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Beyond The Ethical Boundaries Of Solidarity: Increasing Vaccination Rates Through Mandatory Education to Solidarity

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BEYOND THE ETHICAL BOUNDARIES OF SOLIDARITY: INCREASING VACCINATION RATES THROUGH MANDATORY EDUCATION TO SOLIDARITY

by: Dr. Nili Karako-Eyal

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I. INTRODUCTION

Mandatory vaccination laws require children to be vaccinated against certain communicable diseases to attend school. These laws also provide exemptions to school vaccination requirements.¹ All states exempt children from vaccination requirements for medical reasons, and most states also provide an exemption for religious and/or other personal reasons.² Seven states include an educational component in their religious or philosophical exemption process, requiring that parents receive information regarding the benefits of vaccination and the risks of not being vaccinated.³ Of these seven states, five re-

1. See *State School Immunization Requirements and Vaccine Exemption Laws*, CTRS. FOR DISEASE CONTROL & PREVENTION 2 (Feb. 2017), <https://www.cdc.gov/php/docs/school-vaccinations.pdf> [<https://perma.cc/8JRQ-MEA2>].

2. See Erik Skinner, *Vaccination Policies: Requirements and Exemptions for Entering School*, NAT'L CONF. ST. LEGISLATORS (Dec. 2016), http://www.ncsl.org/documents/legisbriefs/2017/lb_2548.pdf [<https://perma.cc/7U4J-D4MG>].

3. *Id.*

quire that information regarding the social benefits of vaccination will be provided to parents.⁴

This type of legislation is part of an overall trend to tighten the vaccine exemption process, which is reflected in the vaccination laws of an increasing number of states.⁵ Tightening the vaccine exemption process through the addition of administrative requirements has been proven to decrease exemption rates.⁶ But this is not the focus of this Article. Instead, the Article focuses on one aspect of the educational component of the legislation—educating parents regarding the social benefits of vaccines. The Article explores the nature of the obligation to be educated regarding the social benefits of vaccines and the potential influence of this legislation on parents' vaccination decision making.

I claim that this legislation should be conceptualized and understood through the concept of solidarity. Following this conclusion, I will explore the potential effects of solidarity legislation on parents' vaccination behavior. For this purpose, two aspects of the legislation will be addressed. First, I will discuss the language included in these laws, which explicitly declare that vaccines have social benefits. I will explore the expressive functions of this language and their potential influence on parental attitudes, beliefs, and behaviors. I will continue by addressing the educational process that this legislation requires. Addressing this aspect of the legislation, I will examine whether providing parents information regarding the social benefits of vaccines through educational encounters is expected to increase their motivation to vaccinate their child.

The Article comprises four parts. Section II discusses the term “solidarity” in general and in the special context of healthcare and vaccination. Solidarity, I conclude, is of special importance in the context of vaccination. Section III describes the legal rules that obligate parents to be educated regarding the social benefits of vaccines. This section presents the transformation of solidarity from an ethical value to a legal component, thus creating legislation, which I will name “solidarity legislation.” Section IV presents the expressive approach to the law and applies it to solidarity legislation. The Article presents and applies

4. See *infra* text accompanying notes 60–84.

5. James Lobo, *Vindicating the Vaccine: Injecting Strength into Mandatory School Vaccination Requirements to Safeguard the Public Health*, 57 B.C. L. REV. 261, 285–286 (2016); Jennifer S. Rota et al., *Processes for Obtaining Nonmedical Exemptions to State Immunization Laws*, 91 AM. J. PUB. HEALTH 645, 647 (2001). For example, personal and religious belief exemptions are not allowed in some states. See, e.g., Act of June 30, 2015, ch. 35, 2015 Cal. Legis. Serv. 1440 (West); Act of May 28, 2015, ch.37, § 4, 2015 Vt. Acts & Resolves 341, 345–46. Legal initiatives to eliminate religious and/or philosophical belief exemptions to vaccination were also undertaken in other states. See, e.g., H.B. 1043, 91st Gen. Assemb., Reg. Sess. (Ark. 2017); H.F. 261, 87th Gen. Assemb., Reg. Sess. (Iowa 2017).

6. See Saad B. Omer et al., *Vaccination Policies and Rates of Exemption From Immunization, 2005–2011*, 367 NEW ENG. J. MED. 1170, 1171 (2012).

three expressive theories of the law: “the attitudinal theory,” “the informational theory,” and “theories of coordination.” The discussion in this section suggests that although solidarity legislation has an expressive potential and is thus expected to have an influence on parents’ vaccination behavior, there are reasons to believe that its influence on parents’ attitudes, beliefs, and behaviors will be limited. Section V focuses on the educational process that is expected to occur following the legislation and its potential effects on parents’ vaccination decisions. It concludes that the causal connection between providing parents information regarding vaccines’ prosocial benefits and vaccination decisions is not straightforward. Based on the previous sections of the Article, Section VI suggests that the expressive and direct influence of solidarity legislation may be improved, for example, by framing the information provided to parents or providing them with certain types of information. Section VII concludes the Article and provides suggestions for reform.

II. SOLIDARITY, PUBLIC HEALTH ETHICS AND VACCINATION

Although it is commonly accepted that solidarity is a prosocial concept,⁷ scholars’ understandings of the term are diverse, changing over time and across contexts.⁸ Accordingly, solidarity has many different meanings and definitions⁹ and has often been described as vague,

7. See, e.g., Ulrich Steinworth, *The Concept and Possibilities of Solidarity*, in *PHILOSOPHICAL STUDIES IN CONTEMPORARY CULTURE: SOLIDARITY* 29, 29 (Kurt Bayertz ed., 1999); Shawn H. E. Harmon, *Solidarity: A (New) Ethic for Global Health Policy* 14 *Health Care Analysis* 215, 216 (2006); Jelena Vasiljević, *The Possibilities and Constraints of Engaging Solidarity in Citizenship*, 27 *FILOZOFIJA I DRUSTVO* 373, 381 (2016).

8. For an extensive discussion of the historical and political legacy of the term solidarity, see Barbara Prainsack & Alena Buyx, *Solidarity: Reflections on an Emerging Concept in Bioethics*, *NUFFIELD COUNS. ON BIOETHICS* 6–10 (Nov. 2011), http://nuffieldbioethics.org/wp-content/uploads/2014/07/Solidarity_report_FINAL.pdf [<https://perma.cc/7T2F-H2NE>] [hereinafter Prainsack & Buyx, *Solidarity*]; Aleksander Glos, *Solidarity in the Legal Frames*, 44 *DIAMETROS* 204, 205 (2015); Michel Hoelzl, *Recognizing the Sacrificial Victim: The problem of solidarity for Critical Social Theory*, 6 *J. FOR CULTURAL & RELIGIOUS THEORY* 45, 50–53 (2004). See generally Karl H. Metz, *Solidarity and History: Institutions and Social Concepts of Solidarity in 19th Century Western Europe*, in *PHILOSOPHICAL STUDIES IN CONTEMPORARY CULTURE: SOLIDARITY* 191, 191–207 (Kurt Bayertz ed., 1999).

9. For a review of the different meanings of solidarity, see, e.g., Barbara Prainsack & Alena Buyx, *Thinking Ethical and Regulatory Frameworks in Medicine From the Perspective of Solidarity on Both Sides of the Atlantic*, 37 *THEORETICAL MED. BIOETHICS* 489, 490 (2016) [hereinafter Prainsack & Buyx, *Thinking Ethical*]; Prainsack & Buyx, *Solidarity*, *supra* note 8, at 20–22, 36; Harmon, *supra* note 7, at 217; Ruud Ter Meulen, *Solidarity and Justice in Health Care: A Critical Analysis of Their Relationship*, 43 *DIAMETROS* 1, 9–10, 14–16 (2015); Emmanuel Melissaris, *On Solidarity* (LSE L., Soc’y & Econ. Working Paper, No. 10/2017); Avery Kolers, *A MORAL THEORY OF SOLIDARITY* 4 (2016); Darryl Gunson, *Solidarity and the Universal Declaration on Bioethics and Human Rights*, 34 *J. MED. & PHILOSOPHY* 241, 244–45 (2009). This observation also applies to the context of health care. See Richard B. Saltman, *Health Sector Solidarity: A Core European Value but with Broadly Varying Content*, 4

controversial, and complex.¹⁰

Against this background, Prainsack and Buyx's current and extensive work, which includes a systematic analysis of the term "solidarity," is of substantial importance.¹¹ Seeking to set out the basic elements of the term "solidarity,"¹² Prainsack and Buyx define solidarity in its most elementary form as an act of commitment to carry the "costs" (financial, social, emotional, and other contributions) of assisting others with whom the individual finds similarity in a relevant respect.¹³

They further claim that solidarity, as they understand it, has several characteristics. First and foremost, it is a practice. Something that is enacted, not merely a feeling, a thought, or an abstract concept. Thus, it requires actions. Motivations or feelings, such as empathy, are not sufficient.¹⁴ Second, while focusing on costs, their definition of solidarity does not exclude scenarios in which groups and individuals also benefit from assisting others. According to this view, a collateral self-interested motivation for an act or even the expectation of a personal benefit does not prevent a practice from being solidaristic. It is only when self-interest is the main motivation that the resulting practice should not be considered solidaristic.¹⁵ Third, while solidaristic prac-

ISR. J. HEALTH POL'Y RES. 1, 1–2 (2015); Prainsack & Buyx, *Solidarity*, *supra* note 8, at 20, 22.

10. See Prainsack & Buyx, *Solidarity*, *supra* note 8, at 36; Glos, *supra* note 8, at 204; Hoelzl, *supra* note 8, at 45; Kurt Bayertz, *Four Uses of "Solidarity"*, in *PHILOSOPHICAL STUDIES IN CONTEMPORARY CULTURE: SOLIDARITY* 3, 4 (Kurt Bayertz ed., 1999); Saltman, *supra* note 9, at 1.

11. I chose to focus on Prainsack and Buyx's work for three reasons: first, their work provides one of the most extensive reviews of the term "solidarity." Second, it is a project accomplished in recent years. Thus, it provides an up-to-date review of the term. Third, while reflecting on the nature of the term "solidarity" in general and based on different perspectives, Prainsack and Buyx present a working definition of the term that cuts across political, philosophical, and social dimensions. Thus, their working definition is applicable to various bioethics discussions.

12. See Barbara Prainsack & Alena Buyx, *Solidarity in Contemporary Bioethics—Towards a New Approach*, 26 *BIOETHICS* 343, 346 (2012) [hereinafter Prainsack & Buyx, *Solidarity in Contemporary Bioethics*].

13. See Prainsack & Buyx, *Thinking Ethical*, *supra* note 9, at 493; Prainsack & Buyx, *Solidarity*, *supra* note 8, at 46. Prainsack and Buyx claim that solidarity is an act of commitment to carry costs, which was criticized by Dawson and Jennings. Dawson and Jennings claimed that costs are not a necessary requirement for solidarity. Angus Dawson & Bruce Jennings, *The Place of Solidarity in Public Health Ethics*, 34 *PUB. HEALTH REV.* 65, 74 (2012). Considering that Prainsack and Buyx included "other contributions" in the term "costs," it is questionable whether this theoretical dispute is of practical meaning. Moreover, there can be no dispute that in the context of the paper, the vaccinated child and the parents incur costs.

14. See Prainsack & Buyx, *Solidarity in Contemporary Bioethics*, *supra* note 12, at 346; Prainsack & Buyx, *Solidarity*, *supra* note 8, at 49. This characteristic was also noted by other scholars as a necessary requirement of solidarity. See, e.g., Gunson, *supra* note 9, at 246.

15. See Prainsack & Buyx, *Thinking Ethical*, *supra* note 9, at 494. For the claim that solidarity is characterized through motivation that reaches beyond self-interest

tice regularly occurs in a context of stark differences among individuals, it requires the recognition of relevant similarity among individuals.¹⁶ According to their understanding of the term, individuals practice solidarity with other individuals with whom they recognize subjective similarity in a relevant respect.¹⁷ This requirement is met if an individual considers himself or herself to have something in common with the other individuals who matter in a specific situation.¹⁸ The recognition of similarity may take many forms: It entails the awareness of being associated by choice, fate, or other circumstances with other individuals. Alternatively, it is an instance of seeing one's own potential or actual fate, or that of loved ones, in the fate of another.¹⁹

Prainsack and Buyx further identify three tiers by which individuals come to engage in practicing solidarity.²⁰ The first tier applies to the interpersonal level. At this level, solidarity comprises manifestations of the willingness to carry costs to assist other individuals with whom a person recognizes sameness or similarity in at least one relevant respect.²¹ Solidarity in the second tier is comprised of manifestations of a collective commitment to carry costs to assist other individuals who

and, as such, may be described as non-instrumental cooperation, see Glos, *supra* note 8, at 207–08; Dawson & Jennings, *supra* note 13, at 74.

16. In the words of Gunson: “Although it may be natural to think of solidarity as being between members of the same group, it need not be. All that seems to be required is that people—groups or individuals—are connected by their adherence to or support for a common goal.” Gunson, *supra* note 9, at 246–47. See also Glos, *supra* note 8, at 206 (for the same approach).

17. Prainsack & Buyx, *Thinking Ethical*, *supra* note 9, at 494.

18. See *id.*; Prainsack & Buyx, *Solidarity in Contemporary Bioethics*, *supra* note 12, at 346–47.

19. Prainsack & Buyx, *Solidarity in Contemporary Bioethics*, *supra* note 12, at 346. Other scholars have described similarity as sharing the same ends, which may take the form of sharing values, ideals, aspirations or goals, such as equality and justice. See Adam Steven Cureton, *On the Nature, Grounds and Limits of Social Moral Rules* 64 (2011) (unpublished Ph.D. dissertation, University of North Carolina at Chapel Hill), <https://cdr.lib.unc.edu/indexablecontent/uuid:607865cf-e155-4d0f-8844-45fa9275c331> [<https://perma.cc/9JT3-YZKB>]; Vasiljeviæ, *supra* note 7, at 381; Harmon, *supra* note 7, at 218.

20. See Prainsack & Buyx, *Solidarity in Contemporary Bioethics*, *supra* note 12, at 346–48. This distinction was criticized by Dawson and Jennings. Dawson and Jennings claimed that level 2 is the real heart of solidarity. Dawson & Jennings, *supra* note 13, at 73. Moreover, level 1 should not be considered as solidarity at all because it misses the dimension of a group in which individuals share common commitments towards other individuals in the group. See *id.* Considering that childhood vaccination addresses commitments towards other individuals in a given community, there is no need to resolve this dispute for the purpose of this Article. The claim that childhood vaccination addresses commitments towards other individuals in a given community will subsequently be explored. See *supra* Part II.

21. See Prainsack & Buyx, *Solidarity in Contemporary Bioethics*, *supra* note 12, at 346. Like Prainsack and Buyx, other scholars claim that solidarity may exist at the individual level. See, e.g., Gunson, *supra* note 9, at 248 (claiming that solidarity has no obvious limits, and thus, it may exist in the context of individuals, groups, communities, and the global society).

are all linked by means of a shared situation or cause.²² Tier-three solidarity is created when values or principles of solidarity manifest themselves in contractual or other legal norms. These contractual or legal arrangements are highly institutionalized enactments of carrying costs to assist other individuals recognized as having sameness.²³

This Article is also inspired by Bierhoff and Kupper's distinction between two forms of solidarity: (1) solidarity formed based on common interest; and (2) solidarity with the interests of other individuals.²⁴ The first form of solidarity refers to the cooperation of concerned individuals with the goal of improvement of their own fate. The basic idea of this form of solidarity is that certain groups of individuals who have a group interest in common recognize that they presumably are not able to reach the goal by individual efforts; however, it is possible to be successful as a group of individuals who experience a community of interests.²⁵ The second form of solidarity is not directly linked to one's interests. Solidarity of this type is elicited by treating problems of needy individuals all over the world. In this case, solidarity does not serve one's interests.²⁶ Jorgen Husted, who made a similar distinction, referred to these two forms of solidarity as group solidarity and moral solidarity.²⁷ Within group solidarity, the common interest is the cement or organizing principle of the group. The members have a common interest in the sense that what is good or harmful to this interest is (or, at least, is perceived to be) good or harmful to the individual. In situations in which solidarity is not practiced for the common interest of an identifiable group or is only practiced to a limited extent, Husted suggests that individuals may demonstrate solidarity for the sake of the needy benefiting from it. In these circumstances, the act is based on individual moral responsibility rather than collective responsibility to a group. Instead of a defined group with shared aims and objectives, there is a more general bond between individuals, a sense of sharing a common lot and recognizing oneself in the other individuals. Husted suggests "that the basic principle underpinning

22. As Prainsack and Buyx explained, this is the case, for example, with respect to self-help groups. See Prainsack & Buyx, *Solidarity in Contemporary Bioethics*, *supra* note 12, at 347.

23. Examples of this solidarity include welfare states and welfare society arrangements. See *id.*

24. Hans W. Bierhoff & Beate Kupper, *Social Psychology of Solidarity*, in *PHILOSOPHICAL STUDIES IN CONTEMPORARY CULTURE: SOLIDARITY* 133, 133 (Kurt Bayertz ed., 1999).

25. *Id.*

26. *Id.* at 134.

27. Darren Shickle et al., *Public Policies, Law and Bioethics: A Framework for Producing Public Health Policy Across the European Union*, EUR. PUB. HEALTH ETHICS NETWORK 85 (Mar. 1, 2003–Aug. 31, 2006), http://eprints.whiterose.ac.uk/100247/1/EuroPHENfullreport_libre.pdf [<https://perma.cc/V84H-VKWZ>].

this form of solidarity is making the other person's causes one's own out of a sense of duty."²⁸

In the recent years, the concept of solidarity has been increasingly addressed in bioethical discourse.²⁹ Overall, this discourse is in its beginning; however, the notion of solidarity has been invoked more explicitly and substantially more frequently in the field of public health than in other areas of bioethics.³⁰

This is not surprising. Solidarity is highly relevant to the context of public health.³¹ As Verweij and Dawson indicated, "public health . . . consists of collective interventions that aim to promote and protect the health of the public."³² Public health addresses the issue of what "we, as a society, do collectively to assure the conditions in which people can be healthy."³³ In contrast to personal healthcare, which has the individual patient as its primary focus, public health strives to im-

28. *Id.*

29. Patricia Illingworth & Wendy E. Parmet, *Solidarity for Global Health*, 26 *BIOETHICS* ii, ii (2012). For an overview of this literature see Prainsack & Buyx, *Solidarity*, *supra* note 8, at 20–22; Dawson & Jennings, *supra* note 13, at 72; Gunson, *supra* note 9, at 243. Prainsack and Buyx reported that although explicit references to solidarity in bioethics are relatively scarce, solidarity is substantially more prominent in bioethics writing than its explicit use. Prainsack & Buyx, *Solidarity*, *supra* note 8, at 36.

30. See Prainsack & Buyx, *Solidarity*, *supra* note 8, at 23; *Solidarity in Public Health Ethics and Practice: Its Conceptions, Uses and Implications*, QUE. NAT'L COLLABORATING CTR. FOR HEALTHY PUB. POL'Y 3–5 (July 2015), http://www.ncchpp.ca/docs/2015_Ethics_Solidarity_En.pdf [<https://perma.cc/75HJ-YNUS>]. The idea that solidarity is a relevant value to public health discourse was expressed in several ethical documents. See, e.g., *Principles of the Ethical Practice of Public Health*, PUB. HEALTH LEADERSHIP SOC'Y 2 (2002), https://www.apha.org/-/media/files/pdf/membergroups/ethics/ethics_brochure.aspx [<https://perma.cc/T3S7-VBUV>]; UNESCO Res. 24, U.N. DOC. 33 C/22, § 13 (Universal Declaration on Bioethics and Human Rights) (Oct. 19, 2005); *A Framework for the Ethical Conduct of Public Health Initiatives*, PUB. HEALTH ONT. 10 (Apr. 2012), <https://www.publichealthontario.ca/en/eRepository/PHO%20%20Framework%20for%20Ethical%20Conduct%20of%20Public%20Health%20Initiatives%20April%202012.pdf> [<https://perma.cc/2RFQ-WXXM>]; NUFFIELD COUNCIL ON BIOETHICS, PUBLIC HEALTH: ETHICAL ISSUES 23 (2007), <http://nuffieldbioethics.org/wp-content/uploads/2014/07/Public-health-ethical-issues.pdf> [<https://perma.cc/4BLW-AHTB>]. A different understanding of current public health discourse was presented by Dawson and Jennings. Dawson and Jennings claimed that solidarity is largely a term missing from the discussion of public health ethics. See Dawson & Jennings, *supra* note 13, at 71. I believe that it is impossible to ignore the increasing attention that the term "solidarity" has received in the context of bioethics and health since Prainsack and Buyx published their work.

31. Some scholars, for example, Dawson and Jennings, claim that solidarity is and ought to be at the heart of ethical thinking about public health. See Dawson & Jennings, *supra* note 13, at 76.

32. MARCEL VERWEIJ & ANGUS DAWSON, *The Meaning of 'Public' in 'Public Health'*, in *ETHICS, PREVENTION, AND PUBLIC HEALTH* 13, 21 (Angus Dawson & Marcel Verweij eds., 2007).

33. Lisa M. Lee, *Public Health Ethics Theory: Review and Path to Convergence*, 40 *J. L. MED. & ETHICS* 85, 86 (2012). See also Lawrence Gostin, *Legal Foundations of Public Health Law and its Role in Meeting Future Challenges*, 120 *PUB. HEALTH* 8, 8 (2006).

prove, through collective actions, the functioning and longevity of populations.³⁴ As the previous discussion indicates, solidarity is a concept that concerns groups or communities and involves prosocial behavior. It follows that, by its very nature, solidarity is a relevant value to public health ethics. Moreover, the practical success of public health policies and programs, as well as their capacity to gain normative legitimacy, often relies on the presence of a cultural sense of solidarity, mutual aid, and cooperation.³⁵ As the Bellagio statement of principles maintained, “public health efforts are more likely to succeed in an atmosphere of social solidarity and trust.”³⁶

The connection between solidarity and public health stands out in the case of vaccination. For individuals who can be vaccinated, vaccination is not only an act of personal benefits, but it is also an act of solidarity, which involves social benefits.³⁷

First, when sufficient numbers of individuals in a specified group have been vaccinated, “herd immunity” (which is also termed “population immunity” or “community immunity”) occurs. Once created, herd immunity provides protection to members of the community who do not have the required immunity.³⁸ There may be various reasons why some children have not been or cannot be vaccinated. Some children cannot receive the vaccine for medical reasons. Other children have not reached the age at which vaccination is recommended. There are children who were not vaccinated because they lack access to health services or their parents have refused the vaccine. Other children may not have the required immunity although vaccinated. For example, some children did not complete the recommended childhood immunization schedule, and some individuals did not develop protective responses to vaccines (vaccine failure). These individuals depend on herd immunity for protection from the disease.³⁹ The social nature of vaccination is also reflected in cases in which the infectious disease causes serious harm to specific sectors of the population but not to

34. Gostin, *supra* note 33, at 10; NUFFIELD COUNCIL ON BIOETHICS, *supra* note 30, at 5–6.

35. Bruce Jennings, *Relational Liberty Revisited: Membership, Solidarity and a Public Health Ethics of Place*, 8 PUB. HEALTH ETHICS 7, 7 (2015); see Gostin, *supra*, note 33, at 9.

36. *Bellagio Statement of Principles*, BELLAGIO MEETING ON SCO. JUST. & INFLUENZA (July 2006), https://www.unicef.org/avianflu/files/Bellagio_Statement.pdf [<https://perma.cc/TY2Y-W2KV>].

37. See Mabel Berezin & Alicia Eads, *Risk is for the Rich?: Childhood Vaccination Resistance and a Culture of Health*, 165 SOC. SCI. & MED. 233, 234 (2016).

38. See *A Framework for the Ethical Conduct of Public Health Initiatives*, *supra* note 30, at 7; NUFFIELD COUNCIL ON BIOETHICS, *supra* note 30, at 54. When herd immunity occurs, the additional benefit to the individual from being vaccinated is very small because, even if not vaccinated, he would likely be protected from the disease through herd immunity. *Id.* at 56. In these cases, the main benefit of vaccination occurs at the community level through the maintenance of herd immunity, which protects individuals who, for distinct reasons, do not have the required immunity. *Id.*

39. NUFFIELD COUNCIL ON BIOETHICS, *supra* note 30, at 54.

other sectors. For example, some diseases seriously affect females rather than males or vice versa. In these scenarios, individuals are required to receive a vaccine to protect against a disease that would not seriously harm them in order to achieve population immunity and protect other individuals who it *could* seriously harm. One example is the mumps, measles, and rubella vaccine (“MMR”). MMR is administered to both boys and girls, even though mumps is generally most serious for males, and rubella is serious only for pregnant women.⁴⁰

At a more communal level, vaccination saves healthcare and other societal costs.⁴¹ It prevents outbreaks of infectious diseases and, as a result, reduces the rates of morbidity and mortality. Thus, the World Health Organization (“WHO”) estimates that immunization currently averts an estimated 2 to 3 million deaths every year worldwide.⁴² In addition, in cases in which a disease can be eradicated, successful vaccination programs are expected to save future vaccination costs, as occurred with smallpox.⁴³ Findings reported by the Center for Disease Control (“CDC”) in 2011 support these claims. According to these findings, adherence to the childhood immunization schedule of each U.S.-born cohort not only prevented approximately 42,000 deaths and 20 million cases of disease but also led to a “net savings of nearly \$14 billion in direct costs and \$69 billion in total societal costs.”⁴⁴ In the United Kingdom, infectious diseases continue to account for more than 10% of deaths and approximately one in three consultations in primary care.⁴⁵

Finally, health is an important form of human capital. An increasing amount of research focuses on the relationship between health outcomes and economic growth. This literature expresses a growing consensus that improving health has a positive effect on national economic growth.⁴⁶ For example, health enhances the productivity of

40. *Id.* at 56–57.

41. See *Ten Great Public Health Achievements—United States, 2001–2010*, 306 J. AM. MED. ASS’N 36, 36 (2011); NUFFIELD COUNCIL ON BIOETHICS, *supra* note 30, at 54; Angus Dawson, *The Moral Case for the Routine Vaccination of Children in Developed and Developing Countries*, 30 HEALTH AFF. 1029, 1031–32 (2011).

42. *10 Facts on Immunization*, WORLD HEALTH ORG., <http://www.who.int/features/factfiles/immunization/en/> (last updated Mar. 2018) [<https://perma.cc/PGS2-6GD5>].

43. Dawson, *supra* note 41, at 1032.

44. *Ten Great Public Health Achievements—United States, 2001–2010*, *supra* note 41, at 36.

45. NUFFIELD COUNCIL ON BIOETHICS, *supra* note 30, at 51–52.

46. See, e.g., Peter Lorentzen et al., *Death and Development* 13 J. ECON. GROWTH 81, 83 (2008); Daron Acemoglu & Simon Johnson, *Disease and Development: The Effect of Life Expectancy on Economic Growth*, 115 J. POL. ECON. 925, 925 (2007); Daron Acemoglu et al., *Disease and Development in Historical Perspective*, 1 J. EUR. ECON. ASS’N 397, 398 (2003); NATIONAL COMMISSION ON MACROECONOMICS AND HEALTH MINISTRY OF HEALTH & FAMILY WELFARE GOVERNMENT OF INDIA, REPORT OF THE NATIONAL COMMISSION ON MACROECONOMICS AND HEALTH 21–22 (Sept. 2005), <http://www.who.int/macrohealth/action/Report%20of%20the%20Nation>

workers by increasing their physical and mental capacities.⁴⁷ From this perspective, encouraging individuals to adopt behaviors that will improve their health as well as the health of others is an important condition to the economic development of societies. This is particularly true regarding vaccination, which may lead to substantial improvements in health outcomes at relatively low costs.⁴⁸

The previous discussion leads to the conclusion that although vaccinating a child is first and foremost an act that aims to protect the vaccinated child, it also serves as a means to protect the health of others and promote the collective good. At the same time, vaccinating a child is an act that involves costs for both the child and his or her parent, for example, time, pain, physical inconvenience, emotional distress, mild side effects, and, in rare cases, serious illness, which may result in disability or death. It follows that vaccinating a child is an act that shares two characteristics with solidarity: carrying costs and assisting other individuals. The third characteristic of solidarity, similarity, is also present in childhood vaccination. Vaccinating a child is often perceived and presented as an act promoted by common interests and the recognition of similarity between children that can be vaccinated (and their parents) and other individuals. For example, the CDC website states: “Immunizing individual children also helps to protect the health of our community . . . Vaccine-preventable diseases have a costly impact, resulting in doctor’s visits, hospitalizations, and premature deaths. Sick children can also cause parents to lose time from work.”⁴⁹ The idea that vaccination is an act based, in part, on the existence of mutual interest is also expressed by the U.S. Department of Health and Human Services. Its website states: “To help keep them safe, it is important that you and your children who are able to get vaccinated are fully immunized. This not only protects your family but also helps prevent the spread of these diseases to your friends and loved ones.”⁵⁰

It follows that in the context of public health, vaccinating a child is also an act of solidarity. In the next Section, I describe how solidarity

al%20Commission.pdf [https://perma.cc/X95K-WMM2]; Julio Frenk, *Health and the Economy: A Vital Relationship*, OECD OBSERVER (May 2004), http://oecdobserver.org/news/archivestory.php/aid/1241/Health_and_the_economy:_A_vital_relationship_.html. [https://perma.cc/P22B-MEG3].

47. David E. Bloom & David Canning, *Health and Economic Growth: Reconciling the Micro and Macro Evidence 2* (Ctr. on Democracy, Dev., and the Rule of Law, Working Paper No. 42, 2005), https://fsi-live.s3.us-west-1.amazonaws.com/s3fs-public/BloomCanning_42.pdf [https://perma.cc/4KU7-CKVZ].

48. *Id.* at 4.

49. *Why Are Childhood Vaccines So Important?*, CTRS. FOR DISEASE CONTROL & PREVENTION, <https://www.cdc.gov/vaccines/vac-gen/howvpcd.htm#why> (last updated Aug. 18, 2017) [https://perma.cc/WC3X-L9BJ].

50. *Five Important Reasons to Vaccinate Your Child*, U.S. DEP’T HEALTH & HUM. SERVICES, https://www.vaccines.gov/more_info/features/five-important-reasons-to-vaccinate-your-child.html (last updated Jan. 2018) [https://perma.cc/3LCG-EU54].

extended its ethical boundaries and became part of vaccination legislation.

III. TRANSFORMING SOLIDARITY FROM AN ETHICAL VALUE TO A COMPONENT OF VACCINATION LEGISLATION

In 1905, the U.S. Supreme Court recognized the states' power and authority to pass compulsory vaccination laws to protect public health.⁵¹ To date, all fifty states require children to be vaccinated against certain communicable diseases to attend school.⁵² State laws also provide exemptions to school vaccination requirements.⁵³ All states exempt children from vaccination requirements for medical reasons, and most states also provide an exemption for religious and/or other personal reasons.⁵⁴

State laws also establish the requirements regarding the exemption application process.⁵⁵ The methods for obtaining exemptions vary from state to state with respect to administrative issues, authority to approve exemption, and filling requirements.⁵⁶ For example, the most lenient states only require that parents sign a statement indicating their religious or personal opposition to vaccination.⁵⁷ Stricter states require parents to present parental notarization or an affidavit with their exemption applications.⁵⁸

Several state laws included in their religious or philosophical exemption process an educational component, according to which parents are obligated to receive information regarding the benefits of vaccination and the risks of not being vaccinated.⁵⁹ While generally

51. *Jacobson v. Massachusetts*, 197 U.S. 11, 27 (1905).

52. *State School Immunization Requirements and Vaccine Exemption Laws*, *supra* note 1, at 1. Vaccination laws often apply to public schools and private schools. *Id.* Most school entry laws focus on children entering kindergarten. However, in many states, school entry requirements also apply to daycare programs, middle schools, colleges, and universities. *See id.* at 1–2.

53. *Id.* at 1.

54. *Skinner*, *supra* note 2.

55. *State School Immunization Requirements and Vaccine Exemption Laws*, *supra* note 1, at 2. For example, some states require that a parental notarization or affidavit is attached to the exemption application. *See infra* text accompanying note 61–84.

56. *Rota et al.*, *supra* note 5, at 646–48.

57. *See, e.g.*, IDAHO CODE § 39-4802(2) (2011); COLO. REV. STAT. § 25-4-903(2)(b) (2018); OHIO REV. CODE ANN. § 3313.671(B)(4) (LexisNexis 2018).

58. *See, e.g.*, ALASKA ADMIN. CODE tit.4, § 06.055(b)(3) (2018); MINN. STAT. ANN. § 121A.15(3)(d) (2016); VA. CODE ANN. § 22.1-271.2(C) (2016); Kevin Hooker, Note, *Exemptions to Vaccine Mandates: The Problem and Possible Remedies*, 14 Hous. J. Health L. & Pol'y 263, 266 (2014).

59. The obligation to be educated regarding the risks and benefits of vaccines as a precondition to an exemption from vaccination should be distinguished from the information provided to parents through the Vaccine Information Statements (“VIS”). All vaccine providers, public or private, are required by the National Vaccine Childhood Injury Act of 1986 § 301, 42 U.S.C. § 300aa-26 (2012) to provide the appropriate VIS to the patient (or parent or legal representative) prior to every dose of specific vaccines. It follows that although information should be provided to parents accord-

applying to parents the same statutory duty to be educated, these laws apply different rules with respect to several issues: the entity responsible for education; the information that should be provided to parents; the methods for providing the information; and the type of exemption—religious and/or personal—to which the education component applies. Among these issues, the most relevant to this Article is the type of information that should be provided to parents. However, for completeness of the picture, I will shortly present each law in its entirety.

Overall, seven state laws included an educational component in their exemption process; these states include Michigan, Vermont, Oregon, Illinois, Washington, Arizona, and Utah.⁶⁰ As of December 21, 2014, Michigan law requires with respect to nonmedical exemptions, the local health department certify that the individual received education on the risks of not receiving the vaccines being waived and the benefits of vaccination to the individual and the community.⁶¹

A similar rule applies in Vermont. As of July 1, 2012, Vermont law requires that a child's parent or guardian sign a form created by the state's Health Department and annually submit it to the school or child-care facility. The signed document should certify that that the person, parent, or guardian "holds religious beliefs opposed to immunization" and "has reviewed evidence-based educational material [provided by the Health Department] regarding immunizations." The educational material shall include information regarding the following: the risks of adverse reactions to immunization; risks of contracting or carrying a vaccine-preventable infectious disease due to the failure to complete the required vaccination schedule; and the risks to persons with special health needs attending schools and child care facilities who are unable to be vaccinated or who are more likely to contract a vaccine-preventable communicable disease and for whom this disease could be life-threatening.⁶²

ing to both types of legislation, the VIS forms are provided to parents who chose to vaccinate their child, whereas the educational obligation of states applies to parents who request an exemption. For the purpose of this Article, it should also be noted that the VIS forms focus on the benefits and risks of the vaccine to the vaccinated child and do not mention the social benefits of vaccination.

60. See *infra* text accompanying notes 61–84. At least three other states, including Connecticut, Minnesota, and Texas, undertook legislative initiatives to include an educational component in the exemption process, but they have not succeeded. See H.B. 7059, 2017 Gen. Assemb., Reg. Sess. (Conn. 2017). S.F. 143, 90th Leg. Reg. Sess. (Minn. 2017); H.B. 241, 85th Leg. Reg. Sess. (Tex. 2017).

61. MICH. ADMIN. CODE r. 325.176 (2018). Accordingly, parents who request an exemption must declare that they have participated in a waiver session. *2018 Immunization Waiver Form*, ST. MICH. DEP'T HEALTH & HUM. SERVS., http://www.michigan.gov/documents/mdch/Sample_Waiver_485823_7.pdf (last updated Jan. 1, 2018) [<https://perma.cc/J8FZ-TZ4G>].

62. VT. STAT. ANN. tit.18, § 1122(a)(3) (2017). The exemption form uses the same wording as the law. See *School Year 2018–19 Religious Immunization Exemption: Child Care and Schools*, VT. DEP'T HEALTH, <http://orangesouthwest.org/uploads/>

According to the law in Oregon, a child is exempted from immunization if the child presents a form signed by the parent of the child, stating that the parent is declining one or more immunizations on behalf of the child.⁶³ The law further states that the document must include one of the following: (1) a signed verification from a healthcare practitioner that he or she has reviewed information regarding the risks and benefits of immunization with the parent that is consistent with information published by the CDC and the contents of the vaccine-educational module;⁶⁴ or (2) a certificate verifying that the parent has completed a vaccine educational module.⁶⁵ The Oregon vaccine-educational module provides parents diverse information regarding vaccination, including a description of the benefits of vaccines. The module describes not only the benefits of vaccines to the vaccinated child but also its importance in protecting the health of others.⁶⁶

An educational component was also added to the vaccination exemption process by the Illinois legislature on August 3, 2015.⁶⁷ According to the law in Illinois, a child is exempt from immunization if

1528296877.pdf (last visited Oct. 15, 2018) [<https://perma.cc/48M5-ZVJU>]. More detailed information is included in an information sheet articulated by the Children's Hospital of Philadelphia Vaccine Education Center. See *Vaccinated or Unvaccinated: What You Should Know?*, CHILDREN'S HOSP. PHILA. (2017), <https://media.chop.edu/data/files/pdfs/vaccine-education-center-vaccinated-unvaccinated.pdf> [<https://perma.cc/V24Y-22RB>] [hereinafter Information Sheet]. Parents are invited to review the information sheet to learn more about collective immunity. See *Parent Education Required for Completion of Vermont's Religious Exemption Form*, VT. DEP'T HEALTH 1 (Jan. 1, 2018), http://www.healthvermont.gov/sites/default/files/documents/pdf/ID_IZ_CCP_Parent_Education_for_Religious_Exemption.pdf [<https://perma.cc/H75A-LZA4>]. The information sheet includes the following explanation: "Just as every family relies on their community for protection of their loved ones, so too does every family contribute to the relative strength of their community's ability to stave off the spread of infection. So how does this work? . . . On the other hand, as the unvaccinated population increases, so does the opportunity for a pathogen to spread through the community. This shared environment is important to all families because studies have shown that vaccinated people in a relatively unvaccinated community are at greater risk than unvaccinated people in a highly vaccinated community. In the first case, the roof is too leaky; in the second case, it's not. Therefore, collectively, the community plays an important role in individual protection, particularly for those who are most susceptible."

63. OR. REV. STAT. § 433.267(1)(c) (2017).

64. *Id.* § 433.267(1)(c)(B)(i).

65. *Id.* § 433.267(1)(c)(B)(ii). The educational component went into effect on March 1, 2014. See Act of June 26, 2013, ch. 515, §§ 1, 5, 2013 Or. Laws 1356, 1356–57.

66. See *Vaccine Education Module*, OR. HEALTH AUTHORITY, <http://healthoregon.org/vaccineexemptionparents> (last visited Oct. 18, 2018) [<https://perma.cc/B7XP-HKTM>]. Thus, parents are informed that "[v]accines protect the children who get them, but they also help protect communities from diseases. Some people cannot get vaccinated because of age or certain medical conditions If enough people in a community are vaccinated, a disease has much harder time in spreading. So, even people that can't be vaccinated and babies may benefit if others are less likely to have a disease to transmit to them." *Id.*

67. See Act of Aug. 3, 2015, ch. 259, § 99, 2015 Ill. Laws 2791, 2795 (codified as amended at 105 ILL. COMP. STAT. 5/27-8.1(8) (2018)).

his or her parents or legal guardians present to the appropriate local school authority a signed Certificate of Religious Exemption that details the grounds for objection and the specific immunizations they object.⁶⁸ The law further states that “[t]he certificate must also be signed by [a] healthcare provider responsible for the performance of the [immunization], confirming that the provider provided education to the parent or legal guardian on the benefits of immunization and the health risks to the student and the community of the communicable diseases for which immunization is required in [Illinois].”⁶⁹

The law in Washington states that a child shall be exempt, in whole or in part, from immunization if he presents a written certification signed by any of the individuals listed in the law, on a form prescribed by the Department of Health, that the “religious beliefs of the signator are contrary to immunization or that the signator has . . . a philosophical or personal objection to the immunization of the child.”⁷⁰ The law further states that after July 22, 2011, the form must include a statement signed by a health care practitioner indicating that he or she provided the signator with information regarding the benefits and risks of immunization to the child.⁷¹ The law does not specify what benefits or risks should be discussed with a parent.⁷² However, a parent signing the form declares that he or she understands that “exempting [the parent’s] children from any or all required vaccine(s) may result in serious illness, disability, or death to [the parent’s] child or others.”⁷³

Arizona also requires an educational component in its exemption process.⁷⁴ Under Arizona law, the parent or guardian of a pupil requesting a personal or religious-beliefs exemption should submit a signed statement to the school administrator stating that he or she has received information regarding immunizations provided by the Department of Health Services and that he or she understands the risks and benefits of immunizations and the potential risks of non-immunization.⁷⁵ The law in Arizona does not explicitly state that parents

68. 105 ILL. COMP. STAT. 5/27-8.1(8) (2018).

69. *Id.*

70. WASH. REV. CODE § 28A.210.090(1)(b)–(c) (2018).

71. *Id.* § 28A.210.090(2)(a). This form should not be presented if the child is exempted because of religious beliefs and the parent or legal guardian demonstrates membership in a religious body or a church in which the religious beliefs or teachings of the church preclude a healthcare practitioner from providing medical treatment to the child. *Id.* § 28A.210.090(2)(c).

72. *See id.* § 28A.210.090(2)(a).

73. *Certificate of Exemption*, WASH. DEP’T HEALTH, http://www.wsd.wa.gov/wp-content/uploads/Immunizations_CertificateofExemption.2017.pdf (last visited Oct. 18, 2018) [<https://perma.cc/X98A-JG3V>]. On the other hand, the provider declares, generally, that he/she discussed the benefits and risks of immunization with the parent. *Id.*

74. ARIZ. REV. STAT. ANN. §15-872(A)(1) (2014).

75. *Id.* §15-873. The educational component was part of the original law. *See Act of May 9, 1990, ch. 209, § 2, 1990 Ariz. Sess. Laws 692, 694.*

should be informed about the benefits of vaccines to other individuals. This information is also not explicitly mentioned in the exemption forms provided to parents by the state of Arizona.⁷⁶

Finally, according to Utah law, a parent asking for a vaccination exemption should complete an online education module.⁷⁷ The law further states that a parent may decline to take the online education module and obtain a vaccination exemption form from a local health department if he or she requests and receives an in-person consultation at a local health department.⁷⁸ Although the law specifies the information that should be provided to parents through the educational module, it does not explicitly state that the social benefits of vaccination are part of the information.⁷⁹ It must therefore be determined whether the information provided to parents through the module will address the social benefits of vaccines.

In summary, of the seven states that include in their exemption process an educational component, four states explicitly obligate parents to receive information regarding the social benefits of vaccination. Another state briefly mentions in its exemption form but not in its legislation that vaccination carries benefits for other individuals. The two other states do not specify in their legislation or exemption forms the specific information that must be shared with parents seeking an exemption. In these latter two states, the decision of whether to provide parents information regarding the social benefits of vaccines is

76. See Religious Beliefs Exemption Form for Child Care, Preschool and Head Start Programs, ARIZ. DEP'T HEALTH SERVS., <http://www.azdhs.gov/documents/preparedness/epidemiology-disease-control/immunization/school-childcare/religious-belief-exemption.pdf> (last updated July 1, 2013) [<https://perma.cc/3RQX-UCBJ>]; *Personal Beliefs Exemption Form Kindergarten–12th Grade Only*, ARIZ. DEP'T HEALTH SERVS., <http://www.azdhs.gov/documents/preparedness/epidemiology-disease-control/immunization/school-childcare/personal-belief-exemption.pdf> (last updated July 1, 2013) [<https://perma.cc/Y2MZ-HDTA>]. It should be noted that these forms refer parents to additional information available at the local county health department and Arizona Department of Health Services. See *Arizona Immunization Program*, ARIZ. DEP'T HEALTH SERVS., <https://www.azdhs.gov/preparedness/epidemiology-disease-control/immunization/index.php> (last visited Dec. 18, 2018) [<https://perma.cc/B8AC-BU82>]. Parents who seek further information through this website are further referred to the CDC's Parent's Guide to Immunizations. The guide includes the following information: "However, the benefits of vaccinating your child also extend to other children. As mentioned earlier, a small percentage of children fail to develop immunity from vaccines. There are also children who can't get certain vaccines for medical or other reasons, and babies who are too young to be vaccinated. These children rely on the immunity of people around them to protect them from infectious diseases. The more children in a community who are vaccinated, the harder it is for a disease to spread. And finally, getting vaccinated today will help protect future generations." *Parent's Guide to Childhood Immunizations*, CTNS. FOR DISEASE CONTROL & PREVENTION 28 (Aug. 2015), <https://www.cdc.gov/vaccines/parents/tools/parents-guide/downloads/parents-guide-508.pdf> [<https://perma.cc/A5Z5-HURC>].

77. UTAH CODE ANN. § 53G-9-304(3)(a) (LexisNexis Supp. 2018).

78. See UTAH CODE ANN. § 53G-9-304(b)(i) (LexisNexis Supp. 2018).

79. See UTAH CODE ANN. § 26-7-9.

left for the judgment of local health services or the individual health-care provider.

Several conclusions may be drawn from the above discussion. First, an increasing number of states obligate parents to be educated regarding the social benefits of vaccination as part of their exemption process (or consider obligating parents to review educational material). Because acting in solidarity is associated with awareness on the part of the actor to the social benefits of his or her acts, this legislation may be perceived as part of an effort to induce or educate parents to act in solidarity. My finding that vaccination is perceived by public health policy makers as an act of solidarity supports this conclusion. It follows that although the word “solidarity” is not explicitly mentioned in the previously described laws, this legislation expresses the idea of solidarity and encourages individuals to act in solidarity. Returning to Prainsack and Buyx’s claim regarding the three tiers by which individuals come to engage in practicing solidarity, this legislation seems to combine between the first and third tiers. Although not obligating parents to act in solidarity, it manifests the idea of solidarity through legislation and adopts a mechanism with the aim to motivate parents to practice solidarity at the interpersonal level. Second, although adopting a similar obligation to be educated regarding the social benefits of vaccination, the laws differ from one another regarding several issues. Thus, there are differences regarding the content of information: benefit to the community versus benefits to other individuals. In Bierhoff and Kupper’s terms: framing solidarity as based on common interest versus framing solidarity as based on the interests of other individuals; or in Husted’s term: framing solidarity as group solidarity versus framing it as moral solidarity. The measures through which information is provided to parents include face-to-face interactions, written information or educational modules available on the net. Finally, the frequency of education includes temporary versus one-time educational interaction.

The increase in the number of states obligating parents to be educated regarding the risks and benefits of vaccination, in general, and of its social benefits, specifically, as well as states in which such an option is considered is not surprising.

In recent years, a number of states have passed legislation or considered passing legislation to tighten their vaccine exemption requirements.⁸⁰ This trend may be associated with three factors. The first

80. See Lobo, *supra* note 5, at 285–86; Rota et al., *supra* note 5, at 647. For example, in California, personal and religious belief exemptions are not allowed. See Act of June 30, 2015, ch. 35, 2015 Cal. Legis. Serv. 1440 (West). In 2015, the law in Vermont was amended to eliminate the philosophical convictions exemption, thus leaving only the medical and religious exemptions in force. See Act of May 28, 2015, ch.37, § 4, 2015 Vt. Acts & Resolves 341, 345–46. Legal initiatives to eliminate religious and/or philosophical belief exemptions to vaccination were also undertaken in other states.

factor is the reoccurrence of diseases that had been declared eradicated in the United States. In 2014 and 2015, the CDC documented over 800 cases of measles in the United States, including a cluster of 117 cases linked to a California amusement park.⁸¹ In 2016, eighty-six individuals in nineteen different states had measles, and from January to May 20, 2017 alone, 100 cases of measles had been reported across fifteen different states.⁸² Reports of pertussis peaked in 2012 with 48,277 cases reported to the CDC, twenty of which resulted in death.⁸³ During 2014, the CDC received reports of 32,971 pertussis cases, a 15% increase from the 28,639 cases in 2013.⁸⁴ The second factor is the increase in the number of parents taking advantage of nonmedical exemptions. This resulted in an increasing number of unvaccinated children and an equivalent decline in childhood immunization rates in the U.S. since 1990.⁸⁵ The third factor is the accumulation of evidence for the association between the frequency of vaccination exemptions or vaccination refusals and the incidence of vaccine-preventable dis-

See, e.g., H.B. 1043, 91st Gen. Assemb., Reg. Sess. (Ark. 2017); H.F. 261, 87th Gen. Assemb., Reg. Sess. (Iowa 2017).

81. *See Measles Cases and Outbreaks*, CTNS. FOR DISEASE CONTROL & PREVENTION, <http://www.cdc.gov/measles/cases-outbreaks.html> (last updated Sept. 26, 2018) [<https://perma.cc/8FTD-EKZ8>].

82. *Id.*

83. *See Pertussis Outbreak Trends*, CTNS. FOR DISEASE CONTROL & PREVENTION, <http://www.cdc.gov/pertussis/outbreaks/trends.html> (last updated Aug. 7, 2017) [<https://perma.cc/A5C2-6LH7>].

84. *Id.*

85. *See* Omer et al., *supra* note 6, at 1171; *Figure Depicting Coverage with Individual Vaccines from the Inception of NIS, 1994 Through 2012*, CTNS. FOR DISEASE CONTROL & PREVENTION, <https://www.cdc.gov/vaccines/imz-managers/coverage/nis/child/figures/2012-map.html> (last updated Sept. 11, 2013) [<https://perma.cc/7JTH-S583>]. Although childhood vaccination rates in the U.S. are at an overall high and exemption rates have been relatively consistent since the 2011–12 school year, in 2016, the CDC reported a national median exemption rate of 1.9%, which indicated a slight increase from the previous school year (1.7%). In 2017, there was a national median exemption rate of 2%, which indicated another slight increase from the previous school year. Moreover, from the 2015–16 to the 2016–17 school year, the exemption rate decreased by >1.0 percentage points only in two states (California and Vermont) and increased by >0.5 percentage points in seven states (Alaska, Georgia, Nevada, New Hampshire, New Mexico, North Carolina, and Wisconsin). In addition, among states that reported exemptions by type in the 2016–17 school year, the median percentage of nonmedical exemptions was 1.8% (range = 0.5% [DC] to 6.5% [Oregon]), compared to 1.6% (range = 0.4% [DC] to 6.2% [Oregon]) in the previous year. Finally, it was also indicated by the CDC that vaccination coverage varies within states, and clusters of under-vaccinated kindergartners may exist in states with high overall rates. *See* Raneë Seither et al., *Vaccination Coverage Among Children in Kindergarten—United States, 2015–16 School Year*, CTNS. FOR DISEASE CONTROL & PREVENTION (Oct. 7, 2016), <https://www.cdc.gov/mmwr/volumes/65/wr/mm6539a3.htm> [<https://perma.cc/AAJ4-VGM6>]; Raneë Seither et al., *Vaccination Coverage for Selected Vaccines, Exemption Rates, and Provisional Enrollment Among Children in Kindergarten—United States, 2016–17 School Year*, CTNS. FOR DISEASE CONTROL & PREVENTION (Oct. 13, 2017), <https://www.cdc.gov/mmwr/volumes/66/wr/mm6640a3.htm> [<https://perma.cc/68GW-Z7V3>].

eases.⁸⁶ Obligating parents to be educated regarding vaccines as part of the exemption process was expected to decrease the number of parents seeking an exemption and thus increase vaccination rates.⁸⁷ This assumption is supported by empirical findings. At least two studies indicated that the level of difficulty of the exemption process affects whether parents seek a nonmedical exemption. For example, a 2001 study shows that states with difficult exemption policies are more likely to have a lower percentage of children with exemptions than states with an easy exemption policy.⁸⁸ The study indicates that the complexity of the exemption process, that is, the time and effort required to obtain an exemption, has a direct effect on the number of parents who seek exemptions to vaccination.⁸⁹ Thus, it suggests that a difficult exemption policy may discourage parents from seeking exemptions for their children and vice-versa.⁹⁰ This conclusion is supported by the findings of a second study, published in 2012. According to this study, from 2005 to 2011, the rates of nonmedical exemptions

86. See, e.g., Saad B. Omer et al., *Geographic Clustering of Nonmedical Exemptions to School Immunization Requirements and Associations with Geographic Clustering of Pertussis*, 168 AM. J. EPIDEMIOLOGY 1389, 1395 (2008); Tracy A. Lieu et al., *Geographic Clusters in Under Immunization and Vaccine Refusal*, 135 PEDIATRICS 280, 288 (2015); Jessica E. Atwell et al., *Nonmedical Vaccine Exemptions and Pertussis in California*, 2010, 132 PEDIATRICS 624, 627 (2013); Saad B. Omer et al., *Vaccine Refusal, Mandatory Immunization, and the Risks of Vaccine-Preventable Diseases*, 360 N. ENG. J. MED. 1981, 1984 (2009) [hereinafter Omer et al., *Vaccine Refusal*]; Aamer Imdad et al., *Religious Exemptions for Immunization and Risk of Pertussis in New York State, 2000–2011*, 132 PEDIATRICS 37, 42 (2013); Saad B. Omer et al., *Nonmedical Exemptions to School Immunization Requirements: Secular Trends and Association of State Policies With Pertussis Incidence*, 296 J. AM. MED. ASS'N 1757, 1761 (2006); Jennifer Zipprich et al., *Measles Outbreak—California, December 2014–February 2015*, CTRS. FOR DISEASE CONTROL & PREVENTION (Feb. 20, 2015), <https://www.cdc.gov/mmwr/pdf/wk/mm6406.pdf> [<https://perma.cc/PY4C-BNER>]; Daniel A. Salmon, et al., *Health Consequence of Religious and Philosophical Exemptions From Immunization Laws: Individual and Social Risk of Measles*, 281 J. AM. MED. ASS'N 47, 49 (1999); Daniel R. Feikin et al., *Individual and Community Risks of Measles and Pertussis Associated with Personal Exemptions to Immunization*, 284 J. AM. MED. ASS'N 3145, 3147–48 (2000).

87. See, e.g., *Frequently Asked Questions Certificate of Immunization Status (CIS) and Certificate of Exemption (COE)*, WASH. DEP'T HEALTH, <https://www.doh.wa.gov/Portals/1/Documents/Pubs/348-472-ExemptionLawFAQs.pdf> (last updated Feb. 2018) [<https://perma.cc/7BGC-KSGM>]; *Oregon Immunization Program, Oregon School and Children's Facility Immunization Law: Nonmedical Exemption Changes in Effect, as of March 1, 2014*, OR. PUB. HEALTH DIVISION 3, <https://apps.state.or.us/Forms/Served/le4684c.pdf> (last updated May 2014) [<https://perma.cc/SAL9-HGD3>]; *Non-medical Waiver Rule for Childhood Immunization: Information for Schools and Child-care*, MICH. DEP'T HEALTH & HUM. SERVS. 1 (July 6, 2018), http://www.michigan.gov/documents/mdch/Waiver_Flyer_for_schools_and_childcare_Ctrs_478621_7.pdf [<https://perma.cc/4RDA-NPF3>]; *School Immunizations, New Certificate of Religious Exemption Requirement*, ILL. DEP'T PUB. HEALTH (Aug. 12, 2015), <http://dph.illinois.gov/news/school-immunizations---new-certificate-religious-exemption-requirement> [<https://perma.cc/698J-RL7G>].

88. Hooker, *supra* note 58, at 266.

89. See Rota et al., *supra* note 5, at 647.

90. See Hooker, *supra* note 58, at 267; Rota et al., *supra* note 5, at 647.

in states with easy exemption policies were 2.31 times higher than the rates in states with difficult exemption policies. By 2011, the nonmedical exemption rate in states with easy exemption criteria increased to 3.3%, an average annual increase of 13%. In contrast, nonmedical exemption rates in states with difficult exemption criteria increased by 8% annually to 1.3% in 2011.⁹¹ Considering that the inclusion of an educational component in the exemption process is expected to impose considerable costs on parents (for example, arriving to the doctor's office, making the time required for the educational process, and confronting the doctor), it is reasonable to assume that adding an obligation to the exemption process might discourage parents from seeking an exemption.

Empirical findings also suggest that parental vaccine refusal or hesitancy is often associated with four factors: low perception of the susceptibility to the disease; low perception of the severity of the disease; low perception of the effectiveness and efficiency of the vaccine; and high risk perception of the side effects of vaccines.⁹² More specifically, concerns regarding vaccine safety, regardless of whether they are scientifically based, are one of the most common factors reported by parents who decline vaccination for their children.⁹³ At the same time, empirical evidence suggests that parents who receive full and correct information regarding vaccines become more supportive of vaccination.⁹⁴ These findings support the assumption that educating parents regarding the low risks and substantial benefits of vaccines through a reliable source will refute parents' wrongful perceptions regarding vaccination and thus increase their willingness to vaccinate their children.

As previously noted, this Article seeks to critically address one aspect of the educational process, providing parents information regarding the social benefits of vaccination, which I will name the "solidarity component" or "solidarity legislation." It follows that the general question of whether it is theoretically or empirically justified to adopt a stricter exemption process or mandate parents to be educated about

91. Omer et al., *supra* note 6, at 1171. For other studies which support these findings, see Daniel A. Salmon, *Parental Vaccine Refusal in Wisconsin: A Case-Control Study*, 108 WIS. MED. J. 17, 17 (2008).

92. See Daniel A. Salmon et al., *Vaccine Hesitancy: Causes, Consequences, and a Call to Action*, 49 AM. J. PREVENTIVE MED. S391, S393 (2015); Omer et al., *Vaccine Refusal*, *supra* note 86, at 1985; Steve P. Calandrillo, *Vanishing Vaccinations: Why Are So Many Americans Opting Out of Vaccinating Their Children?*, 37 U. MICH. J.L. REFORM 353, 402-03 (2004).

93. See Salmon et al., *supra* note 92, at S393.

94. Ellen Wright Clayton et al., *Parents' Responses to Vaccine Information Pamphlets*, 93 PEDIATRICS 369, 371 (1994); see J. Leask, *Vaccination and Risk Communication: Summary of a Workshop, Arlington, Virginia, USA, 5-6 October 2000*, 38 J. PEDIATRIC CHILD HEALTH 124, 126 (2002).

vaccines is not addressed in this Article.⁹⁵ Accordingly, the focus of the discussion is the solidarity component as adopted in the previously described legislation and its possible effects on parents' vaccination behavior. I will start by observing the expressive function of solidarity legislation and its potential influence on vaccination behavior.

IV. THE EXPRESSIVE FUNCTION OF SOLIDARITY LEGISLATION

A. *Generally*

The law influences the behavior of individuals in many ways. The classic "Law & Economics" approach focuses almost exclusively on deterrence as the mechanism through which legal rules influence human behavior. According to this approach, by imposing sanctions, the law increases the expected costs of the regulated activity and thereby induces compliance.⁹⁶

As the previous discussion suggests, this approach may be used to explain and justify, at least in part, a rule that mandates parents to be educated regarding vaccines' social benefits. Mandating that parents participate in an education process and specifically obligating them to be educated regarding the social benefits of vaccines involves a sanction in the form of denying parents who do not comply with this requirement the option of being exempted from vaccinating their children. Considering the implications of this sanction, parents will presumably be motivated to participate in the educational process and thus be informed regarding the social benefits of vaccination. This argument further suggests that providing this information to parents might motivate some parents to change their minds and vaccinate their children.

I will analyze the correctness of this argument in the next part of the Article. However, it is apparent that this argument relies heavily on the deterrent effect of solidarity legislation on parents

However, a more general understanding of the function of this legislation is possible and desirable. In recent decades, an increasing body of legal scholarship has claimed that law has an expressive function independent of the effects of its sanctions.⁹⁷ This view takes a

95. For an empirical study that found that adding a health care provider counseling and/or signature requirement for parents requesting immunization exemptions for their children was associated with decreases in exemption rates, see Saad B. Omer et al, *Exemptions from Mandatory Immunization After Legally Mandated Parental Counseling*, 141 *PEDIATRICS* 1, 4 (2018).

96. Robert E. Scott, *The Limits of Behavioral Theories of Law and Social Norms*, 86 *V.A. L. REV.* 1603, 1603 (2000).

97. See, e.g., Richard H. McAdams, *An Attitudinal Theory of Expressive Law*, 79 *OR. L. REV.* 339, 339 (2000); Dhammika Dharmapala & Richard H. McAdams, *The Condorcet Jury Theorem and the Expressive Function of Law: A Theory of Informative Law*, 5 *AM. L. & ECON. REV.* 1, 5 (2003); Lawrence Lessig, *The Regulation of Social Meaning*, 62 *U. CHI. L. REV.* 943, 964–73 (1995); Cass R. Sunstein, *On the Expressive Function of Law*, 144 *U. PA. L. REV.* 2021, 2026–35 (1996) [hereinafter

macro perspective on the role of law and presents it as a means to stimulate changes in social norms or change the social meaning of a particular behavior.⁹⁸

According to this approach, the discussion should address the explicit and implicit statements included in solidarity legislation, rather than the educational process it is expected to motivate in physician-patient encounters or the sanctions created by it.

More specifically, under this approach, the discussion should address the expressive function of legislation that explicitly states that vaccines have social benefits and that incorporates implicit messages regarding the behavior expected from parents (acting in solidarity). The following discussion addresses this issue.

B. *The Attitudinal Theory*

Expressivist scholars claim that laws' "statements" may change social norms and ultimately affect both the judgments and behaviors of individuals. According to this understanding, the law "expressively," and thus indirectly, influences the behavior of individuals by what it says rather than by creating incentives through sanctions.⁹⁹

Scholars present several mechanisms through which the expressive function of law operates and affects behavior other than through legal sanctions. In his paper, *An Attitudinal Theory of Expressive Law*, McAdams claimed that the law affects behavior by signaling which behaviors are approved or disapproved (esteemed or disesteemed) by members of society.¹⁰⁰ He posited that individuals experience disapproval as a cost and approval as a benefit. As a result, the belief that other individuals generally disapprove of a behavior makes that behavior costlier, at least if there is a risk that other individuals will detect the behavior. In contrast, the belief that other individuals generally approve of a behavior makes the behavior less costly (or more beneficial). One implication of McAdams's theory is that one

Sunstein, *On the Expressive Function*]; Cass R. Sunstein, *Social Norms and Social Roles*, 96 COLUM. L. REV. 903, 953–55 (1996); Alex Geisinger, *A Belief Change Theory of Expressive Law*, 88 IOWA L. REV. 35, 44 (2002); Scott, *supra* note 96, at 1647; Iris Bohnet & Robert D. Cooter, *Expressive Law: Framing or Equilibrium Section?*, 19 UNIV. CAL. BERKELEY SCH. OF L. PUB. L. & LEGAL THEORY, Working Paper No. 138, (2003), https://papers.ssrn.com/sol3/Delivery.cfm/SSRN_ID452420_code98588.pdf?abstractid=452420&mirid=1 [<http://perma.cc/EZ3Z-GM6G>].

98. See Scott, *supra* note 96, at 1622; Matthew D. Adler, *Expressive Theories of Law: A Skeptical Overview*, 148 U. PA. L. REV. 1363, 1384–85; Yuval Feldman, *The Expressive Function of Trade Secret Law: Legality, Cost, Intrinsic Motivation and Consensus*, 6 J. EMPIRICAL LEGAL STUD. 177, 178 n.3 (2009).

99. McAdams, *supra* note 97, at 339; Sunstein, *On the Expressive Function*, *supra* note 97, at 2025–26; Scott, *supra* note 96, at 1603–04; Richard H. McAdams & Eric B. Rasmusen, *Norms and the Law*, in HANDBOOK OF LAW AND ECONOMICS 1573, 1589 (A. Mitchell Polinsky & Steven Shavell eds., 2007); Alex Geisinger & Michael Ashley Stein, *A Theory of Expressive International Law*, 60 VAND. L. REV. 77, 84 (2007).

100. McAdams, *supra* note 97, at 340.

can change an individual's behavior merely by changing his or her beliefs about what others approve or disapprove. Accordingly, McAdams further claims that through signaling that a specific behavior is desirable, the law can influence individuals' behavior merely by causing them to update their beliefs regarding the approval patterns.¹⁰¹

More specifically, McAdams claims that the attitudinal theory has three components. First, it assumes that individuals' behavior is motivated, in part, by what they believe other individuals will approve or disapprove.¹⁰² The motivating power of approval may arise because the individual values approval for its own sake or as an instrument for achieving some other end.¹⁰³ Second, it assumes that individuals have imperfect information regarding what other individuals approve and that their beliefs regarding these matters are frequently mistaken.¹⁰⁴ Third, democratically-produced legislative outcomes are positively correlated with popular attitudes and therefore provide a signal of these attitudes. Therefore, legislative signals may influence behavior independent of the sanctions they impose.¹⁰⁵

When applied to the case of vaccination, the attitudinal theory suggests that the explicit and implicit statements included in solidarity legislation signal to parents that considering vaccination's social benefits and acting in solidarity when making vaccination decisions represent an approved and esteemed behavior by members of the society. On the other hand, ignoring the social implications of nonvaccination and not acting in solidarity are behaviors disapproved by society. According to the attitudinal theory, providing these signals to parents is expected to encourage them to consider the social implications of their decision regarding vaccination and motivate them to vaccinate their child.¹⁰⁶

However, a closer examination of these propositions raises doubts as to their correctness. For this purpose, a distinction between two groups of parents is in place. The first group represents parents who

101. *Id.* at 342.

102. *Id.*

103. *Id.*

104. *Id.*

105. *Id.* at 340; Sunstein, *On the Expressive Function*, *supra* note 97, at 2033.

106. Dewesh Kumar et al., *Vaccine Hesitancy: Understanding Better to Address Better*, 5 *ISR. J. HEALTH POL'Y RES.* 1, 4 (2016). These conclusions are supported by empirical studies that indicate cooperation positively correlates with punitive attitudes vis-à-vis defectors in different contexts, including vaccination. See Shahzeen Z. Attari et al., *Reasons for Cooperation and Defection in Real-World Social Dilemmas*, 9 *JUDGMENT & DECISION MAKING* 316, 325 (2014). Thus, it has been reported that parents' intentions to vaccinate against Hepatitis B were significantly greater when presented with the beliefs that most friends would vaccinate, individuals important to the parents favored vaccination, and these important individuals would appreciate the parents' decision to vaccinate. See John Romley et al., *National Survey Indicates that Individual Vaccination Decisions Respond Positively to Community Vaccination Rates*, 11 *PLOS ONE* 1, 7 (2016).

are members of a close-knit group¹⁰⁷ in which the social norm is to refuse vaccination¹⁰⁸ and parents who object to vaccination based on philosophical, moral or other strongly held attitudes.¹⁰⁹ The second group includes hesitant parents¹¹⁰ and free-rider parents.¹¹¹

107. “A close-knit group is a network in which power is broadly distributed and information pertinent to informal control circulates easily among network members. Typically, close-knit groups are comprised of repeat players who can identify one another.” Lior Jacob Strahilevitz, *Social Norms from Close-Knit Groups to Loose-Knit Groups*, 70 U. CHI. L. REV. 359, 359 (2003).

108. Examples of vaccine-averse groups include Christian Scientists, the Amish, Orthodox Protestant, and Orthodox Jews. These groups are often also close-knit groups. The aversion of religious groups toward vaccination may be driven by religious reasons, safety concerns, tradition, or simply custom. See John D. Grabenstein, *What the World’s Religions Teach, Applied to Vaccines and Immune Globulins*, 31 VACCINE 2011, 2015, 2019 (2013) (Christian Scientists); Wilhelmina L.M. Ruijs et al., *The Role of Religious Leaders in Promoting Acceptance of Vaccination Within A Minority Group: A Qualitative Study*, 13 BMC PUB. HEALTH 511, 512 (2013); Wilhelmina L. M. Ruijs et al., *How Orthodox Protestant Parents Decide on the Vaccination of Their Children: A Qualitative Study*, 12 BMC PUB. HEALTH 408, 409 (2012) (Orthodox Protestants); Olivia K. Wenger et al., *Underimmunization in Ohio’s Amish: Parental Fears Are a Greater Obstacle Than Access to Care*, 128 PEDIATRICS 79, 80 (2011) (Amish); Asher Bush, *Vaccination in Halakha and in Practice in the Orthodox Jewish Community*, 13 HAKIRAH 185, 186 (2012) (Orthodox Jews).

109. See Jessica Smartt Gullion et al., *Deciding to Opt Out of Childhood Vaccination Mandates*, 25 PUB. HEALTH NURSING 401, 402 (2008). For example, a preference for natural parenting or natural-living philosophy characterized by a distrust of Western medicine and a penchant to pursue alternative therapies for medical ailments. See *id.*

110. See Eve Dubé et al., *Vaccine Hesitancy: An Overview*, 9 HUM. VACCINES & IMMUNOTHERAPEUTICS 1763, 1764 (2013). Despite the increasing number of articles that refer to vaccine hesitancy published in recent years, there are discrepancies among publications regarding what exactly falls under the umbrella of “vaccine hesitancy.” *Id.* For the purpose of this Article, I will use the definition presented by Kestenbaum and Feemster: “Hesitant individuals are a heterogeneous group who hold varying degrees of indecision about specific vaccines or vaccination in general. Along this spectrum of indecision, there is a range of vaccine uptake, depending on additional influences that move an individual toward or away from ultimately accepting a particular vaccine.” Lori A. Kestenbaum & Kristen A. Feemster, *Identifying and Addressing Vaccine Hesitancy*, 44 PEDIATRIC ANNALS e71, e72 (2015). The causes of vaccine hesitancy are various and are influenced by multiple factors. These factors include parental specific characteristics, such as knowledge regarding vaccination and information sources; parents’ previous experiences with vaccine preventable diseases; family histories; feelings of control; and relationship with the healthcare providers and the public health system. See *id.* at e73-e75; Dubé et al, *supra* note 110, at 1765–70. Other causes include community-level factors, such as social norms, media, and vaccine policy. Dubé et al, *supra* note 110, at 1765–67. Although some scholars include parents who hold strong attitudes against vaccination in this category, I will refer to these parents as a separate category.

111. Alison M Buttenheim & David A. Asch, *Making Vaccine Refusal Less of a Free Ride*, 9 HUM. VACCINES IMMUNOTHERAPEUTICS 2674, 2674 (2013). Free-rider parents are parents who rely on herd immunity to provide their children protection from infection. *Id.* Herd immunity is considered a public good. *Id.* It is both non-excludable (which indicates there is no way to exclude individuals from using it) and non-rivalrous (which indicates that one individual’s use does not limit or restrict other individuals’ use). Similar to other public goods, such as national defense, herd immunity is vulnerable to the “free rider” problem. *Id.*; Carolina Betsch et. al., *Using Be-*

This argument requires an explanation. The attitudinal theory assumes that individuals care whether other individuals approve or disapprove of their behavior. As this theory suggests, social disapproval is expected to affect individuals' behavior only to the extent they value the esteem and respect of other individuals in the community. It further posits that individuals also consider the amount and quality of social disapproval attached to a behavior, which together present the social costs¹¹² attached to this behavior, the social benefits expected from changing one's behavior, and the private costs involved in each course of behavior (for example, the risks involved in vaccination).¹¹³

Following these assumptions, two propositions are in place. First, it is questionable whether parents who are members of a vaccine-averse, close-knit group will be motivated to change their behavior by legislation signaling that consideration of vaccination's social benefits and acting in solidarity represent an approved and esteemed behavior by members of the society.¹¹⁴ Individuals do not attach the same value to out-group disapproval or approval as they attach to in-group disapproval or approval.¹¹⁵ Moreover, in the case of close-knit groups, changing behavior and vaccinating a child may expose parents to a severe in-group condemnation or cause them to experience guilt for violating the norms of their community. It follows that, for these parents, the informal social sanctions involved in changing behavior or the self-imposed sanction of guilt might result in higher costs than the costs involved in keeping with the practice accepted in their community.¹¹⁶ Therefore, as long as their close-knit community refuses to change its norms regarding vaccination, these parents are expected to stick to their refusal to vaccinate their children even in the presence of

havioral Insights to Increase Vaccination Policy Effectiveness, 2 POL'Y INSIGHTS FROM BEHAV. & BRAIN SCI. 61, 64 (2015).

112. Dharmapala & McAdams, *supra* note 97, at 2. The phrases "social costs" and "social benefits" used in the above text express the social responses attached to a behavior, for example, condemnation, stigma, exclusion, praises, and improving one's social status.

113. For a similar line of reasoning, see Geisinger & Stein, *supra* note 99, at 85.

114. For a similar claim, see Kestenbaum & Feemster, *supra* note 110, at e74.

115. Strategic models of intergroup bias have provided evidence that concerns about reputation lead to greater in-group altruism. See Leor M. Hackel et al., *Social Identity Shapes Social Valuation: Evidence From Prosocial Behavior and Vicarious Reward*, 12 SOC. COGNITIVE & AFFECTIVE NEUROSCIENCE 1219, 1219 (2017).

116. Members of close-knit groups are particularly responsive to social norms because their dependence on each other makes them value their reputation and social status and the costs of obtaining and exchanging information regarding members are low. See Strahilevitz, *supra* note 107, at 360. For a more general discussion about the power of social sanctioning in different social settings, see, for example: Rachel I. McDonald & Christian S. Crandall, *Social Norms and Social Influence*, 3 CURRENT OPINION BEHAV. SCI. 147 (2015); Rob M. A. Nelissen & Laetitia B. Mulder, *What Makes a Sanction "Stick"? The Effects of Financial and Social Sanctions on Norm Compliance*, 8 SOC. INFLUENCE 70 (2013); Andrew L. Spivak et al., *Religiosity, Delinquency, and the Deterrent Effects of Informal Sanctions*, 32 SOC. & CRIMINOLOGY FACULTY PUBLICATIONS 103 (2011).

legislated signals for solidarity. The same is also true for parents who object to vaccination based on philosophical, moral, or other strongly held attitudes.¹¹⁷ These parents may perceive the costs of vaccination, for example, exposing their child to vaccination risks, as substantially higher than the cost of social disapproval involved in not vaccinating him.¹¹⁸

Second, the chance that hesitant parents and free riders will change their behavior in response to a legislated signal regarding solidarity seems greater than the chance presented by the first group. These parents often do not hold strong beliefs against vaccination. They only act out of personal payoff.¹¹⁹ Moreover, although influenced by close social networks,¹²⁰ they are not typically severely sanctioned by their community for changing their minds and deciding to vaccinate their children. It is therefore possible that these parents will be more responsive to the social disapproval involved in not vaccinating a child. However, even then, the extent to which these parents will be responsive to informal sanctions depends, among other things, on their perception of the possible payoff of vaccination versus nonvaccination. This comparison will typically be based on parents' perceptions regarding the following issues: the possibility of social disapproval, that is, the perceived risk that their decision not to vaccinate their child will be made known to other individuals; the nature of the expected social disapproval and its extent;¹²¹ the susceptibility to the disease; the severity of the disease; the risks and efficiency of the vaccine; and the financial costs associated with vaccination versus disease infection (for example, expenses for infection treatment and absence from work).¹²² Free-rider parents will also consider the perceived vaccination rates in their community, that is, their evaluation of whether their

117. P. Wesley Schultz et al., *Normative Beliefs as Agents of Influence: Basic Processes and Real-World Applications*, in *ATTITUDES AND ATTITUDE CHANGE* 385, 404 (William D. Crano & Radmila Prislin eds., 2008). For the claim that having a strong attitude toward the behavior may reduce or reverse the direction of normative social influence. *Id.*

118. For a similar claim, see Jesse Singal, *Why Shaming Anti-Vaxxers Won't Work*, CUT (Feb. 2, 2015), <https://www.thecut.com/2015/02/why-shaming-anti-vaxxers-wont-work.html> [<https://perma.cc/56MW-MLAK>].

119. This part of the discussion ignores the potential effects of other considerations on the behavior of parents, for example, the desire to conform to others. These issues will be discussed in the next paragraphs.

120. Emily K. Brunson, *The Impact of Social Networks on Parents' Vaccination Decisions*, 131 *PEDIATRICS* e1397, e1397, e1401–02 (2013).

121. Richard H. McAdams, *The Origin, Development and Regulation of Norms*, 96 *MICH. L. REV.* 338, 361–62 (1997). McAdams specifically noted the risk that the deviation from the consensus will be detected and publicized, through gossip or other informal or formal means, as a key element of the attitudinal theory. *Id.* at 361–62 & n.100.

122. See Shang Xia & Jiming Liu, *A Computational Approach to Characterizing the Impact of Social Influence on Individuals' Vaccination Decision Making*, 8 *PLOS ONE* e60373, 360373 (2013).

children are protected from infection through herd immunity. Thus, hesitant parents who perceive vaccine risks as high, vaccine benefits as poor, and the possibility of serious social condemnation as moderate might prefer to carry the costs of being socially condemned and refrain from vaccination, and vice versa. Free riders who perceive vaccination rates in their community as high, vaccine side effects as high, and the possibility of serious social condemnation as low might also prefer the option of nonvaccination. It follows that the response of hesitant or free rider parents to legal signals regarding solidarity might change depending on their perceptions of the previously described issues.

C. *The Informational Theory*

While the attitudinal theory focuses on social forces as an external mechanism through which the expressive function of the law may influence behavior, other theories stress the law's expressive power to change individuals' inner beliefs or perceptions. One of these theories is the informational theory presented by McAdams and Dharmapala. In their work, the authors claimed that another way by which the law works expressively is by providing information to individuals regarding the benefits and risks of the relevant activity and thus enabling them to update their own beliefs regarding the regulated behavior.¹²³ This mechanism relies on the process by which legislation is produced. More specifically, it stresses the capacity of legislatures (in certain circumstances) to aggregate information and thus create information superior to that possessed by any individual. In these circumstances, a rational individual may change his or her beliefs regarding the subject of the legislation, even if the legislature has no greater expertise on the issue than the citizenry.¹²⁴ McAdams and Dharmapala further claim that updating individuals' beliefs may have two effects. One type is an "educational effect," by which individuals directly decide to change their own primary behavior. The second type is the "norm effect." In these cases, the updating of beliefs causes individuals to expend greater effort to selfishly enforce the norm, thereby influencing the primary behavior of other individuals. In each of these cases, law works expressively: By informing citizens, it influences behavior independent of the deterrence that legal sanctions generate.¹²⁵

123. See RICHARD H. McADAMS, *THE EXPRESSIVE POWERS OF LAW: THEORIES AND LIMITS* 136 (2015). This information should be distinguished from information regarding the attitudes of other individuals towards the relevant behavior. See *id.* at 136–38. Although information regarding attitudes informs individuals whether others disapprove or approve of the behavior, this type of information relates to actual features of reality. See *id.*

124. See Dharmapala & McAdams, *supra* note 97, at 3.

125. See *id.* at 6. See also Sunstein, *On the Expressive Function*, *supra* note 97, at 2035 (for a similar line of argument).

Applying informational theories to the case of vaccination suggests that including explicit messages regarding the social benefits of vaccines in vaccination laws might increase the willingness of hesitant parents and parents who object to vaccination to vaccinate their children. Parental hesitancy has been associated with the holding of inaccurate information, confusion, uncertainty, and ambiguity regarding the risks and benefits of vaccination.¹²⁶ Under these circumstances, parents might be led to indecision or refusal to make decisions, without holding strong attitudes against vaccination.¹²⁷ Parental objection to vaccination has also been connected to the holding of inaccurate information regarding the susceptibility to the disease, its severity, and vaccine efficiency. Thus, it has been shown that parents who do not vaccinate their children think that their children are unlikely to contract infectious diseases and that infections are unlikely to be transmitted to their child.¹²⁸ Other individuals seem to think that vaccine-preventable diseases are not that severe and may be easily treated.¹²⁹ There are parents who believe that natural immunity, which is acquired through being infected with the disease, is preferable to vaccine-induced immunity.¹³⁰ In addition, parents with a low perception of the disease often believe that the likelihood of negative consequences of vaccination is high and that these consequences are more severe than contracting the disease.¹³¹

Although these data mainly refer to parents' misconceptions and uncertainty regarding the risks and benefits of vaccinating *their child*, holding inaccurate information or being confused regarding these is-

126. See, e.g., Daniel Brieger et al., *Knowledge, Attitudes and Opinions Towards Measles and the MMR Vaccine Across Two NSW Cohorts*, 41 AUSTRAL. & N.Z. J. PUB. HEALTH 641, 643-645 (2017); Salmon et al., *supra* note 92, at S392-93; Omer et al., *Vaccine Refusal*, *supra* note 86, at 1985; Calandrillo, *supra* note 92, at 402-03; Irene A. Harmsen et al., *Why Parents Refuse Childhood Vaccination: A Qualitative Study Using Online Focus Groups*, 13 BMC PUB. HEALTH 1183, 1185-87 (2013); Allison M. Kennedy et al., *Vaccine Beliefs of Parents Who Oppose Compulsory Vaccination*, 120 PUB. HEALTH REP. 252, 256 (2005); Anat Gesser-Edelsburg et al., *Why Do Parents Who Usually Vaccinate Their Children Hesitate or Refuse? General Good vs. Individual Risk*, 19 J. RISK RES. 405, 419-21 (2014). Several factors are responsible for parents' misconceptions and confusion regarding vaccination: the use of unprofessional and unscientific sources of information, such as family members, friends, or the internet, where inaccurate information and unsubstantiated stories regarding vaccines are present; the increasing number of informational sources regarding vaccination, which often provide parents with contradictory pieces of information; and the successful reduction in infectious disease rates and the prevention of epidemics in states with persistently high vaccination coverage. For a detailed discussion regarding the causes for parents' misconceptions and confusion regarding vaccination, see Nili Karakoyal, *Increasing Vaccination Rates Through Tort Law: Theoretical and Empirical Insights*, 86 UMKC L. REV. 1, 1921 (2017).

127. Betsch et al., *supra* note 111, at 65.

128. Harmsen et al., *supra* note 126, at 1186; Kennedy et al., *supra* note 126, at 256.

129. Harmsen et al., *supra* note 126, at 1186.

130. *Id.*; Kennedy et al., *supra* note 126, at 256.

131. Harmsen et al., *supra* note 126, at 1186.

sues affects parents' perceptions regarding the *social implications of vaccination*. For example, a parent may be confused regarding the risk that their child will infect other individuals if not vaccinated, the severity of the disease to other individuals if infected by their child, and the effectiveness of vaccination in preventing epidemics.

According to the informational theory, providing information to parents regarding the benefits of vaccines to other individuals and the community through vaccination legislation will enable them to update their beliefs regarding the social implications of the decision of whether to vaccinate their child. Knowing the legislature's assessment, parents will have a reliable, supportive reference point with which they can interpret information and identify misleading information. As a result, parents' uncertainty may be reduced and parental misconceptions corrected. Thus, as far as parental hesitancy and objection to vaccination is associated with the holding of inaccurate information or confusion regarding the benefits and risks of vaccination, such legislation may increase vaccination rates.

Nevertheless, four covenants are in place. First, the previously described proposition is based on two assumptions: (1) provision of accurate information to parents is expected to increase vaccination rates; and (2) knowledge regarding the social benefits of vaccination is expected to induce parents to vaccinate their children. However, the correctness of these assumptions should be examined. This issue will be addressed in the next part of the Article. Second, as previously noted, McAdams and Dharmapala claimed that rational individuals may change their beliefs regarding the subject of the legislation because of the capacity of legislatures to aggregate information and thus create information superior to that possessed by an individual. This claim seems of special force in the case of vaccination considering that legislatures have greater expertise on the subject than the citizenry. However, attention should be given to findings that indicate vaccination refusal or hesitancy is often associated with distrust in official state authorities.¹³² When this is the case, parents may perceive information provided to the public by the legislature as untrue.¹³³ Third, it is questionable whether the educational effect of legislation as previously described will induce free riders to change their behavior and vaccinate their children. Parents that knowingly free ride herd immu-

132. Heather M.R. Ames et al., *Parents' and Informal Caregivers' Views and Experiences of Communication About Routine Childhood Vaccination: A Synthesis of Qualitative Evidence*, COCHRANE LIBR. 20–21 (2017), <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD011787.pub2/media/CDSR/CD011787/CD011787.pdf> [<https://perma.cc/5NE3-BD3H>]; Fabio Petrelli et al., *Vaccine Hesitancy, A Public Health Problem*, 30 ANN. IG. 86, 91 (2018); Sarah E Williams, *What are the Factors that Contribute to Parental Vaccine-Hesitancy and What Can We Do About It?*, 10 HUMAN VACCINES & IMMUNOTHERAPEUTICS 2584, 2585 (2014).

133. For the claim that the informational function of the law is conditioned on public trust in governmental agents, see Dharmapala & McAdams, *supra* note 97, at 6.

nity are aware of the social benefits of vaccination. In fact, they rely on them. As far as they are concerned, what might lead to a change of behavior is correcting misconceptions regarding vaccination rates in the community, as far as misconceptions exist, and educating others with respect to the possibility that herd immunity will be lost if the number of parents refusing to vaccinate increases. Fourth, using legislation, which is an outside source, to provide parents information regarding the social benefits of vaccination might not have an educational effect in another case: parents who belong to a close-knit community. These parents are highly influenced by the perceptions and beliefs that are common in their community. Therefore, it is questionable whether legislation in and of itself, which is an outside source of information, will have an influence on their perceptions and beliefs regarding vaccination. In these cases, other methods of providing information to the community and changing their perceptions regarding vaccination might be more efficient. These methods will be discussed in the next part.

D. *Theories of Coordination*

Like McAdams and Dharmapala, Cooter was also interested in the way law, through its expressive function, changes individuals' inner perceptions about the behavior itself and not only the way they behave. According to Cooter, an individual will internalize a norm when doing so will provide a Pareto self-improvement¹³⁴—that is, when it makes the person better off as measured by the old preferences and the new preferences.¹³⁵ Law, in turn, creates opportunities for Pareto self-improvements two ways. First, adopting a legal duty allows the state to increase an individual's willingness to undertake the specific duty as an expression of his or her civic virtue. More specifically, according to Cooter, a law may change an individual's behavior because of his or her desire to be seen by other individuals as a cooperator. Second, individuals who believe they should obey the law (in general) may internalize the (specific) behavioral obligation embodied in a particular law.¹³⁶ Cooter further claimed that out of this process, an individual with a new and different view of the behavior will emerge.¹³⁷

134. See Robert Cooter, *Do Good Laws Make Good Citizens? An Economic Analysis of Internalized Norms*, 86 VA. L. REV. 1577, 1592–94 (2000) [hereinafter Cooter, *Do Good Laws Make Good Citizens*].

135. Thus, Cooter claimed that a rational individual internalizes a norm when commitment conveys an advantage relative to the original preferences and the changed preferences. See Robert Cooter, *Models of Morality in Law and Economics: Self-Control and Self-Improvement for the "Bad Man" of Holmes*, 78 B.U. L. REV. 903, 904–05 (1998); Robert Cooter, *Expressive Law and Economics*, 27 J. LEGAL STUD. 585, 585–86 (1998) [hereinafter Cooter, *Expressive Law and Economics*].

136. See Cooter, *Expressive Law and Economics*, *supra* note 135, at 593.

137. Cooter, *Do Good Laws Make Good Citizens*, *supra* note 134, at 1581, 1597–98; Cooter, *Expressive Law and Economics*, *supra* note 135, at 586.

At this point, two results may follow. First, to the extent that citizens internalize the legal rule and are deterred by the prospect of guilt, the law may have self-sanctioning (or third-order) effects.¹³⁸ Second, if enough individuals adopt the new behavior, a tipping point may be reached, and a new equilibrium entrenched. In this way, law can change social norms.¹³⁹

When applied to the case of vaccination, Cooter's theory suggests that solidarity legislation might induce parents who believe they should obey the law or who want to be seen by other individuals as cooperators to internalize the explicit and implicit behavioral obligations embodied in the legislation. Thus, they may consider the social benefits of vaccination when deciding whether to vaccinate their child and act in solidarity.

Though Cooter's theory may affect some hesitant parents, the theory's applicability is uncertain with parents in close-knit communities that refuse vaccination out of social norm and parents with strongly held attitudes toward vaccination such as philosophical or moral objections. Similar to other individuals, parents who are members of a close-knit community want to be viewed by others as cooperators. Nevertheless, these "others" will most likely be members of the community they belong to. For these parents, the Pareto self-improvement option is *not* vaccinating their child, considering that acting in this way will mark them as cooperators in the eyes of members of their community. Parents that hold strong beliefs against vaccination are also not expected to think that acting in solidarity in the context of vaccination will make them better off as measured by their old preferences. Although acting in this way may signal to other individuals that they are cooperators, these parents may estimate the costs of vaccination (for example, the risks involved in vaccination) as higher than the expected benefit from changing preference (being viewed by other individuals as cooperators). When this is the case, internalizing the norm included in the legislation is not expected to present an opportunity to Pareto self-improvement.

Other scholars are also interested in the way law may create equilibria around new behavior. In his article, *A Focal Point Theory of Expressive Law*, McAdams claims that the law works expressively by destabilizing existing equilibria and providing new focal points for the creation of equilibria around new behaviors. Once a new legal rule is adopted, it provides individuals with a basis for questioning whether the past behavior of other individuals continues to apply to future play, and they will no longer simply embrace the traditional equilibrium. Similar to Cooter, McAdams stresses the issue of coordination, claiming that by making certain outcomes focal, the law creates expect-

138. Scott, *supra* note 96, at 1604.

139. See Cooter, *Do Good Laws Make Good Citizens*, *supra* note 134, at 1588–87; Cooter, *Expressive Law and Economics*, *supra* note 135, at 585–86.

tations among individuals that others will play the strategies associated with the newly focal equilibrium. Once expectations exist, they are self-fulfilling. That is, even if the payoffs remain the same, everyone prefers to play their best response to the equilibrium they expect everyone to reach to avoid the higher costs of an unsolved conflict.¹⁴⁰ McAdams further claims that the focal point theory is broad and that his assertions are true for many parts of life.¹⁴¹ Nevertheless, he also claims that the scope of this theory is limited to cases in which the situation includes an element of coordination. Therefore, when no coordination is needed, the theory does not apply.¹⁴² Moreover, for the theory to work, the parties to the conflict should share an interest in avoiding unresolved conflicts because while each side prefers to get its way, each side considers escalating the conflict as the worst outcome.¹⁴³ Therefore, “if an individual has a dominant strategy—best no matter what the other individual does—then he is beyond the influence of a focal point.”¹⁴⁴ McAdams further claims that the success of a focal point theory is also conditioned in the absence of more powerful focal points.¹⁴⁵

While the theory of focal points is relevant to the case of vaccination, a detailed discussion exceeds the boundaries of this Article. Nevertheless, several initial observations may be useful for the current discussion.

As previously noted, herd immunity is required for the protection of individuals who cannot be vaccinated because of medical conditions, children who are too young to be vaccinated, young children who did not complete the recommended childhood immunization schedule, and vaccinated individuals who did not develop protective responses to vaccines (vaccine failure). For this purpose, the overall immunization rates should reach a critical threshold. These findings lead to three conclusions. First, considering that a sufficient number of individuals should be vaccinated for a herd immunity to be achieved, coordinating the behavior of individuals is important in the case of vaccination. Second, as the number of nonvaccinated children increases, there is a risk that vaccination rates will fall below the threshold, and a conflict between the previously discussed groups of parents

140. See Richard H. McAdams, *A Focal Point Theory of Expressive Law*, 86 VA. L. REV. 1649, 1663–72, (2000); McAdams, *supra* note 123, at 62. For a similar line of argument, see Jean-Robert Tyran & Lars P. Feld, *Why People Obey The Law: Experimental Evidence From The Provision of Public Goods*, 5–6 (CESifo Working Paper No. 651, 2002), https://papers.ssrn.com/sol3/Delivery.cfm/SSRN_ID290231_code01111670.pdf?abstractid=290231&mirid=1 [<https://perma.cc/U8S5-3QKA>].

141. See McAdams, *supra* note 123, at 29, 82.

142. See *id.* at 62.

143. *Id.* at 82.

144. *Id.* at 92.

145. *Id.* at 62. He also indicated that for the theory to work, the law must be sufficiently clear and sufficiently public. For discussion, I will assume that these conditions are fulfilled in the case of solidarity legislation.

and non-vaccinators may emerge. Third, considering that free riders rely on the protection provided to their children by herd immunity, a conflict may arise among free rider parents themselves and between free-rider parents and other nonvaccinating parents. Each parent will prefer that other parents vaccinate their children to ensure herd immunity will be achieved and his or her child will be protected while carrying no risks. Fourth, because nonvaccination may result in epidemics and thus increase healthcare costs,¹⁴⁶ a conflict may arise between nonvaccinating parents whose behavior increases the chances for epidemic outbreaks and parents who vaccinate their children who will have to bear the costs of an outbreak.¹⁴⁷ Finally, the fact that any child may experience a vaccination failure and thus be exposed to risk of infection provides another reason for vaccinating parents to be in conflict with nonvaccinating parents. It follows that childhood vaccination creates a need for coordination; therefore, it is a case for which the focal point theory might be applicable.

As previously noted, for the theory to work, each side of the conflict should consider an escalating the conflict to be the worst outcome. This proposition suggests that the focal-point effect of solidarity legislation is expected to be limited when the non-vaccinators are free riders. Free-rider parents will have an interest in avoiding the previously described conflicts only if they believe that vaccination rates are about to fall below the threshold, with the result that they not being protected by herd immunity. Moreover, as long as free-rider parents believe that they are protected by herd immunity, they are beyond the influence of the focal point theory: They are best regardless of how other individuals behave.

The influence of the focal point theory is also questionable in the case of parents who hold strong beliefs against vaccination. As previously discussed, there is a reason to believe that these parents will continue to hold inaccurate information regarding the benefits of vaccinations in preventing epidemics and protecting other individuals, even in the presence of solidarity laws. Holding these misconceptions, they will not have an incentive to change their behavior and vaccinate their children to avoid the described conflicts. For them, the conflict is not the result of their acting according to the old equilibrium; it is the result of misconceptions held by other parents.¹⁴⁸ To put it in another

146. For the connection between outbreaks of vaccine-preventable diseases and healthcare costs, see *Ten Great Public Health Achievements—United States, 2001–2010*, *supra* note 41.

147. Nonvaccinating parents will also have to bear these costs. However, considering that these parents often hold inaccurate information regarding the benefits and importance of vaccination, it is reasonable to assume that they will underestimate the potential of vaccines to prevent these costs, as well as the probability of epidemic outbreaks.

148. For the claim that one reason for non-cooperation is disbelief in the social benefits of cooperation, see Attari et al., *supra* note 106, at 316–17.

way, for these parents, the conflict is not “real”; it is the result of mistaken information held by other parents.

Parents who hold strong beliefs against vaccination are not expected to change their behavior for another reason: the existence of more powerful competing focal points. This is also true for parents who belong to a close-knit community where the norm is nonvaccination. McAdams pointed to customary behaviors or social movements that oppose the new law as potential sources for competitive focal points. The application of this observation to the case of vaccination suggests that there is a non-negligible chance that powerful competing focal points exist. Thus, in close-knit communities, a long tradition and well-established custom of nonvaccination might present a more powerful competing point than the one created by law. Other competing points might be created by anti-vaccination movements, in response to solidarity legislation, by publicly challenging the claim that there are social benefits to vaccination.¹⁴⁹ These alternative expressions may often be louder than the expression included in the legislation. Moreover, individuals often select an expression included in legislation as the one they will use to coordinate their behavior because of its legitimacy.¹⁵⁰ However, as previously noted, parents who strongly oppose vaccination often distrust the legislature and prefer other sources of expressions.

Other scholars claim that law’s coordinating effect stems from its ability to improve cooperation by activating the norm of conditional cooperation.¹⁵¹ Conditional cooperation is defined as a subject’s willingness to contribute to a public good when other individuals also contribute or are expected to do so.¹⁵² It may be considered a motivation in its own or “a consequence of some fairness preferences like ‘altruism[,]’ ‘warm-glow[,]’ ‘inequity aversion[,]’ or ‘reciprocity.’”¹⁵³ Other scholars suggest that the psychological motive behind conditional cooperation may be that unconditional cooperation entails the risk of being exploited by free riders or point to the simple desire of individuals to avoid being different.¹⁵⁴

149. For a similar example, see McAdams, *supra* note 123, at 123.

150. *See id.* at 124.

151. *See* Tyran & Feld, *supra* note 140, at 5.

152. Todd Cherry et al., *Conditional Cooperation on Three Continents*, 101 *ECON. LETTERS* 175, 175 (2008); Peter Martinsson et al., *Conditional Cooperation: Evidence for the Role of Self-Control* 3 (Univ. of Gothenburg Sch. of Bus., Econ. & Law, Working Paper No. 459, 2010), https://gupea.ub.gu.se/bitstream/2077/23048/4/gupea_2077_23048_4.pdf [<https://perma.cc/K6V2-TWYT>].

153. Urs Fischbacher et al., *Are People Conditionally Cooperative? Evidence from A Public Goods Experiment*, 71 *ECON. LETTERS* 397, 397 (2001).

154. *See* Robin Cubitt et al., *Conditional Cooperation and Betrayal Aversion*, 141 *J. ECON. BEHAV. & ORG.* 110, 111 (2017); Elizabeth Bodine-Baron et al., *Conforming and Non-Conforming Peer Effects in Vaccination Decisions* 1–2 (Nat’l Bureau of Econ. Research, Working Paper No. 19528, 2013), <https://www.nber.org/papers/w19528.pdf> [<https://perma.cc/WJ8G-QR34>].

The existence and extent of conditional cooperation are well-documented in the economics literature on public goods provision, and have been shown to be a robust behavioral regularity in economic experiments.¹⁵⁵ More specifically, “empirical evidence from lab and field studies shows that (i) many people are to some extent willing to provide public goods voluntarily and (ii) those who are willing to do so are mostly ‘conditional cooperators,’ that is, they contribute to the public good only if they expect other group members to do so as well.”¹⁵⁶

While the activation of conditional cooperation may be relatively easy in small communities, it is more difficult in larger communities (such as states with millions of inhabitants). In large communities, expectations regarding how fellow citizens are going to behave may be an important determinant of behavior. As lawmaking is supposed to play a significant role in regulating behavior in large groups and because it incorporates direct public expression of the appropriate behavior, it may change individuals’ expectations regarding what others will do and thus indirectly induce conditional cooperation.¹⁵⁷

The application of this theory to the case of vaccination suggests parents are more likely to vaccinate their children when informed that community vaccination rates are high, considering their desire to conform to the norms of their community.¹⁵⁸ This theoretical proposal finds support in empirical literature that consistently points to positive peer effects in vaccination decision-making. This literature suggests that conditional cooperation is an active motive in the case of vaccination.¹⁵⁹

However, several comments are in place. First, scholars across the social sciences have long noted the inherent fragility of voluntary cooperation as a result of free rider incentives in the voluntary provision of public goods. Second, it has also been shown that after some time, voluntary cooperation decreases even if most individuals are not free riders and are conditional cooperators.¹⁶⁰ Therefore, other mecha-

155. See Cherry et al., *supra* note 152, at 175–76.

156. Cubitt et al., *supra* note 154, at 110–111; Ananish Chaudhuri & Tirnud Paichayontvijit, *Conditional Cooperation and Voluntary Contributions to a Public Good*, 3 *ECON. BULL.* 1, 14 fig.3 (2006).

157. Bethany Kirkpatrick, *The Impact of Legal Mechanisms on Cooperation in Infinitely Repeated Games: An Experimental Approach* 1, 12 (Apr. 2014) (unpublished Ph.D. dissertation, Paris School of International Affairs), https://www.sciencespo.fr/psia/sites/sciencespo.fr/psia/files/The%20impact%20of%20legal%20mechanisms%20on%20cooperation%20in%20infinitely%20repeated%20games_Bethany%20Kirkpatrick.pdf [<https://perma.cc/7HS7-3CCX>]; Tyran & Feld, *supra* note 140, at 6.

158. See Romley et al., *supra* note 106, at 3.

159. See Buttenheim & Asch, *supra* note 111, at 2675; Romley et al., *supra* note 106, at 8.

160. See Urs Fischbacher & Simon Gächter, *Social Preferences, Beliefs, and the Dynamics of Free Riding in Public Good Experiments*, 100 *AM. ECON. REV.* 541, 542 (2010); Chaudhuri & Paichayontvijit, *supra* note 156, at 1.

nisms, such as punishment, rewards, or in general, good institutional designs might be necessary to sustain cooperation. Third, there is an indication that cooperation preferences in public good provision are unstable and change according to group identity. Thus, when matched with individuals of a common identity, subjects consistently show the preference for higher levels of conditional cooperation and less self-serving bias than when interacting with individuals who are perceived to belong to different identities. Moreover, individuals were more prone to act as free riders when matched with individuals of a different identity than in group matching.¹⁶¹ This finding might suggest that even with solidarity legislation, parents may present low levels of conditional cooperation if acting in solidarity is supposed to benefit individuals of different identities. This proposition seems to have a special force for parents who are members of a close-knit community interacting with outsiders. Furthermore, although theory and empirical research suggest that conditional cooperation affects individuals' willingness to vaccinate, there is currently not sufficient information regarding the magnitude of this effect and the extent to which it might vary across diseases, geography, age, and status groups.¹⁶²

E. *Final Thoughts on Effects of Solidarity Legislation*

The application of expressive theories of the law to solidarity legislation suggests that although this legislation is expected to have an influence on parents' vaccination behavior, its influence might be limited.

This suggestion seems particularly valid regarding parents who are members of a vaccine-averse, close-knit group. Solidarity legislation will not easily motivate these parents because they are threatened by in-group sanctions, they have a desire to be viewed as coordinators by in-group members, they are influenced by a powerful competing focal point, and they hold on to vaccination beliefs that are common in their community.

The same is also true for parents with strong anti-vaccination attitudes. Because they have misconceptions regarding the high risks and low benefits of vaccines, distrust health authorities, and are influenced by louder competing focal points, these parents might not change their behavior even in the presence of a legislative message regarding the social benefits of vaccination.

The influence of this legislation on hesitant parents is also not straightforward. It might change depending on the extent of their mis-

161. See Matthias Lankau et al., *Cooperation Preferences in the Provision of Public Goods: An Experimental Study on the Effects of Social Identity* 1–2 (Ctr. for Eur. Governance & Econ. Dev. Research Working Papers No. 148, 2012), https://papers.ssrn.com/sol3/Delivery.cfm/SSRN_ID2191469_code1296572.pdf?abstractid=2191469&mirid=1 [<https://perma.cc/V7DR-DFSM>].

162. See sources cited *supra* note 108.

conceptions regarding vaccines, their distrust of health providers, and their community's attitude toward vaccination.

Free riders may also have a questionable response to solidarity legislation. Assuming (correctly or incorrectly) that vaccination rates are above the required threshold, underestimating the fragility of herd immunity, believing that vaccination risks are high, and estimating the probability of serious social condemnation as low, free-rider parents might continue free riding even in the presence of solidarity legislation.

Finally, other reasons, which are relevant to all types of parents, might limit the expressive function of solidarity legislation. For example, individuals are less inclined to cooperate when interacting with individuals of different group identities.

However, these conclusions should not be understood as suggesting that solidarity legislation has no expressive function. Rather, they suggest that its influence might be limited, at least in some cases, and highlight the reasons for its limited influence. As I will claim in the last chapter, once these reasons have been identified, its influence may be moderated, thus improving the expressive function of solidarity legislation. Finally, it stresses the importance of conducting research that will further explore the effect of including expressive messages regarding solidarity in vaccination legislation.

V. THE DIRECT INFLUENCE OF SOLIDARITY LEGISLATION

Another potential justification for adopting solidarity legislation is its direct influence on parents' vaccination decisions. According to this justification, mandating parents to be educated regarding the social benefits of vaccination will increase their willingness to vaccinate their children.

For this justification to be valid, the correctness of two hypotheses should be examined: (1) the general hypothesis according to which educating parents regarding vaccination improves their attitudes towards vaccination and thus increases vaccination uptakes; and (2) the specific hypothesis according to which informing parents regarding the social benefits of vaccination is expected to motivate them to vaccinate their children. I will start by addressing the first hypothesis. Considering that vaccine refusal and hesitancy have often been associated with misconception and uncertainty regarding vaccination, it is not surprising that many believe communication is the most effective way to increase knowledge and awareness regarding vaccines and that providing parents additional information regarding vaccination will encourage them to vaccinate.¹⁶³

163. See Petrelli et al., *supra* note 132, at 92.

Unfortunately, there is mixed evidence on the effectiveness of educational interventions.¹⁶⁴ Although some empirical studies have identified the importance of providers' recommendations and pro-vaccine information in positively impacting parents' attitudes toward vaccination, other studies have indicated that pro-vaccine messages do not always work as intended.¹⁶⁵ Thus, exposure to vaccination information does not significantly influence parents' vaccination intentions or behavior, and specific types of information may be counterproductive.¹⁶⁶

The effectiveness of pro-vaccination messages directed to parents who hold strong beliefs against vaccination is more controversial.¹⁶⁷ Parents who hold particularly strong attitudes against vaccines, for example, attitudes that are viewed as certain and stable, may be less amenable to change their behavior following pro-vaccination information.¹⁶⁸ Thus, providing pro-vaccination information to these parents might be futile.¹⁶⁹

Findings concerning the second (the specific) hypothesis—that informing parents regarding the social benefits of vaccination is expected to motivate them to vaccinate their children—indicate that the connection between educating parents regarding the social benefits of vaccination and vaccination decisions is not straightforward.

In general, there is evidence that prosocial motives play a role in vaccination decisions and that individuals are sensitive to the positive impact their vaccination could have on the health of others.¹⁷⁰ For

164. See Eve Dubé et al., *Strategies Intended to Address Vaccine Hesitancy: Review of Published Reviews*, 33 *VACCINE* 4191, 4200 (2015); Paul Corben & Julie Leask, *To Close the Childhood Immunization Gap, We Need a Richer Understanding of Parents' Decision-Making*, 12 *HUM. VACCINES & IMMUNOTHERAPEUTICS* 3168, 3171 (2016).

165. See Zachary Horne et al., *Countering Antivaccination Attitudes*, 112 *PROC. NAT'L ACAD. SCI. U.S.* 10321, 10321–22 (2015); Williams, *supra* note 132, at 2594.

166. See Corben & Leask, *supra* note 164, at 3172; Joshua Greenberg et al., *Vaccine Hesitancy: In Search of the Risk Communication Comfort Zone*, *PLOS CURRENTS* (Mar. 3, 2017), <http://currents.plos.org/outbreaks/article/vaccine-hesitancy-in-search-of-the-risk-communication-comfort-zone/> [<https://perma.cc/BZE7-FCS9>]; Brendan Nyhan et al., *Effective Messages in Vaccine Promotion: A Randomized Trial*, 133 *PEDIATRICS* 1, 7 (2014).

167. Nyhan et al., *supra* note 166, at 7; Tara C. Smith, *Vaccine Rejection and Hesitancy: A Review and Call to Action*, *OPEN F. INFECTIOUS DISEASES* 5 (July 11, 2017), <https://academic.oup.com/ofid/article-pdf/4/3/ofx146/19601926/ofx146.pdf> [<https://perma.cc/D83L-T7FS>]; Ashley Colman, *Changing Attitudes: The Vaccine-Autism Debate*, *GRADUATE SEMINAR SOC. PSYCHOL.* (Feb. 17, 2017), <https://graduatesocialpsych.weebly.com/class-blogs---public/changing-attitudes-the-vaccine-autism-debate> [<https://perma.cc/7RR5-WGPN>].

168. Nyhan et al., *supra* note 166, at 7.

169. *Id.*

170. See Meng Li et al., *Stimulating Influenza Vaccination via Prosocial Motives*, *PLOS ONE* 2 (July 26, 2016), <https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0159780&type=printable> [<https://perma.cc/7284-ZXQF>]; Rachel Casiday, *Risk and Trust in Vaccine Decision Making*, 13 *DURHAM ANTHROPOLOGY J.* para. 5.9 (2005), https://www.researchgate.net/profile/Rachel_Casiday/publication/44094655_Risk_and_trust_in_vaccine_decision_making/links/56460b7508ae9f9c13e731d0/Risk-and-trust-in-vaccine-decision-making.pdf [<https://perma.cc/XDL6-F46W>];

example, several studies concerning hypothetical vaccines have indicated that individuals were sensitive to the positive impact their vaccination could have on the health of other individuals.¹⁷¹ However, the implications of these findings are claimed to be limited by the hypothetical nature of the vaccine in the scenarios, the characteristics of participants in the study, or the correlational design of the study.¹⁷²

Studies on parental vaccination decisions suggest that parents may be willing to vaccinate their children for the benefit of others.¹⁷³ However, these findings were claimed to be limited by their reliance on interviews or questionnaires directly asking parents their reasons for vaccination and their focus on parents' vaccination intentions instead of vaccination behavior.¹⁷⁴ Other studies have found that emphasizing the societal benefits of vaccination to parents did not increase their intentions to vaccinate their child. In fact, one study found that underscoring the vaccine's benefits to the society, without explicit mention of the expected benefits to the child, did not result in higher levels of parental intentions to vaccinate with the MMR vaccine.¹⁷⁵ Another study indicated that parents viewed community protection only as a bonus rather than a primary aim.¹⁷⁶

It therefore follows that the existing evidence does not conclusively support the causal impact of providing parents information regarding the prosocial benefits of vaccines on vaccination decisions.¹⁷⁷

Moreover, evidence shows that the influence of this information might vary depending on parents' characteristics and the nature of information provided to them.¹⁷⁸ Thus, studies of parental vaccination

Dubé et al., *supra* note 110, at 1769–70; Maheen Quadri-Sheriff et al., *The Role of Herd Immunity in Parents' Decision to Vaccinate Children: A Systematic Review*, 130 PEDIATRICS 522, 528–29 (2012); Julie Leask et al., *What Maintains Parental Support for Vaccination When Challenged by Antivaccination Messages? A Qualitative Study*, 24 VACCINE 7238, 7242–43 (2006).

171. See Jeffrey T. Vietri et al., *Vaccinating to Help Ourselves and Others*, 32 MED. DECISION MAKING 447, 454 (2012); John C. Hershey et al., *The Roles of Altruism, Free Riding, and Bandwagoning in Vaccination Decisions*, 59 ORGANIZATIONAL BEHAV. HUM. DECISION PROCESS 177, 186–87 (1994); Gretchen B. Chapman et al., *Using Game Theory to Examine Incentives in Influenza Vaccination Behavior*, 23 PSYCHOL. SCI. 1008, 1014 (2012); Eunha Shim et al., *The Influence of Altruism on Influenza Vaccination Decisions*, 9 J. ROYAL SOC'Y INTERFACE 2234, 2240–41 (2012); Cornelia Betsch et al., *Inviting Free-Riders or Appealing to Prosocial Behavior? Game-Theoretical Reflections on Communicating Herd Immunity in Vaccine Advocacy*, 32 HEALTH PSYCHOL. 978, 983 (2013).

172. See Li et al., *supra* note 170, at 2; Vietri, *supra* note 171, at 454.

173. See Quadri-Sheriff et al., *supra* note 170, at 528–29; Li et al., *supra* note 170, at 2.

174. Li et al., *supra* note 170, at 2.

175. See Kristin S. Hendrix et al., *Vaccine Message Framing and Parents' Intent to Immunize Their Infants For MMR*, 134 PEDIATRICS e675, e680 (2014).

176. See Vietri et al., *supra* note 171, at 448.

177. See Li et al., *supra* note 170, at 2.

178. See *id.* at 10. Findings that support this claim were also found in Meng Li and others' studies, which addressed flu vaccination intentions. The researchers reported

decisions indicate that vaccine decliners are disinclined to vaccinate their children for the benefit of the community.¹⁷⁹ It has also been shown that when a message emphasizes the personal benefit of indirect protection provided to individuals through herd immunity, individuals' inclination to free ride increases. This was particularly the case when the social benefit of herd immunity was not communicated. In contrast, although communicating the social benefit did not result in a general increase in vaccination intentions, it did reduce free-riding and could have increased vaccination intentions when the costs of vaccinating are perceived as low.¹⁸⁰ These results suggest that vaccination uptake may increase or decrease depending on the salience of personal versus social benefits of herd immunity.¹⁸¹ Further, the MMR study suggests that emphasizing the various benefits of MMR vaccination directly to the vaccine recipient or society may differentially impact parents' intentions to vaccinate their infants against MMR. More specifically, it was shown that underscoring the vaccine's benefits to society, without explicit mention of benefits directly to the child, did not result in higher levels of parental intentions to vaccinate.¹⁸²

Several conclusions emerge from this discussion. First, in general, there is mixed evidence regarding the effectiveness of communication interventions in motivating parents to vaccinate their children. More specifically, the evidence does not conclusively support the causal connection between providing parents information regarding the prosocial benefits of vaccines and vaccination decisions.¹⁸³ Second, parents' willingness to vaccinate their children may differ depending on the nature and types of information provided to them. Thus, specific types of information may be counterproductive, whereas other types may be productive. Third, parents who hold particularly strong anti-vaccination attitudes and vaccine decliners might be less responsive to communication interventions, in general, and information regarding vaccination social benefits, specifically.

VI. IMPROVING THE EXPRESSIVE AND DIRECT INFLUENCE OF SOLIDARITY LEGISLATION

In the final two parts of this Article, I examined whether solidarity legislation is expected to influence parents' vaccine decisions. The discussion suggested that although this legislation is expected to have direct and indirect influences on parents' vaccination behavior, its expected influence is limited.

that highlighting flu victims increased intentions to vaccinate, particularly among individuals who had not vaccinated the previous year. *See id.*

179. *See* Vietri et al., *supra* note 171, at 448.

180. *See* Betsch et al., *supra* note 171, at 983.

181. *See id.* at 979.

182. *See* Hendrix et al., *supra* note 175, at e680.

183. *See* Li et al., *supra* note 170, at 2.

That doesn't mean that solidarity legislation should not be adopted. To begin with, although the magnitude of its influence is not entirely clear, there is a theoretical and empirical basis for the assumption that this legislation is expected to have an influence on parents' vaccine behavior.¹⁸⁴

Furthermore, the expressive and direct influence of solidarity legislation may be improved. The remaining part will present potential methods through which the effect of this legislation on parents' vaccination behavior may be improved.

First, the effectiveness of informing parents regarding the social benefits of vaccination, as well as the effect of including expressive solidarity messages in vaccination legislation, should be further explored through empirical studies.¹⁸⁵ Moreover, consideration should be given to existing evidence that suggests the potential influence of several factors on vaccination decisions: information framing, the content of information, the nature of the educational process, and the source of information.

As the previous discussion suggested, information framing may have a positive or negative influence on parents' vaccination intentions. Thus, focusing on the indirect protection herd immunity provides may result in negative results in the form of free riding. On the other hand, appealing to vaccination social benefits (for example, the protection provided to others through herd immunity) may have a positive effect and reduce free-riding tendencies.¹⁸⁶ Underscoring the vaccine's benefits to the child and to society may result in higher intentions to vaccinate, whereas underscoring the vaccine's benefits to society, without explicit mention of the benefits directly to the child, is not expected to result in higher levels of parental intentions to vaccinate.¹⁸⁷ Current studies also indicate that providing parents with two-sided messages with claims both for and against vaccines decreases parents' intentions to vaccinate similar to one-sided, anti-vaccine-only messages. However, providing parents balanced information while

184. Leask et al., *supra* note 170, at 7243. Regarding the claims that presenting vaccinations as a social good might be a worthwhile and potentially overlooked strategy and that health authorities should highlight individuals' obligations toward other individuals and the importance of vaccinations for the wider community. *See id.*; Ohid Yaqub et al., *Attitudes to Vaccination: A Critical Review*, 112 *SOC. SCI. & MED.* 1, 7 (2014).

185. The need for further research regarding this issue has been noted by several scholars. *See, e.g.*, Li et al., *supra* note 170, at 10–11; Betsch et al., *supra* note 171, at 982–83.

186. *See* Betsch et al., *supra* note 171, at 983–84. This approach was adopted by the health departments in Vermont and Oregon. The information provided to parents in both states briefly relates to herd immunity, while the social benefit of vaccines is emphasized. *See Parent Education Required for Completion of Vermont's Religious Exemption Form*, *supra* note 62; *Vaccine Education Module*, *supra* note 66.

187. *See* Hendrix et al., *supra* note 175, at 680.

emphasizing scientific consensus may improve their vaccination willingness.¹⁸⁸

The framing of information regarding vaccines' social benefits should also be sensitive to research regarding what motivates individuals to act prosocially. A group of studies has shown that individuals are more likely to exhibit prosocial behavior towards individuals to whom they are directly connected, and this tendency is greater towards individuals who are only a few steps removed in their social network (for example, friends of friends) than toward more distant others.¹⁸⁹ Thus, it has been shown that individuals share larger amounts of resources with their kin and are more likely to share resources with friends and acquaintances than with strangers. Shared identities, such as ethnicity, religion, or political partisanship, have also been shown to affect individuals' other-regarding preferences.¹⁹⁰ These findings suggest that the information provided to parents should stress the benefits of vaccination to the recipient's kin, friends, and acquaintances, instead of only describing its benefits to the society as a whole.¹⁹¹

This does not necessarily indicate that the benefits of vaccination to strangers should be completely omitted from the information provided to parents. As Prainsack and Buyx recognized, solidaristic practice regularly occurs where there are stark differences among individuals. This is the state of things in the case of vaccination: Parents are often required to vaccinate their child for the protection of other children they do not know and may be of a completely distinctive social group. According to Prainsack and Buyx, even under these circumstances, individuals will act in solidarity with other individuals if they recognize subjective similarity with them in a relevant respect. The recognition of similarity may take many forms: It entails the awareness of being associated, by choice, fate, or other circumstances,

188. See Christopher E. Clarke et al., *The Influence of Weight-of-Evidence Messages on (Vaccine) Attitudes: A Sequential Mediation Model*, 20 J. HEALTH COMM. 1302, 1306–07 (2015); Graham Dixon & Christopher Clarke, *The Effect of Falsely Balanced Media Representations of the Autism-Vaccine Controversy on Vaccine Safety Perceptions and Behavioral Intentions*, 28 HEALTH EDUC. RES. 352, 355–56 (2012). This strategy was adopted in Vermont. Although parents should be informed that some parents choose not to immunize because they are concerned about vaccine risk, health providers are instructed to provide parents scientifically based information indicating that while side effects or adverse events are possible, most are very rare or mild. See *Parent Education Required for Completion of Vermont's Religious Exemption Form*, *supra* note 62, at 2.

189. See Delia Baldassarri & Guy Grossman, *The Effect of Group Attachment and Social Position on Prosocial Behavior. Evidence from Lab-in-the-Field Experiments*, 8 PLOS ONE e58750, e58751 (2013).

190. *Id.* at e58750.

191. This strategy was adopted by the Israeli Ministry of Health during the 2013 Polio crisis in Israel. See Nili Karako-Eyal, *The Right for Autonomy, the Duty of Disclosure and Public Health Considerations—The 2013 Polio Crisis in Israel as a Case Study*, 36 PACE L. REV. 908, 923 (2016).

with other individuals. This understanding leads to two conclusions. First, information regarding social benefits to others should be framed to underscore the potential similarities with them (for example, information framed as applying to all human beings). Second, the information provided to parents should not be limited to the benefits of vaccination to other individuals. Attention should also be given to the expected benefit to the community. More specifically, parents should be informed of the common interest all members of the community share in preventing epidemics (for example, preventing the costs involved in epidemic outbreaks).¹⁹²

When framing solidarity messages, consideration should also be given to findings that indicate greater empathy and a heightened sense of personal responsibility towards the victim are powerful motivating factors in prosocial behavior. These findings suggest that the educational process should be designed to increase empathy and personal responsibility among parents, for example, by describing the injuries and suffering that epidemic victims might suffer and emphasizing the personal responsibility of the individuals who failed to vaccinate for these consequences.¹⁹³

Providing parents certain types of information may also improve their motivation to act in solidarity. Therefore, it is important to inform parents that all members of the community share a common interest in preventing epidemics (for example, preventing the costs involved in epidemic outbreaks) and thus in preserving high rates of vaccination. According to McAdams, for the focal point theory to work, the parties to the conflict should share an interest in avoiding unresolved conflicts so each party will consider the escalation of conflict as the worst outcome. It follows that information provided to parents under the category of "social benefits" should not be limited to the benefits of vaccination to other individuals. It should also include findings regarding the costs involved in epidemic outbreaks to the community and the indirect influence on each of its members (for example, decreased availability of health providers to treat other patients). Although this information will not likely motivate parents who hold strong attitudes against vaccination to change their behavior, it might influence hesitant parents and free riders.

Considering the potential effects of social attitudes and conditional cooperation on parental behavior, parents should also be informed that although some parents choose to not vaccinate their children,

192. Illinois and Michigan are the only two states that relate in their legislation to vaccine benefits to the community. See *supra* notes 61, 67–69. Vermont, Oregon, and Washington only mention benefits to others. See *supra* notes 62–66, 70–74.

193. See Li et al., *supra* note 170, at 2, 10. Vermont and Washington frame the information that should be provided to parents in a way that emphasizes the personal liability of individuals who fail to vaccinate their children to the suffering of others. See *supra* notes 62, 70–74.

most parents vaccinate their children, and vaccination is a practice approved by the majority in the society.¹⁹⁴

Empirical studies have shown that in some cases, alerting groups of conditional cooperators helps to generate higher contributions than the control treatment.¹⁹⁵ This effect was also identified in the context of vaccination. Hershey and colleagues determined that the vaccination behavior of other individuals exerted most of its influence through bandwagoning or the desire to behave the way others are behaving without regard to the consequences.¹⁹⁶ They also determined that individuals' willingness to vaccinate increased proportionally with their belief that others were willing to do the same.¹⁹⁷ Another study suggested that parents' intentions to vaccinate their children against Hepatitis B were significantly greater when presented with the beliefs that most of their friends and others important to the parents would vaccinate and appreciate the parents' decision to vaccinate.¹⁹⁸

The nature of the communication process may also influence parents' vaccination intentions and should therefore also be considered when an educational encounter is planned. A critical factor that shapes parental attitudes to vaccination is the interaction with the healthcare provider. An effective interaction that addresses the concerns of hesitant parents can motivate them towards vaccine acceptance. On the other hand, poor communication that fails to account for the complexity of reasons that lead to vaccination refusal may result in a backfire effect and lead to the rejecting vaccination.¹⁹⁹ The factors that may negatively influence parents' intentions to vaccinate include judgmental discourse, pressure to vaccinate, or too strongly advocating vaccination.²⁰⁰ Consistent with these findings are parents' reported

194. Oregon adopted an approach whereby the information provided to parents through the module includes an explicit statement that most parents in the state choose to vaccinate. See *Vaccine Education Module*, *supra* note 66.

195. See Claudia Keser & Frans van Winden, *Conditional Cooperation and Voluntary Contribution to Public Goods*, 102 SCANDINAVIAN J. ECON. 23, 37 (2000). However, there is also an indication that the framing of this information is important. For example, it has been shown that informing individuals who already engaged in the desired activity that other individuals engage in the desired behavior less often than they did, resulted in a reduction in the desirable action. On the other hand, providing normative feedback regarding the level of the desired activity to individuals who engage in the desired activity less than the average improved their behavior and resulted in an increase in the desired activity. See Romley et al., *supra* note 106, at 2.

196. See Vietri et al., *supra* note 171, at 448.

197. See Robert Böhm et al., *Exploring and Promoting Prosocial Vaccination: A Cross-Cultural Experiment on Vaccination of Health Care Personnel*, 2016 BIOMED RES. INT'L 5 (2016), <http://downloads.hindawi.com/journals/bmri/2016/6870984.pdf> [<https://perma.cc/NXM8-QRBT>].

198. See Romley et al., *supra* note 106, at 7.

199. See Julie Leask et al., *Communicating with Parents about Vaccination: A Framework for Health Professionals*, 12 BMC PEDIATRICS 154, 154–53 (2012), <https://bmcpediatr.biomedcentral.com/track/pdf/10.1186/1471-2431-12-154> [<https://perma.cc/ERQ7-P6EK>].

200. See Ames et al., *supra* note 132, at 19.

wishes that healthcare providers conduct open, respectful discussions with them regarding vaccination in a caring, sensitive and nonjudgmental manner; provide clear answers to their questions; and provide a supportive environment for decision making.²⁰¹ These findings should be addressed when discussing the social benefits of vaccination with parents. More specifically, it suggests that although parents' personal responsibility for the health of others should not be ignored, the discussion should not take the form of an oppositional discourse during which parents are severely blamed for causing damages to other individuals.

Attention should also be paid to the source of the information. According to several studies, information or reassurance from a healthcare provider is the main factor in changing parents' vaccination decisions. Moreover, it has been shown that the most trusted sources of vaccine-related information are family physicians and other medical professionals.²⁰² This finding does not necessarily indicate that other sources of information should not also be used. Printed materials, web links, or decision aids given prior to or used during the consultation may be helpful in supporting the educational process.²⁰³ However, they imply that the use of an educational module as the only platform for educating parents regarding the social benefits of vaccination, a method adopted by Oregon and Utah legislators, is undesirable.

Policy makers should also acknowledge the fact that simply providing information regarding the social benefits of vaccination might not be effective when parents are members of a close knit, vaccine-averse community. As the previous discussion suggests, these parents are highly influenced by in-group beliefs and norms regarding vaccination and are not expected to be easily influenced by out-group information regarding the social benefits of vaccination or messages regarding the ethical nature of acting in solidarity. In these cases, the use of different methods should be considered. First, understanding the beliefs and norms of the group and framing the information in a way that reflects them might be effective. Thus, when the parents are members of a religious group, it might help to present the ethical duty to act in solidarity as justified through religious norms or at least as not contradicting the religious beliefs of the group.²⁰⁴ Another potential method

201. *Id.* at 27.

202. See Greenberg et al., *supra* note 166; Ames et al., *supra* note 132, at 15.

203. See Leask et al., *supra* note 199, at 157.

204. For a detailed discussion regarding religious attitudes towards vaccination, see Dorit Rubinstein Reiss, *Thou Shalt Not Take the Name of the Lord Thy God in Vain: Use and Abuse of Religious Exemptions from School Immunization*, 65 HASTINGS L.J. 1151, 1573–84 (2014). Reiss reported that excluding some small, radical sects, no major religion prohibits vaccines, several religions actively recommend and, some even require that parents vaccinate their children against preventable diseases. See *id.* at 1573–74.

is the use of an in-group source as a change agent. Classic work in social psychology has indicated that persuasive messages lead to greater attitude change when they are presented by a source who shares the same group identification with the message recipients than when they are presented by a source who does not share this membership. This is particularly true when the message is delivered by a prototypical or representative of the group (for example, a religious leader) for the recipient identified with and when one's identification with the group is strong.²⁰⁵ This suggestion is supported by previous and current experience. Thus, in general, the involvement of religious leaders in health-related interventions has been shown to improve the participation of their congregations in these interventions. Organizations such as the United Nations International Children's Emergency Fund advocate for enhancing trust in immunization by, among other things, seeking partnership with religious leaders and groups for the purpose of reaching maximum vaccination coverage worldwide.²⁰⁶

Finally, the legislature should acknowledge the expressive function of statements included in legislation. This leads to two conclusions. First, explicit statements regarding vaccines' social benefits should be part of vaccination legislation. Including this information in the exemption forms or providing it to parents only during the education encounter is not sufficient. Second, for solidarity legislation to accomplish its expressive potential, it should be conveyed to all parents, not just parents who request an exemption.

VII. CONCLUSION

Several states in the U.S. have included in their legislation a reference to the social benefits of vaccination, thus conceptualizing the ethical value of solidarity as a legal principle. This Article explored the potential effects of this legislation on parents' vaccination behavior. There is support for the claim that conceptualizing solidarity as a legal term might increase parents' willingness to vaccinate their children. The inclusion of statements regarding the social benefits of vaccines in vaccination legislation and obligating parents to be educated about it

205. See Joanne R. Smith & Michael A. Hogg, *Social Identity and Attitudes*, in ATTITUDES AND ATTITUDE CHANGE 337, 344 (William D. Crano & Radmila Prislin eds., 2008); Leor M. Hackel et al., *Social Identity Shapes Social Valuation: Evidence From Prosocial Behavior and Vicarious Reward*, 12 SOC. COGNITIVE & AFFECTIVE NEUROSCIENCE 1219, 1219–20 (2017). For this type of method to succeed, a leader or other representative of the group who supports vaccination and is willing to promote it on behalf of authorities should be identified. Otherwise, the dialogue with him or her is not likely to contribute to increased vaccination coverage. See Wilhelmina L.M. Ruijs et al., *The Role of Religious Leaders in Promoting Acceptance of Vaccination Within a Minority Group: A Qualitative Study*, BMC PUB. HEALTH 7 (2013), <https://bmcpublihealth.biomedcentral.com/track/pdf/10.1186/1471-2458-13-511> [<https://perma.cc/W57P-8WFZ>].

206. See *id.* at 2.

might change their attitudes, beliefs, and behavior. However, it was also shown that the effect of this legislation on parents' behavior is expected to be limited and is highly sensitive to parents' characteristics and attitudes towards vaccines.

These findings do not imply that this legislation should not be adopted by other states. In contrast, I believe that other states should seriously consider the adoption of solidarity legislation. Although further research is required, to date, there is already sufficient theoretical and empirical basis to support the claim that solidarity legislation might positively influence parents' vaccination behavior.

Moreover, the influence of this legislation on parents' vaccination behavior can be improved. To begin with, attention should be on the framing of the information. For example, vaccines' benefits to the recipient's kin, friends, and acquaintances should be stressed, potential similarities with other individuals should be underscored, or a common interest all members of the community share in preventing epidemics should be presented. Providing certain types of information to parents is also advisable. For example, parents should be informed that most members of the community vaccinate their children and that vaccination is a practice the majority of society approves. Special attention should be given to the communication process and the source of the information. Thus, providing parents with information through a module, but not obligating them to personally meet a health provider, is not advisable. At the same time, attention should be given to the fact that for a face-to-face encounter to be successful in changing parents' behavior, it should be open, respectful, caring, and nonjudgmental. Finally, different methods should be considered when parents are part of a close-knit, vaccine-averse community. In these cases, changing legislation or conducting face-to-face encounters with out-group healthcare providers might not be effective in changing parents' behavior.

Solidarity legislation is in its initial stages. It has the potential to decrease exemption rates and as such deserves further research and careful attention. Policy makers should strive to understand how law's expressive function works, search for empirical findings regarding the connection between information and vaccination decisions, identify potential impediments to the influence of solidarity legislation, and seek methods to overcome them.