Improving Nonmedical Vaccine Exemption Policies: Three Case Studies

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Some communities that exempt parents from vaccine mandates have recently reformed their exemption policies by eliminating nonmedical exemptions, allowing nonmedical exemptions only for parents who object to vaccination for religious reasons, or making exemptions more difficult to obtain. We argue against eliminating nonmedical exemptions because there are weighty moral reasons to offer these exemptions and because eliminating them will likely have unfortunate social and political consequences. We also argue against allowing nonmedical exemptions only for parents who object to vaccination for religious reasons, on the grounds that doing so is likely to be unfair or ineffective. We conclude that nonmedical exemptions should (continue to) be available to people who object for both religious and secular reasons, and that the best way to decrease exemption rates is to make the application process more burdensome. We illustrate our arguments with examples of recent policy changes in three US states.

Introduction

An increasing number of parents question whether vaccines are as safe or effective as physicians and public health officials claim (Hough-Telford *et al.*, 2016). This vaccine hesitancy can cause parents to refuse some or all vaccines or to insist on alternative (slowed-down) schedules for their children's immunizations (Rosselli *et al.*, 2016). We should be concerned about rising rates of parents who refuse vaccines. Disease outbreaks are more likely in communities with higher rates of vaccine refusal (Omer *et al.*, 2012; Yang and Debold 2014; Glasser *et al.*, 2016; Phadke *et al.*, 2016). Also, vaccine-hesitant parents frequently rely on other parents for information about vaccines and to support their decisions to not fully vaccinate their children (Larson *et al.*, 2011). As a result, parents who refuse vaccines are often geographically clustered (e.g. in the Bible Belt of the Netherlands or in certain US areas like Boulder, Colorado or Vashon, Washington), which means that local outbreaks are more likely, even while national vaccination rates remain high (May and Silverman, 2003; Omer *et al.*, 2008; Gaudino and Robison, 2012; Lieu *et al.*, 2015). Unsurprisingly, recent outbreaks of vaccine-preventable diseases—measles in France, mumps in Ireland, pertussis in the USA—may be linked to rising rates of vaccine refusal.

The world's political communities pursue diverse policies to promote childhood vaccination. Most states and substate units treat vaccination as a voluntary practice, and their policies aim to make it more likely that parents will choose to vaccinate. For example, communities may subsidize the cost of immunizations, integrate immunizations into the provision of other state services (e.g. postpartum nurse home visits, school activities) or advertise the safety and efficacy of vaccines through mass media campaigns. We agree with the World Health Organization, citing a 2004 analysis of ethical considerations in vaccination, that vaccination should be voluntary, whenever voluntary vaccination programs are effective at realizing sufficiently high vaccination rates to protect the community from outbreaks (Verweij and Dawson, 2004; Moodley *et al.*, 2013). But we also agree that coercive vaccination programs may be justified when they are necessary for protecting public health. We will not argue for that thesis in this article, though others have ably defended it (Pierik, 2016).

Some political communities coerce vaccination by withholding valuable social goods or services from parents whose children are not vaccinated. This is

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mandatory vaccination; it is distinct from compulsory vaccination, which treats vaccine refusal as a crime, which is uncommon. Mandatory vaccination, which limits access to a good or service, is much more common. For example, Slovenia, France, the USA and some Canadian provinces require children to be vaccinated prior to enrolling in school or daycare. Australia withholds government rebates for childcare expenses (up to $7500/child/year) from parents whose children are not vaccinated.

Some communities with coercive vaccination programs allow parents who conscientiously object to vaccination to continue to receive state benefits, even if their children are not vaccinated. For example, the Canadian province of Ontario allows parents to enroll their unvaccinated children in school or daycare if parents submit a notarized affidavit that the province's vaccine requirements 'conflict with my sincerely held convictions based on my religion or conscience' (Ministry of Health and Long-Term Care, Ontario, Canada, 2016). Likewise, every US state allows parents to access state-regulated education or daycare for their unvaccinated or under-vaccinated children if a physician certifies that there is a medical reason why the child ought not be fully vaccinated, and all but three US states (West Virginia, Mississippi and California) allow nonmedical waivers to compulsory vaccination requirements. In contrast, no member state of the European Union provides exemptions for vaccine mandates (Haverkate *et al.*, 2012).

In recent years, there have been significant increases in applications for nonmedical exemptions in some political communities (Omer *et al.*, 2012; Hough-Telford *et al.*, 2016). In response, some states and substate units have made nonmedical exemptions more difficult (or impossible) to receive. For example, until 2016, parents in Australia who claimed a conscientious objection to vaccination could collect their full Child Care Benefit, even if they did not vaccinate their children (Australian Government, Department of Social Services, 2016). But, in 2015, Australia changed the law regulating access the Child Care Benefit. Beginning in 2016, Australia no longer offers any nonmedical exemptions to the vaccination requirement for receiving the Child Care Benefit (Australian Government, Department of Human Services, 2016).

There are a variety of ways that communities can revise their nonmedical exemptions policies. This article discusses the normative implications of three different kinds of reforms to nonmedical exemptions policies, which we call Eliminationism, Prioritizing Religion and Inconvenience. We illustrate each of these kinds of reforms with an example of a recent policy reform implemented by a different US state. These include California's decision to eliminate all nonmedical exemptions; Vermont's decision to eliminate personal belief exemptions, while retaining religious exemptions; and Michigan's decision to retain both kinds of exemptions, while making exemptions more difficult to receive. We argue that Eliminationism and Prioritizing Religion face substantial ethical and pragmatic problems. We conclude that Inconvenience is the best option of the three, even though it faces problems of its own. While we use examples from the US context to illustrate our arguments about reforming nonmedical exemptions policies, our arguments apply in other communities that offer (or are considering offering) exemptions to vaccine mandates.

The California Model: Eliminationism

On 30 June 2015, California Governor Jerry Brown signed Senate Bill 277 (SB 277) into law and eliminated nonmedical exemptions in California. As of 1 July 2016, parents in California are allowed to enroll their children in schools and state-recognized daycare centers only if their children are up to date with the state's vaccination schedule or have a medical exemption. Over the past two decades, California experienced increasing exemption rates, and in 2014–2015 California's Disneyland was the location of a regional measles outbreak (Ingraham, 2015). In the context of both general trends and a high-profile measles outbreak, and after considerable political debate, California's legislature voted to join Mississippi and West Virginia as the third US state to recognize only medical exemptions to school and daycare vaccination mandates. The vote was strongly partisan, with nearly every Democrat supporting the measure and almost every Republican state legislator voting against it (Legiscan, 2015). In the year since California passed SB 277, several other US state legislatures have considered eliminating nonmedical vaccine waivers, and Eliminationism is now the official position of the American Medical Association (AMA), the American Academy of Family Physicians (AAFP) and the American College of Physicians (ACP) (American Medical Association, 2015; American Academy of Family Physicians, 2015; American College of Physicians, 2015). Recently, the American Academy of Pediatrics signaled that it, too, might begin advocating Eliminationism (Wyckoff, 2016).

US federal authorities have likewise considered Eliminationism. In 2015, a bill was introduced in the US House of Representatives that would tie a state's eligibility for preventative health services grants to the state's adoption of the California model for vaccine exemptions (Wilson, 2015). Others have staked out moderate forms of Eliminationism that would maintain nonmedical exemptions for some mandated vaccines, but eliminate them for vaccines that protect against especially serious infections, e.g. measles, though it is not clear whether the differences between different vaccine-preventable diseases are robust enough to justify selective Eliminationism (Byington *et al.*, 2016; Opel *et al.*, 2016).

There are several ethical and practical reasons for political communities to continue to offer nonmedical exemptions and to reject Eliminationism. First, it is morally justifiable to offer exemptions to people who object to general laws for reasons of religious conviction, secular conscience or personal integrity. In particular, there are good reasons to exempt people from general laws when objectors have reasons to object, when imposing the law on objectors would subject them to unique burdens and when exemptions policies do not impose costs on third parties (Vallier, 2016). For example, it is morally justifiable to exempt pacifists from conscription because they have reasons to object to military service, because compulsory military service subjects pacifists to unique burdens, and because exempting pacifists does not undermine national defense when the number of exempted pacifists is relatively small. Nonmedical exemptions to school and daycare vaccination requirements can meet similar criteria.

We have argued elsewhere that most vaccine refusers are not irrational, but have reasonable explanations for their refusals to fully vaccinate their children (Largent, 2012; Navin, 2015). At least some vaccine refusers will experience unique harms if they are not exempted from vaccine mandates. For example, their worries about vaccine safety, their commitment to 'natural' lifestyles or their resistance to government intrusion in their children's healthcare make them vulnerable to unique forms of moral or psychological harm if they are denied nonmedical exemptions. So, the interesting question is whether nonmedical exemptions to school and daycare vaccination requirements will impose burdens on third parties. Even if vaccine refusers have reasons to object, and even if imposing vaccine mandates would subject them to unique burdens, we could not justify nonmedical exemptions if doing so imposed costs on third parties.

It may seem obvious that nonmedical exemption policies impose costs on other people, since liberal exemption policies compromise herd immunity. So, it may appear to follow that there are not (or are no longer) moral reasons to support nonmedical vaccination exemptions. This is a bad inference because it supposes that there are no other ways for communities to decrease exemption rates other than through Eliminationism. But there are other options; we discuss two of them in the following sections. And it is clear that California had other options, too. In 2012, only 3 years before it passed SB 277, California passed Assembly Bill 2109 (State of California, 2012). This bill made it more difficult for California's parents to receive nonmedical exemptions, by requiring them to consult with healthcare professionals as part of the exemption application process. (AB 2109 is an example of what we call Inconvenience.) Preliminary results indicated that AB 2109 was working. California's exemption rates were down, and its vaccination rates were up (Xia *et al.*, 2015). However, California's state legislature abandoned the earlier law, perhaps because SB 277's cosponsors—State Senators Richard Pan and Ben Allen—were responding to emotionally evocative narratives surrounding the 2014–2015 Disneyland measles outbreak and were insufficiently responsive to the early success of AB 2109.

Another reason to reject eliminationist models of reforming school and daycare waiver policies is because they can trigger otherwise avoidable negative social and political consequences. California's most passionate vaccine refusers will likely remove their children from schools and state-supervised daycare centers, rather than have them vaccinated. In the absence of vaccination requirements for homeschooled children, it will be difficult to increase vaccination rates in this population (Khalili and Caplan, 2007). Therefore, vaccination rates may not increase in proportion to decreases in nonmedical exemption rates. We should also be troubled by the social consequences of parents withdrawing their children from schools and state-recognized daycare centers. Formal schooling and high-quality daycare are good for children's present well-being and for their potential to flourish as adults. Also, unvaccinated and under-vaccinated children are precisely the kinds of children that we should want to have under more, rather than less, state supervision. When parents pull their children out from under that supervision, the state loses its strongest incentive to get vaccine-hesitant parents to fully vaccinate their children.

There is likely to be continued political and social pushback against SB 277. Some California activist groups have called for parents to pressure private and charter schools to refuse to exclude unvaccinated children, on the grounds that these enrollment-dependent schools are vulnerable to that kind of economic pressure (Adams, 2015). Some California parents have expressed an intention to perform acts of civil disobedience on school grounds (SaveCalifornia.com, 2015). Video clips of authorities removing children and parents from schools in police vans and news of state-sanctioned penalties for parents who choose not to fully vaccinate their children will undermine citizens' trust in public health efforts, as they have elsewhere (Chaddock, 2007). Even though many political communities have successfully resisted efforts to *begin* offering nonmedical exemptions to their vaccine mandates, efforts to *eliminate* nonmedical exemption policies may face greater practical constraints (Colgrove and Lowin, 2016).

A final worry about eliminationist policies is that they may be less likely to be the object of broad political consensus and may cultivate political polarization surrounding vaccination policy and vaccine science. Recall that most Democrats in the California Senate voted for SB 277, while most Republicans voted against it, reversing a history of bipartisan vaccination policies in the USA (Legiscan, 2015). Shortly thereafter, three of the leading candidates for the Republican nomination for US President—Donald Trump, Rand Paul and Ben Carson—expressed their belief that parents should have an unhindered right to refuse vaccines for their children (Tavernise and Louis, 2015). Beliefs about science-informed policy can quickly become politically polarized, as can beliefs about the underlying science (McCright and Dunlap, 2011). We should be careful not to act in ways that risk cultivating politically polarized views about vaccination (Kahan, 2013). It would be very harmful to vaccine uptake rates if views about vaccination became as politically polarized as views about evolutionary biology or anthropogenic climate change have become in some political communities.

It may be helpful to elaborate on the importance of broad political consensus for coercive vaccination programs to illustrate why it is so worrisome that Eliminationism may undermine consensus. First, herd immunity requires a consistent, decades-long commitment to promoting vaccination. In multi-party states, political parties come in and out of government. Many valuable activities of the state, such as roads and schools, can survive a few years of neglect. But a vaccine-skeptical political party could quickly undermine decades of work developing herd immunity and could expose the community to significant risks. Second, vaccination policies are often decided by substate units, and political party affiliations tend to vary across regions of a state. So, if Eliminationism causes vaccination policies to become increasingly politically polarized, then vaccination policies may lose majority support in some substate units, even if the majority of the members of the broader state continues to support those policies. In many cases, intra-state policy diversity causes few ill effects. For example, one province's lower level of arts funding need not undermine the arts programs sponsored by another province. But vaccination policy is different. In an era of mass mobility, a country's herd immunity depends on the existence of high vaccination rates throughout the entirety of the country, such that geographical clusters of low vaccination rates can be harmful to the entire community.

The Vermont Model: Prioritizing Religion

On 28 May 2015, Vermont Governor Peter Shumlin signed House Bill 98 (HB 98) into law (Burbank, 2015). The result is that Vermont no longer offered personal belief exemptions after 1 July 2016. Instead, it now allows nonmedical exemptions only to people who object to vaccination for religious reasons. With this change, Vermont joins the 28 other US states that offer religious exemptions, but do not offer personal belief exemptions (NCSL, 2016). More US states are considering a similar change, and the editorial board of *USA Today*—the print newspaper with the widest circulation in the USA—endorsed what we call Prioritizing Religion in 2014 (USA Today Editorial Board, 2014). We do not believe that the best way to reduce exemptions rates is to eliminate personal belief exemptions while maintaining religious exemptions. Prioritizing Religion is both unfair and unlikely to be as effective as its proponents suppose.

It is unfair to prioritize religion in vaccine exemption policies. First, modern liberal societies ought to be neutral between different conceptions of the good. Members of a society should not receive unequal treatment merely because they profess different religions or philosophies. The demise of the confessional state is, after all, a crowning achievement of modernity. Prioritizing Religion is eponymous; it prioritizes religion in the public policies of modern liberal societies. That is reason enough to reject it. Second, religion is not a useful proxy for considerations that can be neutrally

defended. We might be able to justify Prioritizing Religion if people who objected to vaccinating their children because of their religious convictions had weightier reasons for objecting than did people who objected for reasons of secular moral conscience or personal integrity. But there is no reason to think that the weightiest reasons for refusing vaccines are *religious* reasons. Also, we might be able to justify Prioritizing Religion if people who objected to vaccination for religious reasons were likely to experience more serious emotional and psychological harms if they were denied access to exemptions. But there is no reason to think that people who object for secular reasons will be less harmed if they are denied exemptions. Therefore, we can conclude that Prioritizing Religion is an unfair method for reforming vaccine exemption policies.

The fact that some US states prioritize religion in their vaccine exemption policies may be an artifact of the privileged role of religion in the Free Exercise Clause of the US Constitution's First Amendment. As Micah Schwartzman (2012) puts it, religion is not special, but the US Constitution insists that religion *must* be special. And against the background of the US Constitution's constraints, Prioritizing Religion may be legally justified. However, it will only be ethically justified if Prioritizing Religion is consistent with neutral treatment of secular and religious objectors to vaccine mandates. Indeed, one could defend Prioritizing Religion in the US context by pointing to the expansive conceptions of religion used in the statutes and judicial decisions that constitute US vaccine exemptions law. Daniel Salmon observed that '[a] lot of states call their exemptions religious, but anyone who wants it, gets it' (McNeil, 2003). Indeed, US courts and legislatures have consistently refused to define religion with any specificity to avoid taking stands in theological disputes, which would violate the First Amendment's Establishment Clause (Koppelman, 2013).

Consider a couple of examples of the expansive conceptions of religion operating in US vaccine exemptions law. Douglas Diekema observed that '[i]n Oregon ... a religion is defined as "any system of beliefs, practices, or ethical values"' (Diekema, 2014: 280). In this case, an objection to vaccination can be religious even if it emerges from secular commitments, as long as those commitments hang together as a sort of system. In *Sherr and Levy v. Northport East-Northport Union Free School District*, a New York appeals court determined that the following parental testimony sufficed to demonstrate a religious basis for refusing vaccines: 'any introduction ... of a foreign element outside the normal processes of the body, is going to [a]ffect the body adversely and, therefore, we feel it is a violation in a sense of our nature, physical, spiritual religious nature' (U.S. District Court for the Eastern District of New York, 1987). In this case, a commitment to bodily purity counts as a religious conviction, and there is evidence that some vaccine refusers are motivated by these kinds of purity values (Reich, 2016). So, parents who object to vaccines because of their commitment to purity values likely qualify for religious exemptions, too.

We acknowledge that Prioritizing Religion can escape the charge of unfairness by embracing expansive conceptions of religion. The problem is that efforts to expand the sorts of objections that fall under the category of 'religion' may do less to limit the number of exemptions. Prioritizing Religion can be either effective or fair, not both. Consider that US states that offer only religious exemptions have significantly higher rates of religious exemptions than do US states that offer both religious and personal belief exemptions (Centers for Disease Control and Prevention, 2015). This is because some people who would otherwise have applied for a personal belief exemption apply for religious exemptions when those are the only exemptions available. Nonetheless, US states that offer only religious exemptions generally have lower overall exemption rates than do states that offer both religious and personal belief exemptions (Centers for Disease Control and Prevention, 2015).

If some parents who object to vaccines for secular reasons are unaware that they qualify for religious exemptions, then this is evidence of another kind of unfairness with Prioritizing Religion. It is unfair to prioritize exemption policies for people who are either privileged enough to understand that the state relies on expansive conceptions of religion in exemptions policies or who are willing to lie. In the first case, it is unfair to prioritize exemptions for people who know that the government is using an everyday word (religion) in an idiosyncratic way. The operative terms in everyday laws should have legal meanings that are as close as possible to their ordinary use. In the second case, it is unfair to prioritize exemptions for people who are willing to lie to get exemptions. Dorit Reiss (2014), for example, has shown that people who apply for religious exemptions are often attempting to deceive. Honest people with secular objections to vaccination will not apply for religious exemptions if they are unaware of the expansive notions of religion operating in exemptions laws. And it is unfair for laws to so blatantly prioritize benefits for people who are willing to lie.

The public's perception of fairness is vital to the maintenance of its trust in public health authorities

and for maintaining high rates of vaccine compliance. Given the many challenges to fairness that Prioritizing Religion faces, we argue that it is unwise to eliminate philosophical or personal belief exemptions while maintaining religious exemptions.

The Michigan Model: Inconvenience

Michigan's recent success in lowering its vaccine exemption rate illustrates the benefits of another model for reforming vaccine exemption policies: Inconvenience. Michigan had one of the USA's most liberal exemption procedures and one of its highest nonmedical exemption rates. Its leaders recognized the need to reform its exemptions policies, but they rejected both Eliminationism and Prioritizing Religion. Instead, Michigan was able to substantially lower its 2015 exemption rates by making it more burdensome for parents to apply for nonmedical exemptions to school and daycare vaccine mandates.

As recently as 2013, Michigan ranked fourth nationwide in the percentage of children entering kindergarten with nonmedical vaccine waivers (Centers for Disease Control and Prevention, 2014). In response to high exemption rates, and at the request of the Michigan Department of Health and Human Services, the Michigan Legislature's Joint Committee on Administrative Rules (JCAR) decided to make Michigan's nonmedical exemption application process more burdensome (Michigan Department of Public Health, 2016). The JCAR approved a new requirement for parents to attend immunization education sessions at local public health departments prior to receiving a waiver. The JCAR also approved a new requirement for parents to use an official state form to apply for exemptions. Both requirements went into effect on 1 January 2015.

Michigan's use of the rule change—to require education sessions and impose standard application forms—was necessitated by practical constraints. It was unlikely that Michigan's Republican-controlled legislature was going to follow California's or Vermont's lead, given that both SB 277 and HB 98 were passed by Democratic supermajorities, and that vaccine policy was becoming an increasingly partisan issue. Michigan's choice was also informed by research showing that communities with more burdensome exemption application processes have lower exemption rates (Blank *et al.*, 2013; Omer *et al.*, 2012; Rota *et al.*, 2001). When vaccine exemptions are easy to receive, some parents apply for them out of convenience. (One of us once applied for a philosophical vaccine waiver for precisely this reason!) And some parents who would otherwise apply for exemptions would deal with whatever inconveniences were necessary to vaccinate their children rather than attend education sessions at the public health department.

Michigan's experience in 2015 was consistent with research on the efficacy of more burdensome exemption policies. The number of new nonmedical vaccine waivers in Michigan fell dramatically in 2015—down 39 per cent statewide compared with 2014 (Higgins, 2016). In some areas of the state, such as Detroit, waiver rates fell by over 60 per cent. Michigan achieved this striking decline in waiver rates without taking on the liabilities of either Eliminationism or Prioritizing Religion, which is the chief reason to prefer Inconvenience: it decreases waiver rates without the disadvantages of other kinds of reforms. We ought to prefer methods of decreasing waiver rates that preserve liberties, promote fairness and minimize coercion, over methods of decreasing waiver rates that lack these virtues (Bester, 2015; Opel *et al.*, 2016).

Another reason to prefer Inconvenience is because it is likely to face fewer practical constraints than either Eliminationism or Prioritizing Religion (Colgrove and Lowin, 2016). Michigan's legislature, like many other legislatures, is not dominated by a political party that is supportive of Eliminationist approaches (unlike the legislatures of both California and Vermont, which have Democratic supermajorities). Indeed, Michigan's reform was so marginally disruptive to existing policy that it did not even require a new statute, but originated with the rule-making authority of an administrative oversight committee of the state legislature. And the fact that Michigan's exemption policy changes have protected everyone's exemption rights has gone a long way toward disarming potential critics of Michigan's successful reforms.

We think it remains an open question whether Michigan's state-mandated education sessions caused parents to change their minds about vaccines, and we are in the early stages of a research project that aims to illuminate more about this possibility. There are reasons to be skeptical that education can cause vaccine-hesitant parents to embrace vaccination (Henrikson *et al.*, 2015; Nyhan *et al.*, 2014). And the fact that more than 98 per cent of the parents who attended Michigan's vaccine education sessions left their appointment with a signed waiver form counts in favor of this skeptical attitude. However, Michigan's in-person conversations with trained public health educators may have been more effective than they initially seem to have been. In 2015, Oakland County Health Division (OCHD)

delivered about 3900 waivers to parents who completed vaccine education sessions at its offices. Only about 2000 of those waivers were returned to OCHD by schools and daycare centers. There are many potential explanations for these 1900 'missing waivers', and research indicates that people often receive vaccines for which they have received waivers (Buttenheim *et al.*, 2015). So, it seems possible that the Michigan Model may be even more effective than it initially appeared to be. We are working with others to find out why. In the meantime, we conclude that there are good reasons to prefer the model of reform that Michigan pursued—Inconvenience—over the alternatives of Eliminationism and Prioritizing Religion. Inconvenience is at least as efficacious as other methods for lowering waiver rates and it suffers less from the practical and ethical problems that plague Eliminationism and Prioritizing Religion.

Conclusion

Despite its obvious benefits, the Inconvenience approach to rising rates of nonmedical exemptions can be a tough sell because of the contentious nature of public discussions about vaccination mandates. Vaccine-refusing parents will likely resent the requirement to attend vaccine education sessions and may complain to their legislators. In Michigan, parents complained to their county commissioners and to their state representatives, and (closer to home) instigated a nuisance Freedom of Information Act request against both of us for our role advising public health departments about vaccine education sessions. The Inconvenience approach also faces resistance from vaccine advocates, like Paul Offit, who argue that giving any ground to vaccine non-compliant parents is dangerous (Offit, 2010). The fact that the AMA, AAFP and ACP have thrown their weight behind Eliminationism does not help. Nonetheless, if our goal is to vaccinate as many children as possible against as many vaccine-preventable diseases as possible, then Inconvenience may offer public health officials the most efficacious method for reforming existing vaccine waiver policies, while at the same time incurring the fewest adverse ethical, political and practical consequences.

Conflict of Interest

None declared.

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