



## CONSCIENTIOUS OBJECTION TO VACCINATION

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### Keywords

conscientious objection,  
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### ABSTRACT

Vaccine refusal occurs for a variety of reasons. In this article we examine vaccine refusals that are made on conscientious grounds; that is, for religious, moral, or philosophical reasons. We focus on two questions: first, whether people should be entitled to conscientiously object to vaccination against contagious diseases (either for themselves or for their children); second, if so, to what constraints or requirements should conscientious objection (CO) to vaccination be subject. To address these questions, we consider an analogy between CO to vaccination and CO to military service. We argue that conscientious objectors to vaccination should make an appropriate contribution to society in lieu of being vaccinated. The contribution to be made will depend on the severity of the relevant disease(s), its morbidity, and also the likelihood that vaccine refusal will lead to harm. In particular, the contribution required will depend on whether the rate of CO in a given population threatens herd immunity to the disease in question: for severe or highly contagious diseases, if the population rate of CO becomes high enough to threaten herd immunity, the requirements for CO could become so onerous that CO, though in principle permissible, would be de facto impermissible.

## INTRODUCTION

People refuse vaccines for themselves or for their dependants for a variety of reasons. These include the beliefs that vaccines cause health problems, that they are not really effective, that they are manufactured in unsafe ways, and that diseases are better dealt with by other means.<sup>1</sup> There are also people who decide not to

vaccinate out of a selfish desire to free-ride on the herd immunity achieved by the vaccinations of others (Navin 2013b; May 2005).<sup>2</sup> Still others refuse to take vaccines or to vaccinate their dependants on conscientious grounds. Our focus in this paper is on vaccine refusal on conscientious grounds. ‘Conscientious objection’ (CO) to vaccination may be based on religious, moral, or philosophical convictions, such as the conviction that health and disease should not be controlled by vaccination, or that governments should not coerce citizens into receiving medical interventions. Vaccine refusals on grounds of conscience are explicitly sanctioned in some legislations; for example, in Australia parents can refuse vaccinations for their children by filling in an ‘Immunisation Exemption

<sup>1</sup> For detailed discussions of reasons for vaccine refusal or hesitancy see, e.g. Department of Health and Ageing (DOHA) 2013. *Myths and Realities: Responding to arguments against vaccination*, 5<sup>th</sup> edn. Canberra: Commonwealth of Australia; J. Leask, S. Chapman, & S.C.C. Robbins. ‘All manner of ills’: The features of serious diseases attributed to vaccination, *Vaccine* 2010; 28:3066–70; N.E. Moran et al. 2006. Are compulsory immunisation and incentives to immunise effective ways to achieve herd immunity in Europe?, in M. Selgelid, M. Battin, and C. Smith (eds) *Ethics and Infectious Disease*. Blackwell: Malden, MA:115–131; S.B. Omer et al. Vaccine refusal, mandatory immunisation, and the risks of vaccine-preventable diseases, *New Engl J Med* 2009; 360(19):1981–8; R.M. Wolfe, L.K. Sharp. Anti-vaccinationists past and present, *BMJ* 2002; 325(7361):430–32. For historical discussion of anti-vaccination movements see S. Blume. Anti-vaccination movements and their interpretations, *Soc Sci Med* 2006;62:628–29.

<sup>2</sup> M. Navin. Resisting moral permissiveness about vaccine refusal, *Publ Aff Q* 2013; 27(1):69–85; T. May. Public communication, risk perception, and the viability of preventive vaccination against communicable diseases, *Bioethics* 2005; 19(4):407–421.

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Conscientious Objection Form' in which they declare that they hold 'a personal, philosophical, religious or medical belief involving a conviction that vaccination under the National Immunisation Program should not take place'.<sup>3</sup>

It may well be that some conscientious objectors to vaccination also have non-conscientious reasons to refuse vaccines, and that they would want to refuse vaccines on these other grounds even if they were denied the opportunity to conscientiously object. We think that the other reasons that have so far been advanced for vaccine rejection are spurious. While it is important that particular vaccination programs, like other medical practices, are evidence-based, scientific evidence has repeatedly demonstrated that vaccination can offer a safe, effective way to achieve individual immunity from serious diseases, and prevents very significant morbidity and mortality.<sup>4</sup> When practised on a large scale through a mass vaccination program, it enables 'herd immunity' to protect those who cannot be vaccinated, and even the eradication of diseases.<sup>5</sup> There is much that could be said, and has been said, about the misguided reasoning of those who think that vaccination is dangerous

or harmful.<sup>6</sup> But this is not the subject of our article.<sup>7</sup>

We will focus on two questions: first, whether people should be entitled to conscientiously object to vaccination against contagious diseases (either for themselves or for their children); second, if so, to what constraints or requirements should CO to vaccination be subject.<sup>8</sup> Countries differ in whether mass vaccination is compulsory or voluntary, and whether provision is made for CO. While there has been philosophical discussion of various ethical questions surrounding vaccination, as well as some discussion of epistemic questions raised by the disagreement surrounding it,<sup>9</sup> there has been little discussion focusing specifically on the permissibility and treatment of CO to vaccination. CO has been discussed extensively in other contexts, including military service (e.g. conscientious objection to conscription) and provision of certain healthcare services (e.g. conscientious

<sup>3</sup> The form can be found at <http://www.nevdp.org.au/info/immunisation/conscientious-objection-form.pdf> [Accessed 10 May 2016]. This form may fall into disuse in Australia following the removal of a CO exemption which previously allowed non-vaccinating families to access certain financial benefits, see M. Klapdor. Social Services Legislation Amendment (No Jab, No Pay) Bill, 2015. *Bills Digest (2015–2016)* 36. Available at [http://www.aph.gov.au/Parliamentary\\_Business/Bills\\_Legislation/bd/bd1516a/6bd036](http://www.aph.gov.au/Parliamentary_Business/Bills_Legislation/bd/bd1516a/6bd036).

<sup>4</sup> E.g., E.S. Bar-On et al. Combined DTP-HBV-HIB vaccine versus separately administered DTP-HBV and HIB vaccines for primary prevention of diphtheria, tetanus, pertussis, hepatitis B and Haemophilus influenzae B (HIB) (Review). *Cochrane Database Syst Rev* 2012(4). DOI: 10.1002/14651858.CD005530.pub3; M.P. Curran & K.L. Goa. DTPa-HBV-IPV/Hib vaccine. *Drugs* 2003; 63(7):673–682; M.G. Lucero et al. Pneumococcal conjugate vaccines for preventing vaccine-type invasive pneumococcal disease and X-ray defined pneumonia in children less than two years of age (Review). *Cochrane Database Syst Rev* 2009(4). DOI: 10.1002/14651858.CD004977.pub2; V. Demicheli et al. Vaccines for measles, mumps and rubella in children (Review). *Cochrane Database Syst Rev* 2012(2). DOI: 10.1002/14651858.CD004407.pub3; K. Soares-Weiser et al. Vaccines for preventing rotavirus diarrhoea: Vaccines in use (Review) *Cochrane Database Syst Rev* 2012(11). DOI: 10.1002/14651858.CD008521.pub3.

<sup>5</sup> Smallpox is an example of an eradicated disease, see M. Verweij, 2013. Vaccination policies. In *The International Encyclopedia of Ethics*. H. La Follette, ed. Blackwell: Malden, MA: 5279–82; and polio has almost been eradicated thanks to vaccines, see Global Polio Eradication Initiative, 2015, Data and Monitoring: Polio cases worldwide, 2015. Available at <http://www.polioeradication.org/Data-and-monitoring/Poliothisweek/Poliocasesworldwide.aspx> [Accessed 1 Feb 2016].

<sup>6</sup> T. Dare. Disagreement over vaccination programmes: Deep or merely complex and why does it matter? *HEC Forum* 2014; 26:43–57; A. Kata Anti-vaccine activists, Web 2.0, and the postmodern paradigm – An overview of tactics and tropes used online by the anti-vaccination movement. *Vaccine* 2012; 30:3778–89; J. Leask & S. Chapman. 'An attempt to swindle nature': press anti-immunisation reportage 1993–1997. *Australian and New Zealand J Publ Health* 1998; 22(1):17–26; Leask, Chapman & Robbins. *op. cit.* note 1; M. Navin. Competing epistemic spaces: How social epistemology helps explain and evaluate vaccine denialism. *Soc Theory Pract* 2013; 39(2):241–264; S. Tafuri et al. Addressing the anti-vaccination movement and the role of HCWs. *Vaccine* 2014; 32:4860–65.

<sup>7</sup> It might be argued that those who refuse vaccines on this basis are 'conscientious' refusers, in the sense that it is their beliefs coupled with their aim of not harming their children (or themselves) that lies behind the refusal, and this aim is a moral or conscientious one. While this raises interesting questions about the role of beliefs about empirical, rather than religious or moral, matters in conscientious objection, we will not seek to address those questions here. If these refusals were to be considered conscientious, however, we would take our arguments below to apply.

<sup>8</sup> Our focus here is only on diseases that are contagious, i.e. that can be transmitted from person to person, and not on non-contagious diseases (e.g. tetanus), where the risk of being infected does not depend on how many people around us are vaccinated.

<sup>9</sup> For discussion of ethical questions, see, e.g. L. Asveld. Mass-vaccination programmes and the value of respect for autonomy, *Bioethics* 2008; 22(5):245–57; A. Dawson. The determination of 'best interests' in relation to childhood vaccinations, *Bioethics* 2005; 19(2):188–205; J. Flanigan. A defense of compulsory vaccination, *HEC Forum* 2014; 26:5–25; J. Harris & S. Holm. Is there a moral obligation not to infect others? *BMJ* 1995; 311(7014):1215–17; M. Navin. Resisting moral permissiveness about vaccine refusal, *Public Aff Q* 2013; 27(1):69–85; M. Verweij, 2006. Obligatory precautions against infection, in *Ethics and Infectious Disease*. M. Selgelid, M. Battin, & C. Smith, eds. Blackwell: Malden, MA: 70–82. For discussion of some epistemic questions see T. Dare. Disagreement over vaccination programmes: Deep or merely complex and why does it matter? *HEC Forum* 2014; 26:43–57; M. Navin. Competing epistemic spaces: How social epistemology helps explain and evaluate vaccine denialism, *Soc Theory Pract* 2013; 39(2):241–64.

objection to abortion).<sup>10</sup> CO in relation to military service in particular has received quite extensive discussion by legal thinkers, human rights activists, and philosophers. It is accepted in many countries and recognized as a human right in various national and international charters and instruments.<sup>11</sup>

To address the two questions above, we consider an analogy between CO to vaccination and CO to military service. As thinking about CO to military service is comparatively well-developed, the policies and practices for responding to CO in that area are a useful resource for considering CO to vaccination. Although in some places conscientious objectors to military service face imprisonment or other serious consequences,<sup>12</sup> in many countries, including the USA, Canada, Australia, and many European countries, policies have been developed that recognise the rights of objectors, while balancing these against the military needs and interests of the state. In many of these countries, CO to military service is granted, sometimes upon satisfactorily meeting certain requirements (or has been when conscription or compulsory national service in those countries was in place). Whether and to what extent the same kind of policy should be adopted in the case of vaccination depends, *inter alia*, on whether and to what extent CO to vaccination is relevantly similar to CO to military service.

We examine the ethical reasoning underpinning the treatment of conscientious objectors to military service in Section 1. In Section 2 we consider the analogy between CO to military service and CO to vaccination in some detail. In Section 3, we explore some key implications of the analogy for vaccination policies. We argue that conscientious objectors to vaccination should make an appropriate contribution to society in lieu of being vaccinated. The contribution to be made will depend on the severity of the relevant disease(s), on its morbidity, and also on the likelihood that vaccine refusal will lead to harm. In particular, the contribution required will depend on whether the rate of CO in a given population threatens herd immunity to the disease in question: for

severe or highly contagious diseases, if the population rate of CO becomes high enough to threaten herd immunity, the requirements for CO could become so onerous that CO, though in principle permissible, would be de facto impermissible.

## ETHICAL REASONING UNDERPINNING RIGHTS AND DUTIES OF CONSCIENTIOUS OBJECTORS TO MILITARY SERVICE

In Australia, the UK and the USA, recent policies surrounding CO have enabled conscientious objectors to military service and to active participation in war to be assigned other duties. Either they have been assigned non-combatant roles within their nation's military services, or civic roles that do not directly assist the military services of their nation, but which contribute to the well-being of their society (e.g. serving in public libraries, healthcare institutions, etc.). The alternative service is generally for at least the same duration, but can be up to twice as long, as conscripts to the military are expected to serve.<sup>13</sup>

Conscientious objectors are typically required to demonstrate that their objection is genuine. Objectors' reasoning is commonly subjected to the assessment of a tribunal. For example, in the UK an Advisory Committee on Conscientious Objectors (ACCO) assesses cases of CO which have been rejected by the relevant service authorities,<sup>14</sup> and in Australia, a Conscientious Objection Tribunal assesses cases of CO during wartime.<sup>15</sup> Usually, the tribunal aims to test sincerity (i.e. whether the objector truly holds beliefs inconsistent with participating in military service) rather than validity (the rationality or reasonability of the explanation the objector provides).

There are at least two ways to justify the requirement that conscientious objectors to military service perform other tasks that benefit their society and that are roughly commensurate with the efforts made by those who perform military service.

The first is to argue that because there is a general duty to contribute to the upkeep of one's society, there is a special form of that duty to make extra contributions to the upkeep and preservation of one's society in times of crisis. Arguably, there is a related special duty to collaborate with others to try to prevent crises. On some occasions a society will come under threat from hostile military forces. Recognizing that threats to their

<sup>10</sup> For discussion of CO to military service, see e.g. C.A.J. Coady. Objecting morally, *J Ethics* 1997; 1(4):375–97; C. Cohen. Conscientious objection, *Ethics* 1968; 78(4):269–79; K.W. Kemp. Conscientious objection, *Public Aff Q* 1993; 7(4):303–24. For discussion of CO in healthcare see, e.g. J. Savulescu. Conscientious objection in medicine, *BMJ* 2006; 332:94; M.R. Wicclair. 2011. *Conscientious Objection in Health Care: An Ethical Analysis*. Cambridge: Cambridge University Press.

<sup>11</sup> United Nations. 2012. *Conscientious Objection to Military Service*. Geneva: United Nations Human Rights, Office of the High Commissioner; 7–20. Available at [http://www.ohchr.org/Documents/Publications/ConscientiousObjection\\_en.pdf](http://www.ohchr.org/Documents/Publications/ConscientiousObjection_en.pdf) [accessed 2 February 2016].

<sup>12</sup> Conscience and Peace Tax International (CPTI). 2006. *Military Recruitment and Conscientious Objection: A thematic global survey*. Leuven: CPTI:89–104. Available at [http://cpti.ws/cpti\\_docs/brett/recruitment\\_and\\_co\\_A4.pdf](http://cpti.ws/cpti_docs/brett/recruitment_and_co_A4.pdf) [Accessed 1 February 2016]; United Nations. 2012. *op. cit.* note 11.

<sup>13</sup> CPTI 2006, *op. cit.* note 12, pp. 121–23.

<sup>14</sup> Advisory Committee on Conscientious Objectors (ACCO). 2016. Advisory Committee on Conscientious Objectors, <https://www.gov.uk/government/organisations/advisory-committee-on-conscientious-objectors> [Accessed 1 February 2016].

<sup>15</sup> M. Coombs & L. Reyner. 2003. Conscientious Objection to military service in Australia. Department of the Parliamentary Library Research Note, 31(2002–3).

preservation are liable to occur, most societies maintain standing military forces to deter or repel such threats. Forces may be maintained by voluntary enlistment and/or by legislating a compulsory period of national service. When emerging threats are significant, military forces may need to be expanded via conscription. People may be understood to have a duty to serve in their societies' standing military forces and/or to serve in expanded military forces during time of crisis, and may be conscripted to do so. Those who have a conscientious objection to military service may be permitted to avoid having to serve in the military, but their obligation to contribute to the upkeep and preservation of their society does not thereby disappear: hence our expectation that they perform commensurate roles that benefit their society.

The second line of justification for insisting that conscientious objectors perform duties that are roughly commensurate with active military service is that society needs to take steps to prevent 'free-riding'. There is an ongoing temptation for individuals to accept the benefits that spring from being part of a society without contributing to the upkeep and preservation of that society. Generally, societies can survive when there are a few free-riders, who do not pay taxes, observe laws, refrain from damaging public property, and so on. However, if the number of free riders becomes too high, the future of that society itself is undermined, as it struggles to maintain itself under the weight of unproductive and counterproductive free-riders. An additional problem is that if non-free riders are aware that there are significantly many free-riders in their society, then their own commitment to contribute to that society can be undermined by resentment towards free-riders, which makes it more likely that they themselves will become free-riders.

Participation in military forces is often thought to be an onerous duty, so there is a strong temptation to avoid that duty. If the appeal to CO were to enable one to avoid that duty, and not acquire some commensurate duty, then it would enable free-riding. Potential free riders would seek to present themselves as sincere conscientious objectors in order to avoid military service, while still benefiting from the protection that military forces provide. If we ensure that conscientious objectors to military service make a contribution to society that is equivalent to military service, such as providing community services for a length of time roughly equal to the period that conscripts are required to provide military service, we discourage free-riders from seeking to present themselves as sincere conscientious objectors. The possibility that free-riders might present themselves as genuine conscientious objectors also underpins the obligation of conscientious objectors to provide a demonstration of sincerity. Objectors to military service have generally

been required to demonstrate that their objection is consistent with their other beliefs, and consistent with their actions.

## ANALOGIES AND DIFFERENCES BETWEEN CO TO MILITARY SERVICE AND TO VACCINATION: LIBERTY, RISK, AND UTILITY

Since infectious disease, like an invading military force, can pose a severe potential threat to society – including threats to political stability and national security<sup>16</sup> – it is arguable that, by analogy to their duty to contribute to military forces, ordinary people have a duty to contribute to the effort to prevent infectious diseases.<sup>17</sup> In fact, the analogy between infectious diseases and war is quite widespread in the public health ethics literature.<sup>18</sup> This duty to prevent contagion involves sub-duties regarding behaviour during times at which there are outbreaks of diseases. For example, if people are instructed by a legitimate authority to quarantine themselves for a period of time, then they have a duty to follow this instruction. They also have a duty to help prevent the outbreak of diseases. This involves, *inter alia*, a duty to receive vaccinations so as to contribute to herd immunity when the disease is communicable.

Infectious diseases are analogous to the threat of invasion by hostile military forces in that in both cases the upkeep and preservation of society can be threatened. It is arguable that infectious disease has actually been more of a threat to the upkeep of society than war. Somewhere between one-quarter and one-third of the population of Europe – and up to three-quarters of the population in some areas – are thought to have died of plague in the mid-14<sup>th</sup> Century, which is a far more significant rate of

<sup>16</sup> H. Feldbaum et al. Global health and national security: the need for critical engagement, *Med Conflict Surviv* 2006; 22(3):192–198; A.T. Price-Smith. 2002. *The health of nations: infectious disease, environmental change, and their effects on national security and developments*. New York: MIT Press.

<sup>17</sup> This duty may be grounded in the status of public health (or herd immunity) as a public good, shared in the community in which one lives (A. Dawson. The determination of "best interests" in relation to childhood vaccinations, *Bioethics* 2005; 19(2):188–205; M. Navin. Resisting moral permissiveness about vaccine refusal, *Pub Aff Q* 2013; 27(1):69–85; S.B. Omer et al. Vaccine refusal, mandatory immunisation, and the risks of vaccine-preventable diseases. *New Engl J Med* 2009; 360(19):1981–8); or based on the duty to avoid harming others: J. Harris and S. Holm S. Is there a moral obligation not to infect others? *BMJ* 1995; 311(7014):1215–17; M. Verweij. 2006. Obligatory precautions against infection, in *Ethics and Infectious Disease*. M. Selgelid, M. Batten, and C. Smith (eds). Blackwell: Malden, MA: 70–82. These different ways of understanding the duty do not affect our argument here.

<sup>18</sup> G. De Grandis. On the analogy between infectious diseases and wars: how to use it and not to use it. *Public Health Ethics* 2011; 4(1):70–83.

death than during any war that has ever been fought in Europe.<sup>19</sup> It is estimated that 80% of the indigenous population of Mexico died of viral hemorrhagic fever in the mid-16<sup>th</sup> Century, which is a much greater rate of mortality than that caused by the Spanish Conquistadors or any other military force in Mexico.<sup>20</sup>

In cases of both vaccination and conscription, a duty is imposed on individuals and is justified by appeal to a public good: national security from external military threats in one case, and group immunity to some infectious diseases (which is also relevant to national security) in the other. In both cases, the duty entails three types of costs for the individual: a liberty cost, personal risk, and a utility cost in terms of time and energies required of the individual.

The *liberty* cost is roughly the same in both cases of vaccination and the military, because in both cases an individual is asked to do something they might not do voluntarily. In both cases, CO can be claimed by appealing to a principle of liberty.<sup>21</sup>

The *risk* for the individual is higher in the case of military conscription, at least during wartime, than vaccination, because fighting in war entails a risk to the life of soldiers, whilst the vaccines that are approved by therapeutic goods regulators and used today are very safe. Side effects occur, but are rare and for the most part negligible.<sup>22</sup> In peacetime, the risk of military service is low, although the possibility that a conflict may happen during one's military service should be factored in when assessing the risk associated with conscription.

The *utility* cost is much higher in the case of military conscription than vaccination, since conscripts are required to spend considerable time in the army training for combat. By contrast, vaccines only entail the small utility costs involved in attending a medical appointment, since the procedure (a simple injection) is usually quick and relatively painless. A further cost of undertaking either military service or vaccination, when doing so goes against one's conscience, might be called a cost of psychological, or moral, distress.<sup>23</sup>

In order to appreciate the severity of the burden that would-be conscientious objectors would have to bear if

they were denied the right to object, the aforementioned costs need to be balanced against the prospective benefits to be gained by these individuals. It seems that individual benefit is higher in the case of vaccination, since the vaccinated individual benefits by obtaining immunity to disease and there is no corresponding benefit obtained by military service. There are, of course, individual benefits that military conscripts may enjoy. Military conscripts are, almost invariably, paid for their service and can receive specialist training that can benefit them later on in civilian life. Some can also go on to enjoy successful careers in the military itself.

Considering analogies and differences with the military case in terms of liberty, risk, and utility costs, it seems that in the case of CO to vaccination there are at least equally strong, if not stronger, reasons for compelling conscientious objectors to make commensurate efforts to help prevent the outbreak of infectious disease and/or to contribute to the welfare of the community in general. They have a duty to make these commensurate efforts and, as our earlier discussion of free-riding shows, we as a society have strong reasons to seek to ensure that they make such commensurate efforts.

## IMPLICATIONS OF THE ANALOGY FOR CO TO VACCINATION

On the basis of the analogy to CO to military service we can draw two broad policy implications for CO to vaccination. First, it is legitimate to expect those conscientiously objecting to vaccination to supply evidence of their sincerity. Second, those who conscientiously object have an obligation to contribute to the upkeep of their society.

Sincerity can be assessed by testing the consistency of the claimed CO with the person's other beliefs, and with their actions. This may be assessed through personal interviews and/or written applications to tribunals, boards, or committees, which may be civil or military in makeup.<sup>24</sup>

Current practices surrounding CO to vaccination do not generally require objectors to state reasons for their objection. In Australia, for example, all conscientious objectors have had to do, in the past, was to sign a form stating that they have a conscientious objection and to have this form signed by a practitioner to certify that a healthcare professional had discussed the benefits of vaccination with them.<sup>25</sup> In the US, most states that allow a

<sup>19</sup> Encyclopaedia Britannica. 2016. "plague." *Britannica Academic*. Web. 31 Jan. 2016. Available at <http://academic.eb.com/EBchecked/topic/462675/plague> [Accessed 1 February 2016].

<sup>20</sup> R. Acuna-Soto, L.C. Romero & J.H. Maguire. Large epidemics of hemorrhagic fevers in Mexico 1545–1815, *Am J Trop Med Hyg* 2000; 62(6):733–39.

<sup>21</sup> United Nations, *op. cit.* note 11; C. Cohen. Conscientious objection, *Ethics* 1968; 78(4):269–79; K.W. Kemp. Conscientious objection. *Public Aff Q* 1993; 7(4):303–324.

<sup>22</sup> Department of Health. 2015. *The Australian Immunisation Handbook*, 10th edn. Canberra: Australian Government Department of Health: ch.4.

<sup>23</sup> C. Cohen. Conscientious objection, *Ethics* 1998; 78(4):269.

<sup>24</sup> United Nations, *op. cit.* note 11; Conscience and Peace Tax International (CTPI), *op. cit.* note 12.

<sup>25</sup> M. Klapdor. 2015. Social Services Legislation Amendment (No Job, No Pay) Bill 2015. *Bills Digest (2015–2016)* 36. Available at [http://www.aph.gov.au/Parliamentary\\_Business/Bills\\_Legislation/bd/bd1516a/6bd036](http://www.aph.gov.au/Parliamentary_Business/Bills_Legislation/bd/bd1516a/6bd036). [Accessed 1 February 2016].

parent to conscientiously object to their children being vaccinated merely require that parent to sign a form or a notarised statement.<sup>26</sup>

These practices may partly be explained by the consideration that it would be very difficult and very costly to assess the sincerity of conscientious beliefs surrounding vaccination. For example, in Australia there are over 40,000 conscientious objectors to vaccination; any procedure to assess the sincerity of Australian conscientious objections to vaccination with reasonable accuracy would require significant resources. Rather than expending significant resources to assess sincerity, it may therefore be preferable to test sincerity indirectly, by increasing the effort required to conscientiously object to vaccination, to a point where free-riders would find the burdens of objecting to be more onerous than vaccinating. For instance, objectors might be required to attend educational counselling about the risks and benefits of vaccination for their children and for the community (as Salmon and Siegel have suggested),<sup>27</sup> to discuss vaccination with a medical professional (as in previous Australian practice), and so on. In addition, CO can be made more burdensome by requiring objectors to make some other contribution to society's upkeep.

There are some requirements that can be placed on conscientious objectors to limit the potential costs to society of accommodating their objection. For instance, objectors might be required not to travel to countries where the relevant diseases are known to exist at levels, or where the population is known to have low vaccination rates, such that the travel could pose a risk to the person's community upon return. They might also be obliged to undertake certain actions in the case of an outbreak, such as isolating themselves (or their children) at home, or submitting to quarantine.

While such requirements might lessen the threat posed to herd immunity from CO they would not discharge the obligation to contribute to the public good. Conscientious objectors might also be required to contribute to society's upkeep in other ways. They might be made subject to financial penalties, denied access to financial benefits, or required to perform community service. The policy recently implemented in Australia to remove conscientious objectors' access to specific financial benefits could in this sense be considered justified, given the lack

of a more direct or clearly commensurate way to discharge the obligation.<sup>28</sup>

However, we do need to be careful with the analogy at this point. The withholding of some financial benefits from families who refuse to vaccinate their children seems consistent with a similar policy in place in the case of CO to military conscription. Granted, the two types of policies are similar in that it is acknowledged that the community bears a cost for the objection and objectors are therefore asked to make up for such cost by providing the community with a relevantly similar utility surplus – a public service in one case, a saving in the budget that the State could use for other health measures in the other. However, denying objectors benefits to which other citizens are entitled is in some relevant respects different from requiring them to do something that other citizens are not required to do. In particular, it is different in that withholding a benefit does not involve a utility cost compared with a non-benefit baseline, whereas providing an alternative service does have a utility cost compared to the non-service baseline.

It is more difficult to find suitable options for an alternative contribution to being vaccinated than to military service. In times of war, society will not only need soldiers. It will require some to hold non-combatant military positions, and will continue to require people to undertake other kinds of (non-military) work. Thus those objecting to military service might still contribute to the war effort, or they might contribute to society's upkeep in other ways. Whilst such positions may involve less personal risk, they might involve similar utility and liberty costs, and they make a contribution to the same overall aim.<sup>29</sup> In the case of vaccination there is no obviously comparable contribution that can be made, in terms of positive impact on herd immunity, or more generally to public health.

What form of compensation is fair, then, in the case of conscientious objection to vaccination? One option is to

<sup>28</sup> One issue with imposing financial penalties is that they may be seen as inequitable: such a system could result in a situation where those on higher incomes can afford to conscientiously object, while those on lower incomes cannot, or to put in another way, that some and not others are permitted to buy their way out of an obligation. While perhaps of concern (especially if vaccine refusal is associated with particular groups, such that it contributes to the polarization of debate) this is in principle no more of an issue for vaccination than for other sorts of penalties such as parking fines. We recognize, however, that the proposals here would limit but not eliminate free-riding.

<sup>29</sup> It seems arguable that those who object to participating in combat might, as a result, be less able to contribute to it well, and thus allowing them to contribute in a different way benefits society as well as the objector. Although this is a disanalogy with the case of vaccination, since one's attitude to vaccination makes no difference to its effect, it strengthens our argument that conscientious objectors to vaccination can be required to make some other contribution, since the duty to contribute to the public good of herd immunity is not transferable in the same way as that of military service.

<sup>26</sup> National Conference of State Legislatures (NCSL). 2016. States with religious and philosophical exemptions to school immunization requirements. Available at <http://www.ncsl.org/research/health/school-immunization-exemption-state-laws.aspx> [Accessed 2 February 2016].

<sup>27</sup> D.A.Salmon & A.W. Seigel. Religious and Philosophical Exemptions from Vaccination Requirements and Lessons Learned from Conscientious Objectors from Conscription, *Public Health Rep* 2001; 116:289–95, p.293.

introduce an additional tax for conscientious objectors to vaccines. This option raises questions about how we are to translate the risk involved in compromising herd immunity into a fair monetary amount. The risk of a conscientious objector compromising herd immunity will vary for different diseases, as well as in relation to background conditions. Diseases differ significantly in their prevalence, contagiousness and the danger to one's health once one becomes infected. Thus, for instance, CO to vaccination for a less serious infectious disease would pose a lower risk than CO to vaccination for a disease likely to be fatal to many people in the case of an outbreak. And in societies with a high overall rate of vaccination, cases of CO may pose little threat, while they would come to pose a higher threat where rates are lower.

These factors suggest that an estimate of what a 'fair' compensation would consist in is not straightforward and equal for all diseases. However, there is no apparent reason why the compensation required from conscientious objectors should not reflect these factors. Financial penalties (in the form of either fines or the deprivation of benefits) might be developed that reflect the severity of possible harms, and their probability of occurring. Penalties for non-vaccination could thus be developed in a way that reflects both the potential severity of the hazards of contracting a disease, and the likelihood that not vaccinating for that disease could lead to an outbreak. Penalties might even be worked out separately for different diseases: for instance, the potential harms from chickenpox are generally lower than those from polio, but one is less likely to contract polio than chickenpox. This could also enable those who object only to some vaccines<sup>30</sup> to pay a proportionate penalty.

On such a system, as vaccination rates decrease, penalties increase, with the effect of not only preventing free riding, but putting pressure on objectors to examine their beliefs. This would provide a way to ensure a balance is reached between protecting society's interest in maintaining herd immunity, and allowing individuals to follow their consciences.

## CONCLUSION

Our examination of the analogy between CO to military service and CO to vaccination is useful for answering the two questions with which we began: whether people should be entitled to conscientiously object to vaccination; and what constraints or requirements CO to vaccination should be subject to. In relation to the second question, drawing on moral considerations and an

analysis of policy surrounding CO to military service, we have argued that conscientious objectors have two obligations when their objection prevents them from discharging a duty to contribute to the public good. These are an obligation to demonstrate the sincerity of their objection, and an obligation to make a commensurate contribution to society. Imposing a requirement to discharge some other duty will in many cases function as a demonstration of sincerity, thus meeting both obligations and enabling policy to side-step difficulties relating to the verification of sincerity. We have argued that in the case of vaccination, though a commensurate contribution to one's society is not available, objectors could discharge this duty by making a financial contribution to the state (either via a penalty or lack of access to a benefit) that reflects the degree of risk imposed on the community by their objection. As degree of risk includes the severity of potential harms, and their probability, calculation of the risk involved in not vaccinating will make reference to the existing levels of vaccine coverage in the relevant community. On such a system, the financial contribution required of non-vaccinators will increase as overall vaccine coverage lowers. When the risk of contagion is very significant and the disease is sufficiently severe, this system would have to imply a financial compensation which is too burdensome for almost anyone to be met.

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<sup>30</sup> For instance, some object in particular to vaccines manufactured using cell lines derived from aborted foetuses, but not to other vaccines, see Department of Health and Ageing (DOHA), *op. cit.* note 1.