

## Should vaccines be compulsory?

This essay argues that compulsory vaccination by the state is justified only when herd immunity is not realised. Herd immunity occurs when the vaccination of a significant portion of a population results in the resistance to the spread of a disease within a population and also provides a measure of protection for individuals who cannot develop immunity, such as children too young for the vaccine, or those who are immunosuppressed.<sup>1</sup> By firstly exploring the moral obligation to vaccinate, an ethical framework arises that strengthens the argument for enforced vaccination, yet when attempting to cohere compulsory vaccinations within principles of liberty and the harm principle, the risk of going unvaccinated when herd immunity is realised does not provide enough harm to others such that state coercion can be justified. The scope of the argument must also be clarified; the application of this argument is towards vaccines that immunise against contagious and threatening diseases such as measles and mumps.

To explore the moral obligation to be vaccinated, the principle of beneficence can be applied to the situation. This principle refers to a “normative statement of a moral obligation to act for others’ benefit, helping them to further their important and legitimate interests, often by preventing or removing possible harms.”<sup>2</sup> Hence, it is a welfare- orientated principle of altruism where acting for the benefit of others is considered morally correct. Beneficence provides the basis of John Stuart Mill’s principle of utility and utilitarianism: a consequentialist moral framework that holds that the ethically correct choice is the one that will produce the greatest good for the greatest number.<sup>3</sup> The principle of utility presented by Mill is an absolute principle such that the concepts of duty and right are subordinated to, and determined by, that which maximizes benefits and minimizes harmful outcomes and hence makes beneficence the preeminent principle of his ethics.<sup>4</sup> Using these principles it seems the moral obligation to vaccinate can be shown. In the context of vaccination, being a beneficent agent requires those of the populace who can, to vaccinate for the benefit of those who cannot and achieve the collective beneficent effect of herd immunity; where the spread of disease is nullified and those vulnerable protected. In addition, herd immunity provides the maximisation of utility as the costs of vaccination for an individual are low (because of high vaccine safety)<sup>5</sup>, and this low cost is greatly outweighed by resulting gains in health and well-being and reductions in disease

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<sup>1</sup> Vaccines Today. 2015. *WHAT IS HERD IMMUNITY?* February 7. Accessed June 14, 2020. <https://www.vaccines.today.eu/stories/what-is-herd-immunity/>.

<sup>2</sup> Beauchamp, Tom. 2019. *"The Principle of Beneficence in Applied Ethics"*. February 11. Accessed June 2020, 2020. <https://plato.stanford.edu/entries/principle-beneficence/>.

<sup>3</sup> McCombs School of Business – The University of Texas. n.d. *Utilitarianism*. Accessed June 15, 2020. <https://ethicsunwrapped.utexas.edu/glossary/utilitarianism>.

<sup>4</sup> Beauchamp, Tom. 2019. *"The Principle of Beneficence in Applied Ethics"*.

<sup>5</sup> CDC. 2020. *Safety Information by Vaccine*. January 14. Accessed June 21, 2002. <https://www.cdc.gov/vaccinesafety/vaccines/index.html>.

incidence from herd immunity.<sup>6</sup> Hence under a utilitarian framework it can be argued that each member of society has an obligation to act in a beneficent way by vaccinating and contributing to achieving herd immunity and through this promoting the maximum utility in society.

However, it can be argued that when herd immunity is realised, the difference a single additional vaccination makes is negligible and thus an individual decision not to be vaccinated causes no additional risk of harm to those who cannot vaccinate.<sup>7</sup> This interpretation would imply that beneficence and utilitarianism does not apply as strongly as first thought, for the benefit of a single vaccination for those who cannot vaccinate, which is where the moral obligation stemmed from, is negligible and almost irrelevant when those who cannot be vaccinated are protected by an established herd immunity. Indeed, the contribution to achieving herd immunity even when it is not realised may also be negligible considering the risk that other people are infected would be high regardless of whether an individual vaccinates or not.<sup>8</sup> Thus, individuals can claim that the negligibility of their contribution implies that they do not have the moral obligation to be vaccinated.<sup>9</sup>

Retrospective responsibility perhaps provides a solution to such a dilemma. Retrospective responsibility involves attributing the responsibility of an outcome through its causal connection to an agent and from this providing moral accountability for that outcome. Moral responsibility can be applied to the two respective groups concerning vaccination: those who are vaccinated, and those who are not. Via retrospective responsibility, the group who does not vaccinate is blameworthy for failing to realise herd immunity and is accountable in the transmission of the disease and putting those who cannot vaccinate at risk. This form of responsibility is directed at the unvaccinated collective, but importantly implies that within this collective each individual has failed their duty to vaccinate. Whether herd immunity is realised or not, morally every single vaccination pertains to an ethical value since an individual who does not vaccinate increases the risk of a harm to the vulnerable and to others; "even if in an infinitely small way."<sup>10</sup>

Ultimately, even if one's effect on infection rate and contagion risk is imperceptible, the cost to each individual of avoiding this risk is small, from the aforementioned safety of vaccines, and since the spread of the disease can have extremely negative outcomes such as widespread death, a utilitarian argument based in beneficence and the responsibility of agents to maximise the utility given by herd immunity, implies that there is a *prima facie* moral obligation to be vaccinated.<sup>11</sup>

Hence, from this ethical justification of vaccination the call for compulsory vaccination is strengthened as a mode for agents to realise and achieve their moral obligation to vaccinate.

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<sup>6</sup> Andre, F E et al. 2008. "Vaccination greatly reduces disease, disability, death and inequity worldwide." *Bulletin of the World Health Organization* 140-146.

<sup>7</sup> Dawson, A, and Marcel Verweij. 2007. *ethics, prevention and public health* Pg. 170.

<sup>8</sup> VERWEIJ, M. 2005. "OBLIGATORY PRECAUTIONS AGAINST INFECTION." *Bioethics*, 19 323-335. Pg. 329.

<sup>9</sup> Giubilini, Alberto et al. 2018. "The moral obligation to be vaccinated: utilitarianism, contractualism, and collective easy rescue." *Medicine, Health Care, and Philosophy* 547-560.

<sup>10</sup> Dawson, A, and Marcel Verweij. 2007. *ethics, prevention and public health*. Oxford: Clarendon Press. Pg. 170.

<sup>11</sup> Giubilini, Alberto et al. 2018. "The moral obligation to be vaccinated: utilitarianism, contractualism, and collective easy rescue."

The key issues surrounding such compulsory vaccinations are that of bodily integrity and autonomy and whether the state is justified in imposing compulsory vaccinations that may require violation of these rights for the sake of public health. The principle of bodily integrity is predicated on the right of each human being to autonomy and self-determination over their own body. It considers an unconsented physical intrusion as a human rights violation.<sup>12</sup> This represents a form of negative liberty where agents are taken to require exemption from external constraints: specifically, exemption from the interference of others.<sup>13</sup> Liberal principles such as these seem at odds to those of mandates from the state, since they hold that it is unjust to coerce individuals for the common good, and they highly value the autonomy and rights of individuals. To cohere and justify compulsory vaccinations within these liberal principles would be ideal as it would be justified when ‘the philosophical deck’ is stacked against it.<sup>14</sup>

To call on Mill again; he presents this negative idea of liberty and also a potential solution to compulsory vaccination in what is known as the ‘harm principle’:

“The only purpose for which power can be rightfully exercised over any member of a civilised community, against his will, is to prevent harm to others; his own good, either physical or moral, is not a sufficient warrant.”<sup>15</sup>

Mill’s principle here is that prevention of harm to others is the only justification for exercising power over people. On the surface such a principle looks befitting for that of compulsory vaccination and how the state is justified in this compulsion, as one might say the risk of harm of not vaccinating to others must be prevented by the use of the state’s power. However, upon closer inspection of the harm of not vaccinating, in comparison to the harm of other day to day activities, such a mandate may not be consistent with the measures the state takes in comparatively similar harms that occur in our day to day life.

Let us compare the risk associated with the ‘normal’ activity of driving, to that of going unvaccinated. In 2012 in the USA, there were 48,277 cases of pertussis with 20 deaths,<sup>16</sup> which health officials claim arose from parent’s refusing to vaccinate their children. In 2017, the USA had 40, 231 motor vehicle traffic deaths.<sup>17</sup> These statistics suggest driving a car imposes a risk on others that is comparable, or even worse to that of going unvaccinated. If we were to say that imposing harm, or a risk of harm justifies state coercion, we may be inclined to accept the state may coercively inhibit the driving of all automobiles because of the risk and harm they create.

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<sup>12</sup>CHILD RIGHTS INTERNATIONAL NETWORK. n.d. *Bodily Integrity*. Accessed June 18, 2020. <https://archive.crin.org/en/home/what-we-do/policy/bodily-integrity.html>.

<sup>13</sup> Pettit, Philip. 1989. *A Definition of Negative Liberty*. December. Accessed June 18, 2020. <https://doi.org/10.1111/j.1467-9329.1989.tb00004.x>.

<sup>14</sup> Brennan.J. 2018. "A libertarian case for mandatory vaccination." *Journal of Medical Ethics*.pg.44:37-43. doi:10.1136/medethics-2016-103486.

<sup>15</sup> Mill, John Stuart. 1857. *On Liberty*.

<sup>16</sup> CDC. 2012. *Pertussis (Whooping Cough)*. Accessed June 20, 2020. <https://www.cdc.gov/pertussis/surv-reporting.html>.

<sup>17</sup> CDC. 2017. *Accidents or Unintentional Injuries*. January 2020. Accessed June 19, 2020. <https://www.cdc.gov/nchs/fastats/accidental-injury.htm>.

This calls for a distinction between the harms and risks imposed by going unvaccinated and that of common activities such as driving.

Perhaps Mill's harm principle can be adapted by Sven Hansson's theory of acceptable risk: "Exposure of a person to a risk can then be regarded as acceptable if it is part of an equitable social system of risk-taking that works to her advantage."<sup>18</sup>

Philosopher Jason Brennan uses Hansson's principle to justify why we are free to expose people to risk through ordinary driving, but not allowed to leave a bomb on the street that has a 1-in-10 000 chance of exploding.<sup>19</sup> This is because driving is part of a 'equitable social system of risk taking' where risks are inevitable, but the benefits of driving for society and the individual far outweigh these risks. The bomb on the other hand provides no benefit or advantage in a social system, only the risk of an explosion and so such a risk would be unacceptable.

The question then raised is where herd immunity and vaccination lie in terms of risk. This is more complex than one would imagine. Suppose the number of people vaccinated has reached the level of herd immunity; a singular individual choosing not to be vaccinated only increases the risk of being infected by minuscule amounts, in fact the chance of contracting an infection may even be close to 0.<sup>20</sup>

In Brennan's example of the bomb, a single bomb is enough to impose a risk. This is because the bomb passes a threshold of risk that was not present before the bomb was there. But when one individual does not vaccinate in a society with herd immunity, no such threshold is crossed, for the risk imposed is not great enough. Only when a significant number of people are not vaccinated and herd immunity is compromised will a threshold of sufficient risk be passed since there is now a risk of a disease outbreak that may harm other individuals, especially those who cannot vaccinate.<sup>21</sup> Hence, only in this situation, where there is tangible risk of harm to others would our harm principle based off of calculated risk allow state intervention.

To take a step back, we have undergone an abstract journey to interpret the nature of the risk of herd immunity, and now we must calculate where this leaves us in terms of justifying the role of the state in compulsory vaccinations. From our 'revised' harm principle, where the nature and size of the risk of harm justifies state intervention, it would follow that only when herd immunity is not achieved can the state coerce individuals to vaccinate, as only then is the risk of harm great enough. This makes reasonable sense, since when herd immunity is realised coercing those unvaccinated to vaccinate is perhaps redundant, as the risk of disease is extremely low and so such an infringement into an individual's autonomy is perhaps unfounded. The moral obligation in such a scenario has voluntarily been achieved by the majority of the collective. Though all may not have realised this moral obligation, as herd

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<sup>18</sup> Hansson, Sven Ove. 2018. *Risk*. Accessed June 13, 2020. <https://plato.stanford.edu/entries/risk/#Eth>.

<sup>19</sup> Brennan, J. 2018. "A libertarian case for mandatory vaccination."

<sup>20</sup> Fine, Paul, Ken Eames, and David L. Heymann. 2011. "'Herd Immunity': A Rough Guide." *Clinical Infectious Diseases* 911-916. Pg. 914

<sup>21</sup> Vaccines Today. 2015. *WHAT IS HERD IMMUNITY?*

immunity does not require 100% coverage, this obligation still exists for all, but the existence of herd immunity is such that the state cannot justifiably enforce this obligation by overriding our right to bodily integrity; there is a disparity between what is the moral responsibility of each individual and what a state, based on liberal principles can impose. When the moral responsibility is not realised voluntarily, and herd immunity is compromised or not achieved, then the state can impose compulsory vaccinations to protect the vulnerable and achieve the socially optimum herd immunity. Such a solution to compulsory vaccinations is ideal as it maintains the liberty of the people where necessary, but this can be superseded by the state in justifiable circumstances.

Word count excluding title, bibliography and this declaration, but including footnotes: 2474

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