Ethical questions concerning Covid-19 vaccines

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The Covid-19 pandemic is a source of many vehement debates in both classical and social media.[1: Covid-19, which means coronavirus disease 2019, is caused by the severe acute respiratory syndrome coronavirus 2, abbreviated as SARS-CoV-2.] This presentation concerns the question of whether the use of Covid-19 vaccines is justifiable and perhaps also obligatory or – quite the contrary – illicit. The question of whether Covid-19 vaccination might be compulsory will also be discussed.

The basic ethical questions

The basic question concerning Covid-19 vaccination is whether there is a moral obligation to be vaccinated. This is a question with personal-ethical and socio-ethical aspects.

The most fundamental principle of Catholic social teaching is that of the common good, in Latin the bonum commune. This is the totality of the conditions which must be fulfilled in order to guarantee the integral human development of each member of society.[2: Gaudium et spes, nr. 26; Paul VI (Populorum progressio, especially nrs. 3 and 5) extended the concept of the common good to the whole world, considering the beginning of globalisation in the '60 of the last century; John Paul II founds the principle of solidarity (Sollicitudo rei sociali, nr. 38) on the definition of the bonum commune and Benedict XVI (Caritas in veritate, nr. 8), considering the advanced globalisation, points out that the bonum commune also concerns the world in its totality. This implies that all people in the world should be vaccinated.] One of these conditions is clearly that the lives and health of the members of society should be protected. All members of society are supposed to contribute to the common good in one or another way, but they are themselves always the end of the common good. They are not subordinate to the common good as means to an end, like a collective type of ethics, such as fascism and communism, which suppose that the individual can be sacrificed in pursuit of the common good of society.

The main responsibility for the common good lies with the government. The government can, therefore, impose measures on the members of society in order to contribute to the common good, especially in as far as the lives of vulnerable people are involved, like lockdowns, regular sterilization of hands and maintaining a certain distance between one and another. This is poorly understood by contemporary hyper-individualist culture, which feels this as an infringement on the freedom of the human individual. However, autonomy is not an absolute principle. On the basis of its special responsibility for the common good government may impose measures on the members of society to protect and guarantee the lives and health of the members of society, also within the framework of the Covid-19 pandemic. Our present hyper-individualist neoliberal culture does not understand or accept the principle of the common good as fundamental for social ethics. It, therefore, fails to comprehend that governments have the right and even the obligation to limit the freedom of citizens to a certain extent, if that is needed in order to prevent infectious agents, like the Covid-19 virus, from spreading among the population. Individualist culture, therefore, frequently protests against the government measures taken with that aim, like lockdowns, maintaining distances from one another and the requirement to show a vaccination certificate (green pass) or proof of a negative Covid-19 test in order to have access to restaurants, theaters and events.

On the other hand, one also should take seriously the objections of people who point at – or suffer themselves from – the damage which some measures to prevent the Covid-19 viruses from spreading, such as lockdowns, cause to the economy. These measures, though contributing to the common good, also have negative effects on it. Another negative aspect which governments have to take into account from the perspective of the common good is the fact that the care for Covid-19 patients renders treatments for other diseases and disorders difficult, for instance, oncological treatments or orthopedic interventions, which are also necessary and cannot be easily postponed. The question of how best to serve the common good in practice is a complicated question.

The central socio-ethical question is whether being vaccinated is an act of love or perhaps also a moral obligation from the perspective of the common good because by being vaccinated we also protect the lives and health of our fellow human beings. Another important ethical question from the perspective of personal ethics is whether vaccination is for the individual person a proportionate means to protect his own life. For he is obliged to make use of proportionate means to save or protect his life by applying proportionate

means.[3: Congregation for the Doctrine of the Faith. “Declaration on euthanasia”, AAS 72 (1980), pp. 549-550; John Paul II, Evangelium vitae, nr. 65]

The answer to both questions depends on fulfilling three conditions:

1. The effectiveness of the vaccines should be proven;
2. There should be a proportional ratio between two sets of factors: on the one hand the risk of dying from a Covid-19 infection, the gravity of this illness and the gravity of its effects which remain in the long run and the effectiveness and the duration of the effectiveness of the vaccines in preventing Covid 19-infections and the spread of the virus: on the other hand, the collateral effects of the vaccines;
3. The vaccines should be designed, developed and produced in a morally good or at least morally justifiable way.

Are the vaccines available in the Western world effective?

The Pfizer vaccine protects against admission to hospital within 24 to 28 days after the first injection in 91% of the people vaccinated. AstraZeneca does the same in 88%.[4: “Interim findings from first-dose mass COVID-19 vaccination, roll-out and COVID-19 hospital admissions in Scotland: a national prospective cohort study”, The Lancet 397 (2021), May 1, pp. 1646-1657.] The Pfizer vaccine and the Moderna vaccines yield protection of more than 90% against Covid-19, after full vaccination, which implies two injections of the vaccine, AstraZeneca 69-80% (also after the second injection) and the Janssen vaccine 60% after one injection.[5: Ministry of Health, Welfare and Sport (The Netherlands), National Institute for Public Health and the Environment (RIVM), “Efficacy and protection”, August 31, 2021, see: https://www.rivm.nl/en/covid-19-vaccination/vaccines/efficacy-and-protection (consulted September 24, 2021)] The Janssen vaccine, though less effective, is used nonetheless, especially in order to get that part of the population vaccinated, which is less easily reached because it requires only one injection.

The duration of the effectiveness of the vaccines is uncertain. The effectiveness of some vaccines, Pizer and AstraZeneca, seems to weaken by 20 weeks after the second injection, significantly against symptomatic disease but in a limited measure, against hospitalization and death in case of infection by the Delta variant especially in people older than 65 years of age. Booster doses seem to be needed, above all in elderly people.[6: N. Andrews, E. Tessier er al., “Vaccine effectiveness and duration of protection of Comirnaty, Vaxzevria and Spikevax against mild and severe COVID-19 in the UK”, preprint version, not certified by peer review, https://doi.org/10.1101/2021.09.15.21263583 (consulted October 9, 2021; cf. E. Dolgin, “COVID vaccine immunity is waning – how much does that matter?”, Nature 597 (2021), pp. 606-607, https://doi.org/10.1038/d41586-021-02532-4.]

The conclusion is that by being vaccinated with the existing Covid-19 vaccines we are quite well or very well protected against infection by the Covid-19 virus. Being vaccinated is undoubtedly a great contribution to the common good by protecting the health and lives of our fellow human beings. And though people vaccinated can incur an infection by variants of the virus, like the Delta variant, in most cases they get less ill and the chance of transmitting the virus to others is smaller. In this respect, we could conclude that being vaccinated is a good moral act – and perhaps also a morally obligatory one – from the perspective of the common good and from that of our personal obligation to protect our own lives.

Are Covid-19 vaccines safe?

Like all medicaments and means to prevent diseases, Covid-19 vaccines have collateral effects. The following table shows the frequent but innocent – though sometimes nasty – side effects of the most widely used vaccines.[7: Bijwerkingencentrum lareb, “Bekende bijwerkingen vaker bij de eerste AstraZeneca vaccination”, June 20, 2021, see: https://www.lareb.nl/news/bekende-bijwerkingen-vaker-bij-de-eerste-astrazeneca-vaccinatie.]

Collateral effect	**Pfizer/BioNTech**	**Moderna**	**AstraZeneca**	**Janssen**
Tiredness	12%	31%	62%	48%
Aching muscles	12%	32%	57%	39%
Shivers	3%	12%	57%	35%

Collateral effect	Pfizer/BioNTech	Moderna	AstraZeneca	Janssen
Pain at the place of the injection	20%	51%	51%	33%
Nausea	2%	10%	27%	17%
Fever	1%	6%	35%	20%
Not feeling very well	8%	24%	63%	45%
Headache	9%	22%	66%	48%

These collateral effects, which occur shortly after the injection of the vaccine, last between one and three days. Pain and fever can be treated with paracetamol.[8: Bijwerkingencentrum lareb, "Bekende bijwerkingen vaker bij de eerste AstraZeneca vaccination", June 20, 2021, see: https://www.lareb.nl/news/bekende-bijwerkingen-vaker-bij-de-eerste-astrazeneca-vaccinatie.] They are mostly observed with the AstraZeneca vaccine. The EMA (European Medicines Agency) in its safety update of the Janssen vaccine of September 8, 2021, also reports the following side effects of this vaccine:[9: European Medicines Agency, "Covid-19 vaccine safety update; Covid-19 vaccine Janssen", p. 4, see: https://www.ema.europa.eu/en/documents/covid-19-vaccine-safety-update/covid-19-vaccine-safety-update-covid-19-vaccine-janssen-8-september-2021_en.pdf.]

Side Effect	Frequency	Estimated as
Swollen Lymph nodes	Less than 1 in 1,000	rare
Unusual feeling in the skin (tingling or a crawling feeling) or decreased feeling in the skin	Less than 1 in 100	uncommon
Tinnitus (persistent ringing in the ears)	Less than 1 in 1,000	rare
Diarrhea and vomiting	Less than 1 in 100	uncommon

Some more serious side effects of the Janssen vaccine still must be assessed by the EMA on the basis of available data: multisystem inflammatory syndrome (MIS, an inflammatory disease affecting many parts of the body) and venous thromboembolism (distinct from TTS, see below), reported after administration of the Janssen vaccine, are suspected but not yet proven side effects.[10: Ibid., pp. 2-3.]

The vaccines can, however, cause very serious side effects. The Janssen and AstraZeneca vaccines may bring about a condition in which the formation of blood clots (thrombosis) is combined with low levels of blood platelets (this is called thrombosis thrombocytopenia syndrome, abbreviated as TTS). It is, however, a very rare side effect. In the United States on May 7, 2021, after 8.73 million Janssen Covid-19 vaccine doses had been administered, the following frequency of TTS was reported:[11: Advisory Committee on Immunization Practices (ACIP) – Centers for Disease Control and Prevention, T. Shimabukoro, "Update: Thrombosis with thrombocytopenia syndrome (TTS) following COVID-19 vaccination", p. 20. https://www.cdc.gov/vaccines/acip/meetings/downloads/slides-2021-05-12/07-COVID-Shimabukuro-508.pdf (consulted September 21, 2021).]

Females			**Males**			
Age group	**TTScases**	**Doses administered**	**Reporting rate per million**	**TTS cases**	**Does administered**	**Reporting rate per million**
18-29 years old	3	641,510	4.7	2	714,458	2.8
30-39 years old	8	642,745	12,4	1	728,699	1.4
40-49 years old	7	743,256	9,4	1	775,390	1.3
50-64 years old	4	1,462,416	2.7	2	1,505,505	1.3
65+ years old	0	814,947	0	0	697,925	0

It seems advisable not to administer the Janssen vaccine to people younger than 60 years of age, especially

females. Some countries (Denmark,[12: Danish Health Authority, "The Danish COVID-19 vaccine rollout continues without the COVID-19 vaccine from Johnson & Johnson", see: https://www.sst.dk/en/english/news/2021/the-danish-covid-19-vaccine-rollout-continues-without-the-covid-19-vaccine-from-johnson-johnson.] Norway [13: Finnish institute for health and welfare, "Decision on using the Johnson & Johnson coronavirus vaccine in Finland to come after European Medicines Agency issues recommendations", see: https://thl.fi/en/web/thlfi-en/-/decision-on-using-the-johnson-johnson-coronavirus-vaccine-in-finland-to-come-after-european-medicines-agency-issues-recommendations?redirect=%2Fen%2Fweb%2Fthlfi-en%2Fwhats-new%2Fpress-releases-and-news%2Fnews%3Fp_p_id%3Dcom_liferay_asset_publisher_web_portlet_AssetPublisherPortlet_INSTANCE_zc1uZ95eEEf6%26p_p_lifecycle%3D0%26p_p_state%3Dnormal%26p_p_mode%3Dview%26_com_liferay_asset_publisher_web_portlet_AssetPublisherPortlet_INSTANCE_zc1uZ95eEEf6_delta%3D10%26p_r_p_resetCur%3Dfalse%26_com_liferay_asset_publisher_web_portlet_AssetPublisherPortlet_INSTANCE_zc1uZ95eEEf6_cur%3D2(consulted September 21, 2021).] and Finland banned the administration of the Janssen vaccine. Belgium for the time being decided not to administer this vaccine to people of 40 years of age and younger.[14: VRT, "Vaccin Johnson & Johnson enkel nog voor 40-plussers na dood van buitenlandse vrouw, 'streefdatum 11 juli halen we niet'", see: https://www.vrt.be/vrtnws/nl/2021/05/26/overlijden-na-j-j-vaccin/ (consulted September 21, 2021).] The same side effect is caused by the AstraZeneca vaccine in less than 0.01%.[15: College ter beoordeling van geneesmiddelen, "Vaccins in het kort: Vaxzevria (AstraZeneca tegen covid-19)", September 14, 2021, see: https://www.cbg-meb.nl/documenten/publicaties/2021/02/08/vihk-astrazeneca-covid-19 (consulted September 14, 2021).]

Myocarditis – apart from other collateral effects – was reported as a potentially serious side effect of the Pfizer vaccine. Its frequency in a nationwide research project in Israel turned out on average to be 2.7 cases in 100,000 people. On the other hand, the possibility of getting myocarditis by Covid-19 is substantially higher, i.e. 11 per 100,000.[16: N. Barda, N. Dagan et al., "Safety of the BNT162b2 mRNA covid-19 vaccine in a nationwide setting", New England Journal of Medicine 385 (2021), n. 12, September 16, pp. 1078-1090.]

Accepting collateral (indirect) effects may be justified on the basis of the principle of double effect.[17: Manual of Catholic medical ethics: Responsible healthcare from a Catholic perspective, W.J. Eijk, L.M. Hendriks, J.R. Raymakers, J.I. Flemming (red.), Ballarat: Court Connor Publishing, 2014, pp. 112-115.] The intended (direct) effect is immunization of the person being vaccinated against Covid-19. The second effect concerns the collateral effects. Accepting these may be justifiable when the following three conditions have been fulfilled:

1. The intended effect is morally good;
2. The intended effect is not caused by the collateral effect; otherwise, it would be the means to realize the intended effect and not a collateral effect; the side effects of the Covid-19 vaccines are not the cause of the immunization of the person vaccinated;
3. There should be a proportionally grave reason for admitting the side effects. Whether such a proportionally grave reason exists, is determined by diverse factors: what is the death rate of Covid-19, how serious is the disease and its consequences compared to those of the vaccines and are the vaccines the only means available in order to slow down or stop the pandemic?

How do the death rates and the seriousness of injuries as collateral effects of the vaccines compare with those of Covid-19?

It is sometimes asserted that Covid-19 would only appear to be a severe flu, with only a slightly higher death rate than ordinary influenza. However, that is not true, according to Woolf and Lee.[18: S.H. Woolf, J.H. Lee, "COVID-19 as the Leading Cause of Death in the United States", Journal of the American Medical Association, 325 (2021) January 12, 2021, pp. 123-124.] On the basis of their study Howard Koh and others state that "COVID-19 ranks as a leading cause of death; at certain times, it is the leading cause of death", compared to heart diseases and cancer in the Western world. They observe that the death rate of Covid-19 is variable, depending very much on seasonal influences, ethnic differences and differences between the male and female populations and the measures governments take in order to prevent Covid-19 viruses from spreading. It also depends on the application of effective therapeutic means, gradually discovered and applied, like monoclonal antibody treatments, remdesivir (an antiviral drug) and dexamethasone (a corticosteroid suppressing inflammatory diseases).[19: H. K. Koh, A.C. Geller et al., "Deaths From COVID-19", Ibid, pp. 133-134.]

Pifarré i Arollas and others examined on the basis of two large databases the number of life-years lost due to

Covid-19 in 81 highly developed countries. In 31 countries the data spanned a period of 9 months. Their study concerned in total 1,279,866 deaths. They concluded that from January 6, 2021, the life-years lost due to Covid-19 were between two and nine times that of seasonal influenza. Three-quarters of the life-years lost to Covid-19 were attributable to deaths in ages below 75 years of age and almost a third, to deaths in ages below 55 years of age. Elderly people are at a higher risk to die from Covid-19, especially because of a higher rate of respiratory syndromes among them. However, young people may die from Covid as well and, having higher life expectancies, lose more life-years. A striking difference exists between men and women because men lose 45% more life-years than women. This is partly due to the higher average life expectancy of women. However, the absolute number of deaths due to Covid-19 was also higher among men. Anyhow, it is clear that Covid-19 is much more serious than seasonal influenza with respect to the death rates.[20: H. Pifarré i Arolas, E. Acosta et al., "Years of life lost to COVID-19 in 81 countries", February 18, 2021, see: https://www.nature.com/articles/s41598-021-83040-3.pdf (consulted September 25, 2021).]

Acute severe respiratory syndrome is a result of a very grave pneumonia, caused by the virus and often worsened by an additional bacterial infection. It may lead to sepsis which affects other organs as well. The pneumonia is often complicated by severe thromboembolism in the lungs. Emboli by blood clots can also occur elsewhere in the blood circulation, often causing myocardial infarctions and brain infarctions. The second cause of death is renal failure. Covid-19 may affect any organ. Multi-organ failure, in which especially the liver is involved, and even general organ failure are also reported. [21: S. Elezkurtaj, S. Greuel et al., "Causes of death and comorbidities in hospitalized patients with covid-19", Science Reports 11. 4263 (2021). https://doi.org/10.1038/s41598-021-82862-5 (published January 21, 2021, consulted September 29, 2021); cf. S. Peiris, H. Mesa et al., "Pathological findings in organs and tissues of patients with covid-19: a systematic review," Plos One (2021), April 28. https://doi.org/10.1371/journal.pone.0250708; L.C. Price, C. McCabe et al., "Thrombosis and covid-19 pneumonia: the clot thickens!," European Respiratory Journal 2020 56: 2001-608; DOI: 10.1183/13993003.01608-2020, see: https://erj.ersjournals.com/content/56/1/2001608.] Nor should we underestimate the gravity of Covid-19 when this does not result in the patient's death. Invasive ventilation and artificial respiration are often warranted. Recovering after longstanding artificial respiration requires a long period of rehabilitation, in which the patient has to train his breathing muscles with the aid of physiotherapy.

Apart from the severe acute effects of Covid, we have to take into account the gravity of long Covid-19. After discharge from hospital, patients, after having suffered from severe acute respiratory syndrome, may be confronted with longstanding pathological conditions and symptoms, the cause of which cannot be easily explained. It is reported that circa 110 days after admission to hospital, either to the ward or to the intensive care unit. patients said to suffer from the following persistent symptoms: mostly fatigue (55%), shortness of breath (42%), loss of memory (34%), concentration (28%) and sleep disorders (30.8%) and loss of hair (20%). No statistically significant differences regarding these symptoms were observed between who were admitted only to the ward or to the intensive care unit.[22: E. Garrigues, P. Janvier "Post-discharge persistent symptoms and health-related quality of life after hospitalization for COVID-19", Journal of Infection 81 (2020) e4-e6 (doi:10.1016/j.jinf.2020.08.029).]

However, patients who had only mild symptoms at the beginning and have not been hospitalized can have long Covid too. An study of patients with mostly mild symptoms at the start of Covid, initially observing 442 non-hospitalized, of which only 353 finally participated in the trial, after four and seven months found after four months: 8.6% had shortness of breath, 12.3 % lacked the ability to smell, 11.1% lacked the ability to taste and 9.7% suffered from fatigue. [23: M. Augustin, Ph. Schommers, et al., "Long-covid syndrome in non-hospitalized patients: a longitudinal prospective cohort study", The Lancet Regional health – Europe 6 (2021) 100122, see: https://www.thelancet.com/action/showPdf?pii=S2666-7762%2821%2900099-5 (published May 18, 2021, consulted September 26, 2021)/] After seven months 14.7% still suffered from the loss of the ability to smell, 13.6% from shortness of breath, 14.7% of fatigue and 11% from the loss of the ability to taste (that these percentages are higher is explained by the considerable drop out of participants between four and seven months). However, they also developed other symptoms at seven months: headache (3.7%), loss of hair (2.5%) and diarrhea (1.1%).[24: Ibid., p. 5.]

All this makes clear that Covid-19 is most certainly a very serious disease and definitely not something like a severe form of influenza. Moreover, as we observed above, Covid-19 is a very heavy burden for health care and blocks the application of treatments, also needed, for other diseases and disabilities.

Anyhow, let us compare the various facts, enumerated above, with one another. The diseases caused by Covid-19 are very severe and its death rate is quite high. Care for Covid-19 patients causes huge problems to the whole of health care. The Covid-19 vaccines are effective and are, at the moment, the only means to slow

down or stop the pandemic. Comparing these factors with their collateral effects, of which the most severe occur very rarely, one may conclude that the use of Covid-19 vaccines meets the conditions of the principle of double effect. The risk of getting side effects of Covid-19 vaccines is therefore justifiable.

A special ethical objection raised against the way in which vaccines are designed, developed, produced and tested

A special objection against the use of some Covid-19 vaccines is that they have been designed, developed, and/or produced and/or that their effectiveness has been verified by using cell lines which derive from human embryos, often aborted decades ago, even in the 1960s and early 1970s. This raises the serious question of whether the development, production or use of these vaccines is cooperation with the abortion of the human fetus, albeit that this was procured decades ago.

Undoubtedly, procured (direct) abortion of a human fetus is a grave intrinsic evil, for it implies the killing of an innocent human being, created in the image of God. Procured abortion, therefore, falls under an absolute moral norm, which means that it is always morally illicit, without any exception, regardless of the intention and the circumstances (indirect abortion, i.e. abortion as a collateral effect of a medical and surgical intervention, for instance, the removal of the uterus affected by cancer in the case of a pregnant woman, may be justifiable on the basis of the principle of double effect).[25: Cf. John Paul II, Evangelium vitae n. 57.] We owe respect to the essential value of human life from conception till natural death. [26: Gaudium et Spes n. 51; Congregation for the Doctrine of the Faith, Instruction Donum vitae I,1; John Paul II, Evangelium vitae n. 57
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It is true that faithful Catholics recognize the Church's teaching on absolute norms, in this case, the norm concerning the absolute prohibition of procured abortion, but that often they do not know about the casuistry of classical moral theology. The principles of this casuistry were developed from the sixteenth century and generally taught till the end of the 1950s and the first half of the 1960s. At that time seminarians frequently protested against the teaching of casuistry under the influence of what was called by the time "the new morality", especially promoted by Fletcher and the Anglican bishop of Woolwich, John Robinson. In their view, there is no intrinsic evil.[27: J. Fletcher, Situation ethics: The new morality, Philadelphia: The Westminster Press, 1966, especially pp. 64-68; J.A.T. Robinson, Verschuivingen in de moraal, Amsterdam: W. ten Have, 1964 (original title Christian morals today); Idem, God bestaat in alles, Amsterdam: W. ten Have 1968 (original title Exloration into God.] Many Roman-Catholic moral theologians replaced classical moral theology with new moral-theological theories, which imply that the concrete moral act cannot be an object of mortal sin or that no intrinsic evil exists on the level of the concrete moral act. Concrete acts could not, therefore, be the object of moral absolutes.[28: Cf. W.J. Eijk, "La persona umana e la legge naturale", in: La legge morale naturale. Problemi e prospettive, R. Gerardi (red.), La legge morale naturale, Problemi e prospettive, Lateran University Press, 2007 (=Dibattito per il millennio n. 9), pp. 113-137, particularly pp.120-126.] These theories initially served to justify the use of direct contraception. They limit intrinsic evil to the formal level, like the intention for, and the attitude with which one acts. The denial of the existence of intrinsically evil concrete acts implies that at the level of the concrete acts a smaller evil, like procured abortion and direct contraception, could be permitted in order to realize a greater good. Consequently, the principles of casuistry which classical moral theology used in order to apply moral absolutes in difficult cases became superfluous. The consequence is these principles were often no longer taught and fell into oblivion. Contemporary Catholics, who accept the Church's teaching on intrinsic evil, therefore, often do not know about them.

I have already applied one of these principles above, that of the act with double effect, and will do so with the principle of cooperation in evil below. Concerning the question of whether creating vaccines by means of the use of human cell lines derived from aborted human fetuses, one should evaluate the measure of involvement in the abortion from the perspective of the designer, the developer and the producer of the vaccine, and the person who is vaccinated with it. This involvement is evaluated by applying the principle of cooperation in evil, largely developed by Saint Alphonsus Maria de Liguori (the patron saint of moral theologians, 1696-1787)[29: Cf. Theologia Moralis, see Alphonsus de Liguori, Theologia Moralis, tomus I, liber III, tractatus III, caput II, dubium V, articulus III "An liceat alterius peccati materialiter cooperari" (I consulted the edition of D. le Noir, Parijs, 1884).] in the eighteenth century.

The application of the principle of cooperation in evil

The point of departure is, of course, that one should not cooperate in the evil acts of others.[30: Some of the following paragraphs have been taken from: W.J. Eijk, Catholic Health Professionals can still deliver", conference

at a congress of MaterCare, Rome, September 21, 2016, pp 5-12.] It is however impossible to refuse that categorically. Cooperation in evil might even be obliged, however contradictory that may seem to be. In certain cases, people may have conscientious objections against acts or projects financed by the State, for instance in the field of education concerning gender theory. This does however not mean that they are therefore allowed to refuse to pay taxes. The inhabitants of the State remain obliged to do so on the basis of their obligation to contribute to the common good by paying taxes. By paying the premium for our health insurance, in many cases, we also pay for procured abortion, euthanasia or sex reassignment procedures in transgenders, but it is a moral obligation to have health insurance in order to safeguard our lives and health and those of others for the sake of solidarity.

The principle of cooperation in evil implies two distinctions in order to establish whether one is allowed to contribute to an evil act of another person in a certain case. The first concerns the intention of the act. The most basic question is: does one share the intention of the act of the principle-agent or not? In the first case, the cooperation is termed "formal", in the second case "material". When people designing, developing and/or producing vaccines, and/or confirming their effectiveness or those being vaccinated with them agree with the direct abortion from which the human cell lines needed were derived, their form of cooperation is evil. One should, however, never act with an evil intention. Formal cooperation with evil is therefore never allowed. Of course, this only concerns people who are aware of the fact that the vaccine has been designed, developed and/or produced and that its effectiveness has been verified by using cell lines derived from aborted human fetuses. However, I assume that many, if not most people, vaccinated with Covid-19 vaccines, are not aware of this and are therefore subjectively not guilty.

As I observed above, one speaks of material cooperation when a person, by performing a morally good or indifferent act, cooperates in an evil act of somebody else without sharing his intention. Material cooperation is generally illicit, too, but can be justified in certain specific cases and is sometimes even unavoidable, as we saw above. When is material cooperation in evil justifiable? To answer this question we need to analyze the relationship between the object of the act of the principal-agent and that of the act of the cooperator. When both acts are together in one operational unity, cooperation is viewed as illicit. In this case one speaks of direct cooperation. This is the case when the designer, developer and/or the producer of the vaccines made arrangements with the person procuring the abortion about the way in which the abortion was performed. Direct cooperation in evil will practically always at the same time be formal. Because the designer, developer and the producer cannot but share the intention of the person who procures the abortion, their cooperation with this is formal. However, when the abortion was performed decades ago, the designer, developer and the producer of Covid-19 vaccines did not make such arrangements. Of course, the recipient of the vaccine is not at all involved in such arrangements.

Indirect material cooperation with illicit acts may sometimes be justifiable, but then on strict conditions. First, what the cooperator himself is doing, should not be an illicit act. Designing, developing and/or producing a vaccine and confirming its effectiveness are in themselves not evil acts. And secondly, the cooperator should have a proportionally grave reason for cooperating in somebody else's illicit act. To evaluate the gravity of the reason one should take into account a series of criteria:[31: Cf. Pontifical Academy for Life in collaboration with the "Ufficio per la Pastorale della Salute" of Italian Bishops' Conference and the "Association of Italian Catholic Doctors", "Clarifications on the medical and scientific nature of vaccination", July 31, 2017, see: https://www.academyforlife.va/content/pav/en/the-academy/activity-academy/note-vaccini.pdf.]

1. The first is whether it concerns cooperation with a serious or less serious evil act. On the one hand, procured abortion is a serious evil, on the other hand the Covid-19 pandemic disrupts social life in the whole world. It is, of course, true that the disaster of the pandemic does not justify abortion in itself, but in some cases it may be possible in the case of indirect material cooperation in it.
2. Another factor is whether the cooperation is proximate or remote: the cooperation of the designer, developer and producer with an abortion of a human fetus, which took place decades ago, is remote and in the case of the recipient of the vaccine very remote.
3. A third criterion is whether one's cooperation is necessary or not. When the evil act cannot be performed at all without the contribution of the cooperator, cooperation should generally be refused. However, this does not concern the production of the vaccine.
4. One should also consider the question of whether the consequences of refusing cooperation are non-proportionatecompared to the gravity of the evil. In this respect, it is important to observe that without the vaccines the Covid-19 pandemic cannot be controlled.

5. Another factor to be evaluated is the risk of causing scandal, which here means the risk that Christians by cooperating with an evil act, in this case procured abortion, creates the impression that the evil in which they cooperate, is not evil according to Christian teaching. By cooperating in an abortion, albeit in an indirect material way, a Catholic health worker could suggest to others that abortion could be licit under certain circumstances.

The cooperation of the designers, developers and/or producers of the vaccine, who do not accept procured abortion and are not involved in arrangements about the way in which the abortion was carried out, is material, indirect, remote and in the case of the recipient very remote. The coronavirus pandemic can cause very grave illness, has relatively high death rates and may totally disrupt social and economic life in the whole world and vaccines are the only means by which the pandemic can be stopped. Material, indirect and remote cooperation in abortion by developing and producing vaccines, by means of cell lines derived from aborted fetuses, and using these vaccines may, therefore, be justifiable. The Congregation for the Doctrine of the Faith states:

> *"In this sense, when ethically irreproachable Covid-19 vaccines are not available (e.g. in countries where vaccines without ethical problems are not made available to physicians and patients, or where their distribution is more difficult due to special storage and transport conditions, or when various types of vaccines are distributed in the same country but health authorities do not allow citizens to choose the vaccine with which to be inoculated) it is morally acceptable to receive Covid-19 vaccines that have used cell lines from aborted fetuses in their research and production process.*
>
> *"The fundamental reason for considering the use of these vaccines morally licit is that the kind of cooperation in evil (passive material cooperation) in the procured abortion from which these cell lines originate is, on the part of those making use of the resulting vaccines, remote. The moral duty to avoid such passive material cooperation is not obligatory if there is a grave danger, such as the otherwise uncontainable spread of a serious pathological agent – in this case, the pandemic spread of the SARS-CoV-2 virus that causes Covid-19. It must, therefore, be considered that, in such a case, all vaccinations recognized as clinically safe and effective can be used in good conscience with the certain knowledge that the use of such vaccines does not constitute formal cooperation with the abortion from which the cells used in the production of the vaccines derive."[32: Congregation for the Doctrine of the Faith, "Note on the morality of using some anti-Covid-19 vaccines", nos. 2-3, December 21, 2020, see: https://www.vatican.va/roman_curia/congregations/cfaith/documents/rc_ con_cfaith_doc_20201221_nota-vaccini-anticovid_en.html; Idem, "Instruction Dignitas Personae on certain bioethical", June 20, 2008, see: https://www.vatican.va/roman_curia/congregations/cfaith/documents/rc _con_cfaith_doc_20081208_dignitas-personae_en.html; cf. the detailed analysis of R. de Mattei of the ethical objection of cooperation with procured abortions in the development and in receiving the vaccine, On the morality of the vaccination, (Edizioni Fiducia, Rome, 2021).]*

The chairmen of the commissions on doctrine and that on pro-life activities of the United States Conference of Catholic Bishops make distinctions, which we should take to heart. These distinctions concern measures in which cell lines from aborted human fetuses have a role in the realization of the available vaccines. The chairmen of the commission mentioned observing that the in the case of the Pfizer and the Moderna vaccines have used human cell lines derived from an aborted fetus only to confirm the vaccine's effectiveness. It concerns the HEK293 cell line, which was derived from a fetus aborted in Leiden in 1972. Moreover, they observe that the AstraZeneca vaccine has been designed, developed and produced and that its effectiveness is verified by using the HEK293 cell line. According to the presidents of both commissions, one should prefer a vaccine, in which cell lines derived from human fetuses, are used as little as possible. However, when the only vaccines available are designed, developed and produced and the effectiveness of which has been confirmed by means of human cell lines, they consider it justifiable to be vaccinated with these vaccines.[33: United States Conference of Catholic Bishops (Bishop K.C. Rhoades respectively Bishop J.F. Naumann), "Moral considerations regarding the new Covid-19 vaccines", December 11, 2020), pp. 5-6, see: https://www.usccb.org/resources/moral-considerations-covid-vaccines_0.pdf.]

Can governments force people to get vaccinated?

Supposing that a moral obligation exists to get vaccinated, one must face the following question: may governments, referring to their responsibility for the common good, force people to get vaccinated when they

are unwilling to do so? The answer is no for the following reasons:

1. The first reason is that vaccination is an intervention in the integrity of the body of the human person. The person involved must consent to that on the basis of the principle of liberty and responsibility, one of the basic principles of medical ethics.[34: Manual of Catholic medical ethics, op. cit., pp. 96-101.] Moreover, enforced vaccination would imply that in certain cases people must be arrested by the police in order to bring them to health care facilities where they are to be vaccinated. This is practically infeasible and could also imply a damage to the common good.

At most, a competent authority – like a judge – may order material to be taken, like a blood sample from somebody suspected of a crime, which is a severe infringement on the common good, in order to have evidence.

Governments should, instead, try to convince the members of society of the importance of getting vaccinated in their interest and that of their fellow human beings, on the effectiveness of the vaccine in order to slow down or stop the pandemics and the fact that the severe side effects of vaccines rarely or very rarely occur. People can also be stimulated to be vaccinated by offering vaccination free of charge.

2. Secondly, one should respect the conscientious objections of people who refuse to be vaccinated, especially of those who have objections against the fact that the vaccine has been designed, developed and/or produced and its effectiveness has been confirmed by using cell lines derived from aborted human fetuses. A basic rule of ethics is that no one is allowed to do something that is evil according to his certain, though perhaps erroneous, conscience. No one may be forced to do something which he views in conscience as an evil act which he should not commit. The conscientious objections against the use of Covid-19 vaccine should be taken very seriously, above all because they concern the cooperation – though material, indirect and remote – in a grave evil, i.e. the fact that the vaccine in question had been designed, developed and/or produced and that its effectiveness has been confirmed by using cell lines derived from directly aborted human fetuses. For, although procured decades ago, the abortion remains a grave intrinsic evil. One should, therefore, respect their conscientious objections. People who refuse to be vaccinated should, however, try to maintain a certain distance from other people, sterilize their hands frequently and undergo Covid-19 tests frequently. A negative Covid-19 test, not older than 48 hours, should grant them access to restaurants, theatres and events.
3. Thirdly, forced vaccination is not necessary when such a percentage of the population has been vaccinated that herd immunity has been reached. According to virologists 70% of the population needs to be vaccinated against covid-19 in order to achieve herd protection.[35: P.J. Hotez, C. Batista et al, “Global public health security and justice for vaccines and therapeutics in the covid-19 pandemic”, EClinicalMedicine 39 (2021) 101053, see: https://www.thelancet.com/action/showPdf?pii=S2589-5370%2821%2900333-3, p. 3.] Other incentives, which do not imply coercion, like not allowing unvaccinated children into crèches and financial measures against unvaccinated persons are then generally unnecessary and undesirable. The vaccinated people protect those who have not been vaccinated. When an unvaccinated person gets Covid-19, this will then not cause an epidemic.

An exception, though, concerns the personnel of health care facilities, who care for people vulnerable to Covid-19. From the ethical perspective, it is not unreasonable that the board of a health care facility asks workers who come into contact with vulnerable people to be vaccinated and if they refuse vaccination, to withhold permission from them to work there. Though this may feel like coercion for understandable reasons, this is not actually coercion. Their free choice to be vaccinated or not as such is respected. However, it actually involves a very strong incentive to be vaccinated because of the loss of their jobs and incomes.

Conclusion

The Covid pandemic has undermined social life across the whole world. In the West, the available vaccines are effective in controlling it and protecting one’s own life and that of others with only proportionate side effects (serious collateral effects, in any case, are rare to very rare). One can justify getting vaccinated against

Covid-19 with vaccines that have been produced using cell lines derived from a human fetus aborted decades ago if no other vaccines are available. For this implies a material, indirect, remote, and above all for those receiving the vaccine a very remote, cooperation in abortion. Cooperation in evil is sometimes unavoidable or even obliged, however contradictory that may seem to be. This is the consequence of living in a world disfigured by original sin.

Pope Francis has described vaccination against Covid-19 as “an act of love”. He said, “Getting vaccinated is a simple yet profound way to care for one another, especially the most vulnerable.”[36: “Pope Francis urges people to get vaccinated against covid-19”, see: https://www.vaticannews.va/en/pope/news/2021-08/pope-francis-appeal-covid-19-vaccines-act-of-love.html.] Since people, by being vaccinated, also protect their fellow human beings they show respect for their right to life, one could perhaps also conclude that getting vaccinated is demanded by justice. Moreover, it is a proportionate and therefore obligatory means of protecting one’s personal life and health. From this perspective, one could also argue that being vaccinated against Covid-19 is a moral obligation. This does not, however, mean that it is also a juridical obligation. The compulsory administration of vaccines is not ethically justified. The decision to be vaccinated must be taken voluntarily by the person receiving the vaccine.