

On opinion, freedom of speech and its responsibilities

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Abstract

Plato and Aristotle place opinion intermediate between knowledge and ignorance with all opinions under the suspicion of error. Kant summarized that opinion is a consciously insufficient judgement, subjectively and objectively. Belief is subjectively sufficient, but is recognized as being objectively insufficient. Only knowledge is subjectively and objectively sufficient. Despite this philosophically doubtful value of opinions, thinkers such as Milton, Locke, Montesquieu and Mill maintain that the freedom of opinion and speech are the basis of open societies but find limits when it represents a definite risk of damage, either to an individual or to the public. Also the UN Covenant on Civil and Political Rights proclaims the right to hold opinions without interference provided that it respects the rights or reputations of others and does not interfere with the protection of public health. Hate speech and propaganda for war are expressively prohibited. Postwar US politicians formulated the position that every man has a right to his own opinion, but no man has a right to be wrong in his facts. The impact of this discussion on opinions about control measures of the COVID-19 pandemic is explored in this editorial.

INTRODUCTION

With their professional activities, scientists are supposed to promote knowledge building. Part of this activity is of purely academic interest, while the applied part of science and technology should address pressing problems of our societies that range currently from containing climate change and a viral pandemic to finding solutions for energy and food security. In the public and political arena, the search of knowledge meets the opinions and beliefs of a non-expert population and its political representatives. Knowledge of scientists and opinions of laymen and politicians are frequently odd bedfellows, which can lead to open confrontation as became lively illustrated by the heated public discussions about how to address the problems of climate change and a pandemic where part of the public opinion even

denied the existence of a climate change and a pandemic. The relationship between scientists and part of the society and populist politicians in Western societies turned into a confrontation where scientists experienced personal threats their communication of scientific insights (Anonymous, 2021; Nogrady, 2021). The trust of the society in knowledge and science as represented by their scientific experts seems to have eroded and raises the question how we should as scientists deal with opinions, particularly in areas where certain opinions are not supported by sufficient empirical evidence. In principle, scientists subscribe to the need for evidence-based decisions. In reality, acquiring the best available evidence base can require much effort and sometimes there is neither the resources nor time for this. Therefore, the effort invested to ensure evidence-based decisions should somehow reflect the

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importance of the policy decision and its impact on our societies. The quest for truth, the freedom of research and the freedom of opinion and of free speech are all defining characteristics of open and liberal societies but can get into conflict. The sometimes tumultuous controversy between scientific arguments for vaccination against SARS-CoV-2 and fundamental opposition against vaccination during the ongoing COVID-19 pandemic illustrated well this dilemma. This controversy together with issues of climate change and purported stolen US elections split Western societies or revealed a pre-existing split in liberal societies that touched the fundamentals of democratic societies, namely the right of the individual on the freedom of opinion and the obligations of individuals to live peacefully in free societies. This dilemma between truth and opinion is accentuated by the Russian aggression on Ukraine justified by deceitful state propaganda on news outlet such as Russia Today and Sputnik, which are now banned in the European Union (Von der Leyen, 2022). It is thus worthwhile to spend some reflections on the philosophical meaning of opinion (The Syntopicon, 1992), the political aspects of freedom of speech and how to live between knowledge and opinion and how to settle a compromise between both.

OPINION CONCEPTS BY PHILOSOPHERS

Plato

A modern encyclopedia of philosophy and science theory defines opinion as ‘a subjective mode of orientation lacking a methodological justification; opinions are always under the suspicion of error but frequently claim a subjective certainty by the holder of an opinion’ (Mittelstrass, 1984). In Greek philosophy opinion (doxa) is somewhere located between knowledge and ignorance. Socrates argues in Plato's *The Republic* (Plato (424–348 BC)a) that between knowledge and ignorance, there has to be discovered a corresponding intermediate. He proposed that one should here admit the existence of opinion and continues that knowledge and opinion have distinct powers and faculties and have thus also distinct spheres of application and subject matters (The Republic, book V). Socrates has then questioned whether any one has the right to say positively something about what he does not know. He denies this as a right when opinion is given with the assurance of positive certainty, but he admits that one may say what one thinks when expressed as a matter of opinion (The Republic book VI). Subsequently, Plato develops a concept of scaling for degrees in certainty. According to this concept, there are four faculties in the soul: *reason* answering to the highest level constituting science; *understanding* at the second level; faith

(or conviction) to the third level, constituting *beliefs*; and perception of shadows in the twilight of becoming and perishing (referring to the famous cave parable in *The Republic*) where the soul has *opinion* only, and goes blinking about, and is first of one opinion and then of another. These four faculties of the soul have clearness in the same degree that their objects have truth (The Republic book VI). In the dialogue *Theaetetus* Plato (424–348 BC)b further investigates whether there are two sorts of opinions, one true and the other false. He quotes the example of an ordinary man thinking that he is going to have a fever, while a physician thinks the contrary. Whose opinion is likely to prove right? Or are both right? The person with a fever in this own judgement or the physician not diagnosing a fever in his judgement? Plato suggests that the opinion or judgement of the professional expert can better judge the situation. He adds further examples: that a vinegrower can better judge the sweetness or dryness of the vintage, which is not yet gathered than a harp player and he quotes further situations confronting experts and laymen. In this dialogue, Socrates argues that all things are either known or not known but admits that there are true and false opinions and explains this with the psychological process with which the soul arrives at opinions. The soul asks questions of herself and answers them by affirming or denying. And when the soul has arrived at a decision, either gradually or by a sudden impulse, and has at last agreed, and does not doubt, this is called her opinion. Opinion is like a word spoken to oneself and in silence, not aloud or to another. Socrates insists in *The Republic* that the power of dialectic alone can reveal the truth and only to one who is aware of the prior evidence of sciences.

Aristotle

Aristotle presents in *Posterior Analytics* another differentiation of knowledge from opinion. ‘Scientific knowledge and its object differ from opinion and the object of opinion in that scientific knowledge is universal and proceeds by necessary connexions, and that which is necessary cannot be otherwise. In contrast, opinion is concerned with that which may be true or false, and can be otherwise: opinion in fact is the grasp of a premise, which is immediate but not necessary’. This view also fits the observed facts, for opinion is unstable. ‘When a man thinks a truth as incapable of being otherwise he always thinks that he knows it, never that he opines it. He thinks that he opines when he thinks that a connexion may quite easily be otherwise. He that knows and he that opines will follow the same train of thought through the same middle term until the immediate premises are reached’. This reasoning is based on the science of syllogism founded by Aristotle, which applies deductive reasoning to logical arguments.

Aristotle insists that one ‘cannot opine and know the same thing simultaneously; for then one would apprehend the same thing as both capable and incapable of being otherwise—which is an impossibility (principle of contradiction). Knowledge and opinion of the same thing can co-exist in two different people but not simultaneously in the same person’ (Aristotle (384–322 BC)a). In *Topics* Aristotle observed that many things, which do not exist are objects of opinion (e.g. animals of fancy such as unicorns) while no knowledge can exist about things that do not exist (Aristotle (384–322 BC)b).

Kant

These concepts of opinion expressed by Plato and Aristotle were essentially maintained through the history of philosophy and experienced a systematic formulation by Immanuel Kant. In *The Critique of Teleological Judgement* Kant writes ‘the question whether something is a cognizable entity or not, is a question, which touches, not the possibility of the things themselves, but the possibility of our knowledge of them. Things cognizable are of three kinds: matters of opinion, matters of fact and matters of faith’. He insists ‘on things altogether unknowable, we cannot form an opinion about them. Matters of opinion are always objects of empirical knowledge that is at least intrinsically possible. They are objects belonging to the world of sense. To assume rational inhabitants of other planets is such a matter of opinion; for if we could get nearer the planets, which is intrinsically possible, the experience would decide whether such inhabitants are there or not, but as we shall never get so near to them, the matter remains one of opinion. The objects that answer to conceptions whose objective reality can be proven are matters of fact. Such proof may be afforded by pure reason or by experience. Examples of the former are mathematical properties that admit to a *a priori* presentation for the theoretical employment of reason. Things that are capable of being verified by experience, be it one’s own experience or that of others supported by evidence are matters of fact. Objects that are transcendent for the theoretical use of reason, are mere matters of faith. We have to believe what we can only learn by testimony from the experience of others’ (Kant, 1724–1804a). In *The Critique of Pure Reason*, Kant defines ‘three degrees of validity of a judgement: opinion, belief and knowledge. Opinion is a consciously insufficient judgement, subjectively and objectively. Belief is subjectively sufficient but is recognized as being objectively insufficient. Subjective sufficiency is termed conviction (for myself); objective sufficiency is termed certainty (for all). Knowledge is subjectively and objectively sufficient’. Kant states that ‘a judgement, which lies solely in the subject that he calls persuasion has only private validity—it is only valid for the individual who judges.

Persuasion I may keep for myself if it is agreeable to me, but I cannot, and ought not, to attempt to impose it as binding upon others’. Kant proposes a test whether that anyone maintains is merely his persuasion or his knowledge—the test is a bet. ‘It frequently happens that a man delivers his opinions with so much boldness and assurance, that he appears to be under no apprehension as to the possibility of his being in error. For he does not hesitate to venture a ducat, but if it is proposed to stake ten, he immediately becomes aware of the possibility of his being a mistake—a possibility that has hitherto escaped his observation’. Thus, what Kant calls pragmatic beliefs has degrees, varying in proportion to the interest at stake (Kant, 1724–1804b).

Hegel

G.F.W. Hegel is even more strict when formulating ‘opinion is a subjective view, a deliberate idea, an imagination, which I can hold in one or a second way, and a different person in still another way. An opinion is mine, it is not a general and for itself existing thought—there are no philosophical opinions’ (Mittelstrass, 1984).

FREEDOM OF OPINION

Roman thought

Freedom of speech is an old tradition. The Roman emperor-philosopher Marcus Aurelius wrote in his *Meditations* that he learned from one philosopher ‘not to busy myself with trifling things, and to endure freedom of speech’ and from another philosopher ‘a benevolent disposition, and the example of a family governed in a fatherly manner, and to tolerate ignorant persons, and those who form opinions without considerations’ (Marcus Aurelius (121–180)). The Roman historian Tacitus observed in *The Annals* a similar liberal position when writing about ‘seditious stirring up of the people or any corrupt act by which a man had impaired the majesty of the people of Rome. Deeds only were liable to accusation; words went unpunished’. Tacitus mentions critically the emperor Augustus who applied legal inquiry to libellous writings in insulting satires and condemned the poet Ovid to exile for his writing. However, when considering an oath where a man had ‘deceived’ Jupiter, Tacitus notes again a liberal position ‘Wrongs done to the gods, were the gods’ concern’ (Tacitus (55–117)).

Milton

Few expressions of freedom of speech were formulated during the Middle Ages and outspoken defence of

this principle dates from much later. When the English Parliament formulated an order against unlicensed books, the poet John Milton reacted in his *Areopagitica* with a Speech for the Liberty of Unlicensed Printing. 'It is the liberty, which is the nurse of all great wits and has enlightened our spirits. Give me the liberty to know, to utter and to argue freely according to conscience'. Milton condemns to 'suppress opinions for the newness or the unsuitableness to customary acceptance and to tolerate them, though in some disconformity to ourselves'. Milton encourages not to 'misdoubt the strength of Truth. Let her and Falsehood grapple in a free and open encounter. Truth is strong, she needs no policies, no stratagems, nor licensing to make her victorious; those are the shifts and the defenses that error uses against the power of truth'. Milton fears 'the iron yoke of outward conformity leaving a slavish print upon our necks. We may soon fall into a gross conforming stupidity' (Milton, 1608–1674).

Locke

The philosopher John Locke investigates in *Concerning Human Understanding* the psychological aspects of opinion holding. 'It is unavoidable to the greatest part of men to have several opinions, without certain and indubitable proofs of their truth. It would become all men to maintain peace in the diversity of opinions; since we cannot reasonably expect that anyone should readily quit his own opinion and embrace ours, with a blind resignation to an authority. You must give him leave at his leisure to go over the account again. How can we expect that opinions thus settled should be given up to the arguments or authority of a stranger or adversary, especially if there be any suspicion of interest and design, as there never fails to be where men find themselves ill-treated. We should do well to commiserate our mutual ignorance and endeavor to remove it in all the gentle and fairways of information; and not treat others ill, as obstinate and perverse, because they will not renounce their own and receive our opinions. There is reason to think that if men were better instructed themselves, they would be less imposing on others' (Locke, 1632–1704a). Locke explores in his *Letter Concerning Toleration* these ideas mainly with respect to different beliefs between Christian churches and comes to one important limitation of toleration. 'I say no opinions contrary to human society, or to those moral rules, which are necessary to the preservation of civil society, are to be tolerated by the magistrate, but examples are rare. For no sect can easily arrive to such a degree of madness as that it should think fit to teach such things as manifestly undermine the foundations of society, because their own interest, peace, reputation, everything would thereby endangered' (Locke, 1632–1704b).

Montesquieu

Montesquieu in *The Spirit of Laws* states that 'the Laws do not take upon thoughts and speech and punish only overt acts'. The reason is that 'speech is so subject to interpretation. Words do not constitute an overt act; they remain only in idea. If words subject people to capital punishment, there is an end not only to liberty, but even of its very shadow'. Montesquieu discusses an interesting case where it becomes difficult to separate words from action: 'Thus, a man who goes into a public marketplace to incite the subject to revolt incurs the guilt of high treason, because the words are joined to the action, and partake of its nature. It is not the words that are punished, but an action in which words were employed. They do not become criminal but when they are annexed to a criminal action'. Montesquieu condemns the legal actions against satirical writers by Augustus since 'nothing was more fatal to Roman liberty. Satirical writings are hardly known in despotic governments. In democracies they are not hindered' because they serve an important function 'they may amuse the general malevolence, please the malcontent, diminish the envy and give people patience to suffer and make them laugh at their suffering'. Montesquieu cites a Roman ordinance by later emperors: 'Though a man should happen to speak amiss of our person or government, we do not intend to punish him. If he has spoken through levity, we must despise him, if through folly, we must pity him, and if he wrongs us, we must forgive him. Therefore, you are to inform us whether we ought to punish or overlook the deed' (Montesquieu, 1689–1755).

Mill

John Stuart Mill in his treatise *On Liberty* devotes a chapter to the Liberty of Thought and Discussion. He defends 'a free discussion of opinions based on the reasoning that the received opinion may be false. In that case, as happened several times in history, the minority opinion might be true. If any opinion is compelled to silence, a society would miss the opportunity to recognize the truth. If the received opinion is true', Mill argues that 'a conflict with the opposite error is essential to clear apprehension and the deep feeling of its truth. Then, there is the common case when the conflicting doctrines, instead of being one true and the other false, share the truth between them. Only by the collision of adverse opinions the remainder of the truth has any chance of being supplied'. He warns: 'even if the received opinion is not only true, but the whole truth, unless it is earnestly contested, it will be held in the manner of a prejudice or a dogma, becoming a mere formal confession'. Mills concludes that 'the free expression of all opinions should be permitted on condition that the manner be temperate, and do not pass the

bounds of fair discussion'. Mills requests certain manners of asserting an opinion: 'One should not argue sophistically, suppress facts or arguments, to misstate the elements of the case, or misrepresent the opposite opinion. Invectives, sarcasm, denunciation should be interdicted equally to both sides'. Mill acknowledges that 'the tendency of all opinions to become sectarian is not cured by the freest discussion. However, not the violent conflict between parts of the truth, but the quiet suppression of half of it, is the formidable evil. In politics it is almost a commonplace', Mills continues, that 'a party of order or stability and a party of progress and reform are both necessary elements of a healthy state of political life. Each of these modes of thinking derives its utility from the deficiencies of the other. In a great measure the opposition of the other keeps each within the limits of reason and sanity'. Mill also quotes cases where the government has to intervene in the discussion: 'It is the duty of the governments, and of individuals, to form the truest opinions they can; to form them carefully, and never impose them upon others unless they are quite sure of being right. But when they are sure, it is not conscientiousness but cowardice to shrink from acting on their opinions and allow doctrines, which they honestly think dangerous to the welfare of mankind'. Mills admits 'there is no such thing as absolute certainty, but there is assurance sufficient for the purpose of human life. We may and must assume our opinion to be true for the guidance of our own conduct when we forbid bad men to pervert society by the propagation of opinions, which we regard as false and pernicious' (Mill, 1806–1873).

Hegel

Hegel in his book *Philosophy of Right* discusses some aspects of public opinion, particularly freedom of press as the freedom to say and write whatever we please which is parallel to the assertion that freedom as such means freedom to do as we please. Beyond the direct incitation to theft, murder and rebellion, which are not covered by freedom of press, Hegel expresses a certain vagueness with respect what is covered by freedom of speech. When it comes to slander, abuse and contemptuous caricature of the government Hegel asks whether they should go unpunished because it is of a purely subjective character. Such acts touch the sphere of freedom of others and it depends on whether the injurious expression of opinion is or is not actually an effective act. Hegel notes 'that the sciences are not to be found anywhere in the field of opinion and subjective views. Their exposition consists of the unambiguous, determinate and open expression of their meaning. It follows that they do not fall under the category of public opinion'. Hegel's statements are a bit problematic since they tend to exempt the monarch from criticism by the public or expressed opinion and while underlining the

freedom of research for science, he excludes science from public opinion and public discussion where most scientist today would see their profession as part of the society and the public discussion (Hegel, 1770–1831).

LIMITS OF FREE SPEECH

Again Mill

As the right of free speech and press is so fundamental to liberal societies and for the public control of democratic governments, free speech and press are a very high public good. It is therefore instructive to look into the writings of vocal defenders of free speech such as J.S. Mill. Mill argues against orthodox (we would today say: mainstream) thinking even if the majority thinking is right. 'True opinion should not become a prejudice, a belief independent of proof. If not fully, frequently and fearlessly discussed, it will be held as a dead dogma, not a living truth. It is not the minds of heretics (we would today perhaps call them Querdenker or adherents of alternative truths) that are deteriorated most by the ban on all inquiry, which does not end in the orthodox conclusions. The greatest harm done is to those who are not heretics, whose whole mental development is cramped by the fear of heresy. He who knows only his own side of the case and is unable to refute the reasons on the opposite side knows little of the case'. Mill argues against 'enemies of free discussion telling that there is no necessity for mankind to understand all that can be said on the topic, provided that there is an authority and élite capable to answering and to resolve every difficulty'. Mill argues for men 'to hear it argued pro and con by people who understand the problem, to arouse them of the deep slumber of decided opinion'. Based on these arguments, Mill defends vigorously free speech, the development of the individual personality even when it affronts the mainstream society in their cherished values. Mill also insists 'that men should be free to act upon their opinions—to carry these out in their lives, without hindrance, either physical or moral, from their fellow men, so long as it is at their own risk and peril'. However, Mill continues 'No one pretends that action should be as free as opinions. On the contrary, even opinions lose their immunity when the circumstances in which they are expressed are such as to constitute a positive instigation to some mischievous act'. Mill quotes an example: 'An opinion that corn-dealers are starvers of the poor, or that private property is robbery, ought to be unmolested when simply circulated through the press but may justly incur punishment when delivered orally to an excited mob assembled before the house of a corn-dealer'. He continues 'The liberty of the individual must thus far limited; he must not make himself a nuisance to

other people'. Mill then continues with reflections that have not lost importance in the current discussion about 'stolen elections' and 'COVID-19 dictatorship' controversies. 'Though society is not founded on a contract (an idea of Rousseau in his *Social Contract*), everyone who receives the protection of society owes a return for the benefits. The fact of living in society renders it indispensable that each should be bound to observe a certain line of conduct towards the rest. This conduct consists, first, in not injuring the interests of one another; and secondly in each person's bearing his share of the labors and sacrifices incurred for defending the society or its members from injury and molestation'. Mill comes then with an interesting distinction which is today discussed under the heading of Mill's harm principle and Mill's offence principle. 'The acts of an individual may be hurtful to others without going to the length of violating any of their constituted rights. The offender may then be justly punished by opinion, though not by law. We have the right, and it may be our duty, to caution others against him, if we think his example or conversation likely to have a pernicious effect on those with whom he associates'. Mill makes an important distinction, we should punish acts but not the personality of an individual guilty of a social offence: 'No person ought to be punished simply for being drunk, but a soldier or a policeman should be punished for being drunk on duty. Whenever, in short, there is a definitive damage, or a definite risk of damage, either to an individual or to the public, the case is taken out of the province of liberty, and placed in that of morality or law' (Mill, 1806–1873).

Current discussion

The discussion on liberal values in democracies is ongoing. Very few, if any, liberal democracies are willing to support Mill's view that only speech causing direct harm to rights should be prohibited. Most support some form of the offence principle. A contemporary discussion of the issue centered on hate speech and pornography is found in the Stanford Encyclopedia of Philosophy (van Mill, 2017). This entry discusses another interesting argument also extensively used by opponents of the public health measures against the COVID-19 pandemic, which they touted as 'corona dictatorship'. The argument became known as 'slippery slope'. This concept states that a current acceptable change ('instant case', e.g. mask-wearing during the COVID-19 pandemic, obligatory vaccination in health and care personnel dealing with subjects at risk of severe infections) might lead to some intolerable future state of affairs ('danger case', e.g. slide into tyrannical developments). While this argument cannot be lightly dismissed, necessitating some caution and requesting good arguments from governments imposing such

measures. van Mill (2017) highlights another aspect of this slippery slope argument, which is also vividly illustrated by the protests against the 'corona dictatorship' namely the slippery slope of protests into anarchy, which Hobbes in *Leviathan* describes as the state of nature, leading to a 'solitary, poor, nasty, brutish and short life' (Hobbes, 1588–1679).

Responsibility

Expression of a free opinion is not a free ride but comes with certain responsibilities towards the society. I will use another case of opposition to vaccination as an illustration. A vaccine against papillomavirus causing cervical cancer was approved by FDA in 2006. A few months after the start of a routine immunization program in Japan in 2013, spurious allegations of side effects of the vaccine such as paralysis and seizures led to a drop of vaccination in the target groups from 70% to 1%. Medical researchers subsequently found that in surveys from 2015–2019 only 9% of Japanese believed vaccines were safe and just 15% thought them effective. Researchers from Hokkaido University calculated that missed papilloma vaccinations caused 5000 extra deaths in women born between 1994 and 2007 (figures quoted from *The Economist*, 2022). This is not to dismiss the risk of possible adverse effects of vaccinations, which is real. However, the risk must be seen in perspective. Zero risk interventions do not exist in medicine, it is important to weigh the risk of adverse effects against the benefit of intervention and decide on the basis of this risk/ benefit ratio on actions. For example, when shunning from COVID-19 vaccination for fearing a low risk of vaccine-associated myocarditis, a person has to weigh this strategy against the risk to acquire myocarditis from a contracted SARS-CoV-2 infection. When analysing the situation, it might well turn out that avoiding vaccination for fear of myocarditis would increase the risk of the person to develop this condition when getting infected with SARS-CoV-2 (Brüssow, 2022). Probability considerations do not easily influence the building of opinions. For example, there is a widespread public opinion that vaccination is risky while dietary supplements are opined to be healthy despite the fact that CDC estimated 23,000 emergency department visits and 2000 hospitalizations in the US per year for adverse effects of dietary supplements, which are in contrast to vaccines not regulated by FDA (Cohen et al., 2022; Geller et al., 2015). In addition to the real medical risk of vaccines (which is much lower than the medical benefit since otherwise the vaccine would not be approved by FDA or EMA) there is a blown-up risk reporting by opponents of vaccination that are widely distributed on social media, which

is not based on adverse effects of vaccines carefully compiled by governmental agencies (Baden et al., 2021; Barda et al., 2021, for myocarditis: Mevorach et al., 2021; Verma et al., 2021; Witberg et al., 2021). Some claims of adverse effects are not based on facts and a few propagated by conspiracy theoretics border on absurdities such that surveillance computer chips are injected by Bill Gates with COVID-19 vaccines. Dissemination of such messages is not punishable by law partly because it is spread by difficult-to-control social media and partly because it is protected by the First Amendment of the US constitution. However, everybody spreading false messages by ignorance or deliberate falsehood should be aware that he or she shares moral responsibility for lost lives to infections that are potentially preventable by vaccination. The problem is compounded by the fact that also physicians are spreading misinformation on social media raising the issue of whether medical licensing boards should take disciplinary measures against such physicians (Baron & Ejnes, 2022) and whether medical associations should support health care workers in stemming mis- and disinformation (Arora et al., 2022). The responsibility for spreading misinformation weighs particularly heavy when considering that about 1 million US Americans alone lost their lives from or with COVID-19. Various politicians from the US (Mr. Baruch, Schlesinger, Moynihan) brought this to the point when saying ‘Every man has a right to his own opinion, but no man has a right to be wrong in his facts’.

UN covenant

It is also instructive to read the International Covenant on Civil and Political Rights as ratified by the UN General Assembly on December 16, 1966. Article 19 specifies:

1. Everyone shall have the right to hold opinions without interference.
2. Everyone shall have the right to freedom of expression; this right shall include the freedom to seek, receive and impart information and ideas of all kinds, regardless of frontiers, either orally, in writing or in print, in the form of art, or through any other media of his choice.
3. The exercise of the rights provided for in paragraph 2 of this article carries with it special duties and responsibilities. It may therefore be subject to certain restrictions, but these shall only be such as are provided by law and are necessary:
 - a. For respect of the rights or reputations of others;
 - b. For the protection of national security or of public order or of public health or morals.

Followed by Article 20

1. Any propaganda for war shall be prohibited by law.
2. Any advocacy of national, racial or religious hatred that constitutes incitement to discrimination, hostility or violence shall be prohibited by law.

Before laws are needed to restrict the right to hold opinions, the responsible citizen should check whether his or her expression of opinion is conform with these rules and likewise the responsible citizen should also remind people who act against these rules that they have a moral obligation to respect these restrictions. For example, in a number of European countries, the denial of the Holocaust is by law a punishable crime. However, in liberal societies, it is desirable that the expression of opinions is regulated by civil commonsense and public discussion and not by laws.

RESISTANCE AGAINST EXPERT OPINION

Scientists and experts have a societal responsibility for communicating facts. Currently, however, part of the public opinion resents the role of experts as arrogating an elite opinion in the public discussion. This aversion against expert knowledge sometimes transforms into frank hostility against experts as revealed by threats against scientists during the COVID-19 pandemic (Anonymous, 2021; Nogrady, 2021). This raises the question of what role scientists should play in the political discussion and in public opinion? This again is an old problem, which was already discussed in the oldest democracy of the world in Athens.

Plato

In Plato's dialogue *Laches* the question arises ‘are you going to accept the opinion of the majority?’ Socrates objects that ‘a good decision is based on knowledge and not on numbers’ and proposes that ‘an advisor should be skillful both in the means and the end which you have in view’ and they should ‘show some proof of their skill or excellence in one or more works’ (Plato (424–348 BC)c). In the dialogue *Protagoras* of Plato, Socrates continues if someone ‘gives them advice who is not supposed to have any skill in the art, even though he is good-looking, and rich, and noble, they will not listen to him but laugh and hoot at him’. However ‘when the question is an affair of state (political), then everybody is free to have a say’ apparently because ‘I am inclined to think that virtue cannot be taught’ (Plato (424–348 BC)d). In the dialogue, *Gorgias* Socrates sees the danger of demagogy in politics because ‘the

rhetorician need not know the truth about things; he has only to discover some way of persuading the ignorant that he has more knowledge than those who know' (Plato (424–348 BC)e). In *The Republic*, Plato qualifies 'democracy a charming form of government, full of variety and disorder, and dispensing a sort of equality to equals and unequals alike' and likens it to 'an embroidered robe, which is spangled with every sort of flower'.

Aristotle

Aristotle in his *Politics* agrees with this view of Plato: 'The principle that the multitude ought to be the supreme rather than the few best is one that is maintained, and, though not free from difficulties, yet seems to contain an element of truth. For the many, of whom each individual is but an ordinary person, when they meet together may very likely be better than the few good, if regarded not individually but collectively. They become in a manner one man, who has many feet, hands and senses'. Aristotle reminds that a person living in a house is a better judge of its quality than the house builder and the guest is a better judge of a feast than the cook preparing the dinner and continues 'according to our present practice assemblies meet, sit in judgment, deliberate and decide. Any member of the assembly, taken separately, is certainly inferior to the wise man, but the state is made up of many individuals and a multitude is a better judge of many things than any individual' (Aristotle (384–322 BC)c).

Hobbes

Hobbes in his book *Leviathan* warns, however, that 'want of science, that is ignorance of causes, disposes or rather constrains a man to rely on the advice and authority of others they think wiser than themselves'. He continues that this attitude 'disposes men to take on trust, not only the truth they know not but also the errors; and which is more the nonsense of them they trust; for neither error nor nonsense can, without a perfect understanding of words, be detected'. What Hobbes formulated 500 years ago still applies to our societies 'ignorance of natural causes disposes a man to credulity, so as to believe many times impossibilities. And credulity, because men love to be hearkened unto in company, disposes them to lying. So that ignorance itself, without malice, is able to make a man both to believe lies and tell them and sometimes also to invent them' (Hobbes, 1588–1679).

Tocqueville

Tocqueville in his book *Democracy in America* notes that 'if man had to prove himself all the truths of which

he makes use every day, he could never come to an end of it. Since life is too short for such a course, man has to accept as certain a whole heap of facts and opinions, which he has neither leisure nor power to examine'. Tocqueville admits that 'it is true that any man accepting any opinion on trust from another puts his mind in bondage'. Tocqueville made then an interesting observation that could explain the current opposition against expert opinion. 'When standards are unequal, men living under an aristocracy are naturally inclined to be guided in their views by more thoughtful men and have little inclination to suppose the masses infallible. However, in times of equality men are readier to trust the mass, and public opinion becomes the mistress of the world'. He continues: 'There is no natural inclination for them to accept one of their numbers as a guide. In democracies confidence in the superior knowledge of certain individuals has been weakened and the idea that any man whosoever can attain an intellectual superiority beyond the reach of the rest is soon cast in doubt. A dogma concerning intellectual equality gradually creeps into their beliefs. Each man has to be convinced separately and it is less the force of an argument than the authority of a name that has brought changes in accepted ideas' (Tocqueville, 1805–1859).

OUTLOOK

Wrong facts

Open societies live from the competition of opinions. A look on the history of thinking teaches us that scientists should not consider themselves as philosopher kings or as privileged holders of truth by the mere fact that they are professionally (sociologically) in the knowledge business. Scientists should, however, meddle in the public discussion with their factual knowledge. However, factual knowledge does not yet assure a good judgement in the political discussion because beyond facts many other factors enter into a political decision ranging from ethics to emotions. While scientists have by their professional activity privileged access to facts, they should not pretend privileged opinions or good judgement because this needs elements beyond factual knowledge. Therefore scientists should not take a paternalistic attitude in teaching the public about true and false opinions. Scientists should not dispute citizens their opinion; however, they should definitively be guardians of correct facts (if available on the subject of discussion). Scientists should energetically defend facts, correct factual errors and lay clear distortions or omissions of facts in open discussions. However, they should do so without teaching from above but just as providers of basic factual information that underlies the political decision process. Scientists cannot arrogate

a political decision from their factual knowledge, they can only propose a rational basis for preparing good decisions by a democratically legitimized authority. While these comments call for reserve from the scientists in the public discussion, a reserve is also requested from the other partners in the public discussion. The discussion must be honest, the political lie or deliberate falsehood should be identified as such. While opinions are free, there is no freedom of facts or a place for alternative truths. This is philosophical and scientific nonsense and should be clearly marked as such by scientists even if this needs a bit of civil courage. The freedom of opinion includes also the freedom of science and scientists must also make their points. If they are threatened to express their opinion, the idea of an open and free society is at risk and societal rules should be elaborated to maintain an open discussion. Democratic societies are already threatened by a rising of authoritarian societies such that they should carefully watch that they are not at the same time undermined by destructive opposition from within.

Wrong decisions

Beyond defending an open society, scientists and philosophers should care that the public discussion remains logical. Mills for example requests not to argue sophistically. I will illustrate where I see an apparently logical, but nevertheless wrong argument in the discussion about vaccination which scientists should highlight to the public. Many people justify their hesitation or opposition to vaccination by the fact that mRNA vaccines against COVID-19 are new types of vaccines. The fact that they are new implies that no long-term experience has been accumulated for these types of vaccines. All data accumulated so far define only short-term adverse effects. Therefore some vaccine-hesitant people argue that they will wait with vaccination until sufficiently long-term data are accumulated. This opinion while at first glance looking like a rational decision lacks logic. When waiting for these data, the pandemic might be over (or at least the current wave claiming a certain amount of human victims) such that when these data are at hand, there might be no need any longer for an mRNA COVID-19 vaccine. On a personal ground, such a decision is frequently rationalized with the opinion that the risk of adverse events from the vaccine is greater than the risk of adverse events from acquiring the disease. However, the odds are much greater for the latter than for the former. Psychologically, the erroneous judgement results because the subject compares a certain vaccination (100% of occurrence when you do it, associated with a finite adverse risk R1) with an uncertain infection event (let us say 1% with another finite

adverse risk R2). Many people only compare certain vaccination vs. uncertain infection event and decide prematurely against vaccination without including the risks R1 and R2 into their mental calculation. Scientists should sensitize people that they should compare the products $100 \times R1$ with $1 \times R2$ where it may well turn out that $100 \times R1 \ll 1 \times R2$, i.e. a much higher adverse effect risk from infection (think long covid) than an adverse effect risk from vaccination. It is well known that numerical literacy is much lower than alphabetic literacy in the general population and dealing with probabilities needs a further level of complex thinking. Here scientists should help their co-citizen in rational thinking.

Ethical considerations

However, vaccine hesitancy/opposition is also philosophically and ethically a questionable decision, which should also be highlighted in the public discussion. Kant in his treatise *Fundamental Principles of the Metaphysics of Morals* asks the question of whether there is something such as 'a moral imperative which is not only a pragmatic precept, drawing our attention to our own interests and merely teaching us to take these into consideration'. Kant found an answer to his dilemma 'there is therefore but one categorical imperative, namely this: Act only on that maxim whereby you can at the same time will that it should become a universal law'. Kant tests this principle on special cases (e.g. a man in despair and considering suicide) (Kant, 1724–1804c). You can now make the test with vaccine hesitancy/ opposition. Can you will that everybody refrains from vaccination for fear of adverse events by vaccination? Here the rational answer is certainly 'no' (as in the suicide case) because then you would accept that the population would confront the pandemic without any vaccine protection. From this reasoning, one would conclude that vaccine hesitancy is ethically justified as a personal decision (neglecting arguments of the individual's contribution to herd immunity, which would passively protect vulnerable parts of the population that cannot be vaccinated) but not as an actively propagated position. One might argue that enforcing a vaccine mandate by law is not an adequate reaction in open societies, which should trust the sense of responsibility in each citizen. Societies are built on a solidarity principle as documented by taxes, health insurance, policing and defence, which serve the common good and the protection of the individual. Paying taxes is in all liberal societies imposed by law and tax evasion is a punishable crime—there are thus areas where also liberal societies enforce solidarity. Whether this should extend to mandatory vaccination depends on the risk a pandemic represents for the stability of a

society and should be discussed and decided in parliaments or if needed in a referendum but not on the streets.

CONCLUSION

Scientists are via their research work professionally committed to truth and knowledge. This commitment extends also for communicating knowledge to the public and for providing the best scientific advice available to decision makers being it political, industrial or societal leaders. Many advanced societies pay substantial amounts of the taxpayer's money for science and technology. This obliges scientists to get out of their ivory towers and to use understandable language in communication with the public. Scientists need not only basic knowledge in the philosophy of science but also in the didactics of science. On the other side, the public has also an obligation to get informed, the public opinion has not the right to ignore facts if our societies want to support good decisions. The problems confronting our societies are today so substantial that science and technology are essential parts of solving these problems. In that context, scientists should make it clear what is fairly established knowledge and what is at best an expert opinion. Scientists should not claim authority for areas that lie outside of their personal field of competence or beyond the knowledge level of their discipline. On the other side, the public should accept the fact that science has not always a ready answer to any emerging problem like an unfolding new pandemic. Science has only the methods to ask appropriate questions that after careful investigation possibly leads to answers and solutions. The false starts with hydroxychloroquine treatment of COVID-19 is a lively illustration where opinions of some scientists not based on sufficiently sound clinical data fed wishful thinking by populist politicians and misled physicians and their patients, only to be dispelled by later large and carefully designed clinical trials (Brüssow, 2021). It is thus of prime importance that both scientists and the public learn to distinguish between opinion and knowledge.

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CONFLICT OF INTEREST

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