

DEMOCRACY AND HIGHER EDUCATION

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DEMOCRACY AND HIGHER EDUCATION

What are the problems of the current democracies, and how could these be tackled?

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1. THE TASK OF HIGHER EDUCATION

The lesson that I take from the Opening speech of TUBerlin in 1946 is this: higher education should not merely prepare for professional practice, but also for *citizenship*.¹ That speech was held immediately after the 2nd world war. The pressing question was how repetition could be prevented. I believe that the task of education to prepare for citizenship is no less pressing today.

I also see a shortcoming in the Opening speech. This is that it exclusively addresses responsibility and ethics at the *level of individuals*. Attention is lacking for the *institutions and organisations* that make up societies and states. These institutions and organisations constitute the context in which individuals function. That context determines to a large extent how individuals decide and behave. It therefore determines to a large extent what does and does not happen in the world.²

So we need to focus our attention on the institutions of the current democracies; on the laws and constitutions that define those institutions, and that determine how the democracies work. These institutions can be improved. And they *must* be improved in order that we can have faith in the future. I hope that the necessary changes will be timely, gradual and peaceful. A condition for this is that as many people as possible should have the knowledge and the proper attitude to contribute, *as citizens*, to positive change. This certainly holds for higher educated persons.

I want to provide insight into some of the major problems of the current democracies and how these problems can be removed or diminished. I hope for a meaningful discussion on the question: What does this mean for higher education including engineering education? The discussion could be continued in the Friday session on Democracy.

¹ "... all education, technical, humanistic, or what you will, is universal: that is to say it must embrace the whole of man, the whole personality, and its first aim is to produce a whole human being, capable of taking his place responsibly beside his fellows in a community. Its second aim may be to produce a good philologist, a good architect, a good musician or a good engineer." Major-General E. P. Nares, CBE, MC. Speech delivered on the occasion of the opening of the TUBerlin, 1946.

² Within engineering education, it is now recognised that there should be attention to the organisational and legal context in which *engineers* do their work. I refer to the people who stress the importance of *macro ethics* as opposed to *micro ethics*.

I will first list some phenomena in the current democratic states that spring to the fore. I expect that you will recognise them. Next I will turn to the heart of the matter, which is collective decision making and how it is implemented in the current democracies. Finally I will deal with what I here call contributing causes.

2. SOME MANIFEST PROBLEMS OF THE CURRENT DEMOCRATIC STATES

Here are nine phenomena that are directly visible:

1. The winner takes all; polarisation. Perhaps the most prominent example is the USA, but we see polarisation in all democratic states. Associated terminology: struggle, fight, victory/defeat.
2. Close ties between a government and the part of the parliament on which that government bases its power. That part of the parliament supports “its” government unconditionally.
3. The state of political and public so called “discussion” and “argumentation” is deplorable. This includes a doubtful influence of social and other media on at least a part of the population. The rules of communication and argumentation are being violated at an enormously large scale.
4. The level of trust in politics and politicians is very low. The Netherlands is in the top 10 of most democratic states according to a ranking of the journal *The Economist*. But while 2/3 of the Dutch citizens trust each other, only 1/4 trust politicians.³
5. The scale and intensity of many human activities is ostensibly non-sustainable. There is exhaustion of natural resources and environmental pollution of all sorts.⁴
6. Environmental risk management is lacking or failing. The biggest example is perhaps climate change. The first warnings that excessive CO₂ emissions could cause global warming came from the Swedish scientist Arrhenius at the end of the 19th century.⁵ When I studied physical chemistry, one of my colleague students was working on a model to describe/predict global warming due to CO₂. That was around 1975. The Intergovernmental Panel on Climate Change (IPCC) was created in 1988. The first national reports urging for action against global warming stem from the 1990ies. It took another couple of decades before some form of action was taken.⁶
7. Failing public risk management is not limited to the environment. A non-environmental example are the financial crises that erupted in 2008 but that had been in the making for

³ Source: the Dutch bureau of statistics (CBS).

⁴ This point and the next one are not merely true for the democratic states.

⁵ See <https://www.lenntech.com/greenhouse-effect/global-warming-history.htm>

⁶ The Paris Conference on climate change of December 2015 was hailed by politicians as a "historic turning point" in the goal of reducing global warming. But the stated ambition of limiting global warming to + 1,5 degree was already no longer a realistic possibility.

a considerable time. And what to think about the management of international relations and war?

8. The malfunction of government organisations. One example in the Netherlands is that ICT projects within government/the public sector seem to fail systematically. I can mention more examples from the Netherlands.⁷ But I have little doubt that you have your own examples, from whatever democratic country you are.
9. In the USA, after almost 4 years Trump is still not convicted for his share in an insurrection. He was not banned from the list of presidential candidates. The question arises: Are the judiciary systems up to their task? Could what happens now in the USA also happen in other democracies? Why (not)?

3. DEMOCRACY, COLLECTIVE DECISION MAKING AND LIABILITY

DEMOCRACY

According to a representative dictionary definition, a democracy is:

*a government in which the supreme power is vested in the people and exercised by them directly or indirectly through a system of representation usually involving periodically held free elections.*⁸

This definition so to speak summarises the official theory of democracy.

RESTRICTED LIBERTY AND MAJORITY DECISION MAKING

As soon as you state this definition, the fundamental problem of *collective decision making* arises. The decision rule that is adopted in all modern democracies for almost all public issues is *simple majority rule*. It means that a proposal brought up for decision making is adopted if at

⁷ Some high profile malfunctions of government organisations in the Netherlands are:

The childcare benefits scandal. Between 2005 and 2019, the Tax and Customs Administration wrongly accused an estimated 26,000 parents of making fraudulent benefit claims, requiring them to pay back the allowances they had received in their entirety. In many cases, this sum amounted to tens of thousands of euros, driving families into severe financial hardship.

Earthquakes caused by natural gas exploitation in Groningen, The Netherlands. This is not a pure government case, as the operator of the Groningen gas field (the NAM) is a public-private partnership between the Dutch government and Shell. The risk analyses that were performed early on were inadequate as they were based on false premises regarding the geological makeup of the subsurface. (This in spite of all the professionals working both at NAM and the Dutch supervising body.) The faulty risk analyses were not or not timely corrected. When harm causing earthquakes did materialise, compensation and repair for inhabitants were and still are a mess, leading to an almost complete lack of confidence in the government among the inhabitants.

⁸ “Democracy.” Merriam-Webster.com Dictionary, Merriam-Webster,

<https://www.merriam-webster.com/dictionary/democracy>. Accessed 26 Mar. 2024.

least 50% + 1 of the decision makers are in favour.⁹ In the following I will refer to this as “majority rule”.

Under majority rule, one party’s gain is another party’s loss. It therefore leads to political struggle and polarisation. Majority rule is unstable and prone to cycling: if during elections a government loses its 50%+1 support in parliament, the new government first destroys what the previous government had built, to execute its own preferences, and so on.

Majority rule conflicts with a deeply held ethical principle that comes by names such as “respect for persons”, the “no harm principle”, or “informed consent”. I will use the term “*restricted liberty principle*”. It says:

*Everyone is free to do what he/she pleases, within the limits that they should not harm others.*¹⁰

Someone translated this principle as: “My freedom ends where your nose begins.”

Another formulation of the same principle is the *right to be safeguarded*:

*Everyone has the right not to be affected by any consequence of avoidable activities of other people.*¹¹

⁹ In the Netherlands, there are only two exceptions to simple majority rule in the two chambers of parliament, in which case a 2/3 majority is required: the first exception is a change of the constitution (which moreover requires new elections and a subsequent vote); the second regards the financial compensation of members of parliament.

¹⁰ Versions of this principle and the reciprocity principle can be traced back deep in human history. For instance in the so called “natural law” tradition in the Western world.

The principle was adopted in the French *Déclaration des droits de l'homme et du citoyen* of 1789:

La liberté consiste à pouvoir faire tout ce qui ne nuit pas à autrui: ainsi l'exercice des droits naturels de chaque homme n'a des bornes que celle qui assurent aux autres membres de la société la jouissance de ces mêmes droits. (Déclaration des droits de l'homme et du citoyen du 26 août 1789, Art. 4.)

In that constitution the following important qualification was added: *Ces bornes ne peuvent être déterminées que par la loi*. See: <https://www.education.gouv.fr/declaration-des-droits-de-l-homme-et-du-citoyen-du-26-aout-1789-10544>

The qualification leads to problems if “la loi” can be adopted or changed with simple majority rule. As is the case for virtually all laws in the current democracies.

¹¹ See J.F.C. van Velsen, Relativity, universality and peaceful coexistence. *Archiv für Rechts- und Sozialphilosophie*, 2000; 86(1):88-108. See also <https://www.lawoflogic.net/>

With majority rule, laws or projects can be adopted that a minority considers harmful. Majority rule is therefore incompatible with the ethical principle of restricted liberty. **The only decision rule that is compatible with this right to be safeguarded is unanimity rule.**

It is unclear what the ethical basis is of majority decision making; Why should a minority be bound by the preferences of a majority?¹² There seems to be no ethical justification for this.¹³

At a very fundamental level, **unanimity rule is compatible with social progress, whereas majority rule is not. For majority rule may lead to social retrogression, even in situations where social progress is possible.**¹⁴

The field of Public Choice has generated a large body of objective knowledge about the properties of unanimity rule and majority rule.¹⁵ Part of this knowledge is logical in nature. Another part is empirical, based on phenomena observed in actual democratic states. This knowledge is not sufficiently known. Very often, simple majority rule is unthinkingly accepted as the best possible implementation of democracy. Or even: is equated with democracy. I believe this would be impossible if that knowledge was better known.

REPRESENTATION

All current democracies operate almost exclusively on the basis of representation. The members of a parliament or a city council are supposed to *represent* those that voted for them. But what does that word “to represent” mean in the current democracies? Representatives are not required to keep their promises. They cannot be called back by their voters, in the way that a government can call back an ambassador if that government thinks the ambassador no longer represents it. Voters can only vote for packages. And they have very limited possibilities to bring up issues for voting of their own.¹⁶

¹² Here are some quotes from historical authors:

“... the laws ... must be absolutely in capable of doing anyone an injustice. Now if someone makes dispositions for another person, it is always possible that he may do him an injustice; but it is never possible in the case of decisions [the latter person] makes for himself, for no harm is done to a man by an act he consents to. Thus only the unanimous and combined will of everyone whereby each decides the same for all and all decide the same for each – in other words, the united will of the people – can legislate.” (I. Kant, *The metaphysics of morals*, part I, Berlin, 1797. English translation by J. Ladd, *The metaphysical elements of justice*, New York, 1965, p 78)

“...unless the king has been elected by unanimous vote, what, failing a prior agreement, is the source of the minority’s obligation to submit to the choice of the majority? Whence the right of the hundred who do wish a master to speak for the ten who do not? The majority principle is itself a product of agreement, and presupposes unanimity on at least one occasion.” (J.J. Rousseau as quoted in D.C. Mueller, *Public Choice III*, Cambridge University Press, 2003 p 128)

¹³ Efforts have been made within philosophy (e.g. by Rawls, who claimed that people behind a “veil of ignorance” would opt for majority rule to take political decisions) and within the science of Public Choice (See D.C. Mueller, *Public choice III*) to come up with such a justification. These efforts have not been successful.

¹⁴ See Appendix. Examples of situations that call for unanimity decision making.

¹⁵ An especially rich source is D.C. Mueller, *Public Choice III*, Cambridge University Press, 2003.

¹⁶ To this can be added the phenomenon of block voting in parliaments: Individual members of parliament vote automatically according to the party line. In spite of all this, voters cannot recall their so-called representers in between elections.

Now combine both aspects: simple majority rule in the legislative bodies (such as parliaments) and the way representation is organised. You see from this that it is not at all guaranteed that decisions taken this way have the support of even a majority of the population.

RECIPROCITY AND LIABILITY

In addition to the restricted liberty principle, or right to be safeguarded, there is another ethical principle that is important for the analysis. This is the reciprocity principle. It applies when a violation of that first principle occurs.¹⁷ It says the following:

*If someone violates the right to be safeguarded and causes harm to others (who did not consent), then the victims have the right to reparation or to be compensated by the violator.*¹⁸

Western legal systems are characterised by weak or lacking liability laws. These laws do not or only very partially respect this reciprocity principle.

Suppose that a risk or harm generating activity is allowed on the basis of a national political majority decision.¹⁹ Think of legislation that allows the use of pesticides in agriculture, with potential negative environmental and/or health effects. A political minority that is opposed to the activity cannot stop it. And if harm does occur, they may even be forced via taxation to contribute to clean up or restoration activities. **There seems to be no ethical basis for this.**

I see in this combination of political majority decision making with weak or lacking liability laws one of the major causes of the problems of the current democratic states.

LIABILITY FOR RISK- OR HARM GENERATING ACTIVITIES:

EXAMPLE

Here is an example from environmental law: The European Directive on environmental liability (2004/35/CE). The directive promises to hold polluters liable for environmental harm. (The “polluter pays principle”.) However, the Directive *exempts* companies from liability for damage from an activity which “was not considered likely to cause environmental damage according to the state of scientific and technical knowledge at the time when the emission was released or the activity took place”. This is the so called “risk of development”. This risk is not borne by the actor but by those who experience the harm if it materialises.²⁰ In addition, all companies are

¹⁷ Both principles together are necessary and sufficient requirements for peaceful coexistence. See the next footnote.

¹⁸ A generalised principle from which the principle in the text can be derived was stated in J.F.C. van Velsen, Relativity, universality and peaceful coexistence. *Archiv für Rechts- und Sozialphilosophie*, 2000; 86(1):88-108. See also <https://www.lawoflogic.net/>

¹⁹ The harm, if it materialises, may affect the citizens of other states as well.

²⁰ For details, see: H. Zandvoort, Legal liability in technology and science in view of peaceful coexistence and progress. In R Arvanitis (Ed.), *Science and technology policy*, volume 3 (Encyclopedia of Life Support Systems, np.). Oxford, UK: Eolss Publishers. 2012 <http://www.eolss.net/Eolss-Publications.aspx> (access with login only). A copy of the text is available at https://www.researchgate.net/publication/266663235_Legal_liability_in_technology_and_science_in_view_of_peaceful_coexistence_and_progress

corporations with limited liability. Even if they are held liable for an environmental pollution, this limited corporate liability largely shields both employees/directors and shareholders/owners from liability.^{21 22}

So the actual liability laws do not guarantee that people who are opposed to certain activities because of the associated harm or risks are restored or compensated when harm does occur or a risk does materialise. Instead, they can be forced to contribute to restoration if restoration is undertaken at all, notably via taxation.

Combine this with political majority decision making, and you have identified **an important cause of the present unsustainable nature of human activities and the absence of public risk management.**

POSSIBLE REMEDIES

- Decide more issues with unanimity or at least closer to unanimity than 50%+1. For decisions on public goods and on NIMBY problems, only unanimity rule guarantees social progress. And if a decision is taken with less than unanimity, accept the implications for liability. The use of simple majority rule can be justified only under very specific circumstances. Such as decisions in times of war, when there is limited time for deliberation.
- Make arrangements to ensure that representatives really represent those who voted for them. If the definition of a democracy as *a government in which the supreme power is vested in the people* is to be taken seriously, those who are “represented” should be able to call back their representatives, in the same way that a government can call back its ambassadors.
- Stricter and less limited liability laws should be reinstated. This includes the abolition of corporations with limited liability. I say “reinstall”, because this would restore a legal norm which existed in the Western legal systems up until the industrial revolution. Knowledge of this part of legal history is very instructive.²³

²¹ This is also true for the banks with failing risk management that were involved in the financial crisis.

²² There does exist a European system of risk evaluation and management of chemicals. It is called REACH. Experience has shown that it cannot avoid large pollution issues. Such as PFAS.

²³ For an explanation of this remark see:

H. Zandvoort, What scientists and engineers should know about the history of legal liability and why they should know it, Proceedings of the International Conference on Engineering Education 2008. July 27-31, Pecs, Budapest, INEER. ISBN 978-963-7298-20-2. Available at:

https://www.researchgate.net/publication/228466215_What_scientists_and_engineers_should_know_about_the_history_of_legal_liability_and_why_they_should_know_it

H. Zandvoort, Evaluation of Legal Liability for Technological Risks in View of Requirements for Peaceful Coexistence and Progress. Risk Analysis, 2011; 31:969-983.

https://www.researchgate.net/publication/49699997_Evaluation_of_Legal_Liability_for_Technological_Risks_in_View_of_Requirements_for_Peaceful_Coexistence_and_Progress

4. CONTRIBUTING CAUSES AND POSSIBLE REMEDIES

Political majority decision making combined with lacking or limited liability can explain many of the negative phenomena that can be observed in the current democracies. Including their unsustainable nature. But there are factors that make things worse. I now turn to a number of these factors. And I will look at possible fixes.

1. THE SIZE OF THE PUBLIC SECTOR

The basic rules and institutions of the current democracies have been introduced some two hundred years ago. This includes the reliance on simple majority rule for taking public decisions. At that time the public expenditures of governments were much smaller than today. Here are some historical data.

Up until about 1900, government spending in the Western countries was usually below 10% of their national product.²⁴ This was certainly true in peace time. The bulk of government expenditure went to warfare. Today, 98% of government spending goes to internal civil goals. Economists use the term “public goods”. In a large number of democracies government spending is now between 40% and 60% of GNP, and the trend is upward.²⁵

It means that the way in which a large part of someone’s income is spent is determined/controlled by political decisions taken with majority rule in the representing bodies. Political decision making and politicians have thus become much more influential than they have ever been. And the problems of simple majority rule combined with absent liability have multiplied.

POSSIBLE REMEDIES

- The remedies mentioned earlier are relevant also here.
- An additional remark is: Make policy with rules, rather than with subsidies. (But preferably make rules that respect restricted liberty and reciprocity.)

2. A LARGE AND GROWING NUMBER OF CONFLICTS OF INTERESTS DECIDED BY POLITICAL DECISION MAKING

The scale and intensity of human activities are continuously increasing. So are the effects of these activities upon others. Populations are growing. There is an increasing struggle for space. The number of NIMBY situations increases. NIMBY situations can be defined as situations

²⁴ A valuable source of information on government spending in the UK since 1689 is: The public finances: a historical overview. House of Commons Library Briefing paper. Number 8265, 22 March 2018. <https://researchbriefings.files.parliament.uk/documents/CBP-8265/CBP-8265.pdf> The report shows that between 1689 and 1900 government spending was below 10% of GDP in times of peace. Only in times of war government expenditure could temporarily rise to 15-20%. The bulk of the spending over the past 300 years or so has been on war, whereas civil spending was only a fraction of the total.

²⁵ Government at a glance 2021, OECD 2021, fig. 2.22: General government expenditures as a percentage of GDP, 2007, 2019 and 2020.

where a large group of citizens may have a small benefit from a certain contemplated project or measure, whereas a relatively small group would experience a relatively large loss. All kinds of infrastructural projects such as airports, roads, railroads, etcetera are examples.

Deciding NIMBY situations with majority rule violates the restricted liberty principle. (You do not stop where another one's nose begins.) The result may be social retrogression instead of progress. For such a project may be adopted by a majority, whereas at the same time the sum of the individual benefits may be lower than the sum of the individual losses. See also the Appendix.

POSSIBLE REMEDIES

- Apply the subsidiarity principle where possible.
- Take more decisions with the consent of those directly involved, also if this consent requires compensation of those harmed.²⁶

3. LACKING OR INSUFFICIENT ACCOUNTABILITY OF POLITICIANS AND PUBLIC OFFICIALS

Politicians and public officials cannot be held accountable or liable for harm caused by their actions or lack of actions. In combination with the way in which politicians and public officials are selected, this lack of accountability maintains and promotes irresponsible behaviour and incompetence of political and public office holders.²⁷

POSSIBLE REMEDY

Politicians and public officials should be made more accountable for what they do or fail to do.

4. INADEQUATE SELECTION OF OFFICIALS IN THE PUBLIC SECTOR, ESPECIALLY THE TOP FUNCTIONS

Public top-officials, members of advisory bodies and of the judiciary are all selected by the political establishment, usually the government. These are in this sense political appointments. Politicians are selected by political parties. What are the de facto selection criteria?

In view of the previous point (lacking accountability or liability) there is no real need for politicians to select competent officers. So they can appoint people who will be friendly/loyal to them. There are no requirements regarding competence. A candidate minister does not have to show a track record proving their ability to manage a large organisation.²⁸

²⁶ If adequate compensation is not possible, the project under consideration cannot be said to represent social progress. See the Appendix.

²⁷ A Dutch example is Eric Wiebes. After having failed as a deputy minister, he was rewarded with a full minister post in the next government.

²⁸ In the private sector of the economy, i.e. the other half of it, there is at least the correction mechanism of the market. If a business organisation or its shareholders selects an incompetent manager, that may result in the bankruptcy or gradual disappearance of the company. Other companies with better management will take over. I do not claim that this solves all problems with public hierarchical organisations. But in the case of a government organisation there is no competition, no market mechanism, no alternative. This makes the topic of government

POSSIBLE REMEDIES

Better selection criteria and procedures for high officials and politicians are very desirable. I have no definite answer as to how this can be accomplished, but increased accountability would help.

5. SYSTEMATIC DYSFUNCTION OF PUBLIC/GOVERNMENT ORGANISATIONS. INEFFECTIVE SUPERVISION/CONTROL OF THESE ORGANISATIONS

To an outside observer it is clear that many things go wrong within government organisations. Internal correction mechanisms regularly fail, if they are present in the first place. As is shown by the wealth of actual cases where important things went wrong.²⁹ All this is in spite of the existence of supervising agencies. Which are themselves government organisations that may dysfunction. The supervisors themselves do not have supervisors.

There exists little research into the inner workings of a public hierarchical organisation such as a ministry. A reason for this scarcity may be the fact that hierarchical organisations are closed shops, not transparent to the outside world. (See the section on hierarchical organisations.) There is also a general lack of interest in the topic from the side of academia.

The result is that very often idealistic theories of management and organisations are confused with faithful descriptions of reality.

The research that *does* exist about the inner workings of hierarchical government-organisations reveals systematic dysfunction and mismanagement.

According to the idealistic theory of democracy, parliament is the highest supervising entity. This is another idealistic fiction, not a faithful description of reality.³⁰

organisations and government officials a special one.

²⁹ I restrict the discussion here to government organisations. There is at least this difference with business organisations that the latter are subjected to the correction mechanism the market and competition, as remarked in a previous note. But even though also business organisations are supervised by governmental supervisory agencies on aspects such as labour conditions, internal and external safety, environmental impact, etcetera, examples abound to show that this does not guarantee the absence of serious misconduct or malfunctioning. To mention only a few examples: The Diesel software scam; the Siemens scandal; the Philips apnea machine malfunction; the quality issues at Boeing.

³⁰ Parliaments, such as the second chamber of the Dutch parliament, sometimes conduct enquiries into cases of serious malfunctioning of government organisations. Such as in the case of the childcare benefits scandal, the natural gas exploitation in Groningen mentioned elsewhere, and the financial crises that erupted in 2008. Such enquiries sometimes bring certain inside information to the fore, but often they do not look inside the organisations that are being investigated. They sometimes draw false conclusions or fail to draw important conclusions. Such as in the case of the enquiry into the financial crises.

The main method of investigation is to hold interviews with persons involved. Usually only persons at the top of these organisations are being interrogated, and not (other) employees. There is no trace that these enquiries have a positive effect in the sense that they would help preventing future malfunctioning of the public sector.

The goal of such enquiries is that of fact finding. They are not meant for attributing guilt or blame, or for setting up a legal case. The parliamentary committees that perform the enquiries are recruited from all political parties with seats in the parliament, and they work on the basis of unanimity. It should be noted that in many cases, a parliament through its legislation is often a contributing factor to the malfunctioning. The unconditional loyalty of politicians in

POSSIBLE REMEDIES

Officials/heads of government organisations should be held accountable for dysfunction. They should be selected on the basis of competence and merit.

It may be that people with sufficient abilities for the requirements of these jobs simply do not exist. That the responsibilities of such jobs are actually unbearable. If so, the conclusion should be that these organisations must be reshaped in such a way that the responsibility of the top jobs does become bearable by competent persons.

Serious research into the internal workings of government organisations is very desirable as it will help disclosing where and how things go wrong, and will provide insight into possibilities for improvement.

6. POLITICIANS OFTEN DO NOT LIVE UP TO ELEMENTARY RULES OF COMMUNICATION AND ARGUMENTATION. THEY ARE IN PRACTICE ALLOWED TO LIE OR TELL HALF-TRUTHS.

At the very least lies or half-truths are usually not met with serious consequences. The rules of communication and solution oriented argumentation are often not respected both within and outside parliament. Politicians give a very bad example for the citizens who are supposed to behave decently, to be tolerant and social minded, etcetera.

To my knowledge all constitutions grant members of parliament immunity for whatever they say inside the meeting room. There are reasons why this immunity was included in the constitutions. But an implication is that the rules of communication and argumentation can be violated at will, and currently are violated at will. With enormously harmful consequences.

POSSIBLE REMEDIES

One observation is this: Majority rule does not stimulate the obedience of decent rules for communication and argumentation. Unanimity rule does.

Apart from this, why should politicians, as well as others who contribute to public discussion, not be held to the rules for communication and argumentation? Why are they allowed to lie or tell half-truths; why are they not required to state sources for factual statements; why are they allowed to uphold inconsistent statements? Etcetera.

How can it be achieved that politicians have more respect for the rules for communication and argumentation than they presently have? I am asking:

- What is the role here of academia and of the media?
- Should the rules for communication and argumentation be included in the constitutions, and should an arbiter be given the authority to enforce them? These rules follow from the act of communication itself, and therefore are binding for anyone who enters into communication with someone else. These rules are a-political.

the legislative branch (parliament) to the government (executive branch) that derives its power from those politicians should also be kept in mind.

7. THE HIERARCHICAL NATURE OF BOTH PRIVATE AND PUBLIC ORGANISATIONS

Hierarchical organisations play a very large role in the current societies, and hence in the democratic societies. Almost everyone works in and depends for their subsistence on a hierarchical organisation. Be it a government organisation or a private organisation (a business). Such organisations deviate in important respects from what in the rest of society is considered normal. This makes it an important topic when you want to discuss the functioning of the current democracies. I will mention a few important aspects.

1. In a hierarchical organisation *there is no democratic decision making*, not even among experts. In essence, it is the top official(s) who decide. Even on topics for which they are less expert than many of their subordinates. This is for instance true for advisory or regulatory bodies of government. It also holds for business organisations. For instance when they have to report certain information to government supervisors, or when the lawfulness of business activities is disputed, or their conformity with internal codes (asserted by the top).
2. Also, in hierarchical organisations *there is no separation of powers*. For example, cases of wrongdoing which fall under the executive responsibility of the head of the organisation are ultimately judged by that same person or group.³¹
3. In addition, *the freedom of speech of employees is severely curtailed*. Only the top officials have freedom of speech. It is a fact that very few employees speak up when they know of a malpractice or misconduct. If they do speak up, they often lose their job. It is impossible not to assume that as a rule, many employees of both private and public organisations are aware of malpractices/misconduct within their organisations, and that the large majority of these employees de facto accept them, or tolerate them. Otherwise it cannot be explained why so many malpractices/misconducts remain unknown to the broader world for a long time.
4. *Hierarchical organisations are not transparent*. Much of what goes on inside hierarchical organisations is confidential and invisible to the outside world. This is true both for business organisations and for government organisations. Employees are not allowed to bring information from within the organisation outside, without the consent of their superiors. Their labour contract obliges them to keep things secret that (according to their management) should be kept secret. No information or messages go outside of the organisation if it does not have the consent of the management.

All of these points can be related to the frequent failure or absence of internal correction mechanisms within hierarchical organisations. In many cases of malpractices or malfunctioning

³¹ Suppose, an employee brings forward to a confidant within the organisation (also an employee) an alleged case of abuse or misconduct in that organisation. That could be anything, from a suspected violation of the company's own rules of conduct, to a suspected violation of laws. Such a case is ultimately judged by the very person who, as an executive, is responsible for the contested conduct. Hence the judiciary and the executive powers are in one hand within a hierarchical organisation. Which is unheard of outside such organisations. In democratic states the separation of these powers is considered of prime importance.

there must have been many employees who were aware of and disagreed with the malpractices or malfunctioning.³²

POSSIBLE REMEDIES

Hierarchical organisations, at least those of the public sector, should be made more transparent. The professional opinions of all members of such an organisation should be public, and not just the opinion of the head of the organisation as is currently the case. When public sector organisations become more transparent in this sense, the individual professional responsibility of the employees will increase. It will *have to* increase. The employees are no longer invisible behind the veil that shields the organisation against external eyes. They will better be able to uphold their professional and ethical standards in their work.

8. THE ROLE OF THE MEDIA, ACADEMIA, AND EDUCATION

The last aspect of our current democracies that I will deal with is the role of the media, academia, and education. There is a reason for dealing with this point last. I see a key role of the media, the universities, and education in the process of improving our democracies.

We have freedom of speech, freedom of the press, and scientific freedom, at least within the university. Yet I think the media and the universities can do much better than what is actually the case.

I do not think that currently the educational system prepares for knowledgeable and critical citizenship. It largely upholds an idealistic (but vague) theory of democracy which does not correspond to reality. It blocks the transfer of knowledge about that reality, and it blocks systematic analysis that may lead to real improvement. When I talk to other people about democracy, I sometimes get this answer: Look, in other places of the world it is much worse than here. My answer is: that may be true, but how it works here is just not good enough to have confidence in the future. But almost all people I talk to are seriously concerned about the functioning of the present democracies. But usually they have absolutely no clue which measures could lead to improvement.

The press does not provide consistent analysis. There is no learning from experience. Issues are in the news for a short time only, then replaced by newer items, and forgotten. Overarching lessons are not drawn. The press is not or not sufficiently critical. The press often functions as a pass-through (service hatch) of what politics releases. Interviews with politicians are often pseudo-critical rather than critical. Which can be explained by the fact that journalists depend on politicians for interviews.

Academies of science remain silent on many of the issues that I have mentioned. Such as the violations of rules of argumentation in the parliaments and in the (social) media, and much more.

Academia is often absent in important public discussions. All kinds of unjustified claims on sustainable technology and renewable energy remain unchallenged from the side of academia. At the universities there is an enormous amount of research on all kinds of subjects, but there is

³² Think of the Diesel software fraud as an example. Many people, both in the car industry and in government organisations, must have been aware of the irregularities, but all these people kept their mouth, or at least were stopped effectively.

very little systematic attention for the subjects that I mentioned. There is among other things no serious study of how constitutions could be improved, or what a sufficient constitution would look like. At least, I do not see any signs of such activity.

POSSIBLE REMEDIES

I will not try to enumerate possible remedies to such shortcomings. But I want to stress that we, in the democratic countries, (still) do have this freedom of speech, freedom of the press, and scientific freedom. That discerns us from the other 70% of the world population where these freedoms are much more constrained than they are in the democratic states.³³ And we should use these freedoms to improve the current democracies. Before it is too late.

People/citizens should ask questions. They should analyse what they see. They should try to find explanations for things that they think are not well. And they should try to act on those explanations, in order to contribute to improvement. At the moment, they are very ill equipped for that. The media, academia, and education should help them and enable them.

The question everyone should ask is: What can be my role? The question we all could ask during this spring school is: What does it mean for engineering education?

³³ According to the website Varieties of Democracy (<https://v-dem.net/>) 71% of the world population live in autocracies, which is an increase from 48% ten years ago.

APPENDIX. EXAMPLES OF SITUATIONS THAT CALL FOR UNANIMITY DECISION MAKING

Two important classes of problems for which solutions exist that can be adopted with unanimity are NIMBY-type³⁴ problems and Prisoner's Dilemma-type problems. They will be discussed in the present and the next subsection. The third subsection is about public goods. The discussion in this appendix applies both to direct and indirect decision making (through a body of true representers).

1. NIMBY-TYPE SITUATIONS

Many decisions in modern democracies involve situations where the interests of different people are conflicting. An important category are NIMBY-type situations. Virtually all infrastructural and planning issues are of this type. It is typical for these decision problems that a certain project or activity is proposed that would make many better off, whereas a relatively small group is made worse off. Often, the individual advantage of those who benefit from the project or activity (and are therefore in favour of the proposal) is relatively small as compared to the individual disadvantage of those who would be made worse off (and are therefore against). In a majority vote those made worse off loose, even when their collective disadvantage is higher than the collective advantage of those in favour.

SOCIAL PROGRESS

A solution to the above decision problem is to require that the decision leads to social progress. For a proposed project or activity to result in social progress, a compensation scheme must be possible where those expecting net harm or loss are compensated by those who expect to gain from the project/activity, in such a way that a net benefit for those in favour remains. Only if such a compensation scheme is actually executed, social progress can be claimed. Here, social progress is defined as a change that makes no one worse off, and at least some better off.

The definition invoked above is the only non-arbitrary definition of social progress.

Within social welfare economics, one encounters also another definition of social progress, according to which a change represents social progress when the sum of all individual benefits and losses caused by the change results in a positive figure. That means that a compensation scheme as indicated above should be possible, but need not actually be executed. There are two problems with this definition. The first is that there is no objective scale on which the individual losses and benefits can be quantitatively compared. It means that, if there are both losers and winners from a project or activity, then strictly speaking it cannot be determined whether there is social progress in the definition of social welfare economics. The second problem is the question why it would be fair that some benefit at the cost of others.

³⁴ The acronym NIMBY stands for not in my back yard. The term has obtained a negative connotation because of claims that NIMBY behaviour is bad citizenship, but the present text makes it clear that there is no basis for such a claim.

If it is assumed for the sake of the argument that it *is* possible to quantify individual losses and benefits on a common scale, for instance in terms of Euro's, then it can be seen that majority decisions do not guarantee social progress in the definition of social welfare economics. Take the case of a proposal to build an incinerator. Suppose that there are many people who will have a small benefit from the incinerator, whereas a small minority experiences a large harm or loss because the facility will be built in their neighbourhood. The project can be adopted because a majority is in favour. Nevertheless the sum of the individual net losses of those against could be larger than the sum of the individual gains of those in favour.

To summarise: majority rule does not guarantee social progress, but makes possible social retrogression instead.

A similar analysis applies to the concept "general interest". A proposal is only in the general interest if it is in the interest of all (if necessary, after a compensation scheme has been effectuated).

2. PRISONER'S DILEMMA SITUATIONS

A Prisoner's Dilemma situation (PD situation for short) exists when:

Each would be better off in his/her own judgement, at least in the long run, if all were imposing certain restrictions upon their behaviour, and

Individual compliance with these restrictions results into a considerable disadvantage compared to non-compliers, whereas the negative overall effect of one or a few non-compliers is relatively small.

SOLUTION OF A PRISONER'S DILEMMA SITUATION.

Assuming that those involved in a PD situation can communicate with each other, and moreover can make binding agreements then a solution to a PD situation can be defined as follows:

Solution to a PD situation: A contractual agreement that binds actors to a strategy that leads to outcomes that are better for all players (in their own judgement) than without the agreement.

Such a solution may be termed non-arbitrary, in the sense that all actors prefer the outcome of the agreement to the likely outcome without the agreement. Solutions of Prisoner's Dilemma situations can in other words be accepted on the basis of unanimity.

The concept of a Prisoner's Dilemma situation was developed in a branch of social science called game theory. The actors in a PD situation are for that reason usually called players.

The matrix below depicts a PD situation with only two "players". In this example, an agreement will render a pay off of 10 for "me" and 9 for "you". The likely outcome without agreement will be 8, 8. For without a contract, it is rational for both "me" and "you" to steal, which leads to the outcome in the south-west quadrant.

		You	
		Do not steal	Steal
I	Do not steal	10, 9	7, 11
	Steal	12, 6	8, 8

Remarks:

1. The scales of the outcomes can be assumed to be subjective: each of the players evaluates the possible outcomes against his/her own values or preferences.

2. In the example all outcomes are positive. But if the situation preceding the activity in question is taken as a reference point, outcomes might also be negative. I.e. the 8,8 in the bottom-right quadrant might also be for example -8,-8, or 2,-10. There are many real life examples where the values in the bottom-right quadrant of the matrix may be negative as compared to the situation preceding the activity. Take the situation where there is a public park with lanes and lawns. Two strategies are “keep to the path” and “take shortcuts crossing the lawns”. If all opt for the latter the lawns will be spoiled and the park will be ruined.

The concept of a Prisoner’s Dilemma situation (or “game”) is very useful for modelling many social situations. But other types of situations have also been studied in game theory, such as coordination games and chicken games. Also for such situations non-arbitrary solutions may exist similar to solutions for PD situations.

GENERALISATION. LAWS AS SOLUTIONS OF PRISONER’S DILEMMA SITUATIONS.

Many social, political and legal institutions of a state, including many of its laws, may be analysed from the point of view that they are or should be solutions to PD situations.

3. PUBLIC GOODS

The Swedish economist Knut Wicksell proposed in an article published in 1896³⁵ that unanimity is required for the approval of public programs and their financial burden. Such “public programs” are now called public goods by economists. The “financial burden” refers to the taxation scheme that is required to finance the public good in question.

Provided that members of parliament are properly represented by their voters, such unanimity decisions might be arrived at in a parliament.

Here is a quotation from this text, stressing this need for unanimity:

³⁵ K. Wicksell. A New Principle of Just Taxation, 1896. The original is in German. In the foreword Wicksell states that “... the essay contains not so much a new principle of just taxation, than a method to ensure that such measure of justice as can be attained is in fact achieved in practice.”

“If any public expenditure is to be approved ... it must generally be assumed that this expenditure ... is intended for an activity useful to the whole of society and so recognized by all classes without exception. If this were not so ... I, for one, fail to see how the latter can be considered as satisfying a collective need in the proper sense of the word.” K. Wicksell (1896), as quoted in D.C. Mueller, Public Choice III p 144.

Note that this text stems from a time where government expenditures did not exceed 10% of GNP.