Seminar: 'Complexity and the public role of civil courts in health and environmental matters'
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Some observations on judicial decision-making and observational research in health and environmental matters

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1.1 Introduction

This seminar is taking place on the festive occasion of the inaugural lecture of prof. Elbert de Jong. First of all, I would like to congratulate him on this special day in his professional and personal life.

1.2 Topic of the seminar

Prof. De Jong chose to focus this seminar on the question how civil courts can adequately deal with scientifically and normatively complex environmental and health issues. He initiated that this central question will be addressed today from several perspectives, using insights from disciplines such as psychology, sociology, economics and law. I am honoured he invited me to speak about this central question from the perspective of law.

I would like to start by citing the description of the topic of this seminar from the announcement on the website of Utrecht University, because this description is as meaningful as the central question itself with regard to the seminar's subject:

> "Civil courts are increasingly asked to decide on health and environmental issues that are surrounded by normative and/or scientific complexity. Think of litigation in the context of climate change, air pollution, toxic substances and Covid-19. Scientific complexity is for instance present when there is uncertainty about the risks involved. Normative complexity is present when in society there are various normative views on the acceptability of the risks involved, the measures that need to be taken and the way the conflicting public interests that are at stake need to be balanced
> The central question of the seminar is how civil courts can adequately deal with scientifically and normatively complex environmental and health issues."

1.3 Scope of this contribution

This central question is an ambitious one. How civil courts can adequately deal with scientific and normative complexity of environmental and health issues, depends on so many people, elements or circumstances. I would like to make a few remarks with regard to the scope of this contribution. I do not want to give the impression that my approach today could be a comprehensive one.

I will listen with attention to those who will eventually make use of recent judgments about scientifically and normatively complex environmental and health issues of Dutch civil courts with regard to our central question. I will hardly do that myself. My perspective will be that of a judge practicing law, mixed with an academic interest. I am a member of the judiciary in the Netherlands since 1990 and an endowed law professor on topics of the judiciary and conflict resolution since 2011.

On two occasions I addressed an international audience on the subject of Dutch environmental law in the past and current Dutch climate change litigation.[1] People told me they appreciated this because international access to such information is limited by language barriers. Today, I will include some aspects of the development of the current Dutch civil law system within which cases about complex issues such as climate change or Covid-19 are decided by civil courts. I will leave out aspects of civil class actions, because I will not address the right to initiate civil cases about complex health and environmental issues. My observations on judicial decision-making and observational research in health and environmental matters will start with some words about judicial decision-making and continue with the combination of legal certainty and the Dutch law of obligations. Then I would like to share some observations on the transition of the traditional role of experts in the proof of facts in a case towards a role of empirical legal studies in the proof of facts and eventually in the development of the law. To conclude, I will return to the idea that the judicial task of doing justice according to the rules of law is an essential part of adequately dealing with scientifically and normatively complex environmental and health issues in civil cases.

2.1 Dual uncertainty and judicial decision-making

As just said, I will start with some remarks about judicial decision-making. For civil courts, the question how to deal adequately with complex environmental and health issues, is one aspect of the wide-ranging subject of the quality of judicial decision-making in civil law cases. A general aspect of judicial decision-making in civil law cases is, in my opinion, that a civil court has to make its judgments in dual uncertainty.

[1] G. de Groot, L'environnement: les citoyens, le droit, les juges. Conference on climate, the citizens, the law, the judges, organised by the Cour de Cassation and the Conseil d'État in Paris; G. de Groot, National judicial solutions to global challenges: some inspiration from Grotius, Symposium on the human rights of future generations in the framework of the Grotius year, 19 November 2021.

Firstly, the factual basis of a civil law judgment is uncertain. The standard of proof is that a court must be convinced that the facts on which the judgment is based, are true. In the Netherlands, a so-called reasonable degree of certainty is sufficient to reach this belief. I assume this standard is not lower than the beyond reasonable doubt-standard. Determining the truth of facts is a relative matter. The application of rules of procedure and evidence are generally not able to exclude that a judgment in a civil law case could be based on (partly) incorrect facts.
Secondly, although in most cases the applicable civil law provisions are clear and do not give rise to questions of interpretation of the law, the assessment of the legal basis of a civil law judgment comes with uncertainties in cases in which disputed provisions are open to interpretation.
At first sight, these uncertainties seem not to have much distinctive character compared with for instance the activities of entrepreneurs or medical doctors, who also make professional choices surrounded by uncertainties. Still, we should not forget that a judgment of a civil court based on uncertainties of fact and law may have a major impact in the living situation of the parties, the legal aspects of the judgment may be of an interest beyond the case of the parties, and judgments may be enforced against a party's will. In my opinion, uncertainties of fact and law as an aspect of judicial decision-making are relevant for our topic today. I will say something more about this later.

2.2 Doing justice according to the rules of law

Now I would first like to draw attention to the core of judicial decision-making by civil courts, which is doing justice according to the rules of law. This does not only apply to health and environmental matters but also to cases in other fields of law. Doing justice according to the rules of law may differ from doing justice outside the legal framework. And doing justice *according to* the rules of law is not the same as doing justice *to* the rules of law, as the current rule of law debate within the European Union about the rule of law basis of so-called illiberal democracies shows.

2.3 Textualism, interpretation and judicial decision-making

A characteristic of such various notions is the way a court deals with texts of law. Imaginable is that in the decision-making process a legal text is taken literally, like Montesquieu in the 18th century propagated. Hardly conceivable is that a law is interpreted without regard to the legal text, but only with regard to intention and purpose, even though this is how sometimes the results of a judicial decision-making process are framed. A third perspective offers us a more realistic account of judicial decision-making nowadays. This is the application and interpretation of the law in the actual context of the case.

It may be useful for the study of our topic today, not to isolate the judicial decision-making process of doing justice according to the rules of law. Textual interpretation and the understanding of textual interpretations are not unique for the field of law. For instance, in the fields of literature, theatre, religion or music, the main three perspectives of textual

interpretation are more or less comparable: an interpretation may be understood as staying close to the text, or it may be seen as rooted in the independent ideas of the interpreter without much regard to the original text or musical score, or an interpretation may be perceived as taking into account a certain historical, social, economic, environmental or other context.[2]

Performances of opera provide an example. An opera combines text, sound and vision to tell a story. In the performance of an opera, staging is used as an instrument to create interpretational effects and to arouse feelings among the public. The public and professional discourse about the choices made in the staging of operas is just as endless as the one about judicial decisions in environmental and health matters. For instance, someone may reject an interpretation of an opera because it is not recognised as a literal one, someone may support the actual choice of the interpreter to create a free interpretation as a new work of art, someone may criticise the way contextual factors are taken into account in the dynamic interpretation of the original version, etcetera. My own preferred approach is, by the way, to observe the performance of an opera with all senses and enjoy it, as a way of distancing oneself from everyday judging.

In everyday judging in the Netherlands, we may also recognise these three different types of interpretation in civil law cases. In 1972 for instance, Gerard Wiarda distinguished them in his famous book titled "Three types of the finding of law". He differentiated between three types of interpretation in the context of judging, roughly said 1) the heteronomous interpretation of statutory law, 2) the autonomous interpretation of civil law, and in between 3) the interpretation of rules and principles with regard to the case and its context, with both heteronomous and autonomous aspects.[3]

2.4 Doing justice according to the rules of law and the powers of state

In today's liberal democracies, the judicial decision-making process is not as free as in a work of art. The state power is divided between the legislative, the executive and the judicial branch. Representatives have their own tasks towards citizens and society, based on the power they represent. Representatives of the legislative, executive and judicial power share a general responsibility for maintaining the law. Together, they have to protect human dignity and to serve the principles of the rule of law. Within the member states of the European Union, they share the values on which the European Union is founded.[4] Within the international community, representatives of the three powers notice how Dutch law is intertwined with international law in treaties the Netherlands entered into, such as treaties

[2] Cf. William Twining and David Miers, *How to Do Things with Rules*, Cambridge: Cambridge University Press 2010, p. 371.
[3] G.J. Wiarda, *Drie typen van rechtsvinding*. (second, revised print), Zwolle: 1980.
[4] Article 2 of the Treaty on European Union: "The Union is founded on the values of respect for human dignity, freedom, democracy, equality, the rule of law and respect for human rights, including the rights of persons belonging to minorities. These values are common to the Member States in a society in which pluralism, non-discrimination, tolerance, justice, solidarity and equality between women and men prevail."

on human rights or climate change. From the legal perspective, doing justice according to the rules of law is key for all powers of state.

2.5 Legal certainty

A fundamental aspect of doing justice according to the rules of law, and of the shared responsibility of the three powers of state, is to take proper care of legal certainty. The principle of legal certainty might be defined by a trilogy: clarity, stability and predictability of the law. In other words, it must be clear what a legal provision means, a legal provision must be applied consistently, and it must be reasonably foreseeable how a legal provision will turn out in a particular case. Without sufficient legal certainty, the regulatory function of the law may fall short, and a lack of legal unity and of legal protection may arise. The guarantees for the rights, duties and interests of people partly depend on legal certainty. Ultimately, a lack of legal certainty may jeopardise safety, well-being and prosperity of the people.

3.1 Legal certainty and Dutch civil law of obligations

Legal certainty and Dutch civil law are an interesting combination. Here we come again to the few cases in which the applicable civil law is open to interpretation and therefore, to some extent, uncertain.

The Dutch law of obligations, within which health and environmental cases before civil courts take place, is part of the Civil Code. Until 1992, the Dutch Civil Code of 1838 was in force. This French based law contained a lot of rather tightly formulated provisions. In short, the judicial decision-making process in the 19th century stayed close to the text of these provisions. Nowadays, we say that hard cases make bad law. Looking into civil cases decided a long time ago, one might find that, in turn, hard law sometimes made cases bad. In some cases doing justice in accordance with the law was even perceived as not possible. A standard example is the judgment of the Supreme Court in 1910 in a tort case. In this case, a water pipe broke down overnight in a warehouse for leather clothes. The main valve was located on the upper floor in an apartment. The owner of the clothes asked the resident of the apartment to turn off the main tap to prevent damage. Initially, she refused. She felt that her sleep was disturbed and she did not take the owner's fears seriously. Afterwards, the owner went to court and claimed damages. He stated that her initial refusal was unlawful towards him. The Supreme Court ruled that the Dutch Civil Code about tort clearly spoke of violations of legal duties or the infringement of another's rights. Because no specific provision in the law prescribed the cooperation of the resident to turn off the main tap in a case like this, the behaviour of the resident towards the owner of the clothes was held not unlawful.[5]

This judgment was severely criticised. In the famous Lindenbaum/Cohen judgment of 1919, 9 years later, the Supreme Court changed its approach, in accordance with a draft of a new

[5] Dutch Supreme Court 10 June 1910, W 9038 (*Zutphense waterjuffer*).

legal provision about tort. This case was also about behaviour that was considered generally negligent – industrial espionage - but not specifically forbidden by law at that time. The Supreme Court ruled that one can also be held liable for damage on the basis of an unwritten rule not to act contrary to what has to be regarded as proper social conduct.[6] The legislator then postponed the further consideration of the draft regulation. It took until 1992 before the Dutch Civil Code included among the grounds for civil liability an act contrary to what has to be regarded as proper social conduct. In the meantime, a rule of unwritten law pertaining to proper social conduct was applied by Dutch civil courts as a ground for civil liability.

The development of the new Civil Code started after World War II. The legislator considered it necessary to improve the balance between legal provisions and judicial decision-making in favour of the possibilities of achieving a fair outcome of a case. In 1992, the new law of obligations as part of this new Civil Code came into force. Since then, the law of obligations contains a lot of precise and detailed provisions on the one hand, and open standards on the other hand. An obligation can only exist if it results from law (article 6:1 Dutch Civil Code). Here, law not only includes the precise and detailed formulated provisions, but also open standards, such as the just mentioned duty not to act contrary to what has to be regarded as proper social conduct, and the principle of reasonableness and fairness. When determining what the principle of reasonableness and fairness demands in a specific situation, one has to take into account legal principles that are generally accepted, existing legal views in the Netherlands, and the social and individual interests that are involved in a case (article 3:12 Dutch Civil Code).

In short, the overriding intention of the legislature with the 1992 Civil Code is, on the one hand, to provide legal certainty as far as it is possible for the legislature to foresee what kind of rules are needed to prevent and resolve civil law conflicts, and, on the other hand, to leave enough space for parties, their lawyers, courts and involved stakeholders to look for fair solutions in the circumstances of the case according to the rules and principles of civil law.

Thus, the Dutch law of obligations enables and obliges civil courts to interpret rules and principles with regard to the circumstances of the case and its context. In more abstract legal terms, the courts have to combine heteronomous and autonomous aspects in the interpretation and application of civil law. During the judicial decision-making process, the interpretation of a legal text in accordance with the will of the legislature is effected through the judge's ability as a human being to decide independently on the conflict in a case. Of course, the space for finding fair and lawful solutions in an individual case must be used in a fair balance with the general need for legal certainty in individual and social life, respectively in civil and commercial life. For civil courts - and especially for the Dutch Supreme Court with its core tasks in safeguarding legal unity, furthering the development of the law and offering legal protection – the contribution of the court to this balance in the judicial decision-making process in a case is a particular point of interest.

[6] Dutch Supreme Court 31 January 1919, ECLI:NL:HR:1919:AG1776 (*Lindenbaum/Cohen*).

3.2 A short look at transnational civil law

After this small glimpse into some origins of the creation of a scope for interpretation within the national civil law of obligations, I will continue with a short look into the transnational part of civil law.

The law of the European Union has an autonomous position in the legal order. EU law effects national law. EU law may for instance force civil courts to examine if a national civil law provision is compliant with an EU law provision, or to examine if a national civil law provision may be interpreted in accordance with an EU law provision. In addition to the position of open standards in the Dutch Civil Code, the duty of courts to give full effect to EU law is an incentive for national civil courts to have an open mind with regard to a dispute about the interpretation of a national civil law provision. An example of such an open mind is listed in the 2021 Annual Report of the Supreme Court of the Netherlands. In the section 'Contacts with the legislator', the Supreme Court describes judgments that include a so-called signal to the legislature. In one of these cases – an EU cross border case - the appeal court had to decide if the limitation period of a claim was interrupted in time, in connection with the start of a mediation attempt between the parties. The Dutch legislator has regulated the limitation periods of claims in the Civil Code, but the limitation period of an EU cross border claim in connection with mediation has been regulated in a specific code in order to implement Directive 2008/52/EG on certain aspects of mediation. The appeal court did not apply this specific code. The appeal in cassation complained of this omission and succeeded. In the section 'Contacts with the legislator' in the Annual Report, the Supreme Court describes this judgment. The open mind I just mentioned is recognisable in the remark that the choice of the legislator to regulate the mediation related interruption of a limitation period in a specific code and not in the chapter of the Civil Code about limitation periods of claims and their interruption, may lead to this specific regulation being overlooked in legal practice. This reflective judicial attitude towards the functioning of the civil law system in daily life, is part of a dialogue in which representatives of the judiciary inform other state powers about potential practical effects of legitimate choices.

We may distinguish another transnational part of Dutch civil law if we take a short look into the Dutch Constitution. Since 1983 the Constitution includes a chapter consisting of a modest collection of fundamental rights.[7] Most of them are also regulated by international treaties, like for instance the European Convention on Human Rights and Fundamental Freedoms (ECHR). The Dutch Constitution prohibits civil courts to examine if provisions of the Civil Code comply with the fundamental rights chapter in the Constitution (article 120 Dutch Constitution), but it obliges civil courts not to apply a civil law provision if this application would violate a provision of an international treaty or agreement entered into

[7] In Kamerstukken II 2007/08, 31 570, nr. 3, p. 16 the Dutch Council of State wrote: "Uit het voorgaande blijkt dat sinds 1814 in de Grondwet geen preambule of algemene beginselen meer zijn opgenomen. De voorkeur is sindsdien altijd uitgegaan naar een sobere Grondwet waarin alleen concrete, bindende rechtsregels zijn opgenomen." ("From the foregoing, it is clear that since 1814, the Constitution has not included a preamble or general principles. The preference since then has always been a modest Constitution containing only concrete, binding legal rules.")

by the Netherlands, like the Convention, that may to its content be considered 'generally binding' (articles 93 and 94 Dutch Constitution).

In this way, the Dutch Constitution provides the immediate effect on Dutch civil law of various provisions of the Convention. Against this constitutional background, references to provisions of the Convention and to judgments of the European Court of Human Rights (EctHR) interpreting provisions of the Convention, are a common part of the judicial decision-making process and of citing the law in judgments of Dutch civil courts. The process of law finding and the judgments respect the usual doctrines guiding the application of the Convention, like the margin of appreciation of the member states, or the interpretation of the Convention as a living instrument in accordance with the Vienna Convention on the Law of Treaties. The canon of the case-law of the European Court of Human rights concerning the rights enshrined in the Convention, is an essential hermeneutical canon for the Dutch legislative, executive and judicial powers, that supports national law to be in accordance with human rights and freedoms.

In addition to the position of open standards in the Dutch Civil Code and to the duty of courts to give full effect to EU law, the Dutch Constitution is another incentive for national civil courts to have an open mind with regard to a dispute about the interpretation of a national civil law provision. In particular, these three phenomena stimulate civil courts to combine a rule based approach with a principle based approach of civil law. But the sky is not the limit. Up to now, according to judgments of the Supreme Court, (article 120 of) the Constitution does not permit a court to review a national legal provision like provisions in the Civil Code in relation to fundamental legal principles that have not yet found expression in any generally binding provision of a treaty.[8]

3.3 A complex multi-layered legal basis

Within this civil law system, litigation as mentioned in our topic today, such as litigation in the context of climate change, air pollution, toxic substances or Covid-19, invokes questions of scientific and normative complexity that will be answered by civil courts on the basis of, if available, precise and detailed provisions in the Civil Code, or otherwise on the basis of open standards, and furthermore on the basis of EU law and international law. This legal basis is already complex in itself. A multi-layered legal order is the basis for a civil court to find the law to be interpreted. The dual uncertainty about the factual and the legal basis of a case further complicates the judicial decision making process.

4.1 Expert evidence and factual uncertainty

In civil cases about scientific and normative complex health and environmental matters, expert evidence is being used regularly. About fifteen years ago, I wrote my doctoral thesis about expert evidence in civil law cases. At that time, my main academic interest concerned the influence of expert evidence on the establishment of the facts by the civil courts. Dutch civil procedural law is based on the idea "Give me the facts, and I give you the law". The Dutch civil rules of procedure and evidence consider expert evidence strictly as evidence of

[8] Dutch Supreme Court 14 April 1989, ECLI:NL:HR:1989:AD5725 (*Harmonisatiewetarrest*).

fact. Even general knowledge and general rules of human experience are considered as facts only by the Dutch civil procedure rules[9], although assuming the existence of such facts and rules sometimes is a scientific and normative exercise in itself. Furthermore, the court must consider facts or rights as established that have been asserted by one party and that have not, or not sufficiently, been contested by the other party.[10] Dutch rules of civil procedure assume that an adversarial procedure includes the right of the parties not to dispute each other's stated facts, unless the facts are not at the parties' free disposal, for instance in procedures between parents about the custody of their children.

The principles of party autonomy and fair trial are important within Dutch civil procedure rules. Just as in the civil law system itself as pointed out before, these rules safeguard the autonomous influence of human beings on their rights, obligations and interests. They provide an opportunity to effectuate rights and obligations in the context of the living situations of the people concerned, as well as to serve interests protected by law.

The extent to which expert evidence can contribute to resolve the scientific and normative complexity of disputed facts, has been debated for decades in countries with different legal systems. My thesis in 2008 addressed this debate. In a recent article, Kasper Jansen and Elbert de Jong clearly show that a permanent question in this debate is about the extent to which a legal professional can assess the correctness of expert evidence in terms of content and procedure.[11]

Limitations in the assessment of scientifically and normatively complex information are in my opinion inherent to the factual uncertainty of judicial decision making. We cannot make them disappear, but we need to acknowledge them and enable ourselves to anticipate their pitfalls in the best possible way, in order to guarantee the well-functioning of expert evidence as one of the instruments in the determination of truth within a fair trial in a case.

4.2 Factual uncertainty and legal provisions

The acceptance of factual uncertainty within judicial decision-making in combination with limitations in the assessment of complex information, may become more difficult if the relevant legal provisions themselves are considerably based on for instance hypothetical information or expectations regarding future developments. Of course, other circumstances may cause difficulties as well, such as expected consequences of a certain interpretation or application of legal provisions, or the way in which an interpretation eventually intervenes into the autonomy of people or the State.

In a dispute between parties about the interpretation of such legal provisions, factual uncertainty and legal uncertainty within the judicial decision making process may increasingly become a chicken-and-egg issue. I will provide an example with regard to the role of international law in the multi-layered civil legal order. In cases about climate change, a dispute between the parties may be about the question if one of the parties has an

[9] Article 149, paragraph 2, Dutch Code of Civil Procedure.
[10] Article 149, paragraph 1, Dutch Code of Civil Procedure.
[11] K.J.O. Jansen & E.R. de Jong, Rechterlijke toetsing van wetenschappelijke kennis in het aansprakelijkheidsrecht, *Nederlands Tijdschrift voor Burgeriljk Recht* 2022/2.

enforceable obligation to reduce the emissions of substances that are considered harmful to the climate. With regard to this dispute, the parties may disagree about the interpretation of the human rights to life, health and privacy in relation to climate change. Then, the judicial decision-making process of civil courts will include questions about the margin of appreciation of states, the dynamic interpretation of human rights provisions and their scope. Factual certainties and uncertainties about climate change have to be integrated in this interpretation. The judicial decision-making process may also include the significance of international treaties on climate change, like the 1992 United Nations Framework Convention on Climate Change, the 1997 Kyoto Protocol and the 2015 Paris Agreement. The law in these treaties is in itself based on facts and figures about climate change that are scientifically and normatively complex and that are surrounded by expectations regarding future developments. If a civil court has to assess, by reference to these legal provisions, an eventual obligation of a party to take measures in order to reduce emissions, a court could essentially pile uncertainty on uncertainty in establishing the facts and in finding the correct interpretation of the disputed legal provisions, or could get bogged down in circles of uncertainty. The factual and legal uncertainties of the judicial decision-making process seem to coincide more and more here. In addition, if the legislature and the executive branch are slow to take action against climate change, partly because it is politically unfeasible, amidst the many uncertainties, to find sufficient support for measures that require serious change of human behaviour and a major transition in society, a particular point of interest of courts is to ensure that they remain within the law and the relevant context of the interpretation of the law, outside the political sphere. Here doing justice according to the law is a meaningful aspect of the task of courts.

It doesn't come as a surprise that a civil court will also have to look after this point of interest in cases in which the dispute about uncertainties of the factual and legal basis of a legal provision already existed within the legislature itself, when this legal provision was drafted. We may distinguish an example of this among the Dutch legal provisions and measures with the aim of limiting the spread of the Covid-19 virus. Since mid-March 2020, Dutch government has taken several measures related to the outbreak of the Covid-19 virus. One of these measures was a night-time curfew announced in January 2021. Under the relevant legal provisions, it was prohibited to be outside in the open air between 9:00 p.m. and 4:30 a.m., apart from exceptions. This was based on article 8 of the Extraordinary Powers of Civil Authority Act, an emergency provision that had been partially put into effect on the day of the announcement of the curfew. In a debate about the necessity of the curfew, the urgency of taking this measure and the legitimate basis of this measure, various data about the scientific and normative complexity of the control of the pandemic were discussed between parliament and government, together with an advice of the Council of State. After the provision was adopted, its lawfulness was contested by different parties in a civil case against the Dutch State. In these summary proceedings before the civil first instance court, the appeal court and the Supreme Court, we may discern quite some arguments that were part of the discussion in the process of establishing the legal provision

for the curfew.[12] Parties may bring a case before a civil court in which legal and political arguments might get mixed up. Their dispute may be about the factual basis and the probabilities of effects of a legal provision. In such circumstances, doing justice according to the rules of the law is once again a meaningful aspect of the task of courts.

4.3 Observational research and legal provisions

The general aspect that a civil court has to interpret legal provisions and make its judgments partly in uncertainty, is a fact of life, notwithstanding the apparently increasing factual and legal uncertainties in health and environmental matters. Even this increase is not unique to such matters. Professionals working in for instance the area of interpretation of globally used international contracts in which digital technology plays a major part, or the area of interpretation of FRAND terms[13] with regard to licensing an intellectual property right, probably won't have much trouble with telling a similar story. Not to mention how courts may adequately deal with the influence of artificial intelligence.

Ultimately, the question how civil courts can adequately deal with scientifically and normatively complex environmental and health issues, is about doing justice according to the rules of law and about providing legal certainty within the state and society. Since justice and legal certainty in rule of law based democracies are founded in logical, truthful and well-reasoned arguments, the drafting or interpretation of relevant legal provisions might be strengthened by obtaining such arguments, or at least more profound and valid information about environmental and health issues. Observational research may be an interesting opportunity to uphold the level of certainties that may be considered necessary to safeguard the general principle of legal certainty within the legal order.

In contrast with the influence of expert evidence on the establishment of facts only, the upcoming focus in legal research on empirical legal studies will eventually provide both legal and non-legal information about the potential or actual functioning of legal provisions. Although expert evidence may provide both scientific and normative information in a case, the key tasks that may be assigned to an expert within a legal context are not about the potential or actual functioning of the law. In my thesis, I distinguished three key tasks that may be assigned to an expert within a legal context. The first task is about the collection, arrangement, clarification and explanation of facts within the field of expertise of the expert. The second task is to provide knowledge and rules of human experience that are available within his field of expertise. The third task is to draw conclusions within his expertise from facts that are already established by the court or from facts that are collected, arranged or clarified by the expert. These tasks illustrate that expert evidence may include both scientific and normative material in a particular field of expertise, but this material is considered as evidence of facts and is not aimed at providing information about the potential or actual functioning of legal provisions.

[12] Please refer to the advisory opinion of Advocate General Langemeijer for an overview (3 December 2021, ECLI:NL:PHR:2021:1136).

[13] FRAND is an abbreviation of fair, reasonable, and non-discriminatory. See about FRAND terms for instance: https://en.wikipedia.org/wiki/Reasonable_and_non-discriminatory_licensing.

I am curious to know whether limitations in the assessment of scientifically and normatively complex information included in expert evidence, might become less restrictive if comparable information could be obtained more generally by making use of empirical legal studies as observational research.[14] Currently, the Dutch law faculties stimulate within the framework of the so-called *Sectorplan Rechtsgeleerdheid* the empirical-legal research profile. This profile acknowledges that law is not separate from society, social developments and behaviour of individuals. Empirical legal studies in Dutch law faculties is about qualitative and quantitative research on assumptions underlying legal provisions, the way in which legal provisions are applied and the effects of the legal system and legal provisions in society. Empirical legal studies may provide information to the legislature, the executive and the judiciary to further for instance the level of certainty about the factual basis of legal provisions or about the interpretation of a legal provision on the basis of both the text and the context in which the provision is functioning. An example to illustrate the importance of clarifying underlying scientific and normative assumptions when drafting a legal provision, in order to prevent eventual health damage pertaining this provision, was for instance given in research of Antokolskaia about co-parenting, the situation in which parents live apart and share the care of their child. She showed that the legislatures of Sweden, Belgium and the Netherlands took the major step of elevating co-parenting to a legal priority model without reference to the available results of behavioural science research into the effects of different residence arrangements on children. She also showed that the Australian legislator did take scientific data into consideration, but nevertheless adopted legal provisions guided primarily by political considerations. Antokolskaia stated that in family law, the question of the functioning of a drafted legal provision often is not raised or, if raised, the answer is filled with unsubstantiated behavioural presumptions, such as the unfounded assumption that reducing the duration of alimony after a divorce will promote the emancipation of women because married women would think more carefully before starting to work part-time or giving up jobs.[15] The so-called "integrated impact assessment framework for policy and legislation"[16], a normative source of information for the drafting of proper regulation, established by the Dutch government, does not describe the use of evidence based information in drafting legislation.[17]

[14] See about empirical legal studies in the Netherlands for instance: Nieke Elbers e.a., *Nationale Stimuleringsactie Empirical Legal Studies*, Nederlands Centrum Criminaliteit en Rechtshandhaving 2018; Nieke Elbers e.a., Empirisch-juridisch onderzoek in Nederland, *Recht der Werkelijkheid* 2018/1; Catrien Bijleveld, Arno Akkermans, Marijke Malsch, Bert Marseille, Monika Smit (red.) *Nederlandse Encyclopedie Empirical Legal Studies*, Den Haag: Boom Juridisch 2020**.**

[15] M.V. Antokolskaia, Van politiek gestuurde wetgeving naar evidence-based wetgeving, in: W.H. van Boom, I. Giesen, A.J. Verheij, *Capita Civilologie, Handboek empirie en privaatrecht*, Den Haag: Boom Juridische uitgevers 2013, p. 171-205.

[16] See https://www.kcbr.nl/sites/default/files/iak_english_incl_corrections_02-11-2017.pdf, or, in Dutch, https://www.kcbr.nl/beleid-en-regelgeving-ontwikkelen/integraal-afwegingskader-voor-beleid-en-regelgeving#Kabinetsbeleid.

[17] See for instance E. Niemeijer en Dr. P.W. van Wijck, Werkzame en toekomstbestendige wetgeving, *Regelmaat*, 2019/3.

4.4 Acknowledgment of observational research as a source of law

Meanwhile, the significance of empirical legal studies for the interpretation of legal provisions in health matters is already expressively acknowledged by the ECtHR. In the case of Vavřička and others v. the Czech Republic, the applicants complained about the consequences of non-compliance with a legal duty to ensure routine vaccination of children. In its assessment of the case, the ECtHR had, amongst others, to determine whether the vaccination measures were an interference to article 8 ECHR that could be regarded necessary in a democratic society. In this determination, the Court considered that a certain margin of appreciation is available to domestic authorities with regard to interferences to article 8 ECHR. The Court has for instance held that matters of healthcare policy are in principle within the margin of appreciation of domestic authorities, who are best placed to assess priorities, use of resources and social needs.

The scope of the margin of appreciation of states is a normative concept. The Court assessed that the breadth of this margin of appreciation depends, more generally, on a number of factors, such as the human rights at stake, whether there is consensus between the contracting states on the interests at stake and protection thereof, and whether debated national regulations result from a democratic decision-making process.[18] Furthermore, in the same determination, the Court examines whether there have been relevant and sufficient reasons for the interference, and the proportionality of the interference. In this context, the Court takes into account whether there was relevant data from national and international experts on the subject, and whether the state's policy has been based on scientific evidence.

Several of these factors show that the significance of empirical legal studies for the interpretation of legal provisions in health matters is expressively acknowledged by the ECtHR. They may also show that complexity of health matters in a legal context indeed includes normative and scientific questions, as the title of this seminar assumes. It is reasonable to expect that in the future more judgments of courts will deal with the potential of results of empirical legal studies as an instrument for the interpretation of legal provisions in health and environmental matters.

5. Closing

There is a lot more to say about the central question of this seminar, but I come to an end. I am happy other contributions from different perspectives will follow.

I would like to remind you that in Dutch daily practice, sometimes the applicable civil law is open to interpretation and therefore, to some extent, uncertain. In these cases, the combination of interpreting civil law, doing justice according to the rule of law and providing legal certainty within the open Dutch civil law culture are key for courts to deal adequately with scientifically and normatively complex environmental and health issues.

[18] ECtHR 8 April 2021, *Vavřička and Others v. the Czech Republic*, 47621/13, ECLI:CE:ECHR:2021:0408JUD004762113, paras. 273-280; 285-309.

These tasks coincide more and more with uncertainties of a both factual and legal nature. Observational research may be an opportunity to cope with them and to contribute to well-reasoned court judgments.

Thank you for your attention.