

Preface¹

Professor Roth is not only a distinguished Austrian lawyer, but also an internationally renowned and experienced legal scholar. Her international visibility is perfectly in line with the profile of the European Academy of Sciences and Arts. As President of this Academy, it is my great pleasure and honour to write this foreword for her commemorative publication. Marianne Roth first studied law at Johannes Kepler University in Linz, where she received her doctorate in law in 1983 and her habilitation in 1991. Her habilitation thesis, ›Individualleistung und Geldersatz‹ (Individual Performance and Monetary Compensation), which was awarded first prize by the Quelle Science Promotion Foundation, was published by Springer Verlag. In the following years, Marianne Roth furthered her legal studies, including an LL.M. at Harvard Law School, MA. Her master's thesis, ›False Testimony at International Arbitration Hearings‹ (1993), received national and international awards.

After professorships at Humboldt University in Berlin (1994–1996) and Christian Albrecht University in Kiel (1996–1998), Marianne Roth accepted a position at Paris Lodron University in Salzburg in 1998, where she has since been working as a professor of Austrian and international civil procedural law with a focus on comparative private law. In addition to her teaching and research activities, she is involved in university self-administration in prominent functions. In the European Academy I have become acquainted with her as extremely competent, committed, and experienced colleague. She provided us with advice and support, particularly in the area of arbitration proceedings, which also play a central role in an academy under association law.

In addition to legal practice in everyday presidential life, I have always been interested in law from a philosophical perspective. With a background in mathematics, physics and philosophy, I was impressed by the logical reasoning behind legal judgements and decisions. However, everyday experience also teaches us that law is not just logic, as in mathematics. Many legal issues are open to different interpretations, and ultimately it is also questions

¹ The preface draws on the following literature: H. Kelsen, *Reine Rechtslehre*, Mohr Siebeck: Tübingen 2008 (1st ed. 1934); K. Mainzer, *Künstliche Intelligenz. Wann übernehmen die Maschinen?* Springer 3rd ed. 2026 (1st ed. 2019, English: Springer Berlin 2019, Chinese: Tsinghua University Press Peking 2022); M. Roth, *Außerstreitverfahrensrecht*. 7th ed. Jan Sramek Verlag: Wien 2023; C. Schmitt, *Der Begriff des Politischen*, Duncker & Humblot: Berlin 2015 (1st ed. 1932).

of political power that lead to decisions. That is why the question of which political order the law should serve is always in the background.

Democracy is in danger, they say. Political orders are unstable, not only in Europe but worldwide. At the same time as these unstable political events, we have seen unprecedented technological developments over the last two hundred years, most recently with the breathtaking results of artificial intelligence, regardless of the fluctuating political systems around the globe.

Hans Kelsen (1881–1973), the great Austrian-American jurist, speaks of a logic of norms according to which the law must be organised. It is noteworthy that Kelsen initially wanted to study mathematics, physics and philosophy. That is why I have always felt a special affinity for his work. Kelsen is, in fact, influenced through the modern concept of science in the beginning of the 20th century (»Vienna circle«) on which the world of algorithms and formal systems is based on. Therefore, he wanted to transform law into a formal system of legal logic which is independent of all kind of ideological and religious interpretations.

But formal systems of logic and mathematics can be incomplete. A major problem in 20th-century logic was the question of the extent to which scientific theories can be completely formalised and their truths automatically derived by algorithms. According to Kurt Gödel (1906–1978), the great Austrian-American logician, this is not even possible for arithmetic with basic arithmetic operations.

On the legal side, Kelsen makes it clear that legal logic must be supplemented and legitimised by a democratic constitution, i.e. by the separation of powers into an independent legislature (parliament), judiciary (courts) and executive (government), which complement and control each other: checks and balances, as it is called in the American legal tradition.

Without this constitution, we end up in the world of Carl Schmitt (1888–1985), Hans Kelsen's legal antipode in the 20th century. Here, legitimacy is the power of the stronger party that has prevailed. Law becomes a mere instrument of power with which legal norms can be implemented efficiently and stringently. We are currently witnessing a global renaissance of Carl Schmitt's thinking in world politics. International law, which Hans Kelsen had a decisive influence on in the 20th century, now seems to play only a subordinate role. For a European academy, however, it would be crucial to defend this legal tradition internationally.

Logically speaking, formal legal logic is therefore incomplete and cannot legitimise itself. This is illustrated by an episode from the life of Kurt Gödel, the discoverer of the incompleteness theorems of logic, which highlights the problem. In order to become a US citizen in 1948, Gödel had to take an oath

to the American Constitution. Shortly before his swearing-in, he surprised his friend Albert Einstein in Princeton with the remark that he could not take this oath. He stated that he had found a contradiction in the American Constitution: it allowed itself to be abolished by formally legitimate procedures. His experience with the Weimar Constitution in 1933 may have motivated him further. In the end, the jovial and pragmatic Einstein was able to persuade his friend to take the oath after all. However, the relevance of this episode is obvious: formal legal logic, however efficient it may be, is not enough to protect democracies.

The dictatorial regimes of the past and present, with their thoroughly efficient and rational legal logic, have demonstrated this. But it could also be a technocracy of efficient algorithms that seems to promise reliability, security and prosperity in times of unstable political orders. To me, this even seems to be the central challenge of the future:

When political systems of any stripe are no longer able to tackle the major challenges facing humanity, such as climate and environmental disasters, supply and healthcare systems, social and military security issues, financial and economic crises, prosperity and welfare, due to their complexity, the global population will increasingly turn to efficient technocracies.

As AI systems become more powerful, we are handing over more and more authority to them. With the increasing number and complexity of legal cases in jurisprudence and patient records in medicine, AI certainly makes things easier, but it is also becoming increasingly autonomous: in future, what doctor, lawyer or prosecutor will want to go against the concentrated knowledge of an AI system when making decisions? These systems will be increasingly trained with all available knowledge, cases and data in, for example, law and medicine.

Technology must therefore be balanced with human reason – with us humans ultimately responsible. How can we achieve this? What is required is the power of judgement that can subordinate individual circumstances to general regulations. This power of judgement must be practised in everyday life, in studies and at work. It must become the central project of education and training in the 21st century – with digitalisation and AI systems as service providers. Arbitration proceedings for dispute resolution below the state level are a central topic of the celebrated jubilee which requires human power of judgement beyond formal logic. Only in this case, machines do not take over, but help us to handle the increasing complexity of our civilisation.

Univ.-Prof. em. Dr. DDr. h.c. Klaus Mainzer
Präsident European Academy of Sciences and Arts

Vorwort

Die vorliegende Festschrift versammelt 108 Beiträge aus zahlreichen Ländern und Institutionen. Sie verbindet wissenschaftliche Sorgfalt mit thematischer Breite und bringt unterschiedliche Rechtskulturen in ein gemeinsames Gespräch. Univ.-Prof. Dr. Marianne Roth, LL.M. (Harvard) ist sie zum 65. Geburtstag gewidmet.

Für die Jubilarin ist Präzision keine Zierde, sondern Voraussetzung. Marianne Roths Wirken beruht auf einer selten anzutreffenden Verbindung von internationaler Offenheit und argumentativer Strenge. Dabei arbeitet sie nicht auf die rasche Pointe hin, sondern auf Lösungen, die tragen. Wer sie erlebt, merkt rasch, dass Zuspitzungen Verantwortung einfordern und Vereinfachungen ihren Preis haben.

Die Texte knüpfen an diese Haltung an. Sie greifen Themen auf, die mit ihrem beeindruckenden wissenschaftlichen Profil verbunden sind, und führen sie aus unterschiedlichen Perspektiven fort. In ihrer Vielfalt zeigen sie, was das Werk der Jubilarin ermöglicht hat: einen Dialog, der nicht bei Meinungen stehen bleibt, sondern stets Begründung verlangt.

Als Herausgeber danken wir allen Autorinnen und Autoren für ihre Zeit, ihre Sorgfalt und ihre Zugewandtheit. Dem Verlag danken wir für die umsichtige Begleitung. Vor allem aber danken wir Marianne Roth für ihre Integrität in der Wissenschaft und für eine Haltung, die Menschen ernst nimmt und stets das Argument vor Augen hat. Für die Zukunft wünschen wir ihr beste Gesundheit und viele heitere Tage.

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RA Univ.-Prof. i.R. Dr. *Hubertus Schumacher*
Sen.Sc. Dr. *Elmar Buchstätter*, LL.M. (London)
Assoz. Prof. Dr. *Gabriel M. Lentner*

