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Theoretical, dogmatic, and legislative drafting issues in legislation, with particular regard to efforts and opportunities for the digitization of legislation

Thesis of the Doctoral Dissertation

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Outline of the Proposed Research

In the course of my research, I initially presented the classical, analog system of legislation. The system is regarded as analogous due to the fact that codifiers do not fully utilise the achievements of the modern age (e.g. electronic databases, computer networks, the internet). In essence, the computer merely substitutes for the typewriter, and email substitutes for postal mail. The second objective is to examine the digitisation of legislation, building on the growing awareness of the use of IT tools. At this stage, legislative drafters are already making deliberate use of the capabilities offered by available legal databases and networked computers, and targeted improvements are being developed to ensure that legislative drafting can be carried out with greater efficiency and to the highest possible standard. The third objective is to explore the possibilities for automating the legislative process. This involves examining how artificial intelligence can support the drafting of legislative texts; however, based on everyday experience, it is also reasonable to consider efforts aimed at generating complete legislative texts. I consider the spread of translation digitization (computer-assisted translation) and translation automation (machine translation) to be applicable models for the introduction of artificial intelligence.

Both legislation and translation are high-value-added intellectual activities that require a great deal of creativity, are carried out by experts with university degrees, and whose transformation (digitalization, automation)—based on my nearly eight years of experience in the translation industry and three years of teaching about the digitalized legislative system—has a similar impact on those engaged in these activities.

Analytical methods, research methodology

I pursued my primary research objective—the examination of the traditional legislative system—through document analysis, a review of current legal provisions and available academic literature, interviews with experts involved in the legislative process, and my own empirical experience gained through legislative work. My secondary objective is to familiarize myself with and examine the digitized legislative system, the *Integrált Jogalkotási Rendszer* (IJR), and to draw legislative conclusions regarding the system's operation.

This was achieved through empirical research, as in 2022 I was tasked with providing user training for the IJR. In order to familiarise themselves with the specific modules, subsystems

and applications relevant to the research, I reviewed the documentation available within the system and consulted with experts.

The development process was further enriched by the fact that the training curriculum was created in collaboration with the system's developers. Thereafter, training sessions on the system's use were conducted on multiple occasions.

To achieve my tertiary objective, I examined the potential applications of artificial intelligence-based self-learning systems in the legislative process using document and content analysis. I also used document and content analysis to review Hungarian and foreign-language literature, with a particular focus on available continental solutions that already utilize electronic systems in their legislative processes. The materials available online are typically legal databases, which I analysed to draw conclusions about their technological sophistication, in many cases with the help of machine translation. Due to the novelty of the topic, the available literature is limited; research is primarily based on the IJR system's documentation and training materials, and information suitable for scientific analysis was obtained using the user report methodology employed by other researchers. In addition, I attended an international conference in 2024, where one of the sessions focused specifically on the digitization of legislation. I also kept abreast of relevant findings in applied linguistics by attending conferences and studying the relevant literature. I used the interview method when speaking with domestic legal information providers (Wolters Kluwer, ORAC) about how they engage with and benefit from the achievements of Hungary's digitized legislative process.

In the course of my research, I also made use of databases: on the one hand, I searched journal and academic book databases to locate relevant literature; on the other hand, I browsed online legal repositories—including specialized legal databases in both Hungarian and foreign languages—often with the help of machine translation software.

Summary of the research; a concise overview of new scientific findings

Based on my research, I formulated the following seven theses, which I examined in my dissertation:

1. Thesis The digitization and automation of translation serve as a model for the digitization and automation of legislation.

According to my initial hypothesis, the digitization of translation can serve as a model for the digitization of legislation. Péter Homoki also argues that the automation of legal work is no different from the automation of other intellectual activities. I view the relationship between translation and legal automation as a specific instance of this. The first phase of my hypothesis investigation involves a comparative analysis of the two activities—translation and legislation—to identify their similarities and differences. First, it should be noted that in both translation and legislative work, it is not the process or procedure that matters, but rather the accuracy and appropriateness of the translated text or the legislation drafted. The most important requirement regarding procedures is compliance with established rules: grammatical accuracy in translation and adherence to legal norms in legislative work. In this regard, I am examining how and in what ways the available and developing technological solutions can contribute to the efficient and high-quality performance of these activities—that is, to what extent they qualify as effective tools, and how their acceptance, quality, and methods of use can be improved or enhanced.

The similarities span a fairly wide range: both translation and legislation are human activities, processes carried out by highly qualified intellectuals with university degrees. Both written activities involve high added value and are computer-based. Both activities are performed by professionals on a professional basis. Furthermore, for each activity, there are digital, software-based tools that greatly facilitate the performance of the task, providing professional assistance to users. For translators, these are computer-aided translation (CAT) tools, and for lawyers, the IJR, specifically its electronic legislation drafting (EJR) module.

The similarity lies in the fact that both activities serve as a form of content mediation: while a translator conveys linguistic content from one language to another in accordance with grammatical rules, a codifier drafts legal texts based on normative content in accordance with the laws governing legislation.

Perhaps one of the most important points in this list of differences is that, unlike translation—which is by its very nature international (interlingual)—legislation is typically a national activity; consequently, the number of service users also varies greatly; there are far more translators in the world than there are national professionals involved in legislative activities, which is why the volume of data processed is significantly greater in the case of translation. This is significant in terms of the automation of the activity, as training artificial intelligence is extremely data-intensive. Another difference is that while translation is typically a market-driven activity, legislation is almost exclusively linked to public authority; consequently, while there is a market interest in the digitization and automation of translation,

the digitization of legislation was driven by a centrally determined objective. The digitization of translation is the result of the efforts of competing market players; its development is financed by individuals and businesses through the purchase of licenses, which drives continuous improvement. In contrast, the digitization of legislation is driven by central authority and is the result of the activities of a single consortium, effectively precluding competition. In terms of the duration of use, it is worth noting that CAT tools have been available to translators since the early 2000s, with regular software updates, upgrades, and developer support, all under market conditions. The digitized legislative system in Hungary has been put into use only in 2021, and not as an exclusively used system.

In terms of automation processes, the automation of translation—machine translation—began more than a decade ago, driven by the deprofessionalization of translation, meaning that even people who do not speak the languages in question can understand foreign-language texts at low cost or for free. This process, which the EU also supports through the creation of its own machine translation tool, eTranslation, works against professional translation. The automation of legislation has not yet begun at the state level, although there are attempts worldwide to draft legislation using ChatGPT. For now, however, there is no clear vision of how artificial intelligence will participate in legislation. A future goal could be to improve the quality and quantity of legislative work; however, it is expected that laypeople will continue to participate in the legislative process only to a very limited extent, generally during the consultation phase. Furthermore, in the event of even a partial rise of direct democracy driven by AI, the involvement of laypeople in automated legislation is conceivable.

An important aspect of this comparison is the human factor: based on discussions, stakeholders have been reluctant to embrace both the introduction of translation support tools and the digitized legislative system. This may be due to a general reluctance toward the new, but it may also be due to inconsistencies in the rollout: if we aim to assist professional users with new tools, productivity typically drops during the initial learning phase due to difficulties, which works against the use of the new tool. In addition, it is common for the use of a new tool to begin with key users who are already capable of working with the expected efficiency and quality without the tool, rather than with those whose work it could actually assist. It is also advisable to implement the introduction of a new tool as a project, with plenty of training and support. Once users experience that the application makes their work easier, faster, and improves its quality, they will not be averse to using it. This has already been achieved during the two decades of CAT tool use; the majority of translators use translation support tools, as the

market often requires it, and they have found that they can only perform professional work efficiently with the help of such tools.

In my view, the performance of IJR, which went live in 2021, is comparable to that of an early CAT tool today. From an automation perspective, machine translation tools (Google Translate, DeepL, and more recently ChatGPT) have no legislative AI counterpart. However, it should be noted that generative AI systems are no longer specialized software designed to perform a single task, like Google Translate or DeepL, but are capable of high-quality translation alongside many other services, such as ChatGPT. This is why it is interesting when draft legal texts are generated in virtually any language using the latter tool. I should note that the AI-based development of legal databases has already begun; the AI-based search engine is already operating in beta mode in the *Jogkódex*, and the development of the AI-based “LegalAI” is also underway for the *Nemzeti Jogszabálytár* (NJT), which is part of the IJR’s services. Of course, it remains to be seen whether, following such development of the database, the automation of the other modules and subsystems will also take place.

My hypothesis is that conclusions regarding the evolution of legislation can be drawn from the evolution of translation, which may still be relevant in the context of current digitization processes. I often share my experiences and predictions in this area with the system developers during IJR training sessions.

2. Thesis The present legislative framework contains no provisions pertaining to digitisation, despite the full operational readiness of the *Integrált Jogalkotási Rendszer*.

With the rise of digitalization, isolated solutions initially emerged in the field of legislation, such as the parliamentary IT system for legislation (ParLex), introduced in 2016, or the *Nemzeti Jogszabálytár* (NJT). A separate decree was issued regarding the NJT, which primarily defines the content displayed in the legal repository and mentions the IJR—which includes the legal repository—in a single provision concerning the legislative activities of local governments.

Until a bill is submitted to Parliament, the legislative process generally proceeds in the “traditional”, manually managed manner, since the current legislation on legislation contains no provisions regarding digitization, and there is no provision that would require the executive branch to use the IJR system in the course of its legislative activities. In contrast, the use of the IJR ParLex module is mandatory in certain cases in Parliament, as required by the Resolution issued by the Speaker of the National Assembly on May 27, 2021, pursuant to Resolution No. 10/2014 (II. 24.) OGY on certain provisions of the Rules of Procedure, dated May 27, 2021,

issued by the Speaker of the National Assembly, which mandated the electronic submission of certain motions. Section 1 (2) of the resolution specifies the types of documents that must be submitted using the IJR, while Section 1 (3) specifies the types of documents that may be submitted using the IJR.

The integration of the NJT, which forms part of the IJR, with artificial intelligence has begun, as evidenced by Government Resolution No. 1403/2025. (XI. 4.) on the further development of the NJT and the associated artificial intelligence-based legal support system (LegalAI). However, it is not yet clear whether this development will have an impact on the legislative process beyond the scope of the legislation database.

A key factor is the effort to digitize legislation in the long term, as set forth in Section 121 (3) (a) (ae) of Government Decree No. 182/2022. (V. 24.) sets forth in Section 121 (3) (a) (ae): within the scope of his or her responsibility for justice, the Minister of Justice is responsible for improving the quality of legislation; in this context, he ensures uniform and exclusive IT support for quality legislation and government decision preparation and decision-making processes, as well as for the IT support of certain related official activities—without affecting the tasks and powers of non-governmental bodies using the system—and for the operation, maintenance, and development of an integrated legislative system. Based on news regarding the development of LegalAI, this provision gives reason to hope that the process of digitizing legislation will continue, and that thoughtful digitization will be followed by automation, even if specific legislation does not explicitly mention the systems, the regulation of their use, or the development tasks.

3. Thesis The digitisation of legislation has been demonstrated to have no effect on the public comprehensibility of laws.

The concept of the formal rule of law emerged as early as the 18th century; one of its key elements is the requirement of legal certainty, which demands clarity of legal norms—that is, that laws be unambiguous and clear to those subject to them. This imposes a duty on the legislature to enact norms that are understandable and, as far as possible, precise in their content.

The purpose of a law is not to serve as a manual, but the clarity of its content is a requirement enshrined in legislation. However, the clarity of legislation—and even more so its comprehensibility—is not examined from the perspective of legislation, since the legislator’s goal in the external legislative process is typically to reflect the normative content developed in

the internal process as accurately as possible in the text of the legislation. Issues of comprehensibility, on the other hand, arise for those applying the law when questions arise regarding the demonstration of law-abiding conduct, or when legal interpretation leads to different outcomes regarding the norm.

The emergence of clarity issues is a slow process, since case law must first develop (unless the provision is so flawed that its application cannot even begin—in which case its complete inapplicability usually becomes apparent quickly), then differences in interpretation emerge, and subsequently, an analysis of legal practice may reveal multiple, divergent interpretations. Following this, a process begins that results in a proposal to remedy the problem through a uniform interpretation of the provision or through legislative amendment. However, this can take several years, and as legal clarity is compromised, the requirement for legal certainty also suffers.

There are no sanctions for violating the clarity requirements set forth in the rules governing legislative drafting, neither regarding the validity of the legislation nor with respect to the legislator. The requirement for clarity could be better enforced through the widespread application of the legal institution of public consultation, as provided for in Act CXXXI of 2010 on Public Participation in the Preparation of Legislation, because the clarity of the draft text could be assessed as early as its publication. In addition, the institutionalized introduction of linguistic proofreading of draft legislation should also be considered; noting that both options are extremely time-consuming processes. One institutionalized solution could be to include linguistic comprehensibility among the criteria for impact assessments under Decree 12/2016 (IV. 29.) MvM on preliminary and ex-post impact assessments, which could be examined in advance, before the legislation is adopted. If the text of a law does not meet the criterion of clarity, it could be subjected to linguistic and legal review. Even more promising results could be achieved if there were a “timed” (conducted within one to three years of the regulation’s promulgation), which would examine the practice of applying the regulation, identify any deviations, and flag provisions that do not meet the clarity requirement, which could then be reported back to the legislature. However, this latter solution is also a resource-intensive and costly undertaking, and ex-post impact assessments are conducted only in exceptional cases.

It is a legitimate question whether the digitization and automation of lawmaking affect the clarity of legislation.

The IRM Regulation on Legislative Drafting states, among the general requirements for drafting legislation, that “[t]he draft legislation must be drafted in accordance with the rules of the Hungarian language, clearly, in a manner that is easily understandable, and without

contradictions.” However, comprehensibility is not a formal requirement but a substantive one. While compliance with legislative norms can be programmed, substantive expectations—such as that the text of the norm be clear, comprehensible, and free of contradictions—are expectations that exceed the capabilities of software. Compliance with legal regulations can be purely formal in a digitized legislative system, since in this application, the system user is always responsible for the content. The legal precision supported by the system itself works against clarity; one need only consider how the many external and internal rigid references and interjections found in certain laws make interpretation difficult.

When examining the impact of automated, machine-based lawmaking on legal clarity, the primary question is whether the machine understands the text of the legislation. This is because legal clarity could be improved only if artificial intelligence accurately understood the legal content from which it is tasked with generating legislative text. In my view, artificial intelligence is currently incapable of understanding normative content, either in the everyday sense or through the consistent application of methods of legal interpretation.

Based on the above, I have concluded that digitized lawmaking alone cannot improve the comprehensibility of legislation.

4. Thesis The implementation of an objective (*horribile dictu*, digital) measurement of legislative quality can serve as the foundation for quality assurance in legislation.

Assessing the quality of legislation is of paramount importance in terms of ensuring legal certainty and compliance with the rule of law. Beyond the review, it would be worthwhile to develop a procedure for measuring quality, since if, in addition to defining quality characteristics and measurement methodology, we could establish an algorithmizable, machine-executable procedure that assigns a clear score and defines a unit of measurement, the measurement results could then be compared based on those outcomes.

The application of such measurements to specific laws, and the definition of objective indices for assessing the quality of those laws, would be a valuable endeavour. Such indices could be determined algorithmically and executed by a machine, such as the BLEU index used for translations. This would enable the comparison of the individual measurement results. In this case, codifiers could improve the quality of the texts by examining the individual text states of legislative texts separately. This would make it possible to develop a kind of quality assurance system for the digitized legislative system, which would have a very positive effect on improving the quality of legislation.

Integrating the legislative system with artificial intelligence-based applications could add further possibilities to the above. Real-time feedback on regulations, serving as a form of ex post impact assessment, would contribute to improving the quality of legislation. By automating the measurement of the quality of legislation, a self-learning AI-based system could be tasked with the automated revision of legislative texts: that is, the continuous automated revision of the legislative text according to a legislative drafting algorithm, until the text reaches a preset quality threshold (score). By scaling the preset quality threshold, the expected level of compliance for a given legal text could be set, thereby ensuring quality control in automated legislative drafting. The procedure could also be applied to improve the quality of non-automated legislation; running it on a trial basis would generate alternative text proposals for our laws.

A lower-risk yet complex version of this approach would involve deploying a self-learning AI-based system as a pilot project on a smaller organization that volunteers to participate, such as a business entity. The artificial intelligence could be allowed to recognize the organization's interactions and patterns on its own and codify them into rules. This experiment differs from the above in that the identification of patterns detected by AI corresponds to the internal legislative process; however, it differs in that it does not answer the question of "how it should be – *sollen*," but rather describes the state of "how it is – *sein*," whereas, according to the external legislative process, the quasi-autonomous legislative activity of artificial intelligence could already be examined by comparing the rules described (generated) based on the recognized patterns with known real-life situations.

It is important to note that I do not agree with the use of machine-generated legislation in its raw form. In my view, just as human post-editing is necessary in the case of machine translation in accordance with the frequently cited ISO standard for machine translation, legislative texts generated in multiple rounds as outlined above and achieving a given compliance score should only be presented to decision-makers after legal (expert) review.

The procedure outlined above provides an opportunity to examine and then measure the quality of legislation, including individual legal texts. If the measurement procedure is automated, the measurement results of different text versions can be compared, allowing the legal text to be improved based on objective metrics. In the case of legislative automation, the legislative text can be generated multiple times by machine based on the measurement values until it reaches a predetermined quality threshold. I consider legal proofreading to be essential in every case prior to the promulgation of a legislative text generated by machine, in order to eliminate any potential machine errors.

5. Thesis The digitisation of legislation could be considered a milestone on the path toward direct democracy.

The legislative process cannot proceed without public input; the framework for this is established by Act CXXXI of 2010 on Public Participation in the Preparation of Legislation. Under this Act, draft laws, government decrees, and ministerial decrees, along with their explanatory memoranda, must be submitted for public consultation; furthermore, the concept of a draft may also be submitted for public consultation. Under current regulations, this takes the form of general consultation, with the opportunity to provide feedback available through the contact information provided on the government's website, or in the form of direct consultation, when the minister responsible for drafting the legislation directly invites individuals, institutions, or organizations to comment on the draft. With the digitization of the legislative process, in addition to the above, it would be relatively straightforward to create the technical conditions for implementing referendary (referendum-based) democracy—one of the two forms of direct democracy—by enabling electronic participation in both the decision-making process and the debate preceding it.

According to the analysis conducted by Zoltán J. Tóth in his book **Democracy, the Rule of Law, and Constitutional Jurisprudence**, “from a technical and logistical standpoint, participation in voting is not feasible for all citizens [...] at today's level of technological advancement, any question can be asked and answered in front of a screen using a computer (or another equivalent device, such as a smartphone). (Referendary democracy is now typically envisioned not through ballot boxes, but through electronic, internet-based voting—this is the concept of so-called e-democracy)” (Tóth J. 2020, 159.). Participation in legislation and the transmission of opinions can be facilitated—and even processed—by a digitized legislative system. Since electronic legislation can enable collaborative editing of documents, the digitization of legislation inherently carries the potential for the collaborative creation of legislation.

In my view, the digitization of the legislative process paves the way for broad-based collaboration in the drafting of legislation, which is a step ahead of referendums, since the wording of the political question to be put to a vote can itself be formulated directly. Of course, digitization cannot solve every problem; if opposing parties become deadlocked in the debate via electronic means, there may be a need for oral discussion of their positions, for which online

conferencing applications ensuring the simultaneous participation of the parties are available; however, organizing and conducting these multi-party disputes remains a significant challenge.

It should be noted, however, that according to the DESI index, digital literacy in our country lags behind the EU average; significant educational efforts would be required to enable citizens with the right to vote to master the use of digital tools to participate in the otherwise rather complex legislative process. If this plan were to be implemented, the investment could pay off, as the system would likely enable the cost-effective administration of referendums and even elections.

Based on the above arguments, I have formulated the position that the digitization of legislation could be a milestone on the path toward direct democracy; however, this does not mean that the goal is to achieve direct democracy. From the perspective of reducing administrative burdens and costs, shifting referendums and elections to electronic channels could significantly reduce their costs even in the medium term.

6. Thesis Artificial intelligence does not understand (cannot interpret) the content of legislation. Consequently, artificial intelligence cannot independently create law.

The novelty of this envisioned automation of legislation will lie in the fact that, by inputting the normative content developed during the internal legislative process as a prompt into the system, the machine will independently carry out the key element of the external legislative process—the drafting of the legal text—based on its algorithm and training database.

This concept raises numerous questions: Can a machine create law, and do we even want machines to create law?

Based on the findings of the study of the digitized legislative system, it can be concluded that computer-assisted legislation supports compliance with the formal requirements of legislative drafting; however, it is not suitable for examining the substantive provisions of the text of the legislation, nor is that its purpose. In the case of “machine-based” legislation, it is also questionable whether, beyond formal compliance, artificial intelligence will be able to “understand” and interpret the content of the legislation.

I agree with Péter Homoki’s view that “we do not assume that these new types of linguistic tools are capable of ‘understanding’ text in the human sense, but there are machine-based approximations of understanding that are quite useful from a functional standpoint. In other words, the term ‘understanding’ has a philosophical and social significance, which means it will

never be clear to what extent machine understanding approximates human understanding” (Homoki 2025, [36]).

Interpreting the law is such a complex and multifaceted task that a machine cannot perform it. One reason for this is that a machine is familiar only with the text of the law; thus, it could at most perform a grammatical interpretation of the text, which is merely the first step in legal interpretation. However, if artificial intelligence is incapable of interpreting legislation, it follows that it cannot be capable of independently drafting legislation either.

In my point of view, automated systems are not yet capable of drafting legislation in terms of content. Although there are already artificial intelligence-based tools that can analyze the content of input text or, based on specified parameters, write stories, letters, or even fairy tales or jokes—in multiple languages if necessary; the text of legislation contains such complex legal content that machines are not yet capable of fully understanding it, even if they give the appearance of doing so.

Digitized systems are the most effective means of ensuring the proper drafting of legal norms; if they detect any irregularities, they prevent the text from advancing to the next stage of the legislative process. According to Tamás Gyekiczky, “modern positive law is therefore ‘text-driven’ and operates within the dimension of law/unlawfulness” (Gyekiczky 2022, 111.). His observation is noteworthy from a digitalization perspective because the duality of law/unlawfulness operates along binary logic just as much as the questions to be decided and computer science itself. If a specific life situation can be processed by answering a finite number of questions to be decided (potentially millions, given today’s computing capacity), then digitalization has a place in this area.

Another fundamental question that needs to be answered is whether we want machines to establish legally binding norms for us. In the world of the IoT, our devices can already serve us, making our lives more comfortable and easier. However, the idea that a machine would create laws on our behalf would go far beyond the scope of this world; in other words, the world would fundamentally change, with AI taking over humanity’s role as initiator and decision-maker, which represents a different quality. In my view, it is not acceptable for a machine to create law on its own, even based on the sensory observation and processing of patterns in human behavior.

Just as is generally expected with AI in legal applications—that the AI should only make recommendations and humans should make the decisions—in the case of machine legislation, the expectation can be no greater than that the machine create law only based on human instructions, and the finished text of the norm must be subject to mandatory human

interpretation and post-editing, and can only be enacted following a human decision. Machine legislation can have a role in the future under such criteria. Machine-generated legislation can be validated by combining it with human post-processing, just as is done in machine translation, where the raw machine translation is edited to meet the quality standards desired by the client. In my view, if the digitization of legislation continues to move toward automation, it makes sense to proceed in this direction—that is, by manually editing legal texts automatically generated from database elements containing legal text according to algorithmic rules. This solution cuts the Gordian knot, since even though the law (legal text) is formally generated by a machine, it must still undergo human review before adoption, during which the legal text can be interpreted as necessary—a task for which, as noted above, the machine is not suited—even before adoption.

In summary, we only want machines to create laws for people if certain conditions are met. From a procedural standpoint, this can only be supported on the condition that the generated legal text is subject to mandatory human post-editing—a form of legal review. From a substantive perspective, machine legislation is acceptable only if the machine merely makes proposals regarding the legal text and does not claim the right to make decisions for itself; the decision always remains with humans who possess democratic legitimacy.

7. Thesis Artificial intelligence—using a generative language model and prompts—can generate standard text if it is subsequently subjected to human editing (see Thesis 1. MTPE–MLPE).

In October 2023, the city council of Porto Alegre, Brazil, passed the first piece of legislation generated by ChatGPT, which was proposed by Councilman Ramiro Rosário and adopted by the council without its members realizing it had been machine-generated.

Even if, in the future, AI becomes so widely accepted that the legislative process shifts to a self-learning, AI-based platform, it is still not advisable to directly publish machine-generated raw legislative text for use by legal practitioners. The Brazilian example also showed that the legislative text was accepted because they did not know and did not realize that the text of the regulation had been generated by a machine.

Based on my research, I have concluded that legislation drafted by a machine would not, in and of itself, be sufficient to produce the desired legal effect. In my opinion, legislation that requires human involvement only in the drafting of the prompt is problematic, because strictly speaking, in this case, the machine “grants rights” to people and makes decisions that should

be based on democratic legitimacy. It is not clear from the cited article whether Councilor Rosário read or possibly amended the draft legislation he submitted.

In the case of machine-generated legislation, I recommend adopting the post-editing approach—which has already proven effective in machine translation—for laws created by machines, thereby maintaining final human oversight over the legislative process. The use of machine translation solutions is now commonplace in the translation industry; while this was considered unimaginable just a few years ago, today more and more people are using them to support their translation work, and an ISO standard has even been established to ensure the quality of machine translation supported by post-editing.

If we examine the automation of legislation using the risk-based approach also applied to the regulation of artificial intelligence, “experimenting” with a country’s legislative process would fall into the highest-risk category. Not only because legislation is the most complex, longest, and thus most costly process, but also because any errors would have to be corrected through the legislative process itself, which would make the process extremely costly and time-consuming. Furthermore, it should be noted that any teething problems that may arise or a potential failure would severely damage the image of the automated legislative initiative, undermining public confidence in the legislative process

Following the example of the MTPE model—*Machine Translation Post-Editing*—which has already proven effective in machine translation, one could create a concept for machine legislation post-editing, known in English as *Machine Legislation Post-Editing*, or the MLPE model. For legislative texts generated according to this model, human prompt input, that is, the formulation of the normative content in clear, simple sentences—essentially the internal legislative process—the machine would generate the legislative text, which could be regenerated using the procedure described in Thesis 4 as many times as necessary until the text reaches the predefined quality threshold. Following this, the post-editing phase would begin, consisting of two elements: legal and linguistic proofreading. The former would examine whether the legislative text complies with the normative content and is suitable for achieving the objective intended by the legislation, while the latter would improve the text’s clarity. It is worth considering making post-editing a requirement for the validity of machine-generated legislation, since the task of legal proofreading is to identify and correct hallucinations, inconsistencies, and errors in content or interpretation, while the task of linguistic proofreading is to examine and improve linguistic quality.

An MLPE process conducted in this manner could ensure not only that legislation complies with formal and substantive requirements but also that it meets the criterion of clarity;

thus, the automation of legislation could serve as a means of meeting the high standards expected of the legislative process.

Summary of scientific findings

In my research, firstly I examined the traditional, classical model of national legislation from a theoretical and dogmatic perspective, based on my own experience gained during my codification work. The aim of the study was to identify areas where technological developments can assist the legislative process, in addition to the traditional tools already in use (e.g., computers, correspondence systems, online legal databases). The examination of the legal environment yielded two lessons: on the one hand, it became clear that the results of the digitization of legislation are not reflected in legislation acts; on the other hand, it was recognized that the rules of legislation are *lex imperfecta*, i.e., they do not provide for sanctions in the event of their violation. Only in cases of significant and obvious violations can occur public law invalidity as the sole sanction. The codification process began during the research period, as a result of which the legislator amended the rules on public participation in legislation and took steps to regularly investigate government omissions, including the imposition of fines for such omissions. Following the establishment of the sanction system, I formulated proposals based on the experiences of the first reports in order to increase the effectiveness of public consultation.

After mapping the traditional system of legislation, I searched for digitized legislative systems to examine. As a model for learning, I used digital translation software, known as CAT tools. After examining the similarities and differences between translation and legislation, I came to the conclusion that the digitization of translation could serve as a model for the digitization of legislation. Originally, I wanted to use international examples to develop a set of criteria for examining the national digitized legislation system. However, this plan failed because international examples are very limited and difficult to access. For this reason, I had to reverse the method and, after learning about the digitalised legislation system of Hungary, called the *Integrált Jogalkotási Rendszer* and examining it, I examined the various stages of digital legislation systems based on the conclusions drawn from it and from machine-assisted translation systems. I met with the developers of the Czech system in person. I found it interesting that during the relatively long two-year period of the pandemic, individual parliaments typically considered the establishment of communication between absent members

to be a priority rather than the digitization of their legislation, i.e., they considered the digitization of deliberation processes to be more important. After examining the individual systems, I used induction to determine the general typology and main elements of digitized legislative systems, such as the online legal database, codification module, and coordination service, which also define the milestones and readiness level of digital development. The opportunity to become acquainted with the IJR was presented through the course of a teaching assignment, during which time authorisation was granted for the publication of the resulting experiences. I familiarized myself with the system through empirical research, with the help of the teaching materials and aids made available to me, as well as expert support. Participation in the further development of the teaching materials and in the teaching itself was undertaken, thus providing the opportunity for accruing further experience for the research. Not only were personal challenges encountered, but also the identification of issues experienced by users when utilising the system was facilitated. Drawing upon the experiential knowledge thus acquired, a proposal was formulated for the characteristics of the ideal digital legislative system.

Since the systematic application of artificial intelligence has not yet appeared in legislation, I briefly reviewed the emerging artificial intelligence regulations, from the antecedents through the proposed artificial intelligence regulation to the text of the adopted regulation. It is my opinion that, despite the fact that the regulation is already in force, the process of regulation is far from over. This is because many detailed rules still need to be worked out and the institutional system established by the regulation has not yet been set up. The examination of the AI regulation process as a specific problem reveals a significant discrepancy between the codification process and the development of AI systems, which contrasts with the conventional reactive legal regulation. Moreover, the sluggish progress in formulating strict regulations stands in opposition to the EU's aspiration of assuming a pioneering role in the realm of AI on a global scale. As a further point of interest in regulation, I examined the emergence of ethics as a decisive factor in legal regulation. In this context, a specific question arose as to whether machines can create law and, related to this, whether we want machines to create law.

Since there is currently no concrete plan for the implementation of legislative automation, presumably based on artificial intelligence, I have based my proposal on my experience with machine translation. In my opinion, only well-thought-out and comprehensive digitization can form the basis for automation. At the technological level, it makes sense to link the elements of a properly prepared legal database, based on language technology, to a self-learning system whose algorithm knows the rules of legislation, much as they are programmed in the IJR

codification module. It should be noted that the integration of the Hungarian legal database, known as *Nemzeti Jogszabálytár*, with artificial intelligence has already begun. For the time being, the goal is to assist citizens searching for legal information by simplifying access to the law through free-text, life-situation-based searches.

At the beginning of my research, "only" neural network-based machine learning systems were available, but then, following the release of ChatGPT in November 2022, I had to rethink my previous idea. GPT and large language models brought AI closer to everyday people, as their handling became significantly simpler and they found their way into portable devices. It is no longer necessary to find a dedicated AI application for a given task, as Gpt does everything in a single app. This is supported by the clear trend that today's teenagers typically no longer use Google Search, but turn to ChatGPT with their questions, which always provides an answer. Of course, it is questionable whether the answer is correct, accurate, or the result of hallucination. In addition, it is (or should be) important to emphasize to users that they should not provide personal or protected data to the AI system, as its secure handling is doubtful.

In connection with the fulfillment of one of the key requirements of legal certainty, namely clarity of norms, I examined whether the digitization and subsequent automation of legislation could have an impact on the comprehensibility of legal provisions. There is a serious expectation that legislation should be comprehensible to its addressees, as law-abiding behavior can only be demonstrated if the text of the legislation is clear and understandable. Digitization can improve the efficiency of legislative drafting and the regularity of legislative texts. It can help ensure compliance with the programmed rules of legislation. In terms of content, this system cannot evaluate the text; ensuring that the text is understandable remains the responsibility of the user. It can contribute to comprehensibility insofar as the formal compliance enforced by the system, as a kind of templating, means that certain provisions of the legislation (e.g., provisions on entry into force, amending provisions, severability clauses, etc.) can only be placed in the locations designated for them in the legislation, thus making it easier for law enforcement officials to navigate the text of the legislation.

In the context of machine-generated legislation, the issue of comprehensibility gives rise to a more complex problem. Given that the legal text is generated by a machine, it can be assumed that a certain degree of understanding is required. While this may be interpreted as a reference to the conventional meaning of the text, it is imperative to recognise the necessity of legal interpretation when discussing legislation. The fundamental principle of legal interpretation is the grammatical analysis of the text, which serves as the initial and most elementary form of interpretation.

It is my opinion that the machine is incapable of performing the remaining 13 steps of legal interpretation (e.g. logical, judicial, other legal, contextual in the narrow sense, teleological, etc.) satisfactorily, and consequently providing a justified interpretation based on them. Therefore, although the text suggests that the AI comprehends the content it is presenting, it is highly questionable whether it possesses an awareness of the content in terms of legal theory.

Based on the algorithmic thinking of artificial intelligence, I outlined quality assurance in legislation as a future possibility. Assuming that not only the quality of legislation but also the quality of individual laws can be measured, it would be possible to create an algorithmic version of the evaluation of laws. A scale could be created to measure the quality of legislation, which could be used to determine the suitability of individual pieces of legislation, similar to the BLEU score used in machine translation. The software would then evaluate the completed legislative text, which would have to be modified—even through machine legislation—until it achieved a predetermined quality score. This would prevent legislation below a predetermined quality level from entering the legislative process.

When examining the model of machine legislation, I proposed model experiments to test the machine legislation process on a pilot basis, either within the central administration or, with less risk, within a business association. However, the latter case would be more complex, as it would also offer the possibility for the AI itself to recognize the rules and formulate them as quasi-legislation, meaning that both the internal and external legislative processes could be examined. In addition, an attempt was made to generate legislation by means of a machine. This involved the generation of three pieces of legislation using ChatGPT: one in early 2023 with the newly released application, and then running the prompts again in the summer of 2025 on the latest free and paid versions of ChatGPT. The objective of this study was to analyse the evolution of the generative application over time, with a particular focus on the disparities in quality between the free and paid versions.

In my thesis, I endeavoured to delineate the national legislative process, subsequently presenting the extant digitised legislative system, for which I also conducted an analysis of international best practices. The digitisation of legislation, in comparison to that of translation, is still in its infancy. This is partly due to the structure of the system itself, which was created and continues to evolve. In the ensuing discussion, I have set forth my conception of an ideal legislative system, in the wake of the IJR analysis, and I have furthermore proffered recommendations for the system's ongoing development. The possibilities of machine

legislation, which does not yet exist in an institutionalised form, were outlined on the basis of extensive and professional experience with machine translation. In the context of the question of whether machines should be permitted to create law, the example of translation studies was examined, leading to the conclusion that, irrespective of the form in which machine legislation is implemented, laws created purely by machines should not be accepted as valid. In all cases, human post-editing is required, which can take the form of legal and linguistic editing. This can address the aforementioned shortcoming of AI, namely its inability to comprehend the content of legal texts. In accordance with the proposal, the process of machine legislation post-editing could be designated Machine Legislation Post-Editing (MLPE), analogous to the MTPE process delineated in the machine translation standard.

The most significant question, however, remains unanswered: one that translators have been examining for many years, but which lawyers have only recently begun to address: will there be a need for lawyers in the age of artificial intelligence?

The ensuing discourse shall be constrained to the domain of legislation. It is hypothesised that highly qualified lawyers will continue to be a necessary component of the legislative process for the foreseeable future. However, it is conceivable that their roles will undergo a period of transition and evolution. However, should machine-based legislation be implemented and the MLPE model proposed here be applied, the legal review of machine-generated drafts will remain a task for lawyers.

References cited in the thesis:

Gyekiczky Tamás: *Olvasmányok a Digitális Társadalomról – Jogászoknak*. Budapest, Patrocinium Kiadó, 2022.

Homoki Péter: Jogászi munkák automatizálása. In Jakab András – Könczöl Miklós – Menyhárd Attila – Sulyok Gábor (szerk.): *Internetes Jogtudományi Enciklopédia*. 2025. Absztrakt (Az információs társadalom jogi kérdései rovat, rovatszerkesztő: Török Bernát, Zödi Zsolt) <http://ijoten.hu/szocikk/jogasz-munkak-automatizalasa>

Tóth J. Zoltán: *Demokrácia, jogállamiság és alkotmánybíráskodás*. Budapest, Patrocinium Kft. 2020.

The author's publications on the topic of the dissertation:

1. Kántor Ákos: A jogalkotás digitalizációja és a mesterséges intelligencia alkalmazási lehetőségeinek vizsgálata. In Miskolczi-Bodnár Péter (szerk.): *XXI. Jogász*

- Doktoranduszok Konferenciája 2021.* (Jog és Állam 39.) Budapest, Károli Gáspár Református Egyetem Állam- és Jogtudományi Kar, 2022. 27–35.
2. Kántor Ákos: Ízelítő az EU formálódó mesterséges intelligencia szabályozásáról. In Miskolczi-Bodnár Péter (szerk.): *XXII. Jogász Doktoranduszok Konferenciája 2022.* Jog és Állam 41. szám. Budapest, Károli Gáspár Református Egyetem Állam- és Jogtudományi Kar, 2022. 45–61.
 3. Kántor Ákos: Az e-ügyintézésről az e-jogalkotás felé. In Miskolczi-Bodnár Péter (szerk.): *XXIII. Jogász Doktoranduszok Országos konferenciája.* Budapest, Károli Gáspár Református Egyetem Állam- és Jogtudományi Kar, 2022. (Jog és Állam, 42. sz.) 145–154.
 4. Kántor Ákos: Jogalkotás és digitalizáció – kihívások és dilemmák. In Török Bernát – Zödi Zsolt (szerk.): *Digitalizálódó társadalom. Tanulmányok az új technológiák társadalmi-jogi hatásairól.* Budapest, Ludovika Egyetemi Kiadó, 2023. 41–62.
https://doi.org/10.36250/01164_03
 5. Kántor Ákos: Gondolatok a jogalkotás digitalizációs lehetőségeiről. In Jakab Éva – Miskolczi-Bodnár Péter (szerk.): *XXIV. Jogász Doktoranduszok Országos Konferenciája 2023.* (Jog és Állam 45. sz.) Budapest, Károli Gáspár Református Egyetem Állam- és Jogtudományi Kar, 2023. 127–136.
 6. Kántor Ákos: Digitalizáció és automatizációs lehetőségek a jogalkotásban. *Parlament Szemle*, 8. (2023) 2. sz. 39–56.
 7. Kántor Ákos: Ösztönözhető-e a jogalkotás társadalmi kontrollja pénzbírsággal? *Glossa Iuridica*, 11. (2024), 1–2. sz. 379–393. <https://doi.org/10.55194/GI.2024.1-2.19>
 8. Kántor Ákos: Társadalmi egyeztetés a Parlamentben? *Parlament Szemle*, 9. (2024) 1. sz. 45–62.
 9. Kántor Ákos: Jogalkotási rendszerek digitalizációja néhány nemzetközi jó gyakorlaton keresztül. *Studia Iuris*, Károli Gáspár Református Egyetem Állam- és Jogtudományi Doktori Iskola, 1. (2024) 3. sz. 56–75.
 10. Kántor, Ákos: Can fines stimulate public control on legislation? *Studia Iuris*, Károli Gáspár Református Egyetem Állam- és Jogtudományi Doktori Iskola, Budapest, 1. (2024) 4. sz. 100–109.
 11. Kántor Ákos: A jogalkotás klasszikus modellje. *Jogelméleti Szemle*, 26. (2025) 2. 98–112.
<https://doi.org/10.59558/jesz.2025.2.98>
 12. Kántor, Ákos: Heading towards machine legislation? *De Iurisprudencia et Iure Publico*, 2025/3–4. 31–44. <https://doi.org/10.64608/DIEIP.2025.3-4.31>

Other publications by the author

1. Bálint, Ferenc; Hideg, István; Isztin, Gyula; Kántor, Ákos: A chinai hős: Kántor Géza története Szombathely, Magyarország : Vasi K. u. K. Matrózok Közhasznú Alapítvány (2024)
2. Kántor, Ákos: Az állami nyelvi közvetítéssel összefüggő közfeladatok ellátásának fejlődése. In: Németh, Gabriella (szerk.) *A névmódosítás mint közfeladat* Budapest, OFFI Zrt. 2020. 61-76.
3. Kántor, Ákos: E-közigazgatás és e-hiteles fordítás a XXI. században. In: Szoták, Szilvia (szerk.) *A hiteles fordítás mint közfeladat* Budapest, OFFI Zrt. 2020. 36-45.
4. Kántor, Ákos: Az OFFI története jogszabályokban. In: Szoták, Szilvia (szerk.) *Az állami fordítószolgálat 150 éve* Budapest, OFFI Zrt. 2019. 61-86.
5. Kántor, Ákos: Az E-OFFI projekt: avagy 147:3-nál nehéz fordítani. In: Kisszölősi-Szánthó, Beáta (szerk.) *Hiszem, Érzem, Tudom : Pozitív projektmenedzsment történetek, elméletek, tippek* Budapest, Positive Attitude Consulting Kft. 2019. 99-110.
6. Kántor, Ákos: Az igazságügyi szakértői törvényről igazságügyi szakértőknek. In: Szakály, Zsuzsa (szerk.) *Igazságügyi szakértők első jogi képzése* Budapest, Magyar Közlöny Lap- és Könyvkiadó 2017. 193-247.