

COMPUTER - AIDED LEGISLATIVE DESIGN: WORTH WHILE THE EFFORT?

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Summary

Until now little research has been conducted into the possibilities of computer-applications within the legislative process. This contribution explores the legislative process in search for clues for the possible development and application of an Advisory System on Legislative Questions. Does the ASLQ-concept apply to the problems which face legislators in the drafting phase of the legislative process? By way of a provisional conclusion this contribution tries to sketch an outline of the possible features of an Advisory System on Legislative Questions.

1. Introduction

Though research into and development of computer-applications are booming in many different areas of law, the prospects for the applicability of sophisticated computer-techniques and -programmes in the legislative area have traditionally been grim. The very nature of legislation itself would, it was supposed, oppose most forms of computerization. Not only was legislation considered to be (the result of) a creative process -determined by an infinite number of variables-, the fact that the process of the enactment itself holds fundamental guarantees for legal security, equality before the law and democratic decision-making would leave little room for the use of computers [Hustinx 85]. Furthermore, the absence of routine- or stereotype-decisions -which we encounter in public administration and in some of the activities of the judiciary- would render the domain unfit for computer-applications. This pessimism was equally adopted by those who set out to research the applicability of expert-systems in law [Oskamp 90].

However, does this conclusion with regard to the legislative process, apply to all the different phases of this process? Have researchers not taken a too global view of the phenomenon of legislation, and do legislation and the legislative process not merit the attention of legal computer-science indeed?

In this contribution I will try to approach this problem from two different angles, i.e. the legislative process itself and the developments in legal computer-science. Based on these considerations I will try to draw a provisional conclusion in the last paragraph.

2. Features of the legislative process

2.1. Applicability-research

Like many other law-related activities the legislative process can be characterized as a decision process. In most European countries formal, or statutory laws -to which form of written law this contribution will be confined- are generally prepared by the

governmental administration and enacted in agreement with Parliament. This process holds a great number of constitutionally determined stages of decision. It is this constitutionally embedded process which warrants the fundamental values of legal security, equality for the law, and the democratic calibre of statutes.

Research into the possible implementation of some sort of computer-aid in the legislative process¹ has mostly restricted itself to the perception of the process as a whole [Hotz 84 and Stoyles 89]. And, indeed, when perceived as a whole, indivisible entity, the process leaves little room for the overall use of computers. On the other hand research into the applicability of computer-science within the separate stages of the legislative process is lagging behind. Some aspects within the process have been explored with regard to possible legal computer-science applications, [Ees 85] but little or no attention has been paid to the separate stages of the legislative process.

2.2. The drafting phase

It is for this reason that I would like to focus attention on one particular stage at the beginning of the actual legislative process: the drafting phase. Although it is hard to distinguish actual (chronological) stages -e.g. a separate policy and drafting c.q. editorial phase- in the departmental process of preparation of legislation [Eijkern 77], one can theoretically discern a phase oriented at putting down in writing the structure and text of a future bill. This drafting phase -which encompasses more problems than those of a mere semantic and grammatical nature²- can tentatively³ be described as the phase which is aimed at the drawing-up of a bill (proposal for a statute) taking into account all of the relevant preconditions. These relevant preconditions consist of the policy choices which have already been made, the knowledge concerning the subject-matter of the regulation, the relevant interests, the factual and legal conditions,⁴ and (when available) legislative-technique directives,⁵ as well as (scientific) knowledge about legislation itself. These preconditions or requirements must be met in the interest of a swift, and competent enactment.

2.3. Requirements in the drafting phase

Perceived like this the drafting phase emerges as a decision process in itself, preconditioned by the afore-mentioned requirements. Lawyers (or other professionals) tasked with the initial drafting of a bill -whom I will call "legislators"- will have to make well-considered choices regarding the phrasing, the construction, and the content of a regulation. Depending on the room these conditions allow, legislators will have more or less drafting discretion, as the case may be. In order to be able to make well-considered choices depending on varying conditions, a lot of skill, expertise and experience is required. Some of this expertise and experience is available in writing. For example in the Netherlands (but also in Germany, Austria, Belgium etc.), legislative-technique directives⁶ have been drafted, consisting of an extensive list of requirements which all bills must meet. These directives mainly hold standard-formulations, directions as to which phrasing and constructions should, or should not be used, provisions concerning transitional law and more in general stipulations relating to the construction and content of statutes (i.e. sanctions, legal protection etc.). Moreover, other directives, even more relating to the content of legislation, have been issued by the Dutch government.⁷ Besides governmental directives other (scientific) knowledge about legislation is available in writing also. Some of this written knowledge and most of the governmental directives constitute requirements which all bills must meet, regardless of the subject-matter. We can therefore define them as homogeneous requirements. Homogeneous requirements are the requirements which are, for example, equally important in the drafting of

proposed alterations of statutes, as in the drawing up of environmental statutes or rent acts. In the Netherlands requirements of this nature are mainly to be found in the above-mentioned legislative-technique directives. When discussing homogeneous requirements I will confine myself to these legislative-technique directives. The span of this paper does not allow to examine all existing categories of homogeneous requirements in depth.

On the other hand drafting discretion is restricted by heterogeneous requirements. Requirements of this sort depend to a high degree on the subject-matter of regulation. For example: when drafting an environmental bill which is aimed at reducing air-pollution caused by exhaust fumes, legislators need to know something about the toxicity of exhaust fumes, the relation between exhaust fumes and air-pollution etc. Knowledge of this kind is relatively unique to the subject-matter of regulation and can hardly be considered to be relevant in the drafting of a rent bill.

It stands to reason that if any attempt is made to develop some sort of computer-aid in order to assist legislators in their professional activities, the focus must be on the homogeneous requirements. If we can classify these requirements in an appropriate manner, it will, in a mirror image-way, tell us something about legislative reasoning (which must be directed at meeting these requirements) and may or may not produce clues for the possible representation and subsequent computerization of this type of reasoning.

3. Do legislators need computer-assistance?

What kind of assistance can a computerized system offer in the drafting phase? Do existing computer-systems possess features that can help legislators to make better bills in an easier way?

In order to be able to answer these questions we need to know what are the major problems of legislative drafting.

As we all know, language and writing are creative processes, as is, in essence, the drafting of a bill. However, creativity generates diversity and although creativity is indispensable when drafting a bill, diversity in formulation holds the risk of disharmony and through this inconsistency. Disharmony of and inconsistencies in the formulation of statutes diminish the credibility and legitimacy of legislation in their turn. In a nutshell these are some of the main reasons for harmonization and coordination in legislation. Computers can be of help in this way, as I hope to demonstrate in paragraph 5. When computer-programmes employ a uniform approach to the drafting-problem, use the same directions, model-phrases etc., harmonization can be brought about in a natural way. I will not discuss every aspect of the harmonization that can be achieved by using the computer as an aid in the drafting process, but will content myself with noting that a uniform approach can have harmonizing effects in itself.

Combined with the advantages of time-saving and the easier accessibility of relevant information computer-programmes can prove their worth in the drafting process [Stoyles 89].

4. Computer-assistance: if possible, what kind of system?

4.1. *The drafting of legislation as a suitable aim for ASLQ-research*

How can legislators benefit from the developments in computer-science? Directed towards the problem at hand, we can try to translate this problem into a more specific question: does legislation, or does some stage in the legislative process, offer a suitable aim and domain for research and development of legal knowledge-based systems?

In the foregoing I have made some preliminary remarks about the different stages of the legislative process itself, and the type of knowledge which is fundamental when legislators want to bring about a "relatively appropriate" bill [Hotz 84]. In this respect legislative reasoning differs from legal reasoning because legislative reasoning can never result in a bill that can profess to be totally (legally) correct. The result of the drafting phase, the bill, is a document which is only one possible answer to a legislative question, open for debate. At best a bill can claim to meet the homogeneous and most of the heterogeneous requirements, but meeting these requirements is essential in view of the aims of the drafting phase.

This conclusion automatically rules out the possible application of any goal-driven knowledge-based (KB) system⁸ [Koers 89]. Furthermore, no assistance for legislators is to be expected from systems that pretend to give authoritative or correct -infallible- results, like expert-systems. First of all the diversity of the knowledge involved (especially the heterogeneous requirements) and the impossibility to comprise all of this knowledge into a single system, as well as the impossibility to solve legislative problems in the drafting phase conclusively, leave no room for the development of systems that profess to have disposal of expert knowledge ('expertise') over a specific domain and a mechanism to conclusively solve complex problems in the field in an intelligent way [Oskamp 90]. But does this conclusion towards the non-applicability of the expert-system-concept automatically rule out research into the possible application of other species of KB-systems?

In their study "Knowledge Based Systems in Law" Koers c.s. describe Advisory Systems on Legal Questions (ASLQs) as the systems which are designed to be advisory in nature and assist in the solving of legal problems [Koers 89]. ASLQs accomplish this by confronting the facts of the case as derived from the answers given by the user with a representation of knowledge on the legal domain in question. Consequently, an ASLQ generates its conclusion through an interaction between the user and its own knowledge about the law. In my opinion the key-concepts held in this definition are -apart from the advisory nature of such a system - knowledge representation and problem-solving through interaction. Confronted with the problem of computer-assistance for legislators, the concept of ASLQs can produce clues for research although the setting of the legislative process, i.e. the drafting phase, is quite different from the one the ASLQ-concept regards. Where ASLQs address legal problems, the legislative drafting phase faces a legislative problem, which may imply legal problems, but on the whole cannot be identified with them. To put it briefly: legal problems mainly concern application of the law, while the problem of legislative drafting consists in the making of a text which may, in term, function as statute law. We can, however, short-circuit this terminological dilemma by way of rephrasing the legal problem-solving aspect in the ASLQ-concept. When we understand the solving of a legal problem as the bringing about of a decision, related to a dispute which we can qualify as legal (because it concerns the contestation of rights and obligations, or more formally, because it concerns a law-related issue), which meets legal (statutory) requirements to the highest degree, the ASLQ-concept can well bear meaning and apply to the problems

which legislators face in the drafting phase. The difference between the solution of legal problems and the solution of legislative problems in the drafting phase would then be reduced to the degree in which requirements are met. Legal problem-solving will have to meet all relevant legal standards in order to produce legally correct results, whereas legislative problem-solving in the drafting phase will have to meet all relevant homogeneous and relevant heterogeneous requirements in order to be able to make a relatively appropriate bill.

4.2. The legislative drafting phase as a suitable domain for possible development of an ASLQ

Does all of this procure sufficient cause for the assertion that the legislative drafting phase offers a suitable aim for research and possible development of an Advisory System on Legislative Questions?

Aside from a terminological similarity in activities involved, we will have to pause at the question whether the legislative activities in the drafting phase can be considered a suitable domain for research and development of ASLQs. When we want to answer this question, the criteria which Koers c.s. use to determine the suitability of domains of legal knowledge when trying to construct prototype ASLQs, may be useful [Koers 89]. These criteria are derived both from the concept of ASLQs, as well as concepts with regard to law and lawyers. In this paper I will not discuss these concepts in depth; I will content myself with adopting these concepts in a legislative setting. *The limited scope of this paper does not allow an extensive research into the similarities and differences of concepts with regard to law (an) lawyers compared to concepts with regard to (the drafting of) bills and legislators.* I refer to the paragraphs 2, 3 and 4a in which I have discussed briefly the concepts with regard to (the drafting of) bills, legislators and ASLQ's.

When selecting a suitable domain of legislative knowledge to serve as an object for the development of a(n) (prototype) ASLQ I consider the most important criteria in this context to be:

- a) the need for a domain to be not too large and thus become unmanageable, nor too small as to offer no challenge;
- b) the knowledge in a domain should be fairly complicated in structure;
- c) it must be possible to isolate the domain, i.e. the domain must consist of a set of autonomous questions and problems which set the domain apart from other related domains;
- d) there should be some variation in the profile of users.

The criteria mentioned here originate from the features of the ASLQ-concept. These specific types of legal knowledge based systems originally were designed to generate legally valid conclusions on the basis of interactive support in legal decision-making for lawyers and non-lawyers alike, by way of legal knowledge representation and specific case-related input from the user [Koers 90]. In paragraph 4a I argued that the concept can be translated to the legislative-drafting environment. An advisory system in a legislative context never can claim to produce legally conclusive results. A relatively appropriate result will have to suffice. A result like this can be brought about by way of meeting the homogeneous and most of the heterogeneous requirements to the extent of a relative optimum. Notwithstanding this difference there exists a distinct similarity between the law and the drafting-process. Therefore ASLQ-criteria, based upon the features of the ASLQ-concept, can be used to determine whether a phase in the legislative process offers a suitable environment for the development of prototype ASLQs.

When we confront the legislative process with the afore-mentioned criteria, the drafting phase can be considered to meet them. This phase, which I described in paragraph 2b & 2c, is neither too large, nor too simple-structured. On top of that the legislative drafting phase is relatively autonomous and a projected advisory system will certainly not only serve the group of professional legislative draughtsmen, but policymakers and other interested persons, like members of Parliament etc., as well.

Two of the criteria which Koers c.s. discern in their search for suitable domains for ASLQ-development are not comprised in the afore-mentioned list. The requirement that the knowledge must be found both in legislation and case law, and the requirement that the law must be fairly specific are missing. It stands to reason that these criteria do not apply in a process which is aimed at enacting a statute. The drawing-up of statute law-to-be is not solely governed by legislation and case law-knowledge, although other statutes and law in general precondition it substantially. The major part of the (legal) knowledge needed in the drafting phase (in the Netherlands) has been laid down in legislative-technique directives. These directives, which will be substantially revised in the near future, do not merely procure practical formulation hints, but also deal with more complicated, substantial matters. Furthermore, these directives have become quite numerous, which makes it more difficult to observe them. Not observing them means a valuable waste of time in the governmental preparation of a bill as well as possible difficulties in the process of enactment of the bill. In this aspect they can be considered the law of law-making. I think that all that has been stated above gives enough grounds for the conclusion that the drafting phase of the legislative process indeed meets the criteria which are being used to determine whether a specific legal domain offers a suitable aim for research and development of (prototype) ASLQs.

5. Features of an Advisory System in a legislative context

5.1. An Advisory System on Legislative Questions

As I see it, a possible Advisory System on Legislative Questions must have a hybrid character [Vandenb 85] in order to be able to assist legislators in the drafting phase in an optimal way. Besides wordprocessing features, such a system needs an extensive dataprocessing-capacity. Preferably the dataprocessing element possess an internal and external database. In the internal database uniform acts, model clauses and bills, preambles, headings, abstracts of statutes, (governmental) legislative directives, legislative hints, editorial notes, and other relevant data, varying from a legislative thesaurus to full text reports, literature etc., can be made available, while menu-guided and uniform full-text-retrieval of external legislative databanks (containing statutes) must be made possible. As for the wordprocessing features one could imagine facilities for styling the text of a bill, a legislative spelling-check, downloading-facilities for information retrieved from internal as well as external databanks, etc. [Stoyles 89] With features like this, though, a mere extensive electronic library is brought about. The crux of an Advisory System is, as we have noted above, advising through interactive knowledge representation. How can knowledge about legislation be brought into a system without impeding or slowing down the drafting-activities (which basically still should be performed by the legislators themselves)?

Here legislators might well benefit from an interactive-wordprocessor, which as a rule will interfere at a minimum with the actual phrasing of the text of a bill. The

system should merely prestructure the drafting-approach by way of levels which are linked to an internal database.

These levels, in their turn, can be linked to questions or points of attention in the internal databank, like notes, legislative-technique directives and other items that merit special attention within a particular level. Some of the most important points of attention must be "hard" -meaning that they automatically arise and actually do interfere-. Other less fundamental items that deserve attention (the major part), can be "soft" and should merely be pointed out to the user as hints.

The "hard" points of attention should of course for the major part consist of legislative-technique directives. In these directives a lot of legislative-drafting knowledge is comprised. They also procure the bulk of the homogeneous requirements that have been discussed in paragraph 2. Although the legislative-technique directives contain in themselves a lot of legislative-drafting knowledge, they do not do so exclusively. Other knowledge, like constitutional knowledge about (statute) law and law-making, can also be considered to be fundamental. Consequently they must be transformed into "hard" points of attention within the proposed system.

A system like the one proposed should not merely retrieve the written knowledge from documents held in a database. It should also process knowledge by way of advice or guidance. This aspect can be provided by a model-law-structure. Based upon an analysis of statute laws such a model-law-structure can be drawn up. This model-law-structure consists of elements all statute laws as a rule must possess. The model-law-structure should not only convey these elements but should rank them in a consecutive sequence. Brought into the proposed system the elements of the model-law-structure constitute the different levels. In their turn these levels are linked to questions and points of attention in the databanks. The passage through the different level-stages must be a "hard" point of attention in itself. When a user fails to deal with a level-stage or a "hard" attention-point within a level-stage it should be made visible for other legislators or other participants in the legislative process.

Because the knowledge of legislators operating in the drafting phase partly consists of knowledge of requirements and knowing how to meet them in order to comply with the aims of the drafting phase, the level structure and interrelative question-structure constitute knowledge representation themselves.

A system like this can also be considered to be purely advisory in nature even though it uses "hard" points of attention. "Hard" points of attention do not inhibit the user to progress in the process of drawing up a bill per se. When a users fails, for whatever reason, to deal with a "hard" point, he/she is free to do so, without interference of the system. The only consequence is that this non-compliance is made visible in the final result. "Soft" points of attention do of course not inhibit users by there very nature.

5.2. Limitations

Initially an Advisory System on Legislative Questions would merely offer a modest tool for legislators, but potentially it can have a big impact. It only offers help and advice in drafting-matters that are somehow linked to the form, shape, and sometimes to the contents of bills. Within a particular level it can offer more substantial and detailed advice. However, drafting logical errors will still be possible, although some of the levels will of course be interlinked in order to make impossible choices that logically rule out one another. To deal with these limitations a constant-evaluation-mechanism must be brought into the system itself, enabling the users to comment on the advice they were given, or problems they have encountered when

using the system. At the same time the results gained from the system should be subject to scrupulous analysis from a legislative-expert group.⁹ In the same way as the legislative-technique directives were drawn up, a list of known mistakes and errors can be created and subsequently be brought into the system as "hard" points of attention. A dynamic error-catalogue can, combined with a user-comment-catalogue, guarantee a constant-update. A constant evaluation mechanism will even allow the system to grow into more than a mere drafting-aid.

There is still another reason why an Advisory System on Legislative Questions always will be modest in its assistance. An ASLQ of this type tries to help and guide users during the actual drafting process itself. Because it allows the users to reach a result in more than one way, the conclusive detection of logical errors is very difficult. The system proposed here is not primarily meant to be an evaluation-system in itself. It is not unthinkable that in the future a legislative-evaluation-system can be linked to the ASLQ proposed. An Advisory System on Legislative Questions can even create new possibilities for the development of such a system.

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6. Conclusion

The care for the quality of legislation is always an important item on the political agenda. For those who know the size of the body of legislation and the pace with which this corpus expands, the need for a harmonized and systematic approach to legislative problems will be evident. Advisory systems may help legislators in doing this. Advisory systems may be practical tools for those who are tasked with the drafting of bills and those who will be in the future. Systems like the one proposed can not only be used for the afore-mentioned purposes, but can also give rise to a more in-depth understanding of the activities performed by legislators in the drafting process and can eventually tell us more about legislation itself.

In his article "The Unfulfilled Promise", Stoyles supposes that the lack of computer-applications in legislative settings is caused by the fear of legislators that the legislative process might be depersonalized by the introduction of computers [Stoyles 89]. This fear originates from the presumption that computers in this setting are able to replace the activities of legislators. I hope I have succeeded in proving that there can be no question of such a replacement and that the basis of the drafting activity will always be the work of creative professionals. But the work may well benefit in a number of aspects from legislative advisory systems. Thus, research in this field may well be worth the effort.

7. Notes

1. In this contribution I will abstain from discussing legislation as a separate concept. I will understand legislation as the objective and final product of the legislative process.
2. E.g. problems related to the structure and the system of statute law, but also issues concerning transitional provisions etc.
3. Only a thorough analysis of the actual foregoing can lead to a more accurate definition. This explanatory contribution, however, does not allow to give an in depth analysis.
4. E.g. constitutional requirements, EEC-regulations etc.
5. In the Netherlands legislative-technique directives are being used during the departmental preparation of bills. These directives have been enacted by decree

of the Prime Minister in accordance with the council of ministers. Aanwijzingen voor de wetgevingstechniek, vastgesteld bij besluit van de minister-president, handelende in overeenstemming met het gevoelen van de ministerraad, van 14 februari 1984, Stcrt. 13 maart 1984.

6. Aanwijzingen voor de wetgevingstechniek, see supra note 5.
7. E.g. Aanwijzingen inzake externe adviesorganen, Stcrt. 6 april 1987, nr. 67, Aanwijzingen inzake terughoudendheid met regelgeving, Stcrt. 27 november 1984, nr.232, Aanwijzingen inzake openbaarheid van bestuur, Stcrt. 9 januari 1980, nr. 6 en 6 juli 1981, nr. 125, etc.
8. Like A.W. Koers, D. Kracht, M. Smith, J.M. Smits and M.C.M. van Weusten in their, *Knowledge Based Systems in Law*, Deventer/Boston 1989, p. 37, I regard knowledge-based systems as systems which solve problems by applying a symbolic representation of human expertise, instead of employing more algorithmic or statistical methods. This definition is derived from P. Jackson, *Introduction to expert systems*, Workingham 1986, p. 1. [Koers 89].
9. In the Netherlands the Department of Justice just recently established a special division to, among others, safeguard and check the quality of bills and statute laws. Divisions like this can be considered to be equipped to analyze the results of the system proposed. Stafafdeling Algemeen Wetgevingsbeleid established by ministerial decree of October 10th 1989 (226\089).

8. References

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