Legal information and knowledge

Jiří Ceipek

LEGAL INFORMATION, COGNITIVE PROCESS AND BEHAVIOUR

Clarification of the relation of information to knowledge is of major importance for a better understanding of the social function of legal documents and traditional as well as automated legal information systems. It can help us better understand the position of information services in law and take up a rational attitude to the extremes when information services in this area are either underrated or overrated.

Let’s start from the definition “Information is the mode and degree of structuring a particular entity (object, source of information) identifiable at the given moment by the receiver. It is thus a relation of an entity to the receiver (observer), who can be man (mankind) through his consciousness or any other organism through natural selection can be a variously perfected automaton” 1. This definition is based on the fact that information is a property of the reflected object, which is a source of information and expresses the manner and degree of its organization; from the point of view of the receiver (user) information is at the same time a reflection of reality. In this sense information is an abstraction from the properties of a particular source from the aspect of the receiver’s needs.

During his development man has achieved a higher degree of integration with his environment. He has acquired the capacity to integrate reflection with symbolic processes. That means he has acquired speech and later the capacity to record it in matter or energy (writing, transmission of speech).

By gradually acquiring these capacities man has substantially overcome his natural determination and considerably improved his means of defence against the forces of nature. The capacity for imagining things and events in a symbolic way – through images and concepts – enabled man to transgress his individual experience and acquire increasingly more social experience as it was accumulated by earlier generations. That was also the principal prerequisite for the creation of man’s conception of the world and man himself.

The invention of writing is a dividing line in the development of mankind; we are unable to date this event. But it was so important that it is generally recognized as the border between prehistoric and historic eras.

The recording of letters in matter, i.e. the creation of a legal document, started a new stage in the development of law. Legal norms became unambiguous, more permanent, and could be valid in a much larger area than before.

1. J. Liniart, Činnost a poznávání, Praha, Academia, 1976, s. 190.
The book, in the wide sense of the word document, received an important stimulus for further development when print came into existence. Printers removed from books the aureola of uniqueness and sanctity and books began to spread into increasingly wider areas of society until in the modern age they have become, at least in culturally advanced countries, easily obtainable and available. Printing has made knowledge more accessible and democratic and opened the door leading to modern education. Without printed books the industrial and later the scientific and technological revolution would not have taken place.

Law, much dependent as a rule on the level of fixation of legal norms and their dissemination, has received through print a new strong impulse for its further development.

But documents recording man’s experience in natural language, that is in symbolic form, are in themselves “dead” objects. Besides the basic prerequisite – the ability to read – another specific kind of human activity was necessary so that the documents could function as sources of information. Information contained in books, libraries or any other thesauri of information, are only potential information sources – they can, but need not, function as such.

“Knowledge is not a collection of records, symbols organized into well-formed formulas that satisfy semantic tests and can be retrieved by query and search”", writes M. Kochen, referring to an older work by Churchmann, The Design of Inquiring Systems, New York, 1971. “This would characterize information in its technical sense, in the sense of computer data. Knowledge, suggests Churchmann, is a potential for a certain type of action; it resides in the user, not in the collection of information. For example, a library does not store knowledge of how to drive a car with a standard transmission; a person wishing to learn must ask questions, such as how to coordinate the actions of depressing the clutch, shifting gears, and depressing the accelerator; he may retrieve information which he must not only interpret, with his point of view, but he must internalize it so he can apply it under unpredictably varying driving conditions. Note that his point of view differs from that of, say, an automobile design engineer or a psychologist who studies factors causing accidents. The information in the library, retrieved by a questioner in answer to a question, and processed by him with a point of view, becomes knowledge”.

Information has to be further differentiated into potential and useful information from the aspect of one’s own psychic process of cognition, the substance of which is reflection of objective reality in our consciousness. That information which (as the news content) was used in the receiver’s action can be regarded as useful. “Potential information, on the other hand, corre-

2. M. KOCHEM, Principles of information retrieval, Los Angeles, Melville, 1974, s. 51-52.
sponds to all properties, i.e. characteristics of a particular entity, in their interconnection and structuring as they are recognized by the receiver. The human brain making reflections of a higher order selectively processes potential information; the processing consists in differentiating between relevant and irrelevant signs; while relevant signs are reflections of these properties (signs) of objects important for man, irrelevant signs are indifferent, they are not further processed and are forgotten»

Josef Charvát puts it in still another way: “Human brain ... can receive and process an immense amount of signals because of its rich network of neurons. Our senses bring in as many as one million information bits per second. Nearly all, however, are removed by the filters in our sense organs and the other stations through which information passes to our consciousness. The brain finally only processes about 100 bits per second”

It is likewise with the transformation of legal information into knowledge. Here too the process of selection goes on. Legal information read (or heard) by the user can but need not be accepted by him. If it is accepted, it is incorporated into the existing knowledge, which is purely individual and is evidently different in a lawyer and in a person of a different profession. It depends especially on the structure and content of this individual knowledge whether the information is converted into knowledge deposited in short-term or long-term memory. And it depends on many other circumstances whether and how this increase in individual knowledge makes itself felt in man’s action.

Knowing some legal norm as a rule of conduct can lead to respecting this norm, especially when the user identifies himself with it, that is when the norm is in harmony with his own value system. The threat of sanction in the case of breaking the norm plays a role too. These sanctions are ordinarily part of the norm. But knowledge of the legal norm can, under certain circumstances, also lead to the breaking of the norm or seeking a way of not respecting it, without legal repercussions. From this it can be deduced that the dissemination of legal information does not in itself necessarily widen and stabilize legal consciousness or make you within yourself identify with the legal norm and fully respect it in your own conduct.

Nevertheless it can be assumed that the opportunity of acquiring legal information is the first prerequisite for the norms that are respected in society. However, confirmation of this hypothesis in greater detail would require a complex sociological and psychological survey.

All measures concerning the spreading of legal information by nonautomated as well as automated means can thus be conceived as a mere improvement of prerequisites for the achievement of a better knowledge of law in society;

3. J. Linhart, Činnost a poznávání, Praha, Academia, 1976, s. 190.
but in no case is a direct and guaranteed effect achieved. Whether the offer is or is not accepted by the user depends on many circumstances both inside the legal area and outside it.

Among the elements which should be sought inside the law, the language of legal documents ranks first. In socialist legislation general comprehensibility of legal regulations is emphasized. But putting this into practice is far from easy. The requirement of comprehension can lead to vulgarization when understanding the text of the legal norm is identified with knowledge of the law. Legal language as any other specialist language requires precision, unambiguity and formalization in the use of the legal terms. These requirements cannot be ignored in the texts of legal regulations. Intelligibility can however be achieved by lexical means (avoiding archaisms and neologisms), syntactic and stylistic means (short sentences, avoidance of pseudoscientific jargon, etc.)^5.

Here the same holds as in any scientific literature: the more erudite the legal expert is, the better and more intelligibly he can express his thoughts. Pseudoscientific phrasing, unfortunately, still persists in legal documents.

This factor comes to the foreground especially nowadays, when completely new means of dissemination of information – overcoming time and space to a degree never known before – become available.

Even when legislative draftsmen do their best to make the language of legal regulations intelligible, the fundamental features of this language are preserved. The language of legal regulations as the basis of legal language will always differ from the general language as well as from the language of scholarly literary texts on the one hand and the language of literature on the other. It will always tend to semantic unambiguity, exclusion of synonymy and homonymy. As a language for a special purpose it will aim more at precision and clearness than at beauty of expression, it will always be a language of neutral emotionality lacking or at least minimizing its emotional features and avoiding figurative expression. It will continue to be a language formalized to a high degree, we could even say a cold and austere language.

To make legal regulations or the legal norms contained in them generally comprehensible even to people with no legal education, the regulations have to be interpreted by lawyers.

In making the legal norms available and accessible to the whole population the mass media – press, radio and television – play – besides books – an increasing role now. Especially television can place dry legal regulations in various situations of everyday life.

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5. Vis např. V. Knapp v publikaci V. Knapp, J. Cejpek, Automatizované vyhlašávanie informácií v právnych textoch, Bratislava, Slovenská technická knižnica, 1980, s. 31-47.

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It can be expected that the opportunity to see such TV programmes will in the future give way to an opportunity for every user without a legal education to resort to this information – whenever he needs it – by means of videocassettes or a selection of a particular videotext programme. Thus a programme dealing with the solution to any particular legal problem will be available.

Lawyers continue to discuss whether the legal norm should be made available to citizens without legal training. They argue that it is a similar problem as that relating to the availability of medical handbooks. They admit, of course, that incorrect use of legal norms need not bring about the same damage as the incorrect application of medical manuals.

Today this problem has largely turned into the issue of the availability of automated legal information systems through data-based centers on a domestic as well as international scale. It is known that from these centers through public data networks increasingly large amounts of legal texts from legal systems can be obtained, especially in advanced countries; the same holds for international law. In advanced countries the user can obtain many data bases with legal texts on the screen of his television set. Modern technology thus helps to spread potential legal information among the whole population. The increasing level of education is a positive factor here. Even though the positive aspects of this development prevail, undoubtedly a possibility exists for the incorrect (unprofessional) exploitation of legal data by people without legal education. On the other hand, formerly nonexistent opportunities are provided for the legal education of citizens by the mass media.

Improvement in the legal consciousness of citizens also depends, however, on several factors from outside the sphere of law. The activity of the user of legal information is stimulated by his motivation (e.g. the person is motivated by his own legal problem), which can be regarded as determiner and stimulator in the regulatory system of human activity. Man’s motivation is the result of his overall life style in a particular society, his capacity for filtration of unnecessary information, purposeful development of his own fund of knowledge, his value orientation, etc.

The text plays a most important role in the written law. First it is the text of legal norms, the text of legal regulations, which are a form of expression of legal norms, then the texts of applied legal documents (court, arbitration and administrative decisions) and the texts of legal literature. Law is defined as a set (system) of generally binding norms (rules of conduct) determined and sanctioned by the state, i.e. legal norms 6. Even when a lawyer speaks to his client or the defence lawyer delivers his concluding speech, he must basically start from the written legal norms. In law – more than anywhere else, holds the Latin proverb “Verba volant, scripta manent”. Any change of law must be carried out in written form.

6. Právnický slovník. 2. díl. 4. vyd, Praha, Orbis, 1978, s. 121.
This close link between modern continental law and written text, the main features of which were briefly described above, strongly affects the general character of the law and the reflection of the law in the consciousness of people with no legal training. It is a factor to be reckoned with in legal policy, education and promotion of the law.

This brings us to the problem of the role of direct and indirect communication in the sphere of the law.

We live in an epoch of unavoidable replacement of direct personal intercommunication by various technical means such as books, radio, film, television, but also e.g. man’s communication with the computer. This new type of communication brings a loss of several characteristics of direct interpersonal communication. Long-term lack of direct interpersonal communication can have unpleasant repercussions in man’s psyche; when it persists, it can produce various deformations in society.

G.B. Shaw pointed out the importance of direct personal intercommunication. With typical shavesque irony and exaggeration he said that there were fifty ways of saying yes, five hundred ways of saying no, but only one way of writing these words. The discovery of writing, as we said above, is one of the major ways of overcoming the effects of the elementary forces of nature. For each such liberation, each new discovery or invention stabilizing man’s position, a tax has to be paid by man. In this case, restriction of the five hundred ways of saying no to a single one. Of course this word can be written in different ways in the many thousands of existing languages. But this written no is a word removed from all the typical signs of the word no used in spoken intercommunication. These signs can express sympathy, repugnance, love, pleasure, hatred, the word no can in direct interpersonal communication have various connotations achieved by intonation, gesticulation, mimicry, pantomimic, colour and the force of man’s voice, etc., but the connotations are also due to the uniqueness of the environment in which the word was spoken and the circumstances under which it was pronounced. Spoken speech, our main instrument of communication, has not been investigated in all its aspects yet. It is a tool that can be defined as a compound of the expressed (pronounced) and the unexpressed (concealed) message present in each utterance. The border between the two elements in the course of direct interpersonal communication is not fixed and is in many respects dependent on the properties of a particular language, its position in the spiritual life of the society and the communicating individuals.

Each information fixed in inorganic matter, space or energy is “deadened” in a way, removed of the typical signs of direct interpersonal speech communication, that unrepeatable and unique atmosphere in which communication takes place.

In order to reinforce the knowledge of law among people without legal training, it is not enough to make legal information available in its authentic
form of written legal norms as part of legal regulations. The need is now
greater than ever that each lawyer should be an erudite interpreter of the
legal order, capable of adding to his interpretation such emotional elements
that are lacking in the language of written legal norms. Rhetorics should
not disappear from the curriculum of law schools. Legal policy should inclu-
de the strengthening of the relations between the law and arts, and increas-
ing the participation of lawyers in documentary programmes shown on the
radio and television.

AUTOMATION OF INFORMATION PROCESSES AND KNOWLEDGE OF LAW

Though we do not realize it, traditional retrieval of legal information usually
proceeds in three stages:

1) we seek the legal document (legal regulation, decision or some other ap-
lication document) or some legal literature (monograph, research report,
university thesis, article, paper, review, etc.) which we believe could con-
tain the relevant information;

2) by means of the table of contents, index or by merely thumbing through
the document we find that part of the text from which we can expect
the required information;

3) by reading or studying it we find out whether it contains the informa-
tion, which can be expressed by a single sentence or even a clause, i.e.
part of a sentence separated by marks.

When in the first stage we try to find the required item in a large collection
of documents, the structure of which our memory is unable to master, we
use various catalogues. For orientation relating to which legal documents
or other works of legal literature are relevant for a particular issue, a bibli-
ographical list can be used which, however, usually does not contain informa-
ton where in the library the document is deposited.

In the third stage – retrieval of information from the text of a document
at the beginning various indexes can be used, especially in fairly large books.
The indexes will lead us to the respective numbered section or paragraph.

But information retrieval from a documentary text can be facilitated in an-
other way. Collections of legal regulations, decisions and opinions are not
only supplied with indexes – each legal sentence in published court deci-
sions is graphically differentiated from the rest of the text. In the field
of law many periodical and non-periodical bibliographies are published, in
nearly every department, subject, sometimes even only a section of social
activity, bibliographical lists of valid legal regulations are published whether
at regular or various odd intervals.

All this naturally requires a great deal of paper. Issuing bibliographical lists
of legal documents or legal literature in itself does not guarantee yet that
there will be enough users for these lists, which are marked by a high degree
of non-utilization. Therefore publication of bibliographical lists is now rather ineffective.

Collections of primary legal documents and legal literature in libraries are often rather incomplete and scattered in various places due to shortage of storage space. The catalogues and bibliographies are often compiled in an inexpert way, which interferes with the retrieval of information. In some law courts, prosecution offices and attorneys offices this processing does not exist at all, with the result that the legal information we need in a particular case is found with difficulty, after much time has been lost.

Multiple, nonuniform and often inexpert processing of legal documents and legal literature stored in many places keeps busy a disproportionately large staff, often lawyers themselves, which is expensive. Since publication terms for books as well as periodical bibliographies are long, each printed bibliography at the moment of its publication is already out of date. This holds especially for lists of legal regulations where latest legal regulations are missing or when earlier published records do not contain the changes made since (abrogations). Thus any legal information that is available is incomplete, out-of-date, not particularly relevant for the user or the issue that is being solved.

The time which passes in this traditional system for the retrieval of legal information between the formulation of the requirement and meeting it is often so long that the information obtained has become unimportant for the user. The waiting depends on the system of each library and can range from a few minutes to several hours or even days. Work on research can involve waiting for several weeks or months.

These are approximately the reasons leading advanced countries including this one to the decision to develop an automated legal information system.

The advantages of automated system of legal information as against the traditional retrieval of legal information are the following:

1. Much scattered, multiple and nonuniform and therefore very uneconomical processing of legal documents and works of legal literature is concentrated in one or several information centres where conditions are prepared for the processing of all newly published legal documents and all works of legal literature according to predetermined rules in a uniform and expert way. These records and complete texts can then be used in a decentralized way – on a national (in some cases even international) scale. In the centre that principle is used on which the documentographic automated legal information system are based: “Each document is to be processed on the national or international scale only once but its record is to be used many times”.

2. Automated legal information systems can supply the users with highly relevant research, i.e. research custom-made for information needs and in-
terests of each particular user. These systems can usually meet general as well as specific demands. This is due, as it will be shown below, to the level of selection languages or selection subsystems of these systems.

3. Most automated legal information systems now endeavour to make available for the user at the output not only the relevant record of the legal documents but also their relevant complete text. This is made possible by storing complete texts of legal documents on memory media, e.g. magnetic tapes or discs or, which is generally more economical, on micrographic media (microfiches) linked or not linked with the computer’s operation system.

4. From a well functioning automated legal information system the user can get latest normative and other legal data (in normative legal information this is of especially great importance), because most of these systems want to process the set of legal regulations stored on machine carriers as quickly as possible after the day of publication of the new legal regulation. By this processing is meant not only the adding of the records or texts of newly published regulations but also additional inclusion of all alterations and cancellations brought about by the publication of a new legal regulation in the records or texts stored earlier.

5. The time that passed between the formulation of the user’s requirement and the supply of the required data depends on the communication media linking the user to the centre of this system or to the centre’s computer. On average this period is much shorter than in traditional retrieval of information. The designers and operators of automated legal information systems try to satisfy the demands of the users in real time, i.e. the time during which the need for information fully persists. This can only be achieved in the dialogue regime, when the user is directly connected with the computer and a dialogue is possible with the base of the data stored in it until the query gets an optimum answer – optimum within the possibilities of the base.

6. While the documentographic automated legal information system is restricted to retrieval of relevant documents (even though for instance each paragraph of the legal regulation can become such a document), another automated information system has been created that in information retrieval from legal documents accumulates all these phases of legal information retrieval – as they are known in the traditional approach: retrieval of relevant documents, retrieval of relevant parts of the text and retrieval of the text itself with relevant information.

Advancing development of computer, communication, reprographic and other techniques since the 50’s has brought a certain gradation for automation of information processes in the sphere of law.

Let us start first from the fact that legal information can be divided into indirect and direct.
1. **Indirect legal information** is about objective law, i.e., a set of legal norms valid in a particular country, together with information contained in decisions and in law literature (history and theory of law). Their core is information on what is valid according to the law.

2. **Direct legal information** is information on subjective laws (authorizations) and duty or freedom of action which is not constituted by law. Unlike indirect legal information, which does not address these persons, direct legal information does so.

Automation of information processes in the sphere of law has so far focused mostly on automation of retrieval of indirect legal information. To make conclusions or decide about authorizations, duty or freedom of action of the persons, and to decide whether certain legal norms were broken or not, usually requires both retrieval and interpretation of the legal norms by a lawyer. This process of decision-making must involve what is called legal thinking. And because the decision is made about man (indirectly when not a physical but a legal person is concerned), it involves much moral responsibility. Several elements play a role in it and no computer so far can deal with them: intuition, emotion (justified emotion only, of course), unequal (i.e., not registrable on a numeric scale) evaluation, etc.

Automated legal information systems that have already been developed or are being developed in the world, have the character of consultative systems. They make no decisions themselves but are ready to provide lawyers with information from the sphere of law as well as outside it. They generally have a high rate of completeness and precision and are capable of more varied information retrieval in greater variety than is in man's power. On the basis of these data lawyers, thanks to their specialist legal education, their experience and, last but not least, their wisdom, can make decisions based on the law.

Now the problem arises how much should the lawyers know and how much information must they have in order to make correct decisions. A number of philosophical and ethical problems are involved, as shown by the Czech writer Karel Čapek, who wrote in his short story *The Last Judgement*: "If the judges knew absolutely everything, they would not be able to pass any judgement; they would only understand everything and their heart would ache".

The present trend in the development of automated legal information systems is characterized by the attempt on the part of the manufacturers of these systems to make the systems give the best assistance possible in information retrieval. Their goal is that lawyers in a direct, generally interactive (dialogue) communication with the database need not use any formalized language for their queries but could use natural language formalized to a

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certain degree so that they need not learn the language. The main thing 
then is to make the queries in a language that maximally approximates natu-
ral language.

When we disregard the gradual improvement of technical, programme and 
linguistic means used in automated legal information systems and concen-
trate on the characteristics of those outlets which are most important for the 
user, we will get the following series of outlets:

1. **Code addresses of documents.** In this case the document is a relative con-
cept because it can designate e.g., a legal regulation (law, notice, directive 
etc.), court decision, monograph, dissertation, thesis or a similar publication 
from the field of law, but it can also mean some part of the legal regulation 
(paragraph, section, etc.), a monograph (chapter etc.), etc. Such a system 
presupposes a coded link of the output with the complete text in a traditio-
nal, usually printed form, e.g. with the full authentic version of the legal 
regulation.

2. **Identification records of documents.** The user obtains at the input the re-
cord of the document as a set of data which characterize this document 
formally. The main role of these data in the record is reliable differentia-
tion of one document from another, i.e., reliable identification of each docu-
ment. Otherwise it holds for the documents what was said in sub 1. Here 
too the fact is reckoned with that every record of the document is by means 
of a code/mark unequivocally linked with the complete text of the respective 
document preserved outside the computer.

3. **Record of documents with content characteristics of various types and kinds.** 
This kind of computer output is more suitable for legal literature, less suita-
ble for legislative documents and judicature, where condensation of informa-
tion from a complete text of a document can easily distort the meaning. 
The sense of the content (abstract, paper, etc.) can make the content of 
the document more accessible for the user and thus make easier his decision 
of whether to seek or not the complete text of this document as well as 
the record of the document from the computer.

4. **Record of documents and extracts from the text.** The type of record is 
less often used and its identification part is enriched by important parts 
of the text. E.g., the record of a law court decision can be supplemented 
by the so-called legal sentence, which is the most important part of the deci-
sion.

5. **Relevant parts of the texts of deposited documents on the basis of automatic 
retrieval of information from a complete text of the documents.** In systems 
with this outlet a computer method is used which is quite different from 
the methods used to reach the outlets discussed earlier. This method enables 
information retrieval from the text in such a way that any significant word 
from this text is conceived as a selection expression. Nonsignificant words 
are automatically excluded by means of negative vocabulary. Retrieved is
especially that part of the text (e.g. sentence, paragraph, section, etc.) in which a reply to a particular question is expected. The computer of course can with this method supply the user with both the particular part of the text and the code address (mark) of this part. Such an outlet is then on the level of the outlet described above in sub 1.

6. **Various preprocessed and mutually combinable factographical data.** In the sphere of law such data are usually obtained from automated systems of legal statistical information. The source of the fact is knowledge of objective reality (entities, objects, processes, events) which are generally called simply objects. The facts have their own attributes and values which measure these attributes. The facts become factographic information from the moment they enter man’s cognitive process. As examples of systems providing such outlets are automated systems of criminal statistics, automatic criminal records etc. They mainly help to control legal policy.

7. **To a query direct logical responses in natural language.** Systems providing such outlets represent a qualitative leap forward in the development of automated information systems. In literature they are often called active. Of course this is not activity in the sense of human activity but in the sense of greater assistance to the user’s system in information retrieval. Another fitting name for these systems is “expert systems” 8.

As this paper is mainly concerned with the expert systems, somewhat greater attention will be devoted to them.

In the 70’s an applied branch of the field of artificial intelligence was born – knowledge engineering – dealing with the obtaining, representation and automatic retrieval of knowledge. Conditions for its full development will arise only after computers of the fifth generation are introduced, which is expected in the early 90’s. These systems have been most successful in medical diagnostics. Besides expert diagnostic systems – even outside medicine, expert generative systems designed for testing have appeared. Beside them creative expert systems have been developed, with the capacity to create new information and thus enrich human knowledge.

To make the automated information system capable of responding to a query and supplying direct logical information, other data and another structure must be deposited in the computer memory. These data are at least of three types:

1. In order to communicate and receive information, the system must have linguistic knowledge – that is, knowledge of lexical items (words, phrases), grammatical categories (noun, verb) and grammatical relations (subject, object) representing the extralinguistic knowledge of relevant domains.

2. The system must have extralinguistic knowledge. Knowledge of the entities, attributes, events, processes and relations comprising the information models for relevant domains.

3. The system must have the ability to use such knowledge, that is, the knowledge of procedures for utilizing linguistic and extralinguistic knowledge to achieve a particular goal” 9.

The possibility of designing and introducing expert systems is limited in the present state of knowledge of natural languages, knowledge within a domain and the present level of computer technology and programming. There is no doubt that the preparation and operation of expert information systems will accelerate and deepen scientific knowledge of natural languages as well as the respective branches of knowledge more than all the other information systems enumerated above. If these systems are prepared and introduced in the field of law, it will involve legal language and the science of law.

There are generated methods enabling creation of logical information systems in the field of artificial intellect of the “question-answer” type in natural language on the basis of the semantic network automatically created from the input text 10. It also makes the creation of the system controlling the robot and keeping up a dialogue with him in the natural language possible.

The system applying these methods must create the “representation” of knowledge in the form of a semantic/tectogrammatical record of sentences of the input text, universum, from which the computer then selects a suitable answer to the user’s question. This question must also be transferred into this record. The way to this semantic recording of sentences is through the process of their morphological and syntactic analysis, which enables the transition from the records of meanings back to the sentences of natural language. Inference procedure makes enrichment by inferential rules of the set of knowledge obtained straight from the input text possible. It is enriched by statements which were not contained directly in the text but which the reader/listener deduces from direct information.

Systems of this type represent the highest degree of automation of text comprehension in natural language yet achieved; they are very complex systems, demanding on the outer and inner memory of the computer and its operational velocity.

Conclusion of the basic work on these mentioned methods will not mean that they can be automatically applied in the field of law. There will still remain the problem which knowledge from law or other fields should be put into the database system of this type serving the information needs of lawyers, and in what structure. Now shortcomings and gaps in legal science will come out that until now seemed negligible or were not apparent at all. It is even likely that the need of creating expert systems in the field of law will lead to a new conception of law.

While the application of expert systems providing information on objective law will probably produce no major problems, the attempt to use them in the field of providing direct legal information can bring about legal and ethical problems. The problems will also arise in the field of data collection characterizing e.g., all major circumstances of each law court, their evaluation, the structure of their deposition, etc. The problem of the “automatic judge” and “automatic prosecutor” will emerge again in lawyers’s discussions, now in a more real form than ever before.

There is and will be considerable difference as to whether the expert systems will be applied to a narrowly delimited field of law, or a whole legal branch or the whole field of law. Other differences will be according to in which section the expert systems will be used. As a matter of fact, they have already been experimentally applied to a section of law, as shown by the description of the Legal Research System (LRS) by the British author C.D. Hafner. This system is an expert system based on knowledge taken over from court decisions and legal regulations relating to these decisions. It is knowledge from some parts of commercial law involving cheques and promissory notes.

CONCLUSION

The possibility of easily obtaining complete and precise legal information from increasingly automated systems of legal information must be understood as a mere prerequisite for the rationalization of legal decision-making and other creative activities of lawyers as well as a prerequisite for growth of knowledge of law in people with no legal education. Such systems can also form a solid base for the introduction and control of legal education and legal policy.

The real efficiency of legal information, however, depends on the cognitive process itself and on the subsequent action of the recipient. This process is influenced by a number of inner and outer factors. Legal language plays a major role in it.

The process of becoming familiar with law in people with no legal education can positively affect the mass media which can play a role in the interpretation of legal norms of artistic, emotionally coloured forms of legal education.

Interplay between automated legal information systems and knowledge in the field of law become more intensive according to what outlets each type of system can provide for the users. So far this interplay makes itself felt most in expert systems in the field of law, which are developed by close cooperation between knowledge engineers and highly qualified lawyers.

These systems are only being prepared in research laboratories and operate only rarely and in a narrow section of law. Their social usefulness could not be unequivocally proved as yet.