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Studi e ricerche

Computers and the Consistency of Law

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1. CONSISTENCY OF LAW

1.1. *Law as the Frame of Reference*

There are two types of the legal systems relevant for the consistency issues: statutory (civil) law systems and common law systems, treated as ideal types.

Statutory (civil) law system is thought of as a system of general rules, hierarchically ordered, in some degree consistent, in which the main source of law is a statute, enacted by parliament, and serving as the normative basis of decisions of the law-applying agencies. Common law system is judge-made law which functions using the rule of precedent. In judicial decision one singles out a *ratio decidendi* and *obiter dicta*, and the stare decisis principle holds for the former but not the latter.

In contemporary common law countries the role of statutory regulation is growing [1], and the impact of law-applying decisions on the functioning of the application of law is patent in the statutory (civil) law countries [2]. There is, thus, a growing rapprochement between two types of legal systems, in spite of the still significant differencies in the ways in which the law is created and applied in them.

For the purposes of the present essay I will refer to law as a set of rules reduced to a standardized structure of four elements, viz. conditions (H), per-

1. P. S. ATIYAH, R. SUMMERS 1987 ch. 4, 5.
2. J. WRÓBLEWSKI 1983, pp. 157-177.

sons with some characteristics (P), behaviour (B) and normative consequences (NQ). The rule states that in conditions belonging to the class H the persons of the class P ought to behave in the manner B, and otherwise the normative consequences of the class NQ ought follow. This structure is not any commitment to some theory of the structure of a legal rule: it is simply a construct convenient for presenting the consistency of law issues in the present essay.

The structure in question is thought of applicable to the statutory rule and to the *ratio decidendi*, although is more adapted to the ideas developed in the analysis of statutory (civil) law theories in the wake of positivist and normativist tradition.

1.2. *Consistency of Rules*

Consistency referring to a set of rules in a legal discourse is used either as a generic term or is divided in two species.

«Consistency» in the wide meaning of the term (W-consistency) refers to the lack of conflicts between rules belonging to this set. W-consistency covers at least two types of relations, i.e. the relation of contradiction, contrariety and sub-contrariety (I will use the term «S-consistency» i.e. consistency in the strict sense), and the relation of coherence meaning «consistency between values». The opposition of S-consistency and coherence presupposes a non-cognitivist semantics in which in a given language there is a difference between descriptive and evaluative statements.

In the following I will use the term S-consistency opposed to coherence. S-consistency covers three types of relations i.e., contradiction, contrariety and sub-contrariety.

Coherence deals with the relation between values. Within the non-cognitivist axiology the values could be either coherent or incoherent, and in the latter case either the classes of objects defined with evaluative criteria are incoherent («class-incoherence») or the implementation of values in the same set of situations is either impossible or at least difficult («pragmatic-incoherence»). The class-incoherence presupposes that the designata references of terms are singled out using evaluative criteria (e.g. good man, bad man); the pragmatic incoherence deals with situations in which the implementation of value V_1 excludes an implementation of a value V_2 (strong version) or at least V_1 makes an implementation of V_2 more difficult (weak version).

1.3. *Consistency of Legal Rules*

S-consistency of legal rules is modelled by comparing two rules R_1 and R_2 according to their standard elements assuming that the rules in question are in contradiction.

R_1: H_1, P_1, B_1, NQ_1

R_2: H_2, P_2, B_2, NQ_2

According to our intuitions, R_1 and R_2 are not S-inconsistent if there is a S-inconsistency of H_1 and H_2, and P_1 and P_2. If these elements are S-inconsistent, whereas the remaining elements are not, then it means an extension of the area of the application of the rules in question to all the situations and all persons (contradiction) or to the area covered by both rules (contrariety, sub-contrariety) if R_1 and R_2 are valid in the same spatio-temporal dimension.

On the other hand, according to the same intuitions, R_1 and R_2 are S-inconsistent if H_1 and H_2, P_1 and P_2 are common, and B_1 and B_2 are S-inconsistent and/or B_1 and B_2 are common and NQ_1 and NQ_2 are S-inconsistent. The examples are for B: action/omission; legal act/illegal act; for NQ: liability/non-liability/immunity; responsability/non-responsability; validity/invalidity.

Ceteris imparibus the same holds for the coherence. The relevant is incoherence between the B and NQ, provided that the H and P elements are the same. There are two types of incoherence, i.e. in respect to the evaluative definitions of the B and NQ element («class-incoherence»), and to the incoherence of the implementation issues («pragmatic incoherence»).

The class-incoherence occurs when to define the classes one uses evaluative terms. E.g.: using a right/abusing a right; legitimate defence/illegitimate defence or assault; high motives/low motives; morally right (acceptable) behaviour/morally (wrong unacceptable) behaviour.

It seems that for NQ a construction of class incoherence is somewhat artificial. The evaluative NQ as e.g. «just compensation» gives ample lee-ways, but its opposite «unjust compensation» cannot be found in any legal rule, whereas the opposition with e.g. «strict compensation» stimulates the question whether or not we have to do with a class incoherence on the level of rules or on the level of concrete decisions. In the following I will not discuss the class incoherence in respect to NQ.

The pragmatic incoherence concept demands introduction of the category of the factual consequences FQ, as different from NQ. There are the two classes of these consequences depending on whether they are consequences of B (referred to as BFQ) or of NQ (referred to as NQFQ). In any case FQ are singled out descriptively and evaluated in terms of the values connected with B or with NQ.

The cases of pragmatic incoherence are in practice rather complicated. E.g. R_1 demands passing an entrance examination for all candidates to the university; R_2 adds a quota of free places on fifty/fifty basis for men and women; BFQ_1 is the structure of the university trained qualified employees depending on the inequal opportunities for university studies; the BFQ_2 makes

the employment in question more equally distributed in the two categories in question. The former is evaluated as an implementation of the value of equality without discrimination, the latter could be treated as an implementation of social justice value. For an example of the FQ consequences there are NQ_1 as prison penalty and NQ_2 compensation for the same B in R_1 and in R_2: the $FQNQ_1$ is the exclusion of the convicted from productive work and more of less costly stay in a state supported institution, whereas $FQNQ_2$ is the stimulus for productive work of the convicted and, thus, from the purely economical point of view the former is less justified than the latter – this point of view is, however, not decisive discussing the punishment policies.

1.4. *Identification of W-inconsistency*

There are three ways to identify W-inconsistency of legal rules, i.e. syntactic, semantic, and pragmatic.

Syntactic W-inconsistency is identified by comparison of the syntactic structure of the rules. The criteria is the use of negation in the simple and/or complex terms. The functor of negation has very important and complicated role in normative discourse [3], but it is relatively easily stated and can be mechanically applied for identification of the syntactic W-inconsistency.

Semantic W-inconsistency of rules demands a comparison of the meaning of rules or of their parts taking into account the features of the terms of the given language used in a determined contexts. E.g.: and/either... or; action/omission; right/wrong; allowed/prohibited.

Pragmatic W-inconsistency cannot be stated without the knowledge of the factual consequences of the B and NQ elements of the rules and their evaluation according the defined criteria.

2. Value of W-consistency

2.1. *Rationality and W-consistency of Law-Making*

W-consistency is related with the value of rationality. There are various conceptions of rationality but I cannot discuss them in my essay [4]. One of the concepts of rationality referred to in legal discourse is based on justification of legal decision [5]. The premisses justify decision treated as their consequences according to the accepted rules of legal justificatory reasoning. A decision is supported by epistemic and axiological premisses, as any practical rational decision does.

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3. J. Wróblewski 1984 A.
4. J. Agassi, I. C. Jarvie 1987; T. E. Geraetz 1979.
5. A. Aarnio 1987; R. Alexy 1978 part C; J. Wróblewski 1983, pp. 49-70; 1986 A.

A decision is internally rational if it follows from the premisses accepted by the decision-maker and the rules of justificatory reasoning he uses. The internal rationality appears thus as W-consistency linking premisses and decisions.

External rationality deals with the justification of the premisses and/or the rules of justificatory reasoning qualified from the critical point of view; W-inconsistent premisses are not acceptable in any rational criticism, of course. Roughly speaking W-inconsistent decision cannot be rational decision, both in the meaning of internal and external rationality.

The value of rationality is a cultural dependent value. In the present legal culture it is one the values accepted and thought of *inter alia* as an opposition of arbitrariness.

Rationality in legal practical discourse is mainly referred to the two types of decisions singled out in statutory (civil) law systems, i.e. to the law-making and law-applying decisions, and transferred to their results, viz. to the law and to the law-applying decisions.

2.2. *Efficacy and W-consistency of Law-Making*

There are many concepts of efficacy in law i.e. behavioral, motivational, finitistic and educational [6]. For our purposes it is sufficient to take into account two types of the motivational and finitistic efficacy.

A rule is effective in the motivational sense if it influences the decision-making processes of the person making legally relevant decision; the paradigmatic example is the decision-making of the rule-addressee. The rule is motivationally effective if the decision-maker prefers an alternative of his behaviour recommended by the rule in question. The motivational efficacy refers to the rules which determine obligatory patterns of behaviour and not merely give rights. Is is evident that W-inconsistency of rules eliminates the possibility of a motivational efficacy of an information concerning the content of the rules in question, since they point at different behaviour as obligatory.

A rule is finitistically effective if its observation results in implementation of the goals ascribed to the rule-maker. These goals are treated as the factual consequences of prescribed behaviour (BFQ) or of its normative consequences (FQNQ). The rational law-maker cannot have W-inconsistent goals, otherwise the concept of finitistic efficacy would have no sense at all, because the rules would be either always «effective» or never «effective» not depending on their observation.

Since the law-maker aims at the finitistic efficacy of the enacted rules, and

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6. J. Wróblewski 1980.

one of the conditions necessary (but not sufficient) is their motivational efficacy, he is interested in the W-consistency of the rules in question.

2.3. *W-consistency and Application of Law*

Ceteris imparibus these observations could be referred also to the law-applying activity taken as whole, i.e. as the practice of decision-making. There are the purposes of the law-applying practice defined by the application of law ideology, and the purposes of the law-applying agency has making a decision in a concrete case. A decision ought to motivate its addressee and to implement the purposes of the decision-maker too. It is so in statutory (civil) law systems, and to a even higher degree in the common law systems.

Also the law-applying decision ought to be rational and not arbitrary, at least in the ideology of a legal and rational decision [7]. The non-arbitrariness of decision is controlled *inter alia* in proper procedures especially for the judicial decision-making. W-consistency of decision is controlled in two dimensions; in its internal justification and in the external justification of the premisses and the used rules of reasoning too.

3. Dealing with W-inconsistency in Law

3.1. *Statutory Law-making and W-inconsistency*

The demand for W-consistency in law-making is so obvious in the present legal culture that it is only in the most general directives of the law-making technique that we could find a reference to the postulates which could be treated as a explication of the demand for W-consistency. The postulate of not enacting rules that are W-inconsistent is obvious. The worth mentioning feature of the law-making technique is that the demand for W-consistency is coupled with leaving quite substantial lee-ways for decisions of the application of law.

There are several technical means serving the preservation of the W-consistency, such as the shaping and use of the legal language in respect to its syntax and semantics, proper systematization of legal rules including transitory provisions, the good technique of derogation etc.

A difficult problem is how to preserve the coherence of enacted law because of the procedures of the law-making involving axiological compromises and collective decision-making using the majority voting decisions, especially in statutory law-making.

The W-consistency of law is the postulate implied in law-making technique directives. The W-consistency is also a presupposition of legal reasoning in

7. J. Wróblewski 1974.

general, and especially of the reasoning used in heuresis of decisions and in their justification.

3.2. *Application of Law and W-consistency*

Application of law presupposes the W-consistency of the law-maker and of the law as the result of law-making activity. According to theoretical analysis, the judicial application of law decision, as the paradigm of law-applying decision in statutory (civil) law system, can be modelled in several manners. For the present analysis the most convenient is a material decisional model, in which the final judicial decision is justified by the fractional decisions of validity, of interpretation, of evidence and of the choice of (normative) consequences [8].

The W-consistency is relevant for justification of each of these decisions but within the scope of the present paper I have to limit my analysis to one of these decisions, and the most adapted is the decision of validity because it involves also the decisions of interpretation.

The basic conception of validity for statutory (civil) law systems is the systemic validity [9]. Roughly speaking, a rule is valid in the system in question if and only if (a) it is enacted by competent law-making agency and is applicable in defined spatio-temporal dimension; (b) is not derogated; (c) is W-consistent with other valid rules; (d) if it is W-inconsistent it either does not loose the validity on the strength of the conflict of law rules or is interpreted in a way eliminating the inconsistency in question.

The concept of systemic validity implies the W-consistency (or W-inconsistency) issues. The conflict of law rules deals with relations of hierarchy (*lex superior/lex inferior*), of time (*lex anterior/lex posterior*) and with substantive content of rules (*lex specialis/lex generalis*). It could be demonstrated that the substantive criteria imply an evaluation at least when the *lex specialis/lex generalis* relation is stated by interpretation. Then this is the case of coherence implying the concept of W-consistency. The use of intepretation to determine the meaning of inconsistent rules implies evaluations, because the interpretative doubts, choice of directives of interpretation, and their use, is not axiologically neutral, and the interpretation is used to eliminate S-inconsistency of incoherence.

Coherence is the essential criterion of using the axiological concept of validity according to which a rule is valid if not incoherent with some extra-legal values. I leave this concept out, because in the systems of law I am dealing with it is of lesser importance than the concept of systemic validity.

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8. J. Wróblewski 1984 B, pp. 259-265; 1988, pp. 344-349.
9. J. Wróblewski 1985 A.

3.3. *Judicial Law-making and W-consistency*

In common law systems the problems of W-consistency refer to the judicial law-making expressed in the decisions disposing of concrete cases.

In decisions two elements are singled out, i.e. *ratio decidendi* and *obiter dicta*, and the rule of precedent concerns the former element only. The institution of *stare decisis* and precedent is fixed by practice in the English and American administration of justice [10]. In any case, the determination of *ratio decidendi* gives some lee-ways and grounds some elasticity of decision-making. The obvious possibility of conflicting precedents as a result of singling out various *rationes decidendi* by distinguishing the cases opens the area of choices. Last but not the least, there is a possibility of leading case, if a new precedent is followed in practice.

The W-consistency demand is implied in the judicial law-making in common law, because it is implied in the very notion of precedent: «following a precedent» means *inter alia* to make a new decision W-consistent with the prior binding decisions.

4. Computers and W-inconsistency in Law

4.1. *Linguistic, Systemic and Axiological Conditioning Factors*

There are three types of factors conditioning the use of computers in dealing with W-inconsistency in law, provided that the use of the proper computerization techniques and the proper hardware is guaranteed. These factors are: the language of the applied rules, the systemic features of the applied law, and the axiology implied in it.

The language in which the applied rules are formulated is a species (or «register») of the common ethnic natural language. It is a fuzzy and contextual language. Fuzziness [11] is revealed in the existence of the cases which cannot be decided whether or not they are referred to by the linguistic expressions (semantic penumbra cases), opposed to the cases wich clearly are referred to (positive semantic core) or are not referred to (negative semantic core). This fuzziness cannot be removed by definition either by the better knowledge of language or of the situation in question. Contextuality means that the meanings of many terms of the language in question depend on the contexts of their use, which, in the case of law, are the legal language itself, legal system and the functional context the rule has been created or applied.

Legal system the rules belong to is more or less ordered by many relations [12]. Among them there are relations of S-consistency and coherence, that is of

10. P. S. Atiyah, R. S. Summers 1987 ch. 5, 1-3.
11. J. Wróblewski 1985 B, pp. 239-243.
12. J. Wróblewski 1986 B.

the W-consistency. Practically the W-consistency of legal system is only in part the direct result of the law-maker's activity — in statutory (civil) law systems — or of the courts — in common law systems — because it is also a result of the transformation of legal material in the course of making concrete decisions and by the systematization of legal dogmatics too.

Axiological unity of the legal system is expressed in the coherence of its constitutive parts. Because of the role of the axiological underpinning of law-making and law-applying decisions it is presupposed that there is some coherent axiology justifying the decisions in question. This is the basis of the role the coherence plays in law. The coherence is implied directly in any legal decision as axiological justifying argument, or indirectly in coherent evaluation of factual consequences of these decisions appraised in a coherent manner (pragmatic unity).

There are, however, two factors highly relevant for axiology conditioning the use of computers in law.

Firstly, the axiology in question is coherent only in some degree, because various conflicting values are taken into account. This situation occurs when in the law-making various axiologically opposed or differently oriented subjects take part and the result is a more or less shaky compromise. Analogous situation occurs in the law-applying decisions although there is a safety valve of dissenting opinion open.

Secondly, there is a highly controversial role of the principles of law; their nature, their place in legal system, and their role in law-making and in application of law is highly controversial, and the principles taken into account are often incoherent. Moreover, there are different concepts of «principles of law» which cannot be discussed here. One of the concepts in question defines principles as a type of a directives which could be more or less observed and which are incoherent and should be weighed, whereas the rules are either observed or not and, for them the postulate of coherence is accepted. Taking this into account, the axiology of law linked with coherence is a fundamental to understand law as it is complicated and problematic.

All three factors, i.e. linguistic, systemic and axiological, are highly relevant for any use of computers in law, and especially for their dealing with W-inconsistency. The features of these three factors are important for construction of an ordinary information system, as contrasted with expert system. In the following I will not, however, make a difference between these two types of systems and I will limit my observations on the linguistic, systemic and axiological issues implied in construction of any legal information system (LIS). The problems of ordinary LIS (referred to as OLIS) are, of course, less complicated than those referring to the expert system (ELIS) [13], but

13. The difference between OLIS and ELIS is not sharp: about the latter cf. R. SUSSKIND 1987; A. A. MARTINO 1987

it seems to me that a theoretical analysis of W-consistency could be useful for mapping out the situation in which OLIS or ELIS are constructed.

4.2. *Linguistic Problems of Legal Informatics and Consistency*

The features of legal language the rules of law are formulated in are highly relevant for the construction of any LIS, in which the data bank consists of these rules. In the following I will deal with these problems referred to the statutory (civil) law system, mentioning separately the issue concerning judicial decisions as data.

The salient features of the legal language are its ambiguity linked with contextuality and fuzziness. Fuzziness is of essential importance in the application of law, and so it is not manifest when constructing LIS which is not directly used for the decision disposing of the concrete cases, like some ELIS are potentially aimed at. Therefore our interest here is centered on various kinds of ambiguities relevant for any LIS. I will use here the term «ambiguity» in a loose manner referring to various kinds of defects of the precizeness on the syntactic and semantic level, which are manifested in concrete uses of the language (pragmatics).

Firstly, the formulation of legal text could be syntactically ambiguous. In the OLIS one can just put the whole text in the system and retrieve it according to the proper procedures. The output will be as ambiguous as the input is. Any ELIS demands, however, an elimination of the syntactical ambiguity without which the operation of the whole system seems spurious. There are higly sophisticated techniques elaborated for elimination of syntactic ambiguity through reformulation of texts in a standardized way adapted to identify all «horns» of possibilities implied by the formulation [14]. As the result one gets the whole map of syntactically univocal readings of the text as several «blocks» connected with univocal relations. The higly relevant factor of the elimination of syntactical ambiguity is the interpretation of legal rules referred to as «careful scrutiny» of «careful analysis», which is an intellectual operation transcending the pure description of the texts. Any interpretation, however, is linked with values implied in doubts concerning the direct *prima facie* meaning, and in choosing the instruments for removal of doubts, and for justification of the interpretative choices. The result of the syntactically unambiguous reformulation of the text depends, thus, on the not axiologically neutral expertise of the constructor of the ELIS.

Even syntactic ambiguity removed, some of the terms used in the legal rule could be ambiguous. The terms of legal language change their meaning in various changing contexts of their use, which is important for the elasticity of law and its adaptation to the different functional contexts. It is a open question how the LIS can do with semantical ambiguity, and especially with

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14. L. E. Allen, C. S. Saxon 1987.

polysemy which sometimes even cannot be reduced to a finite set of possible meanings of some terms.

The constructor of LIS could either map out the possible meanings as alternative readings of rules, or to choose one as the right meaning. The former leaves the choice to the user of the LIS, the latter means making preferential choices and discarding the axiological neutrality of the constructor, if any. Moreover, because of the features of the legal language, it is not possible to identify all meanings at least for the future uses, which relates the semantics with pragmatics of a legal language.

The W-consistency of rules presupposes that the rules have a determined meaning, because rules are consistent or inconsistent only as normative statements having definite meaning. To state the consistency or inconsistency one has, thus, to define the meanings of the rules in question. The reformulation of rules removing the syntactical ambiguities and the mapping out possible meanings of terms used in these rules is, thus, necessary for testing the consistency of legal systems.

There are two basic problems for any LIS: the identification of inconsistency and its elimination. The identification of inconsistency could be made by the LIS if the inconsistency is expressed by the negation in the text of the standardized formula of a rule, or is made explicit by the reformulation of the text in a linguistic or arithmetic way. The former depends on the style or formulation of rules by the law-maker, the latter depends on the reformulation in which one uses a standardized way of making explicit the structure of the rule (syntactic reformulation) and chooses the terms making the implied negations explicit (semantic reformulation).

4.3. *Systemic Problems of Legal Informatics and Consistency*

The features of legal systems are highly relevant for the construction and operation of LIS. The most important problem is the use of the systemic concept of validity referred to above (sec. 3.2.) which is proper to the statutory (civil) law systems and appears also in statutory regulation in the common law countries.

Firstly, the role of the person deciding the content of an imput of LIS is highly relevant if the valid rules of law constitute the data base. It has been demonstrated that the systemic validity in some situation cannot be stated without making evaluative choices and this is one of the features of some hard cases. Deciding what is valid rule (or normative act) which should be put in the LIS is, then, a choice involving a decision whether some rules are coherent and in some situations implying an interpretation. There are two issues to be decided; (a) whether the construction of LIS is competent to state the S-consistency and coherence implied in the decision, and (b) whether it is up to him to make decisions, which without using LIS are up to the person who makes, applies or uses the law. There is a difference bet-

ween the issues of S-consistency and coherence. Any user of LIS has to decide whether the data base gives him the complete and reliable information on validity of rules, or only a *prima facie* information which he has to test. This is the problem of any OLIS.

Secondly, there is the question whether the LIS could be constructed in a way enabling an automatic testing of the W-consistency of the input when the data base are valid rules. This task, if made by ELIS, would have big relevance of the operational value of computers in law. This type of controlling the input preserves the W-consistency of the data base, of course. The conditions of this ELIS are rather difficult, because they include: (a) the proper formalization of the input and data base rules through a special syntactic form; (b) an elimination of semantic ambiguities, if any, in the texts formulated according to the (a) requirement; (c) the program for identification of the W-inconsistency, which is easier for S-inconsistency than for incoherence; (d) a system of elimination of W-inconsistency or at least of its identification for the constructor of the LIS for remowing them, or (f) the system of eliminating them whithout constructor's intervention.

Thirdly, one can discuss ELIS which can test the validity of rules in the data base. It is a special version of the control of input, and the difference lies in the time-dimension, because it deals with the already introduced data. This operation could be also treated as a second level control of the input. The problems to be solved are, however, the same.

4.4. *Axiological Problems of Legal Informatics and Coherence*

Coherence refers to the relations of values and is opposed to the S-consistency. As explained above, coherence issues are implied in the linguistic and systemic problems because of the features of the languages connected with law, and of the features of the systemic validity. The role of evaluations in determining the meaning of the terms of the language in question, and in determining the systemic validity, are the factors conditioning the perspectives of developing ELIS. These problems were mentioned above, and here I would present some more general problems dealing with coherence relevant for LIS.

Firstly, there is a problem of the coherence between rules in terms of the identification of W-inconsistency. To state when two rules are incoherent demands an evaluation of the singled out elements of the rules in question, viz. of (B) regulated behaviour, of NQ-normative consequences, and of FQ factual consequences (sec. 1.3.). The comparison of the values ascribed to them is difficult if the terms referring to them are ambiguous or fuzzy, but in situations when one is an explicit negation of the other, and purely syntactical comparison is enough. In some situations a weighing of values to state an incoherence is required and the criteria for doing it are, as a rule, not quantitatively stated.

Secondly, there is the problem of the coherence between the values ascribed to the whole sets of valid legal rules, or in other words of the systemicity of legal axiology relevant for LIS. This systemicity is especially important when LIS takes into account the principles of law.

Thirdly, there is the problem of identification of the incoherence in a formalized way proper to the operation of computer. If there are not syntactically used or descriptively stated characteristics, then the algorithmisation of the comparison serving the identification in question seems rather dubious, at least concerning the actual legal axiology of law. ELIS could be a «thinking machine» but whether it could be «evaluation machine», if evaluation is not reduced to calculation?

4.5. *Consistency, Legal Informatics and Peculiarities of the Common Law*

The general linguistic, systemic and axiological problems of S-consistency and coherence are in part common to any legal system. The main difference in my opinion concerns the systemic features of the statutory (civil) law systems as opposed to common law. In the former the concept of systemic validity is used and it stimulates problems discussed above (sec. 4.2.).

In the common law the precedent is binding and the problem of determination of *ratio decidendi* is not solved by the constructor of LIS but is determined in concrete judicial decision. There are, therefore, no problems of input of valid legal rules, as in statutory (civil) law system, but one has to put in all decisions of a given hierarchical level of courts. There is, thus, a difference of the data base of LIS in both systems and the problems of S-consistency and coherence have to be solved in different way. In the common law this is the much discussed problem of defining *ratio decidendi* of the case and this is the task of a judge and not of the LIS.

5. Concluding Observations

W-consistency of law is presupposed in legal reasoning and is treated as a value related with the rationality of legal decisions and with the efficacy of law. There are relevant differences between S-consistency and coherence which influence the possibilities of legal informatics systems. There are linguistic, systemic and axiological factors conditioning the consistency issues, which are also dependent on the features of the legal system in which this informatics is used.

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