ULRICH KLUG'S LEGAL LOGIC
A CRITICAL ACCOUNT (1)

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Ulrich Klug's book on legal logic (2) (the first edition of which appeared in 1951 and the second in 1958) seems to constitute the first book-length attempt to formulate the types of legal argument in formulae of symbolic logic. Klug is favourably inclined towards modern formalistic logic and attempts to identify himself with its spirit (3). We may ignore the details of the symbolic transcription (which — incidentally — might be subject to criticism). Of primary interest to us will be Klug's conception of legal logic itself, together with the forms of legal argument analysed in his book. But first we shall deal with the characterization of general logic as presented in his Introduction.

1. THE CONCEPT OF (FORMAL) LOGIC (Summary) (4)

At the beginning of the Introduction Klug clarifies his use of the terms 'formal logic' and 'legal logic'. Referring to Heinrich Scholz (5) and to Rudolf Carnap, he sees formal logic as part of the theory of

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(2) Ulrich KLUG, *Juristische Logik*, Berlin, 1951; zweite, verbesserte Auflage, 1958.

(3) He includes in his Bibliography those of Rudolf Carnap's books which appeared in German.

(4) The present study is divided into alternate sections of summary and criticism.

(5) Heinrich SCHOLZ, *Geschichte der Logik*, Berlin, 1931.

science. He conceives of the latter as dealing with the technique of acquiring scientific knowledge. Formal logic is that portion of the theory of science which provides the technique of scientific proof. To be more exact: it is that branch of the theory of science which formulates the rules of inference required for the construction of the sciences. It is termed 'formal' since the technique which it provides is limited to the inference of propositions from other propositions without taking heed of their contents. It does not depend on the subject matter and may be applied to any subject matter.

Is it also possible to speak of non-formal logic? In the words of Scholz: "By the term non-formal logic the remaining sphere of the theory of science should be understood. Thus included in non-formal logic is all which belongs to the theory of science but not to formal logic" [6]. (2) [7]. Yet, Scholz himself deals in his book only with formal logic, and Klug explains: "This restriction to formal logic is not a simplification. On the contrary, it appears worthwhile to go even one step further and agree that by the term logic only formal logic is meant". (2). However, Scholz, although he distinguished between formal and non-formal logic, maintained that, "strictly understood, the concept of formal logic is a misleading one, since it requires non-formal logic as an opposing concept, and thus burdens logic with tasks which by right are reserved to other philosophic disciplines" [8]. (2). Carnap also "can rightfully advance the thesis that a special logic of meanings is superfluous and that the expression non-formal logic is *contradictio in adjecto*" [9]. (2). Brugger as well, in his philosophical dictionary ([10]), "calls formal logic true logic and suggests that wherever until now material (non-formal) logic was mentioned, other designations should be chosen". (2). In any event, when speaking of logic in general in his book, Klug refers to formal logic.

([6]) *Op. cit.*, p. 16.

([7]) The numbers in parentheses refer to pages in Klug's book (second edition).

([8]) This is a paraphrase from Scholz, *ibidem*, p. 5.

([9]) The source: R. CARNAP, *Logische Syntax der Sprache*, Vienna 1934, p. 202.

([10]) Walter BRUGGER, S.J., *Philosophisches Wörterbuch*, Freiburg i. Br., 1947.

2. Criticism

Since Klug appears to believe that there is great affinity, if not complete congruence, between his conception of logic and that of Carnap, it is interesting to note three differences between the two conceptions.

Firstly, the restriction of logic to a part of the theory of science does not agree with Carnap's conception. Carnap recognizes not only the logic of indicative sentences, but also the logic of sentences expressing an approval, a wish, a command, a decision, etc. ([11]) Only the logic of indicative sentences, which he prefers to call 'the logic of science', is for him a part of the theory of science. If the impression was given (as with Klug and others) that Carnap viewed logic in general as part of the theory of science, this was mainly due to the fact that he actually dealt in his studies for many years almost exclusively with the logic of indicative sentences, and used the term 'logic' mainly as a short form for 'logic of science' ([12]).

Secondly, within the framework of the theory of science (whatever the nature of science, according to the current meaning of the English or German term ([13]), Klug allocates to (formal) logic a different place than Carnap does. Indeed, while the latter identifies the logic of science with the syntax and semantics of the language of science, Klug understands formal logic as dealing only with scientific *proof*. Is this not a restriction of the discipline? In principle — no; but in practice — to a great extent yes. Klug indeed limits the study of "legal proof", in essence, to the exemplification of

([11]) See: P. A. Schilpp (ed.), *The Philosophy of Rudolf Carnap*, La Salle (Illinois), 1963, pp. 999-1013.

There Carnap deals with the logic of such sentences, which are termed in an inclusive manner 'optative sentences' or 'optatives'. It is doubtful if he *ever* explicitly identified logic in general with the logic of science.

([12]) A factor abetting the above-mentioned mistake on the part of German scholars seems to have been the German word 'Wissenschaft'. The meaning of the word in its customary usage, influenced by German idealism, includes, among other things, the ethical and legal spheres of 'cognition'. Thus its meaning is wider than that used by Carnap in his studies in German where the word appears to be synonymous with the English word 'science' — in its customary sense. This includes, aside from the formal sciences, only descriptive spheres.

([13]) See preceding footnote.

several modes of inference practised in court, and almost does not deal at all with the special characteristics of legal language and legal system, despite the fact that an exhaustive study of proof requires, in principle, extensive syntactical and semantical investigation.

Finally, in identifying logic with syntax and semantics, Carnap excludes from its sphere all pragmatical investigation. Klug, on the other hand, by characterizing (formal) logic as providing the *technique* of scientific proof, somewhat permits the belief that he conceives of logic as a discipline with a pragmatical dimension. This belief is further strengthened when he asserts, later on in the Introduction, that legal logic is "an instance of *practical logic*" (see below, Sections 3 and 4); however, it is not subsequently confirmed. Actually Klug in his book does not deal at all with the anthropological (psychological or sociological) aspect of the "technique of proof", and is in no way concerned with the "practical" nature of the discipline. It is possible, therefore, to view part of his characterizations in the Introduction as formulated in borrowed or somewhat careless language, not to be understood literally. Yet these characterizations do not lack certain substantial confusion, as we shall see further on.

Thus it appears that Klug somewhat misinterprets the very conception of logic which he intends to represent. But this notwithstanding, the relatively progressive spirit of his approach should be positively assessed in comparison with authors to whom the achievements of contemporary logic and methodology are almost entirely foreign.

3. The concept of legal logic (Summary)

Further on Klug explains that the term 'legal logic' is not meant to designate any special and independent logic of law, different from the logics, as it were, of other branches of science. In general, the assumption that there are logics peculiar to different fields, with rules of their own, is without basis. In all the spheres of science the logical laws and modes of inference, such as the law of contradiction, the law of double negation, or the method of indirect proof, are valid. The differences between the various spheres of science are not due to the logic applied, but rather to the difference in the premises

serving as a point of departure for the arguments. "Therefore, when *legal logic* is spoken of, this is not a designation of a logic for which special laws are valid; but rather that part of logic which finds application in the science of law is thereby meant". (5).

The link with logic in all the branches of legal research and practice is that which transforms legal theory into a science. Logic plays a decisive role in the systematic part of legal theory, inasmuch as the concept of system is clearly a logical one. The historical-genetical study of law also requires logic, insofar as it involves proving and drawing conclusions. The question of the supra-positive *a priori* foundations of law is likewise a logical question. However, it is not customary to view legal logic as encompassing all these spheres. Generally, it is customary to limit its scope solely to adjudication — that is, to the application of law to concrete cases for the purpose of reaching a verdict and passing a sentence. The author associates himself with this limitation by emphatically stating: "*Legal logic is the theory of the rules of formal logic applied within the framework of adjudication*". (6). Legal logic may be seen in this sense as "an instance of *practical logic*", as opposed to general logic — "pure or theoretical" (6). For the purposes of adjudication "arguments are always presented — that is, conclusions are drawn" (7). What, then, are the forms of argument peculiar to legal logic? The previous characterization in itself does not provide an answer to this question: "It should be added, of course, that the previous definition of the concept of legal logic does not permit the unequivocal delimitation of the sphere of investigation. Nevertheless, it is convenient to follow the linguistic usage in the stated manner. If an exact delimitation is desired, one should define as follows: legal logic is the theory of the forms of inference mentioned in §§9-16 of this investigation (*argumenta a simile, e contrario, a maiori ad minus*, etc.)". (7). (See below, Sections 7 to 11).

Until now little attention was paid to legal logic in jurisprudential literature. The accepted opinion is that legal errors are less common with respect to form than with respect to substance, and that 'the lawyers common sense' in itself assures the correctness of logic. However, Carnap showed that this opinion is without basis, and Leibnitz had already disagreed with the opinion that it is not easy to err over form. It is customary also to point out the contradiction

between the formal and abstract nature of logic and between' life'. "However, if logic were something 'opposed to life', it would be difficult to understand how it happens that in scientific and in everyday controversies the accusation of deficient logic is the gravest that can be levelled against the opponent in the debate. It is more correct to say that wherever intellectual weapons are still used at all, at least *one* objective instance is generally appealed to. This sole forum considered absolutely binding is precisely the forum of logic". (8).

4. Criticism — the proper extension of legal logic

Klug's central thesis — that legal logic is not a special and independent logic, but is "that part of logic which finds application in the science of law" (5) — is not sufficiently clear. First of all, what is "logic"? How can we reconcile an unqualified assertion of the existence of one logic of general validity with the multiplicity of existing and possible logics — many-valued, intuitionistic, modal, deontic and inductive? The claim of the intuitionists regarding mathematics is well-known, as is the claim that certain branches of modern physics should be based on a special logic. To the extent that these claims are justified, the opinion that the differences between the spheres of science lie only in the contents of the premises, and not in the logic applied, cannot be defended without qualification. However, the view is sometimes maintained ([14]) that for the needs of the natural sciences ordinary extensional logic — that is, classical functional calculus of a suitable order — is sufficient. Klug presumably intends to represent such a position, even though he does not clearly state this. In all events, he does not recognize the clear-cut difference between law and the applied sciences: for him law is a branch of science, and his legal logic does not stray, in the main, from the framework of ordinary functional calculus of the first order. (In the general section of the book, which deals with the "basic theories of pure logic, explained by examples of legal logic", elementary material from the propositional and functional calculi,

([14]) By Quine, for example.

from the theories of classes and relations, and from the theory of definition, is explained and illustrated. It is not always clear what the connection is between the cited material and the modes of inference constituting the object of investigation. Furthermore, a good deal of this material remains unapplied in the continuation of the book, in its special part. However, the boundaries of 'general logic" are sufficiently clear).

The usage of the term 'science' according to which law is a branch of science is misleading and pointless. For Klug a sphere or discipline is scientific inasmuch as it depends on logic. 'Science' in this sense is obviously synonymous with 'rational sphere' or 'sphere of argument', and the usage under discussion conceals the profound differences between spheres so dissimilar as formal sciences, applied sciences (conceived of as domains of descriptive knowledge), ethical systems, law, or games with rules. Law, of course, is a sphere of rational argument; but this in no way implies that the logic upon which law is based is identical with the logic of all or some of the applied sciences. The scope of the term 'science' should be limited to disciplines which formulate their findings in indicative sentences; the applied sciences, in particular, should be viewed as formulating well-corroborated indicative sentences about the world. In other words, the sciences, according to the correct usage, are descriptive disciplines or spheres of knowledge, as opposed to ethics or law, conceived of as prescriptive disciplines.

Klug, however, ignores this difference and assumes without discussion, as if it were self-evident or assured beforehand, that the ordinary logic of indicative sentences is adequate for law. He cannot avoid the use of deontic expressions such as 'are to', and indeed this expression occurs in the general premise and in the conclusion of his subsumptive syllogisms (e.g., "all professional fences are to be punished by a term of imprisonment up to ten years" (50)). The deontic expression is, however, understood as a component of the predicate ("are -to -be -punished -by -imprisonment -of -up -to -ten -years"), and not as a logical operator or constant in itself. The legal sentences in which the expression 'are to' occurs (in its specific use) are considered by Klug as indicative sentences for all means and purposes. Only in the «philosophy of law" (and not in law itself) does he disjoin the deontic element from the overall expression descriptive

of a human action (153). He mentions ([15]) G. H. von Wright's deontic logic (154), but again only in connection with the philosophy of law. He conceives of law itself as if it were a descriptive discipline. Furthermore, he speaks without any hesitation of "legal cognition".

To the extent that we agree, as is understandable, that law requires deontic (or imperative or the like), and in this sense special, logic, we have to abstain from the view that legal logic is part and parcel of the general logic of the sciences. It should be noted in this connection that the possibilities of applying intuitionistic logic to law were suggested ([16]). Accordingly, much weight cannot be attributed to references to the "general validity" of certain laws and rules; especially, insofar as Klug's examples are concerned, it is known that the law of double negation and indirect proof are disregarded in intuitionistic logic, and furthermore, that the law of contradiction is formulated differently in deontic logic than it is in ordinary propositional and functional calculi. In general, there is the danger of confusion and fallacy in any indefinite mention of logical laws and modes of inference when abstracted from specific logical systems.

But let us assume for a moment, for the sake of the criticism, that Klug is correct in his assumption that the ordinary logic of indicative sentences is adequate for law. How should his idea that legal logic is only "part" of it be understood? What does 'part' mean in this context, and what are the criteria for determining the appropriate part of general logic? It is stated in the Introduction that the logic required for the purposes of law "is not the entire logic with all its laws, but is only a part, very essentially more elementary than, for example, that part of logic required for the construction of mathematics". (5). Apparently, it may be assumed that the author intends to state here, among other things, that functional calculus of the first order is sufficient for law, while the various branches of mathematics require functional calculi of higher orders. But he does not give his reasons. Indeed, does law not require at least simple arithmetic, and thus functional calculus of the second order? It is quite clear that it is impossible to deal with such questions in a

([15]) In the second edition; not in the first.
([16]) By Robert Feys, for example.

fruitful manner without first analysing, in outline at least, the special structure and characteristics of the overall legal system. Klug does not even attempt to analyse sufficiently large portions of legal language. Instead he simply adopts, together with their Latin names, a list of "arguments" as they were singled out by his predecessors within the framework of traditional logic. They constitute legal logic according to his conception, and the principal part of his book is dedicated to them. The result is, therefore, that the above-mentioned "part" of general logic is not one or another system of logic at all, but rather is a set of a few "modes of inference", by which legal logic is also "defined". (This "definition", meant to provide an "exact delimitation" of the discipline (7), does not appear in the first edition). These modes of argument are not the primary rules of inference in functional calculus (such as *modus ponens* or the rules of substitution). What, then, singles them out from among the derivative rules of inference? Also, in order to come to terms with the proposed limitation of the scope of legal logic, it is necessary to know what the reasons or guarantees are for the assumption that the given list indeed includes all the important modes of argument likely to be of use in legal reasoning. Klug avoids all clarification of this question. Further on it will become clear that the traditional "modes of argument" studied in the book are not primarily logical but heuristic in nature.

However, a certain confusion of the logical context with the pragmatical is in fact felt already in the Introduction. This finds expression in the limitation of the scope of legal logic to the actual framework of adjudication. One should have reservations about the conception of a field logic as a theory of reasoning with a pragmatical dimension. Such a conception stands out in the remarks about the delimitation under discussion, in which it is explained that logic is needed by whomever argues — that is to say, proves and draws conclusions — whether in the theoretical-systematical study of law, in its historical-genetical or philosophical study (the study of its "supra-positive" foundations), or in its practical application during adjudication, which constitutes the special sphere of legal logic. We agree that descriptive history of law logically constitutes a discipline distinct from law itself (although one should not reject in advance the possibility of logical relationships between the two

spheres, especially in the context of the corroboration of laws by historical-genetical considerations). On the other hand, it is not at all clear what the substantial justification is for excluding from the scope of legal logic the systematic study of law or the study of its *a priori* foundations, if indeed such exist. Obviously one cannot accept as satisfactory the reason given for the limitation under discussion, namely, that it is generally accepted. On the contrary, its inconsistency is striking to the extent that those who argue for the purpose of adjudication actually make frequent use of systematic, historical-genetical and philosophical considerations.

Klug's assertion that the concept of system is a clearly logical one can be interpreted as lip service to the conception of legal logic, in principle, as an extensive syntactical and semantical theory of the legal system. In the Introduction he explains, in outline, the nature of the applied axiomatic-deductive system, and at the end of the book he even points out the need for the axiomatization of law and its formalization (see below, Section 12). Yet these remarks remain vague and unconnected with the body of the work. Indeed, since Klug limits legal logic, as we have seen, in fact to the study of certain modes of reasoning customary in courts of law, he sees himself absolved from making any contribution whatsoever to the clarification of the systematic nature of law. In particular, we should search in vain in his book for even the beginning of a discussion of purely logical questions, such as the problem of the distinction, within the legal system, between descriptive and prescriptive elements, between analytical and synthetical elements, between axioms, meaning rules, correspondence rules, etc; or the problems of the logical nature of justification and corroboration in law, or of central concepts in jurisprudential theory, such as the concepts of transgression, right or responsibility.

Following general usage, Klug also excludes from the scope of legal logic the question of the "supra-positive" foundations of law, despite the fact that he takes it to be a "logical question". As it becomes apparent from his remarks at the end of the book (see below, Section 12), he refers here to "teleological" assumptions, to *a priori* "judgments of obligation", whose study he relegates to the philosophy of law. Without embarking on a criticism of this conception nurtured by the tradition of German philosophy, we shall

point out only in passing its substantial role in the book: The *a priori* assumptions of law represent the price, as it were, which Klug pays for the conception of legal logic as simply the logic of indicative sentences; they absorb, as it were, the distortion which he causes in this manner to legal logic. Proper legal logic does not require the assumption of "supra-positive" legal foundations.

In the characterization of legal logic as "an instance of practical logic", as opposed to "pure or theoretical" general logic (6), there is an implicit confusion between two different distinctions — namely, the distinction between pure and applied systems, on the one hand, and the distinction between theoretical and technical (methodological-practical) disciplines, on the other hand. Legal logic is actually applied logic (or 'special' logic, in the sense that in addition to variables, specific non-logical constants occur in its formulae). However, this circumstance does not involve the loss of its theoretical nature, as Klug, who mistakenly identifies applied with practical or technical, believes. On the contrary, a rational conception of field logic does in fact require the sharp substantial separation between logic and the methodology and technique of reasoning. Logic itself is concerned — in principle — with the formalized system, and examines its syntactical and semantical characteristics, and through this also the general conditions for the validity of the arguments formulated within its framework. The conception of legal logic as a pragmatical and methodological discipline investigating the processes or acts of legal reasoning should be replaced by the conception of legal logic as syntax and semantics of legal language, parallel to the corresponding conception of the logic of science.

Klug rightly agrees with Leibnitz and Carnap who claim that it is easy to err over matters of form. Yet, by divorcing legal logic from the study of the overall legal system, he ignores the most common and serious of such errors — which is, the viewing of matters of form as if they were matters of substance. It is clear that the elucidation of alleged imaterial relations' as formal relations is only possible within the framework of the overall system. The dissociation under discussion, therefore, prevents legal logic in advance from carrying out one of the main tasks which should be assigned to it — that is, the clarification of the 'non-formal' nature often attributed to legal argument. The dissociated, isolated, enthymematic argument

appears at first glance to involve a substantial, material inference. In order to develop and complete it, one must view it against the background of the entire language of law. It is true that Klug is not prepared to recognize the existence of 'material' legal logic. On the contrary, he emphasizes, as we have seen (above, Sections 1 and 2), that logic is formal by its very nature. However, this progressive outlook is unfortunately not accompanied by an adequate conception of the discipline. Within the narrow and confining framework allotted by Klug to legal logic, his attempts to present the modes of legal reasoning as purely formal inferences appear (as will become evident later) as manifest distortions of the object of the study.

Beyond the analysis of several syllogistic forms which attracted attention in traditional logic, there is a wide field of study which the logician must not neglect. Claims as to the absence of opposition between logic and life, and assertions to the effect that logic is the "sole forum considered absolutely binding" (8), will remain empty and somewhat ridiculous as long as there is no assurance that the "logical forum" is conceived of in its proper extension, as the sphere of unequivocal language, regimented in systems with distinct and clear rules.

Before passing to the special part of the book, we shall tarry for a while to examine how the author defends legal logic against the objections of its alleged opponents.

5. Discussion of anti-logical doctrines (Summary)

Further on in his Introduction, Klug disagrees with the two doctrines which raised the "paradoxical claim that adjudication is possible without the aid of logic" (9) — the doctrine of free judgment and the doctrine of interests ([17]). The first stressed the fact that, in certain cases, the judge must ignore the letter of the law and decide on his own. More precisely: (a) Whenever the written law does not permit a completely clear decision, or whenever it is not apparent that the actual governing authority would have decided as is stipulated in the law, the judge must decide as the actual go-

([17]) Freiheitsschule, Interessenjurisprudenz.

verning authority would have done. (b) If the judge is unable to such a decision, he should decide "in accordance with 'free law'"(10). (c) In complicated cases in which quantity is concerned, as in the case of material compensation for non-material damage, the judge should decide arbitrarily.

Klug replies that in all these cases the witness only changes in the legal premises, but under no circumstances the relinquishment of the use of logic. In the first case, the judge supplants the written laws with other laws, but he does not give up the use of logical rules when he comes to draw conclusions from the new premises. Furthermore, the new premises themselves are deduced from the governing principles of the state by means of logic. In a similar manner, the new premises in the second case are deduced from teleological principles, generally unsophisticated ones, and here, too, there is no room to speak of a 'non-logical' argument. Finally, in the third case, the 'arbitrariness' of the judge does not mean lack of consideration; he does not decide 'by tossing a coin', but on the basis of some (unwritten) principles.

Also in relation to the doctrine of interests one can speak only of the transmutation of premises, and not of the disregard of the rules of logical inference. This doctrine demands of the judge that he weigh the opposing interests of the parties. However, it is clear that such 'weighing' cannot be carried out on the basis of feeling, but must be deduced from the implicit principles governing the relations between the interests. "Here too the matter is one of genuine inferences, and hence of logical operations." (11). To the credit of both doctrines it must be said, from the standpoint of legal logic, that they pointed out "that in deriving conclusions from existing law it is necessary to take into consideration, aside from the legal premises laid down in legal stipulations, some further initial material. But the discovery of the latter is not a task of legal logic, since the operations of legal logic begin only when the premises are already present". (12).

6. Criticism. — Legal corroboration ([18]). — The background of legal logic

Klug does not develop his debate on the proper plane and thus, to a great extent, it becomes pointless. Already at the beginning he characterizes the positions of the two doctrines with too much simplicity and vagueness, in attributing to them the "paradoxical claim that adjudication is possible without the aid of logic" (9). One cannot be sure of the exact meaning of this phrase, in which pragmatical and logical elements are intermingled. Should it be understood as affirming (a) that adjudication is possible without any reasoning whatsoever, in the psychological sense; or (b) that the judge does not always complete his enthymematic considerations and formulate them as formalized arguments; or (c) that not always is such formalization needed as a requisite for assuring good adjudication; or (d) that such formalization is not always possible? It is very doubtful if anyone ever seriously opposed claims (b) or (c), or if anyone ever seriously defended claim (a) or even (d). In any event, none of these four contentions is seen as implicit in the considerations of the two doctrines under cirticism as they are presented by Klug himself.

The major genuine question whose clarification is required in this context seems to be the following one : What is, in the arguments of good adjudication, the relative part of the general premises drawn from the legal system itself, on the one hand, and of those which the judge must supplement, on the other hand? There is also a preliminary question : What is it that makes the difference between good and bad adjudication? These two questions should be clarified as referring (a) to the legal systems actually in existence to-day and (b) to perfect legal systems, which could be constructed in the future or ideally conceived of as regulative principles. The "opponents of logic", in defending their criteria for good adjudication, argue mainly along the lines of (a) : they claim that within the framework of good adjudication to-day, verdicts and sentences are only rarely deduced unequivocally from the factual data with the aid of the

([18]) The expression 'legal corroboration' in this study means the corroboration *of* legal utterances, and not corroboration *through* legal utterances.

existing legal system. The possibilities of deduction from that which is available are limited here, and in this sense the part of the non-logical operations is great. However, it is also possible to interpret part of the considerations under discussion as an attack along the lines of (b). Klug does not disagree with the criteria suggested for good adjudication. He, too, avoids the proper development of the second line of argument, despite the fact that his struggle along the first line may be considered a defence of a lost cause. Indeed, he is unable to deny the main point of the genuine "anti-logical" contention. On the contrary, he admits that the judge is often compelled to supplement the law and amend it. He understandably does not find it difficult to refute what he construes as a "paradoxical claim". He explains that the substitution of premises in legal arguments does not mean relinquishing the use of rules of inference. But in this he is obviously jousting with windmills, since it should not be assumed that the adherents of the doctrines under ciriticism would find reason to deny the existence of those "operations of legal logic" which "begin only when the premises are already present" (12). They would only comment, surely, that in their opinion these operations are rather unimportant as compared with the acts of subjective decision upon which the supplementation or amendment of the law depends. In short: the discussion, as Klug presents it, misses its central mark. It is necessary to develop it and to elucidate its implicit aspects.

To-day, the proportion of the non-logical operations, in the above-mentioned sense, required in the process of reasoning in court is great. This contention itself cannot be opposed, and is correct not only with respect to good critical adjudication, but even with respect to bad routine adjudication. Many authors do, in fact, emphasize the role of these operations in adjudication. In view of the prevalence of this emphasis, it is worth examining the problem from time to time in its various aspects. For such an examination one needs to maintain a clear division between the factual affirmation referring to the state of contemporary law, and between the theoretical question concerning the possibilities of its development and formalization. One needs also to distinguish between obstacles in practice and in principle that stand in the way of the logical systematization of adjudication.

A legal system is constructed in order to allow adjudication by logical means. As long as the system is not sufficiently developed, such possibilities are in themselves limited. Deduction without a system is obviously impossible : it is not enough to have factual data in order to draw legal conclusions in a formal argument. As in science so in law, the construction of a theoretical system precedes the setting out of arguments; as in science so in law, the operations of the construction of the theory are, in the initial stage, more numerous than the operations of its employment. In the perfect state of law (and we are ignoring social change for the moment) the judge in principle only sets in operation the system of laws; in its existing condition he must also take part in its construction. It is impossible to deduce a new law from the system to which it is being added : in this lies its very nature as a new law. It is true that in this discussion the point is not so much the legislation of entirely new laws as it is the "substitution of premises" — that is, the change in existing laws. But the modes of such change, too, obviously cannot be deduced from the system itself. Thus arises the question of the criteria for the distinction between a good legal system and a bad one. A scientific system is tested, first and foremost, by empirical corroboration. Is it possible to speak of the corroboration of a legal system?

The adherents of the doctrine of free judgment emphasize the need of adapting law, firstly, to the 'intentions' of the governing authority, and secondly, to the current intuitions of equity and justice. The doctrine of interests demands the consideration of the concrete interests represented in court by the parties. For the sake of the analysis of these claims and their evaluation, we must ask : What, in fact, are the functions of law? Science describes phenomena, makes it possible to explain them and to predict them. Law, which is applied to society, does not have a cognitive function as does science : it is not meant to describe society, but to direct it. While science describes regularity, law establishes regularity (that is, determines rules of action); while science formulates statements of fact, law commands and warns; while scientific theory provides explanation for the propositions of science, the legal system provides justification and sanction for the injunctions of law and the decisions of the judge. Just as the value of a scientific theory is gauged by the correspondence of its predictions to observations, thus is the value

of a legal system gauged by the correspondence of its consequences to human volitions. However, this analogy is evidently deficient in an important respect: while scientific observations are inter-subjective and fairly stable (though dependent on instruments of observation and measurement which develop with the passage of time), substantial differences exist between the volitions of the members of a society, and these volitions are also greatly influenced by social change. The problem of the criteria for good corroboration is thus far more complex in law than it is in science. One cannot escape seriously considering the question as to whose volitions are decisive in legal corroboration.

The adherents of the doctrine of free judgment reply as follows. In principle, the value of a legal decision is gauged by its correspondence to the volitions of those who hold the reins of power at the time of adjudication, since they, in a sense, are the masters of the legal system which serves them as a tool of rule. Just as the non-correspondence of scientific predictions to observations requires changes in scientific theory, thus the non-correspondence of legal conclusions to the volitions of those in power requires a change in the law from which the conclusions were deduced. When the volitions of those in power are not clear to the judge, he must make use of the criterion of the simple intuition of justice which represents the average will of society, this average being weighed, as it were, in accordance with the social balance of forces. The two criteria tend, in any event, to coincide in a healthy democratic state. The reply of the doctrine of interests is not essentially different. The judge must evaluate the tangible interests involved in the case under consideration. The social factors whose balance controls the authorities in power are here explicitly mentioned. It is convenient in this context to use the term 'collective will' or 'effective will' as a theoretical term of legal pragmatics.

It is thus possible to interpret and present the "antilogical" position common to both doctrines in the following manner. Even in cases where the judge is in possession of explicit and clear laws, he cannot be satisfied with drawing conclusions automatically, but rather must examine them on the basis of the criteria of legal corroboration. He must reject any conclusion which does not appear sufficiently sound, and he must amend the law accordingly. Like

the scientist, the judge is required to assure the appropriateness of the theoretical system to its basic functions. However, since the corroboration of law is not inter-subjective and stable to the same degree as is the corroboration of science, the use of theory is disturbed, by its construction in law, to a far greater extent than it is in science. Furthermore, the obstacle in the path of the logical systematization of law is not the result of special circumstances limited in time; but rather the subordination of logical operations to non-logical ones constitutes in fact a permanent feature of law.

Klug does not even commence such a discussion. He explains that the logical operation is not affected by the fact that the judge supplies his arguments with new premises. He adds that the new premises themselves are deduced from principles — "the governing principles of the state" or "simple teleological principles" (10). But what is the status of these principles? Is it possible to formulate them in advance and incorporate them in the legal system? Klug does not claim that this is possible, but it is clear that such a claim would be ineffective against doctrines emphasizing the dynamic nature of law. Only an analysis based on the concepts of empirical corroboration, as indicated above, properly reflects their position, and only such an analysis will be acceptable to anyone unwilling to adopt an aprioristic viewpoint. Like science, law is in need of corroboration 'from below', in the absence of any possibility of deducing it from 'superior' principles. To the extent that the claims of the two doctrines are based on a progressive empiricist approach, they seem to merit serious consideration.

However, it also seems that there is room to blunt the edge of the "anti-logical" criticism ([19]). Law, as an instrument of power, serves not only as the means of imposing will in general, but primarily serves as a means of organizing the life in society and of coordinating opposing volitions. The legal system should be construed as a factor in the creation of patterns of behaviour and in the regulation of certain aspects of life in society. This function, based on the social nature of man, strengthens law in its actual application. Organization and coordination require theory and consistency to a greater

([19]) Such a discussion should, of course, be held on a sociological and historical level. A few comments will be sufficient in this context.

extent than does the imposition of will in general. The desire for organization and coordination, when guiding the private isolated volitions, limits the oppositions between them, and in this way lessens the tension between law and the effective will. Accordingly, the differences between the individual volitions do not make law so different from science, as far as the inter-subjective nature of corroboration is concerned, as it would seem at first sight. Furthermore, the function of law as a factor of organization and coordination also increases its stability. It is possible to analyse this phenomenom as a process of progressive consolidation. As law becomes more stable, so it succeeds in better coordinating volitions, and as the volitions are better coordinated, so do they grant a greater degree of stability to the system of law which they corroborate. This analysis is especially suited to democratic rule. To a certain extent, it is even possible to identify the described process with the progress of democracy. This constancy of law is also reflected in the vagueness of the corroboration of law. The question of the correspondence or non-correspondence of a law, or of a verdict, to the effective will, cannot be so sharply resolved, nor does it require such a sharp resolution, as does the question of the correspondence or non-correspondence of a natural law, or of a prediction, to observation. This vagueness and flexibility of the effective will serves as a safety valve for law in its directing and coordinating social function.

It is true that law is greatly influenced by changes in the material aspects of society — that is, by technical and economic development — through the mediation of changes in the balance of the social forces which determine the general will. With respect to these phenomena, the distinction between pure theory and the correspondence rules connecting it with the observational domain is relevant. Owing to the open nature of the theoretical legal terms, much latitude is assured in providing an interpretation for the theory. Consequently, material changes have less influence on pure theory than on the correspondence rules. Moreover, it is in the power of sagacious legislation, directed towards increasing the stability of law, to limit in advance the overall influence of economic and social changes on the pure theoretical part of the legal system, and to increase the degree of absorption of this influence by the correspondence rules. Finally, it is worthwhile pointing out in this context

the relatively small degree of cohesion between the numerous parts of the legal system. It can be said that a legal system is broad and shallow. Because of these characteristics, any change made in one or another of the system's parts does not usually submit it to such a general disturbance as that caused to a narrow and deep scientific theory by changes at sufficient depth.

We shall now turn to Klug's reaction to the claim (of the adherents of the doctrine of free judgment) that in certain cases the judge is forced to make arbitrary decisions. Klug replies that such 'arbitrariness' does not mean the absence of consideration: even in such cases the judge does not reach a decision 'by tossing a coin', but on the basis of unwritten principles. In this part of the debate as well, a clear distinction between actually existing law and between perfect law is lacking. Here, too, Klug sees himself absolved from turning the discussion to the possible and the desirable. Due to the oversimplified and misleading interpretation he gives to the basic thesis of the two doctrines he criticizes, he believes that for the sake of its refutation it is sufficient to show that in every instance — also when following the recommendations of the "opponents of logic" — the judge presents arguments, and hence requires logic. However, it is clear that his reply, insofar as it refers to existing law, misses the point. The unwritten principles which serve as a basis for judicial arguments in the cases under discussion are not deduced from the law. Consequently, their case is similar to that of the new premises which were discussed earlier. Their very formulation is a non-logical operation. Such operations are unavoidable in adjudication — *this* is the fundamental "anti-logical" thesis, and not the allegation "that adjudication is possible without the aid of logic" (9). Implicit in Klug's reaction is the claim that there are sufficient unwritten principles in order to solve all the complex questions for which the ordinary 'free' intuition of justice does not provide an unequivocal. solution. In support of this claim, which is essential to this reply, Klug gives no reasons whatever, nor does he explain how are those principles established. Is their formulation sufficiently protected against chance? Here, too, it is very difficult to see how it is possible to weed out the "anti-logical" plant with its empiricist roots without the use of an aprioristic spade.

The evaluation of the two "anti-logical" doctrines may be sum-

marized as follows. While their basic position seems acceptable insofar as it deals with the state of adjudication to-day, it should be seen as very exaggerated to the extent that it is interpreted as casting serious doubt as to the possibility of extensive rationalization of adjudication, by means of developing legal systems and improving them, with respect to their appropriateness to social conditions and the rationality of their structures. The difference between good law and good science, from the point of view of the importance of logical operations in their practical application, is not as great as it seems at first glance. Also the difference between them from the point of view of their relative stability is not great enough to justify relinquishing the logical development of law and its improvement as a system of applied theory. The consideration that making efforts in this direction will not be profitable due to the rapidity of social change does not seem sufficiently sound.

The only thing which Klug marks to the merit of the two doctrines is that they showed "that in deriving conclusions from existing law it is necessary to take into consideration, aside from the legal premises laid down in legal stipulations, some further initial material" (12). Such an evaluation ignores the essential. The great merit of these two doctrines is that they emphasized the positive nature of law and its empirical foundations. Just as in other spheres, so here, too, the anti-aprioristic trend was, due to misunderstanding, at times presented as "anti-logical". Klug, with his aprioristic tendencies, would presumably not be inclined to recognize the above-mentioned merit, even if he saw the problem of legal corroboration as relevant to the debate on legal logic. In any case, the framework of his discussion is limited, from the beginning, by his narrow and faulty conception of applied logic.

One must surely agree with the opinion that the *discovery* of initial material for adjudication "is not a task of legal logic" (12). Yet, in a discussion on legal logic such as that held by Klug against the two doctrines, there is no justification for excluding from the scope of the discussion the syntactical and semantical characteristics of the premises and of the overall system, just as there is no reason whatsoever for detaching the framework of logical matters from their general methodological and pragmatical context. It is impossible to investigate the nature of legal argument and the scope of

legal logic properly, without being acquainted with the logical and pragmatical characteristics of law as an applied theory, with its functions, the nature of its connection with the domain of application, its modes of corroboration, the circumstances of its development, etc. The double limitation makes Klug's discussion shallow and sterile.

We shall now pass to the chapter in Klug's book dealing with "special arguments of legal logic". These are, according to the order of the sections: inference by analogy, inference by inversion, arguments *a maiori ad minus*, *a minori ad maius*, *a fortiori*, *ad absurdum*, and arguments of interpretation. The author explains that the use of these special forms of argument involves difficulties, as opposed to the easy use of "the fundamental form of legal inference", which is the traditional form of inference *barbara*: "The fundamental form of legal inference is characterized by the fact that the major premise includes the general legal directive, while in the minor premise the concrete situation is subsumed. The conclusive sentence gives the concrete judgment of obligation as following from both premises". (49). An example of such a syllogism is given: "All professional fences are to be punished by a term of imprisonment up to ten yers; accused A is a professional fence; therefore — accused A is to be punished by a term of imprisonment up to ten years". (50). It has already been pointed out that Klug regards sentences which include expressions of obligation ("judgments of obligation") as belonging to the scope of the ordinary logic of indicative sentences.

7. Analogical inference, inference by inversion, and their mutual relation (Summary)

1. The use of *analogical inference* (or *argumentum a simile*) may be characterized in the following manner. A legal rule which according to its explicit formulation refers to a certain state of affairs is applied to a different state of affairs, congruent with the first "in all essential respects" ([20]). In other words, this is the application

([20]) The expression appears in double quotation marks also in the original, p. 101.

of given legal rules to unforeseen cases which correspond, nevertheless, to the "basic idea" ([21]) of the rules. The difficulty in the use of analogical inference lies obviously in the obscurity of the distinctions between the essential and unessential respects, and between the basic and unimportant ideas.

The form of *argumentum a simile* is this: ([22])

All M are P; all S are N; therefore — all S are P,

with 'M', 'N', 'S', 'P' serving as predicates, and the meaning of 'N' being: similar to M (or, to be more exact: similar to all M) in all essential respects. This similarity in itself "is not a fundamental logical relation" (123). The argument as it stands is not valid, but it becomes valid by the substitution of 'M-or-N' for 'M' in the major premise. The class of individuals with the property M-or-N is called "the circle of similarity of M". For example: certain prescriptions in German law refer explicitly to contracts of sale — that is, contracts of transfer of material property. Here analogical inference permits the application of these prescriptions also to contracts of transfer of a commercial establishment, including goodwill, etc. It is sufficient to interpret the original prescription as applicable not only to contracts of sale in the narrow sense, but also to contracts which are contracts-of-sale-or-contracts-similar-to-contracts-of-sale ('similar' to be read as 'similar in all essential respects'; thus also subsequently in every suitable context), since contracts of transfer of a commercial establishment are similar to contracts of sale. In the form given above: S — contracts of transfer of a commercial establishment; P — contracts to which the original prescription is applicable; M — contracts of sale; N — contracts similar to contracts of sale. After the amendment of the major premise, the minor premise is subsumed to it as in any syllogism constructed in accordance with the fundamental form of legal inference. It follows that we should agree with the logicians who refuse to attribute to analogical inference a special logical structure of its own.

([21]) See preceding footnote.

([22]) Follows a concise and fairly free, though sufficiently faithful, paraphrase of Klug's explanations, in which he makes use of simple formulae of the functional calculus and the theory of classes.

Analogical inference may be used also when the legal assumptions are not a sufficient but a necessary condition for the legal consequences. Let us assume, for example, that the law stipulates that only government officials have the right to receive tax-free expense money. The status of a government official is thus a necessary condition, but not a sufficient one, for the above-mentioned right. Do notaries, who are considered semi-government officials, also fulfil the necessary condition for the same right? The matter depends upon the resolution of the question of whether or not semi-government officials belong to the circle of similarity of the class of government officials.

Klug concludes: "On the basis of the formal-logical structure of analogy developed above, one can show the possibilities available in its practical application for deciding when certain analogical inference is admissible and when it is inadmissible. But the criterion for this question, so essential in practice, is not provided by the figure of inference as such, but rather by the definition of the suitable circle of similarity. Depending on whether the definition is broad or narrow, it will be possible to draw more or less analogical inferences. Without a precise definition it is impossible to draw any conclusions (...). The purpose in view is decisive here. Before us is a teleological binding force. Hence, as long as the appropriate circle of similarity has not been defined, the criteria for the admissibility of an analogical inference are not logical, but rather teleological. But when the circle of similarity has already been defined, the analogy takes on an exact shape, and the question whether an inference of similarity is admissible can be unequivocally resolved". (128).

2. Let us assume that the law stipulates that if a state of affairs fulfils legal conditions *a*, then legal consequences *c* apply to it. By means of *inference by inversion* (or *argumentum e contrario*) it is inferred from this that if a state of affairs does not fulfil assumptions *a*, then consequences *c* are not applicable to it. Such an argument is also called *argumentum e silentio*. For example, from the prescription permitting several legal residences to natural persons (people), we infer that several legal residences are not permissible to corporations. The use of this inference is exemplified by Kelsen's "negative norm": "What one is not obliged to do, one is free to do or to refrain from doing". (130, quoted from Kelsen). Also well-known

are the Latin adages: "*Qui dicit de uno, negat de altero*" and "*Exceptio firmat regulam in casibus non exceptis*" (130, quoted).

The inference is invalid whenever the legal assumptions are a sufficient but not a necessary condition for the consequences, and it is valid whenever the legal assumptions are a necessary or a necessary and sufficient condition for the consequences. Klug also expresses this in an alternative way, saying that the validity depends on the nature of the logical relation between the assumptions and the consequences: the inference is "permitted when the appropriate legal assumptions imply the corresponding legal consequences intensively or reciprocally, and it is inadmissible when the legal assumptions imply the legal consequences extensively". (133). ('Intensive implication' is the designation, in Klug's terminology, for the propositional connective 'only if..., then...', with the characteristic TTFT; 'extensive implication' is the designation for the connective 'if..., then...', TFTT; and 'reciprocal implication' designates '...if and only if...', TFFT.) Sometimes the legal formula itself permits a decision as to the nature of the implication. The intensive interpretation, in particular, is valid with respect to prescriptions negatively formulated, prescriptions which lay down exceptions to the rule, or include expressions such as 'only if'. "However, when it is impossible to determine unequivocally what the character of the appropriate implication is, teleological analysis is required. Then it is impossible to agree on the basis of teleological principles — in adjudication and in jurisprudence — as to what should be considered as determined (defined) on the basis of the teleological axioms". (134).

3. The question is often discussed as to whether a legal prescription which does not explicity refer to a given state of affairs requires analogical inference extending the scope of the prescription, or *argumentum e contrario* limiting it. Among jurists the opinion is current that in such cases always one and only one of these two arguments is admissible, and they usually add that it is impossible to decide in logic between the two. The author disagrees with the first opinion and has reservations about the second. Here is an example of a case in which neither analogy nor inversion should be used. According to regulations it is forbidden to bring a dog into the carriage of a passenger train. A man who brought a large crate into

the carriage of a passenger train was summoned to court. He makes use of inversion when he argues that the crate is not a dog nor does it resemble a dog, and hence it is permissible to bring it into the carriage. However, this argument is invalid since the implication in the regulation is extensive, and not intensive or reciprocal: it is not stipulated that the prohibition applies only to dogs, and there are no grounds for such an interpretation. Yet the passenger is right in maintaining that crates do not belong to the circle of similarity of dogs, and the plaintiff cannot employ *argumentum a simile* here. Thus the opinion that the invalidity of one of the two arguments automatically entails the validity of the other is refuted. On the other hand, in certain cases the use of one of the two arguments does not prevent the supplementary use of the other. This refers to cases of intensive implication (only if...). Already mentioned above was the regulation according to which only government officials may enjoy a certain right. Here it is permissible to infer by inversion that whoever is not a government official cannot enjoy the right in question. The criterion for the possibility of inversion is obviously logical here: the nature of the implication. Yet the possibility is nevertheless open, as we have seen, to the use of the analogical argument here: notaries, as semi-government officials, are similar to government officials, and hence they, too, are not disqualified from enjoying the right in question. It follows that the use of inversion does not necessarily prevent the use of analogy. The analogical argument in such cases determines the result of the inference by inversion: if we include the notaries in the circle of similarity of the class of government officials, the inference by inversion will not harm them, but if we exclude them, it will be to their detriment. The decision itself, one way or another, is — as has already been emphasized — not a logical question, but rather a teleological one. Also in the case of reciprocal implication between the conditions and the consequences *argumentum e contrario* does not prevent a prior analogical argument.

In summary, the relations between the two types of argument is more complicated than is usually thought in jurisprudential literature. The factors upon which the possibility of each form of argument depends are different and independent of each other. The possibility of *argumentum a simile* depends on the determination

of the appropriate circle of similarity, while the possibility of *argumentum e contrario* depends on the nature of the implication in the legal rule. *Argumentum e contrario* is possible if and only if the implication is intensive or reciprocal, and then its scope depends on the results of the prior analogical argument — that is, indirectly, on the determination of the appropriate circle of similarity.

8. Criticism. — (Formal) logic and heuristic 'logic'. — Creative judgment and semantical interpretation

Klug's view that arguments *a simile* and *e contrario* do not constitute special logical means straying form the framework of formal logic is contrary to the opinion current among jurists. Aside from this, a certain paradoxality is sensed in his considerations and in his conclusions. This feeling may be related to a certain obscurity in his position and formulations. Indeed, his basic thesis is somewhat unclear: is it his intention to say that the two modes of argument are formal logical means, or that they are not logical means at all (and thus not special, non-formal logical means)? It appears that he did not properly take note of this ambiguity. But his formulations seem to indicate that he would prefer the former interpretation. This is especially clear with respect to *argumentum e contrario*, which, in his opinion, is none other than ordinary formal inference by inversion. In regard to *argumentum a simile*, he distinguishes between two stages. In the first stage, as long as the circle of similarity has not been defined, "the criteria for the admissibility of an analogical inference are not logical, but rather teleological". In the second stage, "when the circle of similarity has already been defined, the analogy takes on an exact shape, and the question whether an inference of similarity is admissible can be unequivocally resolved" (128). The "exact shape" is obtained through a change in the major premise. At this stage *argumentum a simile* appears as a formal logical means in every respect. The operations of legal logic — this should be remembered — "begin only when the premises are already present" (12). It seems that the substantial disagreement between Klug and most jurists is to a great extent illusory, namely, to the extent that it is due to considerable differences in the usage of the

terms '*argumentum a simile*' ('analogical inference') and '*argumentum e contrario* ('inference by inversion'). In other words, Klug's objections to the current view are, to no small degree, due to its distortion. This will be the main point of our criticism. Aside from this, we shall point out some further serious deficiencies in his considerations.

It is worthwhile discussing *argumentum a simile* in detail. Klug here distinguishes between two forms — the primitive one which is inexact:

(1) All M are P; all S are N (similar to M in all essential respects); therefore — all S are P;

and the amended one:

(2) All M-or-N are P; all S are N; therefore — all S are P.

He explains that the second form alone is formally valid.

We shall now attempt to imagine the opinion which would be held on this matter by an unbiased representative of the accepted position of the jurists. He would argue as follows:

"The amended form (2) does not correspond at all to what we call 'analogical inference'. Moreover, we see even the primitive form (1) only as the final stage of the entire argument. Its initial and essential stage is constituted — in our opinion — by the establishment of the minor premise 'all S are N'. Indeed, this premise, as opposed to the major premise 'all M are P' which appears in the law, is not a datum, but rather should be inferred through the comparison of the meanings of S and M. According to our conception, therefore, *argumentum a simile* is composed of two partial arguments as follows:

(3) Through the comparison of the meanings of S and M (for example, contracts of transfer of a commercial establishment and ordinary contracts of sale) it is inferred that S are similar to M in all essential respects, or in short, that S are N.

(4) The prescription of the law which determines that all M are P is extended also to S, on the basis of the essential similarity,

and thus it is inferred that all S are P, in accordance with Klug's primitive form (1).

The arguments referred to in (3) and (4) are not formal, and it cannot be seen how it would be possible to formalize them. In the first argument, the essential similarity is founded on substantial considerations, and in the second argument, a formally invalid rule of inference is used — that is, the special, material legal rule which permits the transition from 'M are P' to 'N are P'. This transition is essential to *argumentum a simile*, no less so than the inference of the essential similarity in the first stage (3). Yet Klug excludes both these steps from the argument, on the pretext that the discovery of premises is not a task of legal logic. But the premises in the amended from (2) are clearly the results of the analogical argument, and not its points of departure. The formal inference (2) is unimportant in comparison with the material inferences (3) and (4), and it is ridiculous to view it as the crux of the argument" ([23]).

Klug does not pay proper attention to such a position. His reply, to the extent that it is sound, is too brief; but aside from this — as has already been hinted at — is deficient in its details. Before we see this, we have to analyse, for the purpose of criticizing the jurists' stand, the two partial arguments pointed out by their imaginary representative in (3) and (4) .The following minimum assumption relative to the use of the terms 'argument' and 'inference' as logical terms seems acceptable to both sides:

Inference and argument involve a relation between certain sentences (premises) and another sentence (the conclusion or the consequent), the nature of that relation being determined by logical rules — that is, by non-empirical rules referring only to the aforementioned sentences and to their meanings. In this general characterization — suitable to both the deductive and inductive argument — the crucial question concerning the specific nature of the logical rules, whether material or purely formal, is left undecided.

What, then, in the argument referred to in (3), are the premises for the drawing of the conclusion:

([23]) The double quotation marks here indicate, as is remembered, an *imaginary* citation.

(5) S are N (that is: S are similar to M in all essential respects)?

Clearly there is a need here for premises analysing the meaning of 'S' and 'M'. In a schematic and very simplified manner (but adequate for our discussion) we shall assume that the two premises are:

(6) All M are (have the properties) A, B, C;
(7) All S are (have the properties) A, B, D.

We can see these meaning rules as explicitly or implicitly given in the legal system. Can (5) now be deduced from (6) and (7)? Certainly not; a third, complementary premise is still required:

(8) A and B (or one of them) are essential properties of all M, and these are all the essential properties of all M.

The meta-theoretical nature of (8) is prominent, and it is now clear that the entire argument by which (5) is inferred from (6), (7) and (8) is an argument in meta-theory. Accordingly, for the sake of accuracy, (6) and (7) as well should be reformulated in meta-theoretical language:

(6*) 'All M are A, B, C' is an analytical meaning rule;
(7*) 'All S are A, B, D' is an analytical meaning rule.

The premises should yet be supplemented by appropriate meta-theoretical meaning rules, and especially by meaning rules for the 'essential similarity' ([24]). Obviously, (5) too should be understood as a meta-theoretical proposition.

Let us try to determine the meaning of (8). It is quite clear that the relativization of the concept of the essentiality of property is required here. For example, it should not merely be said that A is essential to all M, but rather that A is essential to all M with respect to the law under discussion:

([24]) In (5) *respects* are mentioned, while in (6*), (7*) and (8) only *properties* are involved. This opposition can be done away with by substituting far more complicated schemata for the over-simplified formulations (6), (7), (6*), (7*) and (8).

(9) All M are P,

or with respect to legal consequences P, or even to one specific end ('basic idea', 'intention') of the law, in the event that it is possible to attribute to it several ends. To say that A and B are all the essential properties of all M, with respect to the law under discussion, means — in our schematic case — that property C is not relevant to law (9), in the sense that already the legal prescription:

(10) All (objects having the properties) A-and-B are P,

of which law (9) is special case, is valid. Consequently, we accept in meta-theory not only the proposition:

(9*) The prescription 'all M are P' is valid,

but also the proposition:

(10*) The prescription 'all A-and-B are P' is valid.

It is also clear that (10) is not dependent, in the logical sense, on (6) and (7), and that (8) and (10*) are not dependent on (6*) and (7*). We accept (10) (in the legal system) and (8) and (10*) (in meta-theory) not only on the basis of the analysis of the meanings of 'M' and 'S', but also because we understand or interpret the 'intention of the legislator' or the will determining the 'basic idea' of law (9). Proposition (8) (which should be amended, in accordance with what has been said, by the relativization of the essentiality of properties with respect to law (9)) follows, in meta-theoretical argument, from (6*), (7*), (9*) and (10*) (with the addition of suitable meaning rules). It is important to stress that (10*) is a premise essential to (8). Hence (10) also precedes (8) in the pragmatical sense: it is impossible to accept (8) as true without accepting (10*) in meta-theory — that is to say, without accepting (10) as a valid legal prescription, the improvement of law (9).

As regards the meta-theoretical proposition (5) (in which, too, the essentiality of respects should be understood as relative to law (9)), it is now clear that it is impossible to view it as resulting, according

to some material rule, "from the comparison of the meanings of M and S", as the representative of the jurists maintains (see (3) above). As we have seen, (8) is necessarily one of the premises. Hence, on the basis of what was said at the end of the preceding paragraph, (5) equally cannot be accepted prior to the acceptance of the amended law (10). Again, to summarize, the claim as to the essential similarity of S and M cannot be accepted without its being based on the amended law, since the very meaning of the claim is that the original law can be amended so as to be made applicable to both M and S; in other words, both M and S belong to the scope of a certain generalization of the original law, which better expresses its 'basic idea' ([25]). Thus it becomes clear that the valid legal generalization (10) constitutes the centre of gravity of the entire analogical argument and the key to its understanding.

The important point is this: *logically* (whether deductively or inductively) the legal finding (10) is not established by the legal data (9), (6), (7) and further meaning rules. It does not follow from them, nor is it confirmed by them (to an extent sufficient for its acceptance) by any rules, whether formal or material, deductive or inductive. It is dependent on them and 'follows' from them, as it were, only in the *psychological and heuristic sense*. The comparison of the meanings of 'M' and 'S', with the aid of (6) and (7) and with respect to law (9), constitutes an *occasion and stimulus* for the reduction of law (9) to its relevant elements. The amended law (10) is not obtained from the legal data in any argument whatever, and in particular not in a non-formal argument, if the term 'argument' is meant in its logical sense (see minimum characterization given above, p. 40) ([26]). Yet there is, of course, the possibility of prescription (10) being confirmed 'inductively' by other legal prescriptions and by para-legal scientific considerations, especially sociologi-

([25]) There is no room in law, insofar as it is an applied discipline, for proofs of existence without actual construction, such as those usual in pure mathematics.

([26]) It is worhtwhile emphasizing that the confirmation of (10) by the conjunction of (6), (7) and (9) *alone* is very slight, and its degree is of no use for a logical explication of the legal concept of analogical argument. Indeed, the very establishment of the analogy involves (in our schematic case) the acceptance of (10) on the basis of *adequate* confirmation.

cal ones. Its acceptance can also be defended with the aid of methodological principles of legislation. Such considerations, inasmuch as they are induced by the comparison of S with M, are obviously relevant for the purpose of clarifying the concept of analogical argument. Is it possible to view them as real arguments, in the logical sense? It appears that the reply shouid be : in theory — yes, in practice — to-day no, in the future perhaps. The matter will depend on the possibilities of the practical development of a system of appropriate inductive logic, which would enable the jurist to determine, or at least compare, the degrees of confirmation of legal prescriptions by other legal prescriptions, scientific statements and methodological principles. The more the efforts in this direction succeed, the greater will become the part of the logical-inductive element in the explicatum of the concept of analogical argument. For the time being this part is limited in fact to nil ([27]).

Let us look, for the purpose of illustration, at the example of the contracts. The law stipulates that legal consequences P apply to ordinary contracts of sale. The question arises whether they are also applicable to contracts of transfer of a commercial establishment. We compare the meanings of the terms 'ordinary contract of sale' and ' contract of transfer of a commercial establishment'. The contracts of the first type have the properties A, B, C, with C referring to the circumstance that sale in the ordinary sense applies only to material objects. The contracts of the second type have the properties A, B, D. On making this comparison, the idea occurs to us that property C of the ordinary contract of sale is irrelevant to the 'basic idea' of the law, in the sense that properties A and B alone already justify consequences P. Indeed, under the influence of (a clear intuition of) the high degrees of confirmation of our hypothesis by the rest of our legal, para-legal and methodological considerations, we amend the law accordingly. The formulation of the amendment is thus caused psychologically by the investigation of the given law and of the meanings involved in the problem; but it can by no means be affirmed that the amended law resulted logically,

([27]) The success of the systematic formalization of the legal analogical argument (and of other special legal arguments) will depend not only on the progress of general inductive logic, but also on the corresponding improvement of the legal systems, the para-legal science, and the methodology of law.

whether formally or materially, from these data. The generalization of the original law obviously precedes the establishment of the statement of essential similarity, with respect to the original law, between the two types of contract, since the very function of this statement is the expression of the fact that the two types of contract both belong, as special cases, to the scope of a valid generalization of the original law.

Now it will be easy to conclude the criticism of the considerations of the representative of the view current among jurists. After generalization (10) of the original law (9) is accepted, the following conclusion is immediately deduced from it with the aid of meaning rule (7):

(11) All S are P.

This is the final result of the analogical argument. Thus it becomes apparent that the meta-theoretical propositions (8) and (5) do not at all serve as premises in the argument, and in this respect are redundant. So it follows that the two non-formal considerations in the analysis under criticism (see above (3) and (4)) are also wholly redundant. The deduction of (11) from (10) and (7) of course constitutes an integral part of the process of establishing (11) by analogical reasoning. However, the corresponding argument:

(12) All A-and-B are P; all S are A, B, D; therefore — all S are P,

cannot be seen as constituting by itself an adequate logical explicatum of the concept of analogical argument, but rather should be seen as only constituting a single, logical-deductive component for such an explicatum, whose completion will depend on the possibility of providing inductive arguments for the confirmation of (10).

Therefore, as long as the formulation of such confirmatory arguments is not possible, only a psychological-heuristic explication of the concept of analogical argument is possible. Indeed, argument (12) alone represents only the terminal part of the entire argument. Its premise (10) cannot be considered a datum. On the other hand, the original law (9) and meaning rule (6) do not serve in it as premises. They constitute (in practice to-day), together with

meaning rule (7), only psychological points of departure, but not logical ones, for the establishment of (11). The concept of essential similarity and the term 'N' also do not have, as we have seen, any logical importance in the argument. In short, the transition from the (legal, scientific, and methodological) data to the final result is not carried out, in the main part of the analogical argument, on the basis of logical rules, but rather only through psychological association. Therefore, the terms '*argumentum a simile*', 'analogical inference', are not to be seen (to-day) as designations for a genuine mode of argument, in the logical sense, but rather for an heuristic process. Such current use of the words 'argument', 'inference', and the similar use of other logical terms, such as 'premise', 'conclusion', and even the terms 'logic' and 'logical' themselves, should, of course, not be disqualified. But it should be remembered that their meaning as terms of legal heuristics (and as expressions in the current general usage) differs greatly from their principal meaning, the logical one (in the logical sense...; in order to resolve the infinite regress which is beginning here, let us say: their principal, non-pragmatical meaning). Such an heuristic argument or inference is of course non-formal, yet it cannot be considered a non-formal logical (in the non-pragmatical sense) argument or inference.

It is interesting to note, in concluding this portion of our criticism, that by substituting in (12) 'M' for 'S' and 'C' for 'D' the following argument is obtained:

(13) All A-and-B are P; all M are A, B, C; therefore — All M are P,

by which the original law (9) is deduced from its generalization (10) and from meaning rule (6) for 'M'. The structural similarity between (12) and (13) reflects the analogy between S and M with respect to P.

Let us now return to Klug's considerations and examine his two forms (1) and (2). They are:

(1) All M are P; all S are N; therefore — all S are P,
(2) All M-or-N are P; all S are N; therefore — all S are P.

Klug makes the transition from (1) to (2) by amending the given

law 'all M are P', which serves as the major premise in (1). He is right, of course, in that he believes that the analogical argument involves, in one way or another, the amendment of the original law, but he is mistaken in proposing as the amended law the version 'all M-or-N are P'. Its weak point, of course, is 'N' (which symbolizes, as will be remembered, 'similar to M in all essential respects'). Not only is the essential similarity "not a fundamental logical relation" (124), as Klug himself understands, but 'N' is not a predicate at all in legal object-language, as are 'M', 'P' or 'S', but is rather a predicate in semantical meta-language. Its meaning is rather complicated, since it depends, as we have seen, on a certain valid generalization of the original law, a generalization which Klug does not even formulate. Therefore, since in the formula under discussion ('all M-or-N are P') expressions of object-language and of meta-language are intermingled, the formula and its substitution instances are not well-formed. The minor premise — 'all S are N' — suffers from a similar deficiency. It follows that argument form (2), proposed by Klug as a formalization of the analogical argument, is disqualified precisely for formal reasons, and this despite the fact that it appears valid at first.

Moreover, even if 'similar to ... in all essential respects' were a well-formed expression in object-language, it still would be impossible to consider (2) alone as an adequate explicatum of the analogical argument, just as argument form (12), which is well-formed and valid, cannot — as has been pointed out — serve alone as such an explicatum. In an adequate formalization of the analogical argument the initial legal premises should be drawn from the existing legal system, while in form (2) the two premises (and in form (12) the first premise) are dependent on the prior change of the existing law. Furthermore, in the fictitious situation in which 'N' would be a well-formed predicate in the object-language, there would be no problem of "the definition of the circle of similarity", and Klug then would have no need whatever for form (2). This is so since the very amendment of the law could then be carried out through a logical inferential operation, according to the rule 'all M are P; therefore — all N are P', and Klug's primitive form (1) would be valid as a derivative rule of inference. It may be further remarked that the use of such non-formal rules of inference could be avoided by the introduction

of a meaning rule or an interpretation rule which would require the constant interpretation of every predicate 'M' as equivalent to 'M-or-N', or by enacting a general law to the effect that if all M are P, then all N are P. Such a law would serve as an additional premise in form (1) and would make it formally valid. It is true that the objection could then still be made, in the spirit of the analysis of the imaginary representative of the jurists, that such an explication, in passing over the argumentative establishment of the minor premise 'all S are N', ignores the first essential stage of the analogical argument (see (3) above) and limits it to its second stage (see (4) above). In any event, the analysis under consideration, with its two stages, is fundamentally deficient from the logical point of view.

In this context it is interesting to point to a certain complication in Klug's use of the term 'analogical inference' as a designation for the argument form (2), in which "the analogy takes on an exact shape" (128) subsequent to the definition of the corresponding circle of similarity. As long as the circle of similarity has not been defined — Klug explains — "the criteria for the admissibility of an analogical inference are not logical, but rather teleological" (128). What is "the admissibility of an analogical inference"? It is quite clear that admissibility here is not (formal) validity — since Klug does not cast any doubts on the validity of form (2) — but soundness. Surely the question envisaged by Klug is whether the minor premise 'all S are N' is acceptable, or — alternatively — whether the original law 'all M are P' can be validly generalized so as to be made applicable not only to M but also to S. A positive answer to this question, insofar as it involves the actual transition from the original law to its suitable generalization, constitutes — according to the opinion current among jurists — the main stage of the analogical inference. According to Klug, this argument is not possible at all as long as this transition has not taken place: the use of form (2) is delayed until the discovery of the appropriate generalization of the law makes the form "admissible".

Klug justifies his abstention from an analysis of this decisive transition by maintaining that it does not depend on logical criteria, but on teleological ones. We can, presumably, understand this remark as referring to the impossibility of deducing the amended law from the existing legal system, and to the need of establishing it

with the aid of para-legal considerations, principally sociological and ethical ones. As far as the genuine analogical inference of the jurists is concerned, this means — as we have seen — that it does not in fact constitute a logical mode of argument but rather an heuristic procedure based on the practical directive: whenever there is no law applying explicitly to a given case, try to find a valid generalization of some existing law so as to make it applicable to the case.

We shall now pass on to Klug's claim that it is possible to carry out analogical inference not only when the legal assumptions in the original law constitute a sufficient condition for the consequences ('all M are P', a case of "extensive implication"), but also when they constitute a necessary condition for them ('only M are P', "intensive implication"). His example is this: if a law stipulates that only government officials have the right to receive tax free expense money, do notaries, who are considered semi-government officials, also fulfil the necessary condition for that right? Klug replies that the matter depends on the answer to the question of whether or not semi-government officials belong to the circle of similarity of the class of government officials. This answer raises serious reservations since, if the notaries only resemble government officials without actually being government officials, it cannot be ruled, without violating the above-mentioned law, that they fulfil the necessary condition stipulated in it. There is, indeed, an important difference between the two cases: while in the "extensive" case the amended version "all M-or-S ([28]) are P' is a logical *reason* for the law 'all M are P' (for example, M — ordinary contract of sale; S — contract of transfer of a commercial establishment), in the "intensive" case the amended version 'only M-or-S are P' is the logical *consequence* of the law 'only M are P' (for example: M — government official; S — notary or semi-government official) ([29]). (It should be remembered that 'only M are S' means 'no non-M is S', and does not entail 'all M are S'). In other words, in the first case, the amendment of the law involves a generalizing, reductive operation, while in the

([28]) 'S' here properly comes in place of the pointless term 'N' which occurs in Klug's version.

([29]) Klug refrains from using formulae in the case under consideration.

second case, it involves a deductive operation and, therefore, limits the scope of the law. While the generalization of the original law does not permit decisions opposing it, such decisions are rendered possible by its limitation: 'S-which-are-not-M are P' is compatible with 'only M-or-S are P', but not with 'only M are P'. Hence the similarity (between S and M) here cannot contribute to the elucidation of the basic idea of the law without contradicting it. (On the other hand, it is possible here to generalize the law by *limiting the scope of* M — for example, when it is found that in fact, according to the 'real intention' of the law, only *certain* officials have the right to receive tax free expense money).

Nevertheless, one is inclined to say that notaries, as semi-government officials, do resemble government officials and that the law, as it stands, 'intends' perhaps after all to include them in the scope of the term 'government officials'. This, however, is only a false dilemma. For the purpose of its resolution, we shall make use of the distinction between creative judgment and semantical interpretation. Indeed, instead of viewing an act of adjudication as involving an amendment of the law itself, it is often preferable to view it as involving only its semantical interpretation — that is to say, the formulation of meaning rules for the terms which appear in it. In an ideal system the terms are unequivocal, and thus the meaning rules for a term are not dependent on the particular law in which it occurs. In the existing systems, on the other hand, the meaning of the terms alters at times from law to law, and the meaning rules are in this sense relative. This is expressed by phrases such as 'for the purpose of the application of this law, ...' prefacing the meaning rules. It is important to emphasize that the meaning rules themselves do not have to be formulated in the form of an explicit (equivalential, Pascalian) definition ('M and ... are identical'). On the contrary, there are great theoretical and practical advantages (related to the 'open' nature of the theoretical terms) in meaning rules formulated as conditional or subsumptive sentences with the form (rules for 'M') 'all M are ...' (such as rules (6) and (7) above) or 'all ... are M'. Thus we can interpret the law in Klug's example with the aid of the rule:

For the purpose of the application of this law, notaries are (or: are considered) government officials.

In such a manner it is possible to apply the law to notaries without altering its wording, and thus without violating it. But this is not made possible by the inclusion of the notaries in the *circle of similarity* of the class of government officials, as Klug understands it, but rather by their inclusion in this class *itself*. 'Essential similarity' here becomes 'essential subsumption'.

Yet aside from this, there is another similarity of a more abstract nature between the notaries and the government officials, which also contributes to the inclination mentioned at the start of the preceding paragraph. This similarity is not relative to the given law and to its 'basic idea', but rather is related to the totality of laws in which the terms under discussion occur. With respect to a fairly large number of legal prescriptions, a notary is a government official, while with respect to others, he is not. Moreover, there are numerous prescriptions which apply (according to the explicit phrasing of the prescription) to both government officials and notaries. This is the actual meaning of the saying that notaries are semi-government officials. Klug, since he did not see with sufficient clarity the relativity of his 'essential similarity', also did not take heed of this difference between the two concepts of similarity. This circumstance presumably further strengthened his mistaken belief that there is no difference between the "intensive" and "extensive" cases with respect to the nature of the 'essential similarity' and the legal reasoning relative to it. It has become clear to us, in any event, that in the "intensive" case, if one wishes to refrain from openly violating the law, the analogical argument should be presented as being employed for the purpose of semantical interpretation and not for the purpose of creative judgment.

In the "extensive" case, on the other hand, analogical arguments employed for the purpose of creative judgment can sometimes be also understood as serving the purpose of semantical interpretation. Thus we can interpret the original law in the example of the contracts without changing its wording, by ruling that, for the purpose of its application, contracts of transfer of a commercial establishment will be considered contracts of sale. Such an interpretation is compatible

with the open theoretical nature of the term 'contract of sale'. Klug presents the analogical inference as involving the actual extension of the law. He speaks, as we have seen, of the original law being supplanted by its amended version, which serves as an essential premise in the proposed formalized argument. Yet, again, while such a conception corresponds in principle to "extensive" cases, Klug is obviously mistaken — as has been explained — in applying it to "intensive" cases as well. Jurists generally emphasize — rightly so — that the distinction between arguments of creative judgment and arguments of semantical interpretation is not at all sharp. In cases in which the two possibilities seem moot, the preference for semantical interpretation over creative judgment (this preference being desirable for practical reasons) depends on the possibility of formulating meaning rules, for the purpose of applying a given law, so that these rules will not contradict other laws or more general meaning rules and so that the term's new meaning will not overly stray from its meanings with respect to other laws. Nevertheless, the substantial considerations for or against the introduction of a new meaning rule resemble, on the whole, considerations for or against a corresponding amendment of the law itself. However, we shall not go into the details of this subject.

Now we can summarize the findings of our discussion on the analogical argument schematically as follows.

The Clarification of the Explicandum as an Heuristic Concept
Let l be a law referring explicitly to all M. The question arises whether it is also (implicitly) applicable to all S — that is, whether formula f, obtained by substituting 'S' for 'M' in l, is valid. Let us assume that one of two possibilities exists: (a) There is an expression 'R', so that formula g, obtained by substituting 'R' for 'M' in l, constitutes a valid generalization of both l and f; or (b) Meaning rule m for 'M' is accepted, stipulating that for the purpose of applying l all S are M. Then the answer to the previous question is positive for logical reasons. Under such circumstances it is customary to say that M and S, and in case (a) also R, are similar to each other "in all essential respects" with respect to (the 'basic idea' or the 'true intention' of) l. The process of the discovery of g (or of the conjunction of

l and m) and of f as valid, with all the considerations which confirm g (or the conjunction of l and m), and with the deductive consideration in which f is inferred from g (or from l with the aid of m), is called '*argumentum a simile*' or 'analogical argument (inference)'.

The Clarification of the Explicandum as a Logical Concept
In the logical explicatum of the concept of analogical argument, the formulation of which will be made possible only through the adequate formalization of the above-mentioned confirmatory considerations by means of sufficiently well-developed inductive logic, the formal argument corresponding to the above-mentioned deductiveco nsideration will serve as a correlative component, while the suitable inductive confirmatory arguments will constitute the main part of the explicatum.

In evaluating Klug's considerations as discussed in this section, it can be said in summary that he did not succeed in clarifying the nature of what is called by jurists 'analogical inference' or '*argumentum a simile*', since his claim as to the formal nature of analogical inference is based on a serious distortion of the accepted use of these terms, and since his analysis suffers from rather serious logical errors.

9. Criticism (continued). — Meta-legal character of the conclusion of legal inversion

Our fairly lengthy discussion of *argumentum a simile* will enable us to curtail the criticism of Klug's analysis of *argumentum e contrario* (and also later, in Section 11, the criticism of his analysis of the remaining special legal arguments). This is so since *argumentum e contrario* (or — inference by inversion) should also be construed as an heuristic process which cannot be formalized (in actual practice to-day). Klug, on the other hand, sees it as an argument in the logical sense and identifies it with the formal inference by inversion:

Only if *a* then *c*; therefore — if not *a*, then not *c*,

with *a* symbolizing the legal conditions (assumptions) and *c* the

legal consequences. Accordingly, he disqualifies argument by inversion as invalid whenever the assumptions in the original law only "extensively" entail the consequences — that is, whenever the original law prescribes that if *a*, then *c*, and not that *only* if *a*, then *c*.

This usage by Klug of the term '*argumentum e contrario*' deviates from the usage customary among jurists even more than his usage of the term '*argumentum a simile*'. In the "intensive" case, when only M are P ([30]), it is impossible — as we have seen — to generalize the law by extending the scope of 'M'. Consequently, whenever we have before us an S which is not M, we can be assured that this S is not P; on this point Klug is of course correct. But this is a trivial case of ordinary and safe formal inference which jurists do not generally view as constituting a 'special argument' in legal logic ([31]). Otherwise in the "extensive" case: when the law stipulates that all M are P. and we have before us an S which is not M but in certain respects is similar to M, the question may arise whether S is P (that is, whether S is similar to M 'in all essential respects') or not. At times the analogical argument succeeds, and then the conclusion is positive — namely, that S is P, or, in a meta-legal manner of speaking, that the law under discussion is also applicable to S. On the other hand, when the analogical argument cannot be used, the conclusion will be that the law under discussion is not applicable to S, or that S is not P, at least by virtue of the law under consideration. (The last reservation will be explained in the following paragraph). The process leading to the formulation of such findings is called in the language of jurists '*argumentum e contrario*' or 'inference by inversion'. These designations are applicable to the process of discovering such findings also in 'interpretative' adjudication, both in the "extensive" case and in the "intensive" case, when the acceptance

([30]) With respect to the discussion on inversion there is no appreciable practical difference between the formulations 'all M are P' and 'only M are P', on the one hand, and between 'if *a*, then *c*' and 'only if *a*, then *c*', on the other hand. (The first version is far more convenient when the *similarity* between legal assumptions is discussed.)

([31]) Contrary to this, the case is not trivial (in the "intensive" case under discussion) when S is M *of a certain sort*. Then a 'special argument' is required (although not necessarily *argumentum e contrario*) in order to rule whether S is P or not.

of the rule 'for the purpose of the application of this law, S are M' is rejected. For obvious reasons, inference by inversion can be suitably designated as 'argument from absence of similarity (analogy)'.

For the purpose of explaining the previous expression of reservation — 'at least by virtue of the law under consideration' — we shall distinguish between *absolute validity* (of an explicit prescription or of the conclusion ([32]) of a special legal argument) and *relative validity* (of a conclusion). According to this terminology, an explicit legal prescription is always absolutely valid (on the assumption that the system is consistent). If the law explicitly stipulates that all M are P (or that no M is P), then the addition of expressions such as 'by virtue of such and such law' does not constitute a reservation as to the validity of the prescription. Similarly, absolute validity should be attributed to a legal conclusion properly obtained by an analogical argument. This is not the case with respect to the conclusion of *argumentum e contrario* ([33]). Indeed, while an analogical argument is meant to show that a certain prescription or decision is implied by a given law, *argumentum e contrario* shows that it is not implied by it. But, in order for a legal prescription to have (absolute) validity, it is sufficient for it to be implied by one law. On the other hand, if a prescription is not implied by a given law, this does not mean that it is not implied by other laws. Therefore, it should not be decided in such a case that its negation is absolutely valid. Accordingly, the meaning of the result obtained by *argumentum e contrario* is always negative and meta-legal. The conclusion 'S are not P' actually means that by virtue of the given law it should not be ruled that S are P; and the conclusion 'S are P' actually means that by virtue of the given law it should not be ruled that S are not P. Hence the need for reservation when the conclusion of the inversion is formulated in object-language, while there is no room for such a reservation with respect to the conclusion of an analogical argument formulated in object-language.

([32]) The term 'conclusion', too, is of course meant here in its heuristic sense. This applies also to its occurences in similar contexts, and in particular in the heading of the section.

([33]) Here only the 'special', heuristic legal inversion is meant. A conclusion which is derived through the valid formal inversion of an explicit prescription is of course absolutely valid.

Thus, parallel to the characterization of the analogical argument given at the end of Section 8, we can characterize legal argument by inversion as follows.

The Clarification of the Explicandum as an Heuristic Concept
Let l be a law explicitly referring to all M. The question arises whether it also (implicitly) applies to all S — that is, whether formula f, obtained by the substitution of 'S' for 'M' in l, is valid. We shall assume the following two-fold assumption: (a) No expression 'R' can be found so that the formula obtained by substituting 'R' for 'M' in l would constitute a valid generalization of both l and f; *and* (b) It is impossible to accept a meaning rule for 'M' which would prescribe that for the purpose of the application of l, all S are M. Then the answer to the previous question is a qualified negative: not all S are P, at least by virtue of l — that is, it should not be ruled by virtue of l that all S are P. Under such circumstances it is customary to say that M and S are not similar to each other "in all essential respects" with respect to (the 'basic idea' or the 'true intention' of) l. The process of the discovery of this result, with all the considerations confirming it, is called '*argumentum e contrario*' or 'inference by inversion'.

The Clarification of the Explicandum as a Logical Concept
In the logical explicatum of the concept of *argumentum e contrario*, the formulation of which will be made possible only through the adequate formalization of the above-mentioned confirmatory considerations by means of sufficiently well-developed inductive logic, the corresponding inductive confirmatory arguments will constitute the main part of the explicatum.

Klug's analysis, which entirely ignores cases in which inversion is not formally valid, is very far from being adequate, since these are precisely the cases of interest from a legal point of view, corresponding (even according to Klug himself) to the generally accepted conception. The manner in which he emphasizes the formal-logical nature of the "special arguments of legal logic" is certainly over-

simplified and does not properly take into consideration the "anti-logical" positions and the views of the various adherents of 'non-formal logic'. So he ignores the classical adages relative to inference by inversion; he quotes them only incidentally without analysing or explaining them, since they are incompatible with his conception. Indeed, these adages — "*Qui dicit de uno, negat de altero*" and "*Exceptio firmat regula in casibus non exceptis*" (130) — as well as the expression '*argumentum e silentio*', do not point to formally valid modes of inference, but rather to heuristic devices which can be analysed along the lines of our critical considerations. This is also the case with respect to Kelsen's "negative norm": "What one is not obliged to do, one is free to do or to refrain from doing". (130).

Kelsen's rule is particularly interesting for two reasons. First of all, it concerns not only inversion relative to a given law, but also and mainly what might be called 'absolute inversion'. This means that it should not be understood as only ruling that if a given law does not make the doing or not doing of a certain deed obligatory, then it is permissible either to do it or not to do it, at least by virtue of the law under consideration; but Kelsen's norm should primarily be understood as ruling that if there is no law which makes the doing or not doing of a certain deed obligatory, then it is permissible to do it or not to do it by virtue of the entire legal system. (In this sense the "negative norm" is a kind of principle of completeness of law with respect to the totality of possible deeds.) Secondly, involved in this rule, whether explicitly or implicitly, are the deontic concepts of obligation, prohibition and permission, and the logical relations between them, such as the equivalence of the obligation of m and the prohibition of non-m, etc. Klug, who limits the discussion while distorting its objects — as we have seen — and who believes that the ordinary logic of indicative sentences is sufficient for law, is not prepared to discuss these aspects of the "negative norm", although he calls it — surprisingly enough and without providing any justification — "a noteworthy application of inference by inversion to legal philosophy" (130). He only remarks: "This is not the place for a discussion of this thesis. But the example shows the importance of *argumentum e contrario* for the overall legal sphere" (130) — without any further explanation.

We now pass to sub-section 3 in Section 7 above. Klug's far-ran-

ging deviations from the accepted use of the designations of the legal arguments explain his opposition to the opinion current among jurists about the mutual relationships between analogical inference and *argumentum e contrario*. According to the current opinion, whenever a certain legal prescription does not explicitly refer to a given state of affairs, there is room for one and only one of two inferences: the analogical inference which extends the prescription to the problematic state of affairs, or inference by inversion which excludes the latter from its scope. This opinion is clear and understandable according to the findings of our discussion. Indeed, the heuristic attempt to extend the scope of the prescription either succeeds or fails; there is no third possibility. Klug, on the contrary, brings an example of a case in which neither one of the two inferences is possible, and of a case in which both inferences together are possible. These examples, therefore, require examination.

The first example — as will be remembered — is the following. According to explicit regulations it is prohibited to bring a dog into the carriage of a passenger train. A person who brought a large crate into the carriage of a passenger train was summoned to court. The plaintiff failed in his attempt to use *argumentum a simile*; yet — Klug explains — *argumentum e contrario* is also not possible, since the implication in the regulation is extensive and not intensive: it is not stipulated that the prohibition is applicable *only* to dogs. Klug's error is fairly transparent. He does not take note of the negative heuristic nature of the inversion and of the relative validity of its conclusion. Since it cannot be ruled that by virtue of the regulation under discussion it is forbidden to bring a large crate into the carriage of a passenger train, it follows that such a prohibition is not valid, at least by virtue of the regulation under consideration. It is also apparent that if a more appropriate prescription would exist for conviction in such a case, the plaintiff would have made use of it. So if indeed there is no such prescription or regulation by virtue of which it would be forbidden to bring a large crate into the carriage of a passenger train, we shall infer by 'absolute' inversion, in the spirit of Kelsen's "negative norm", that such a prohibition is not valid at all, by virtue of the existing legal system.

The second example concerns the case of the notaries that was already discussed. An explicit regulation determines that only

government officials may enjoy a certain right. Here inversion in Klug's sense (formal-logical) is possible: whoever is not a government official cannot enjoy the right in question. Yet — he explains — there is nothing to prevent the use of analogy involving the inclusion of the notaries in the circle of similarity of the class of government officials. In such a manner, inference by inversion will not harm them. The weaknesses of this example, too, are clear. We have already expressed reservations as to the conception of *argumentum a simile* as involving the generalization of the law's prescription in the "intensive" case, and as to viewing formal inversion as a type of inversion in the sense current among jurists. But the decisive deficiency of the example is this: the analogy and the inversion refer here to two different objects. The analogy is meant to allow the granting of the law's advantages to the notaries, while the inversion is not meant to discriminate against the notaries, but rather against those-who-are-neither-government-officials-nor-notaries. There is nothing amazing in this. In a similar manner, in the example of the train, it is possible to extend the prohibition to cats, e.g., and yet refuse to extend it to large crates. The opinion current among jurists of course refers to the trivial claim (which Klug as well, according to his conception, must recognize) that the joint acceptance of the conclusions of both arguments *with respect to the same object* is not possible. (Less trivial is the complementary claim, constituting the main part of the thesis criticized by Klug — namely, the claim that with respect to every problematic state of affairs *at least* one of the two arguments is possible.) It is clear, therefore, that both examples miss their mark.

Klug also has reservations in regard to the opinions of those who maintain that logical criteria are never sufficient in order to decide between analogy and inversion. In his conception, too, the possibility (or "admissibility") of the analogical inference, which depends on the scope of the appropriate circle of similarity, is tested by teleological criteria. On the other hand, in his opinion, inversion is valid or invalid in accordance with the "type of implication" inherent in the legal prescription, and this is a logical criterion. Only when the wording of the prescription leaves doubt as regards the nature of the implication, is the possibility of inversion examined by teleological criteria. Here, too, it is clear that the differences of

opinion are due to the differences in the usage of the central terms.

The two arguments, harmoniously coupled according to current opinion, are totally separated in Klug's conception. He does not attempt to submit the views current among jurists to direct analysis and criticism, but rather only shows, in the easiest manner, that their views are not compatible with his. Clearly, his alleged refutation of their position is achieved at the cost of its misinterpretation. Once again the discussion is largely a barren one, resembling the discussion of the "anti-logical" doctrines (see above, Sections 5 and 6). We shall now turn to a further section in Klug's book.

10. Remaining special arguments of legal logic (Summary)

1. *Argumentum a Maiori ad Minus.* — This type of argument is illustrated by the following examples. First example: The law stipulates that a conspirator is free from punishment if he informs the authorities, or the person in danger, of the plot, in time to prevent its execution. From this it is inferred, *a maiori ad minus*, that the conspirator who foils the plot by his own direct action is also free from punishment. Second example: The law stipulates that a declaration of intention not seriously made is invalid if it was given with the expectation that its lack of seriousness would not go unnoticed by those concerned. From this it may be inferred, *a maiori ad minus*, that if at the time of a public auction a person signals a friend by raising a hand and this gesture is considered an offer of purchase, his declaration is invalid. Such examples correspond to the well-known characterization by the French jurist Fabreguettes: In *argumentum a maiori ad minus* "a legal prescription is extended to assumptions unforseen by it, but in which nevertheless one finds, to a more eminent degree than in those formally stated in it, the motive in view of which it was enacted". (138, quoted in French ([34])).

However, this characterization requires correction. *Argumentum a maiori ad minus* should be understood as a special instance of the

([34]) The source: M. P.Fabreguettes, *La Logique judiciaire et l'art de juger*, Paris, 1914, p. 376.

classical argument *ad subalternatam propositionem*, which infers from the applicability of a predicate to a general class its applicability to special cases belonging to that class. This is a formally valid inference. Such a correction of the previous characterization is made possible by the addition of another premise, constituting a generalization of the given prescription and applicable to the case under judgment as well. It is implicit in the original prescription and may be established through teleological considerations. So, in the first example given above, the argument is based on the general assumption, implicit in the law, that a conspirator is free from punishment if he intentionally prevents the execution of the plot. Just as the disclosure of the conspiracy in time is a special case of its intentional prevention, so is the foiling of the plot by direct action. In the second example as well, the case under judgment does not initially belong to the scope of the explicit prescription. It is impossible to say that the man who signalled his friend with a motion of the hand did this in the expectation that the lack of seriousness of his offer of purchase would not go unnoticed by those concerned, since he had no intention whatsoever of making an offer of purchase, not even jokingly. Yet in order to make the argument possible, it is sufficient to generalize the explicit prescription in the following manner. The behaviour of a person, liable to be interpreted as a declaration of intention, will not be recognized as such unless the person expected his behaviour to be recognized as a serious declaration of intention.

In summary: "In order to decide the question whether in a particular case of legal practice *argumentum a maiori ad minus* can be used, the preliminary question should first be posed as to whether the legal proposition brought as a premise indeed serves as a general subordinating proposition with respect to the particular case to be discussed. To establish this is the task of the interpretation of existing positive law. Only after a basis for the argumentation has been determined in such a manner can the logical derivation commence". (140).

2. *Argumentum a Minori ad Maius.* — This argument as a valid inference is a special instance of the classical inference *ad subalternantem propositionem*:

It is not the case that some S are P; therefore — it is not the case that all S are P.

According to a different conception *argumentum a minori ad maius* is characterized as follows: From the applicability of certain legal consequences to cases of lesser importance, their applicability to cases of greater importance is inferred. It is clear that the possibility of such an argument depends on the prior question of evaluation — that is to say, on teleological analysis. The author does not attempt to bridge the two conceptions, nor does he illustrate them with examples of arguments of adjudication or of interpretation ([35]). He remarks that the designation '*argumentum a minori ad maius*' is not current in jurisprudential literature.

3. *Argumentum a Fortiori.* — Here are two examples of this argument. Laws which apply to representation — that is, to the action under another's name — should be applied, *a fortiori*, to the action under a false name. If it is prohibited for two people to ride a bicycle on a public road, it is also prohibited, *a fortiori*, for three people to do so.

Fabreguettes explains the use of the term '*a fortiori*' as follows: "These words are used before the consequence drawn from reasonings in which inference is made from the lesser to the greater, from a less evident thing to a more evident one". (142, quoted in French ([36]). This is a psychological explanation involving interpretation of purposes. The logical analysis is as follows:

If *a*, then *c*; therefore — if *a* and *b*, then *c*

— that is: if legal consequence *c* is entailed in the law by assumption *a*, it may be inferred that it is also entailed by the conjunction of that same assumption and additional data *b*.

([35]) The sole example given for *argumentum a minore ad maius* is only seemingly legal: "If, for example, the proposition that some basic rules of positive law are independent of the principles of natural law is false, then the proposition that all the basic rules of positive law are independent of the principles of natural law is also false" (141).

([36]) M. P. FABREGUETTES, *op. cit.*, p. 376.

However — Klug points out — when *a fortiori* is referred to, it is not the logical form that is generally meant, but rather the evaluation of the seriousness of different instances of transgression. Such an evaluation permits the extension of the legal consequences set down in the law for cases which seem less serious to cases which seem more serious. Like *a maiori ad minus* and *a minori ad maius*, thus also *a fortiori* is primarily a teleological argument in which the inference is based on the determination of the "difference in degree" between the deviations of the two modes of behaviour — that mentioned in the law and that under consideration in court — from the corresponding teleological norm. (143). Such an analysis leaves the scope of legal logic.

4. *Argumentum ad Absurdum.* — In this argument the correctness of a certain possibility is inferred from the incorrectness of the remaining possibilities. Involved here, in the concept of correctness, are logical and teleological questions, and some jurists point in particular to the teleological aspect: ethical correctness, economic advantage, etc. The logical meaning is this: a proposition is proved by showing that its negation contradicts a proposition which was already accepted.

5. *Arguments of Interpretation.* — The teleological arguments mentioned above belong to the class of arguments of interpretation, which provide premises for arguments of legal logic but do not themselves belong to its scope: "They serve only for the determination of initial material to which legal argumentation must resort. Hence they concern principles of interpretation and not problems of legal logic as such. Therefore only a comprehensive outline will be given". (145).

Subjective interpretation, which leans on the argument from the motives, strives to determine what the legislator intended at the time of legislation. It serves as a supplementary means of *objective interpretation*, which deduces legal principles from teleological axioms (see Section 12 below). After the clarification of the linguistic meaning (grammatical and semantical interpretation) comes the main stage of objective interpretation — namely, *systematic interpretation*, which strives to make the particular prescription corres-

pond to the general trend of the law (*ratio legis*), in the spirit of the teleological system upon which the existing legal system is based. Some of the arguments of systematic interpretation serve to extend the scope of the legal prescriptions (*argumentum a generali sensu, argumentum pro subjecta materia*), and some to limit it (*argumentum a rationi legis stricta, argumentum a rubrica*). *Argumentum ab auctoritate* is based on the opinion of courts of law and of experts in jurisprudence.

Systematic interpretation is sometimes also designated as '*logical interpretation*'. This designation is meant to emphasize the fact that the interpretation does not have a psychological or subjective-genetical nature. But the term 'logical interpretation' also serves as a designation for arguments *a simile* and *e contrario*, and may therefore be misleading. So it is preferable to refrain from employing it, for the sake of a clear division between the theory of interpretation and legal logic: "Analogy and *argumentum e contrario*, as well as the remaining logical operations in the sense of legal logic, come under consideration only when the premises have been previously clarified by interpretation. This of course does not change anything with respect to the fact that the work of interpretation itself is carried out again according to logical laws. But to this extent it is not desirable to speak of legal logic". (146/7). The arguments of interpretation are — as stated — supplementary means for the preparation of initial material for the logical legal inferences.

The section on arguments of interpretation concludes the portion dedicated to the special arguments of legal logic in Klug's book.

11. Criticism. — Legal arguments as arguments of corroboration

The presentation of the modes of argument 1-3 leaves much room for ciritcism. The actual distinction between them is not at all clear, and the impression is given that their characterizations do not correspond to their designations. This is also the case with respect to the examples given by the author. Furthermore, their logical explications as proposed by him are based on mistaken considerations and are not at all adequate. The threefold distinction between the

arguments 1-4, between the "arguments of interpretation" (subsection 5), and between the two "arguments of legal logic" (i.e. arguments *a simile* and *e contrario* discussed previously), also seems very deficient. Consequently, the reservations as to Klug's conception of logic in general, and of legal logic in particular, formulated in the first four sections of the present study, are substantially strengthened.

We shall review and interpret this in detail. It is explicitly stated in Fabreguettes' characterization of the first argument that the motive for the enactment of a given legal prescription is found "to a more eminent degree" in the assumptions to which it is extended "than in those formally stated in it" (138). We clearly pass here from a less eminent case, but one explicitly ordered by the law, to a more eminent case, the case under consideration. Hence it is difficult to understand why the form of argument characterized in such a manner is designated '*a maiori ad minus*' and not '*a minori ad maius*'. It is also not at all clear what the difference is between this argument and the *argumentum a fortiori*, in which — according to Fabreguettes' testimony as well — "inference is made from the lesser to the greater, from a less evident thing to a more evident one" (142), and which therefore also deserves the designation '*a minori ad maius*'. Klug himself also sees *a fortiori* as involving a transition from cases of transgression mentioned in the law to cases which are similar but appear to be more serious, while in his (non-formal) characterization of *argumentum a minori ad maius*, the corresponding transition from less important to more important cases is involved. What is the difference here between "eminent" and "evident", or between an "important case" and a "serious transgression"? This is very unclear, especially since, according to Klug, all three arguments involve the evaluation of the deviation of modes of behaviour from the corresponding teleological norms, and consequently all three are "teleological arguments", not belonging to the sphere of legal logic.

The examples themselves do not contribute anything to the clarification of the obscure points. Let us examine first the two examples for *argumentum a maiori ad minus*. For the argument in the example of the repentant conspirator the designation '*a minori ad maius*' seems rather more appropriate at first glance. Indeed, informing on

the plot, although efficient, is *less* efficient than the direct defeat of the plot. Therefore, if the informer is not liable to punishment, one who directly foils the plot is also not liable, *a minori ad maius*. Alternatively it can be argued that punishment of the informer is a *lesser* deviation from the norms of punishment than is the punishment of one who directly foils the plot. Therefore, if punishment is forbidden in the first case, it is forbidden in the second as well, *a minori ad maius*. Also the designation '*a fortiori*' is suitable to both versions. The example of one who signals his friend at the time of a public auction can be interpreted either way. It is possible to say that an offer of purchase which is not serious is *less* innocent in the situation under consideration, or that it does *more* resemble a serious proposal of purchase, than signalling a friend. Therefore, if the declaration of intention is invalid in the former case, it is invalid also in the latter, *a minori ad maius*, or *a maiori ad minus*, respectively, and in all events *a fortiori*. Several possibilities are also open with respect to the first of the two examples for *a fortiori* — that is, the example of action under a false name. Finally, the example of the bicycle riders successfully exemplifies not only *argumentum a fortiori*, but also the first of the three arguments (and the second only with difficulty). Indeed, two people riding a bicyle is *less dangerous* (it cannot be said in ordinary language: safer) than three people doing so. Klug's poor treatment of the *argumentum a minori ad maius* and the fact that he does not illustrate it with a single genuine legal example may be seen as attesting to some difficulties in distinction and classification. These difficulties seem to be common to Klug and to other authors, if one may judge by the lack of clarity and uniformity in the use of the three designations under consideration, and by the infrequent use of the designation '*a minori ad maius*' in jurisprudential literature.

The subject seems rather complicated. The analysis of the examples, in particular, emphasizes the need to elucidate the object of comparison evaluated as 'greater' or 'lesser', on whose determination in fact depends the qualification of a given argument. It is possible to intrepret Klug's concluding remarks regarding the three arguments as including the elements for the beginning of a clarification. Indeed, mention is made there of the degrees of deviation of modes of behaviour from the teleological norm. This can be considered a hint as to the general nature of a quantitative, or at least

comparative, parameter. According to the proposal which is implicit here, the designation '*a maiori ad minus*' will be given to arguments in which one passes from the kind of action referred to in the law to an action considered less dangerous, less harmfull, or more beneficial — in short, more desirable. (Now Klug's first two examples appear somewhat more understandable.) The designation '*a minori ad maius*' will be understood accordingly. Yet it is clear that for the continuation of the clarification, deontic distinctions are required. In *a maiori ad minus* one infers, from the permission for (obligation to) the action mentioned in the law, the permission for (obligation to) a similar but more desirable action, while in a *minori ad maius* one infers, from the prohibition of the action mentioned in the law, the prohibition of a similar but less desirable action ([37]). But an exact explication of the two concepts is not at all easy. The problem of the establishment of adequate criteria for the comparison of the above-mentioned degrees of deviation appears to be very difficult in certain cases, especially since aside from sociological parameters, such as detriment or danger, one must very often also take into consideration parameters depending on specific legal elements, such as duties and rights, torts and amends, etc. An additional difficulty is due to the circumstance that the modes of behaviour being compared must be 'essentially similar' to each other. This intuitive concept of relevant similarity does not appear easy to explicate. As far as *argumentum a fortiori* is concerned, it can be identified with *argumentum a minori ad maius*, which, as was said, infers from the prohibition of a less serious action the prohibition of a similar but more serious action. Alternatively, it can be viewed as a more general kind of argument, encompassing the two previous ones. Klug himself in no way deals with these questions, since he in principle excludes the "teleological considerations" from the framework of legal logic, in which, moreover — as will be remembered — he does not require deontic operators.

One aspect common to the three arguments and to the analogical

([37]) Such a conception is represented in jurisprudential literature. See, e.g., G. KALINOWSKI, Interprétation juridique et logique des propositions normatives, *Logique et Analyse*, 6, 1959, or J. GREGOROWICZ, L'argument *a maiori ad minus* et le problème de la logique juridique, *Logique et Analyse*, 17-18, 1962.

argument (which was discussed in Sections 8-10 above) is outstanding. All four of them involve the transition from the given prescription to a different prescription, applicable to the case *sub judice* and expressing, more eminently than does the given prescription, the 'basic teleological idea' implicit in it. Thus the three arguments under consideration in this section can be seen as special cases of the analogical argument — namely, as cases characterized by their link to certain monotonous functions of comparative or quantitative variables, in a suitable deontic context. In the central stage of each argument it is also possible to formulate, generally without difficulty, the generalization common to the original prescription and to the new one, as Klug himself explains in connection with *argumentum a maiori ad minus*. But this can be done in a natural manner also in the argument concerning the bicycle riders, given as an example of *a fortiori*. Indeed, it is possible to construe this argument so that its climax will be constituted by the following prescription, a generalization of the original one: it is prohibited for two or more people to ride a bicycle on a public road. It expresses very adequately the 'true intention' of the original description. Yet is it also possible to forego the formulation of such generalizations by using general *a fortiori* principles (the principle of the prohibition of the greater, the principle of the permission of the lesser) ([38]) together with appropriate comparative statements, such as: more than two people riding a bicycle is more dangerous than two people doing so ([39]).

None of the three logical explications given by the author seems acceptable. But if we correct one basic error in the first explication, we will be able to say that it is less deficient than the other two. The error is that Klug speaks of, and adduces formulae for, the inference *ad subalternatam propositionem* (the inference is: all S are P; therefore — some S are P), while in fact he rather needs, as is attested to by his explanations and examples, the subsumptive inference (the classical inference *barbara*: all M are P; all S are M; therefore — all S are P). Now this inference constitutes an adequate

([38]) These two principles are analytically equivalent, on the assumption that 'prohibition' and 'non-permission' are synonyms.

([39]) Such a conception is discussed by J. GREGOROWICZ, *op. cit.*

formalization of the terminal stage of *argumentum a maiori ad minus*, provided that the latter is understood as involving the mediation of an improved generalization of the given legal prescription. (If this condition is fulfilled, the subsumptive inference constitutes an adequate formalization of the terminal stage of the two other arguments as well; but the author ignores this). The similarity between this formalization and that of the analogical argument, given by Klug, is outstanding. Though the former is not dependent as is the latter on the defective concept of 'essential similarity', they have the following major fault in common: both explications account only for the terminal, deductive transition from the generalized prescription to the prescription applicable to the case *sub judice*, and thus considerably distort their respective explicanda.

In the usage current amongst jurists the designations '*a maiori ad minus*', '*a minori ad maius*' and '*a fortiori*' do not refer to the terminal deductive step, but to the overall transition, mainly 'inductive', from the given prescription to the final result of the argument. Klug, on the other hand, who mistakenly identifies the material relation between 'greater' and 'lesser' with the formal subsumptive relation, becomes hopelessly involved in his analysis. Due to this mistake which affects his analysis of the first argument he is compelled to provide special explications for the remaining two arguments, though it is clear that this task is foredoomed. The identification of *argumentum a minori ad maius* with the inference *ad subalternantem propositionem* is baseless to such an extent that there is no need to dwell on it. As regards the explication given for *a fortiori*, on the other hand, some comments are of interest. First of all, the proposed explicatum (that is, the inference: if a, then c; therefore — if a and b, then c) concerns an initial stage of the (very distorted) explicandum, since in the proposed form it is the original prescription that serves as (the sole) premise. This clearly opposes the general trend of Klug's analyses. Secondly, the inferential transition, which is usually 'inductive' in the initial stage of genuine legal arguments, is here deductive. This circumstance, it seems, conceals from the author the inconsistency just mentioned. It also explains why the proposed form is apt to yield only trivial 'arguments' of no interest. Finally, the deficiencies of the explication are reflected in the failure of every attempt to formalize, in accordance with it, even the

examples given by the author. In the example of the bicycle riders, it seems that the argument can at best be understood as depending on a meaning rule according to which two people 'under additional circumstances' — namely, two people associated with another person — are three people. More plausible, in the other example, is the meaning rule according to which an action under a false name is considered as defined, at least for the purpose of applying certain prescriptions, as a representational action under certain special circumstances. Here the openness of the concept of representation as a theoretical legal concept is of assistance. In any event, such meaning rules cannot be viewed as given in advance for the purpose of deriving the final result in *argumentum a fortiori*, since their very acceptance is one of the consequences of the argument. The inductive nature, in principle, of (the logical explicatum of) *argumentum a fortiori* cannot be done away with or easily concealed. But even if we ignore the last point and agree to view — in accordance with Klug's general tendency — the required meaning rules as "already present" after the relevant "teleological considerations" are completed, we shall find that Klug's inferential step (which will now be situated not at the start of the entire argument, but at the beginning of its terminal stage) seems highly implausible. For example: two people riding is prohibited; therefore — two people riding with the addition of a third person is prohibited. Not only is such an inference most artificial, but it also requires supplementation by an additional inference: two people riding with the addition of a third person is prohibited; two people riding with the addition of a third person is three people riding; therefore — three people riding is prohibited. It is clearly preferable to use here the analytical quasi-subsumptive inference leading directly to the final conclusion: two people riding is prohibited; three people riding is (a kind of) two people riding; therefore — three people riding is prohibited; or: consequences *c* are applicable to representational actions; actions under a false name are (a kind of) representational actions; therefore — consequences *c* are applicable to actions under a false name. But also such an inference is no more than a caricature of the genuine legal *a fortiori*.

The preceding discussion clearly points to the conclusion that Klug did not succeed even in the limited task he undertook — that is,

in the formalization of the logical derivation which begins in the three arguments under consideration "only when the premises are already present" (12). Moreover, he understands (as is apparent from his concluding remarks on the arguments *a maiori ad minus* and *a fortiori*) that the very limitation of his task involves a serious distortion of the conception current amongst jurists, according to which the three arguments are primarily "teleological" modes of reasoning and not deductive inferences. Also in his short remarks on *argumentum ad absurdum*, he emphasizes the gap between the two aspects, the logical and the teleological, of legal argument. Consequently, he sees these arguments as constituting an intermediary group between the two proper "arguments of legal logic" (that is, the arguments *a simile* and *e contrario*) and the proper "arguments of interpretation". We must disagree with this threefold distinction insofar as it constitutes a distorting 'horizontal projection' of the 'vertical' elements of legal arguments. The reason why the author views *argumentum e contrario* as a properly logical argument is obvious. He identifies it, mistakenly as we have seen (in Section 7 and 9), with the formal inference by inversion. On the other hand, it is difficult to understand the reasons for separating the analogical argument from the arguments under consideration here, to which it is in fact closely related, as was pointed out earlier. This affinity could hardly escape Klug's notice. Just as a particular application of *argumentum a simile* depends on the preliminary examination of its "admissibility" (see Section 8 above), so does the decision of "the question whether in a particular case of legal practice *argumentum a maiori ad minus* can be used" (140) govern its employment. Here, too, the question is not one of formal validity, but is rather one of "teleological" foundation. This is also the case with respect to the remaining arguments. The reason for the special and apparently arbitrary treatment of analogy can perhaps be seen in the "circles of similarity", which receive relatively extensive explanation in the book, by means of concepts from the theory of classes. Perhaps under the influence of the role they play in his analysis (largely incorrect as we have seen in Section 8), the author received the impression that in the analogical argument the logical elements decisively outweigh the non-logical ones (although he understood that the "essential similarity" itself "is not a fundamental logical

relation" (123)). Actually all the legal arguments discussed in the book are primarily arguments of empirical corroboration, and not trivial deductive inferences.

We shall not extend the discussion on "arguments of interpretation", which the author reviews only in outline. We shall only remark that in their framework two types of consideration are involved. On the one hand, substantial legal and para-legal considerations, and especially all the "teleological" considerations mentioned previously, are required since "analogy and *argumentum e contrario*, as well as the remaining logical operations in the sense of legal logic, come under consideration only when the premises have been previously clarified by interpretation". (146/7). There are, on the other hand, practical, methodological and procedural considerations. It is clearly a fault of classification to view "arguments of interpretation" as constituting a separate group of arguments alongside the other two groups. All the "special arguments of legal logic" are arguments of interpretation (in the broad sense of the term 'interpretation', which Klug also has in mind ([40])); in all of them both "teleological" and deductive steps are found, interlinked with practical considerations.

The confusion, at least in part, does not escape Klug himself, but it is not in his power to overcome it. The web of relations and distinctions is too complicated with respect to the limited means of analysis which his conception of logic in general, and of legal logic in particular, places at his disposal. The study of legal argument, with its types, requires the elucidation of the border relations between law, sociology, descriptive heuristics, logic and methodology. For this purpose, 'general logic' understood as the "theory of scientific proof", and 'legal logic" confined to a short list of derivative deductive rules "applied withing the framework of adjudication" (6) (see above, Sections 1-4) are not sufficient. Klug's general tendency to distinguish and separate the logical and pragmatical elements in legal reasoning merits of course positive appreciation. However, he is gravely mistaken in excluding arguments of interpretation from the scope of legal logic, and this despite the fact that he does not

([40]) Encompassing both semantical interpretation and creative judgment as distinguished above in Section 8.

deny that "the work of interpretation itself is carried out again according to logical laws" (146/7). What is the nature of these laws? He sees himself absolved from dealing with this question since he believes that here "it is not desirable to speak of legal logic" (146/7). His only reason for this opinion is, as will be remembered, that this is also the current opinion (see Section 3 above).

The serious logical study of law cannot exclude arguments of legal interpretation and corroboration. Such research requires a sufficiently well-developed system of logic — deontic and not only indicative, inductive and not only deductive, a system, moreover, constituting an extensive and detailed syntactical and semantical theory of the legal system and of the domains serving its corroboration.

We shall now turn to the last part of Klug's book, bearing the title: "Logic, the Science of Law, and the Philosophy of Law".

12. Conversion of law into a calculus. — Legal teleologics (Summary)

The connection between the science of law and the philosophy of law and between logic is a necessary condition for their scientific character. "Hereby both a negative and a positive thing are expressed. Negatively, the thesis states that we are to reject all logicism, insofar as by this term one understands the philosophical trend which overemphasizes the logical aspect. Positively, it follows from the thesis that the creation of scientific theories is possible only with the aid of logic. It serves as an indispensable tool for the progress of knowledge and of the development of theory". (147/8). "It should be emphasized that a link with any *metaphysical* or *antimetaphysical* system does in no way result from the recognition of the necessity to apply modern logic to these sciences, since all that is meant here is that the use of a tool is required. The object to be treated is not yet determined by the choice of the tool". (148). In particular, one should not link the use of the tool under discussion with positivism. The application of modern logic to legal science should be directed towards the calculization ([41]) of existing systems of positive law.

([41]) Kalkülisierung.

When the legal system will be formulated in exact language, legal logic will serve as the logical syntax of this language. The calculization of law will not cause its removal from life, but on the contrary, will bring it closer to life, due to clarity and exactness. The analyses of the legal inferences given in the book are no more than "calculizations of very small sections of the systems of positive law" (150).

Authors such as Engisch ([42]), who cast doubt on the possibility of applying the axiomatic method to law, should so be answered : ([43]) "Thought should be given to the fact that according to the state of contemporary science only axiomatic foundations can be regarded as unobjectionable. Also when 'basic ideas', 'principles', 'commonplaces', 'special circumstances', 'concrete stituations', 'substantial logic', etc. are referred to, inferences are made. But inferences are only possible in an axiomatic system. Therefore, the jurist always acted — also in the case law method ! — in at least a quasi-axiomatic manner. Theoretically, it is not a far step to legal calculus. The fact that the practical difficulties are very considerable does in no way affect the possibility in principle". (150).

Though from a purely logical point of view, the axiomatic legal system can be altered or replaced, it is nevertheless subject to teleological pinciples. The development of a teleological system for the purpose of directing legal systems is the function of the exact philosophy of law. The basic form for the teleological axiom is :

> For all x, if x is a behaviour of type A, then x is an obligatory behaviour.

In place of 'obligatory' it is possible to say 'useful', 'desired', 'ordered', 'proper', etc. "The logical construction of the world" should be supplemented by its "teleological construction" ([44]). Among other contributions to teleological systems, G. H. von Wright's deontic logic is mentioned in this context ([45]).

([42]) Karl Engisch, the author of several studies on legal logic and methodology.

([43]) This answer to Engisch does not appear in the first edition.

([44]) Klug explicitly refers here to Carnap's first book(Der logische Aufbau der Welt, 1928), in which he points out the duality of aspects (logical and teleological) of the world.

([45]) In the second edition of Klug's book, not in the first.

Finally, the author touches on the problem of the relativity of logic and teleologics. He disagrees with Carnap's view according to which "everyone can construct his own logic — that is, his form of language — as he desires" ([46]). His objection is that "an argument of this sort refutes itself since its correctness is incompatible with the existence of a criterion for its own general validity". (155). A similar argument is given with respect to the relativity of teleologics: "The claim that there is no meaningful and generally valid behaviour refutes itself, since if it were true, the establishment of this very claim could not be generally valid and meaningul behaviour" (156). There is thus a limit to logical and teleological relativity. Klug remarks that "also the determination of logical calculi is teleologically bound" (156). It is impossible to construct a logical system without teleologics, just as it is impossible to construct a teleological system without logic. "It follows, then, that there is a reciprocal functional dependency between logic and teleologics, whose exact analysis still constitutes an open problem". (156). With this the book ends.

13. Criticism. — Law lacks 'philosophical' confirmation

Without accepting the usage of the terms 'science' and 'cognition' according to which law is a science or a sphere of cognition, we shall of course agree with the emphasis on the close link between law and logic. It is the link with logic that transforms law into a domain of argument. Law is a theoretical discipline, and every theory is based on logic by its very nature. Worthy in particular of positive appreciation is the demand for the 'calculization' of law — that is, its development as a formalized axiomatic system formulated in unequivocal and precise language. The author's answer to Karl Engisch's sceptical objections is also plausible. Law is a domain of rational argument only to the extent that it can be formulated as a rigorous axiomatic system. Adjudication that requires intuitive reasoning cannot be considered logical unless its arguments can be examined by their formalization within the framework of the system.

([46]) Explicit reference directs the reader to Carnap's "principle of tolerance" (1934 and 1942).

It is true that the formalization of law constitutes a very difficult practical task, but again, we shall not be entitled to attribute a rational nature to legal argument without viewing this task as feasible.

Legal logic is now understood as the syntax of the language of law. This conception should be extended by the addition of semantics to syntax. In any event, before us is a conception of legal logic which is strikingly different from that presented in the body of the book, in its special part, and explained in the Introduction. The few "special arguments of adjudication", through which legal logic was there defined in its entirety for the purpose of "exact delimitation" (see Section 3 above) are now thought of as "very small sections of the systems of positive law" (150). In this manner the lip-service paid to the new conception reflects the fact that Klug only began — to the smallest extent and without much success, as we have seen — the study of the discipline which he intended to encompass when he wrote his Introduction.

Against the background of the general demand for rigour and preciseness, quite surprising is the reservation as to "logicism" insofar as it means the exaggerated emphasis on the logical aspect. For what is the meaning of 'exaggeration' here? It seems that this reservation should be understood as referring to the idea that logic *alone* is not sufficient for the development of the legal system. Indeed, in the preface to the first edition, the author admits that in dealing with complicated legal problems "it is impossible to reach the goal with the aid of only logical means of analysis", and that "much scope has been left to intuition". He adds that a correct logical process constitutes only a necessary condition but not a sufficient one for "legal cognition" (IV). However, he does in no way point here to the character of law as an applied discipline requiring empirical corroboration. Klug, who attributes to law (which is in fact a prescriptive discipline) the character of a science and of a domain of cognition, completely ignores precisely the essential dependence of law on the sciences, and in particular on psycho-sociological and historical knowledge. Obviously, all he means is the dependence of "legal science" on "legal philosophy" or "teleologics", which is also considered a 'scientific' discipline, insofar as it too requires logic.

When he writes that there is no need to link the demand for the calculization of law to the positivist position, it is not sufficiently clear what his claim actually is, since the term 'positivism' and the terms derived from it are not unequivocal. But it is clear enough, on the other hand, that a philosophical position such as his, which sees a need and a possibility for providing *a priori* foundations for law, is not compatible with a proper understanding of the process of "applying modern logic" (148) to law. Only a connection with the empirical sphere is likely to guarantee that legal rules will have a clear and distinct prescriptive meaning, and only empirical control can serve as a criterion for their quality as just prescriptions. Law is "close to life" to the extent that it is properly connected to the sphere of practical application and empirically well-corroborated. The simple "calculization", even with the addition of a "teleological" basis, is not enough.

There is no justification for the development of a special discipline for the purpose of founding law on principles of obligation of any sort, whether *a priori* or empirical. Every prescriptive principle accepted as valid with respect to law is not an extra-legal principle but rather should be seen as belonging to the legal system itself. The separation of "teleologics" from law itself is related to the indicative character attributed by Klug to legal sentences. His legal logic, insofar as it is the ordinary logic of indicative sentences, does not permit the convenient formulation of orders, prohibitions, and permissions. Only in "teleological axioms" does the concept of obligation receive a special symbol (as a predicate denoting obligatory modes of behaviour). Klug sees von Wright's deontic logic as being of interest to the philosophy of law, but not to law itself. The development of law constitutes, in his opinion, "the logical construction of the world", requiring completion by its "teleological construction". The reference to Carnap for the purpose of justifying this duality is quite surprising. "The logical construction of the world" is for Carnap a descriptive activity, while law is essentially prescriptive, and in this sense is already itself "teleological". It is clear that the rejection of philosophical "teleologics" as a basic discipline for law involves the recognition of the empirical character of legal corroboration, on the one hand, and of the deontic character of legal logic, on the other hand.

Also the remarks concerning the "principle of tolerance" involve a misinterpretation of Carnap's ideas. The argument in which Klug attempts to show that the principle is self-contradictory is based on the mistaken assumption that it refers to the content of the propositions and to their truth (their "general validity"), while actually it concerns only the form of the sentences expressing them. "A criterion for the general validity" (155) of a synthetic proposition is always empirical and not purely logical. (It is an additional error to view the principle of tolerance as constituting an ordinary synthetic proposition, but there is no need for us to go into this point.) The argument against the thesis about the relativity of norms of behaviour is also very deficient. The mistaken identification of general validity with *a priori* validity, and the confusion of the truth of a proposition with the ethical correctness of its production, are especially outstanding. As far as the view that there is a limit to the relativity of logic is concerned, it is acceptable, but in a sense and for reasons different from those which Klug had in mind. It is also possible to extend this view to the discipline complementary to logic, if we substitute for this purpose methodology for teleologics. On this condition we shall also be able to provide plausible meaning and justification for the "reciprocal functional dependency" (156) between the two disciplines. However, we have no need for such discussion in this context.

In conclusion it can be said that Klug did not succeed in properly presenting legal logic and properly analysing the formal character of legal argument. It is no wonder, therefore, that his views met with opposition and even strengthened to a certain extent the positions of those who contend that legal argument does not belong to the scope of formal logic. Thus it appears that the thesis according to which legal argument and logic are non-formal in nature requires further examination.

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