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# A DIALOGICAL MODEL OF LEGAL REASONING

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## Summary

*This paper argues the thesis that the rules of law are best viewed as rules for dialogues rather than as rules constituting institutional facts. Starting from this view, a dialogical model of legal reasoning is developed. The paper provides an example of such a model in action. Thereafter a prelude to an intelligent legal tutoring system is given, incorporating the chosen view and the dialogical model as starting points.*

## 1. Introduction

Although most legal reasoning takes place in the context of legal disputes in which two parties argue their positions in a dialogue with the other party, formal models of legal reasoning often resemble monological proofs [Sergot et al., 1986][Prakken, 1991][Sartor, 1991]. This phenomenon might be explained by the fact that monological logics are the prevalent tools for formalizing any type of reasoning, but this explanation would not suffice unless there would be independent reasons to consider legal reasoning along the lines of proofs.

Such independent reasons can be found in the positivist view of the law which prevails among modern legal theoreticians. This view considers the law as a social institution and legal conclusions as descriptions of institutional facts [MacCormick, 1974]. In our opinion this view is wrong, and as a consequence we reject monological logics as adequate tools for modelling legal reasoning. Instead we propose a dialogical model introduced informally in this paper. The model is illustrated by means of an example. Moreover, we indicate how the model may be applied in an intelligent legal tutoring system.

## 2. Law as institutional fact

A popular modern view of the law tells us that the law consists of a set of rules. The results of applying rules of law are facts of a special kind, namely institutional facts. Institutional facts are the result of the application of the rules of a social institution to other facts. These rules are constitutive, which means that they 'create' their conclusions [Searle, 1969, p. 50 f.].

Examples from chess are famous in this context. The rules of chess *make it the case* that some moves are legitimate ones, and other illegitimate ones. Less familiar in this connection is the constitutive role played by rules of language. The definition of laser makes it the case that some beams *are* laser beams.

In the law a comparable mechanism would *make it the case* that a person which takes a good belonging to someone else, with the purpose of misappropriation is a thief. Being a thief in the sense of the law is an institutional fact. Legal definitions are constitutive rules [MacCormick, 1974][Ruiter, forthcoming].

But not only definitions would be constitutive, also rules which declare some types of behavior punishable would be constitutive. Being punishable is an institutional fact within the social institution of the law.

Although institutional facts are different from normal, "brute" facts [Anscombe, 1958], they are just as real. For instance, institutional facts are independent from whether some individual wants to acknowledge them. I have a duty to pay my taxes, whether I recognize it or not. Laser beams, illegitimate moves, rights and duties, permissions and powers, they all exist independent from individual recognition just as the sea, buildings and thoughts.

There exists, however, a difference. Institutional facts depend on the rules of a social institution and these rules in their turn depend on humans. Usually institutional rules cannot be changed by individuals to suit their whims. But most often they can be changed if a social group grows into different rules (this is how moral rules change), or if an official within the institution, who has the power to do so (e.g., the legislator) changes the rules.

If the law consists of a set of institutional rules, there is a striking isomorphism between, on the one hand, the constitution of institutional facts on the basis of legal rules, and on the other hand, the reasoning step in monological logics which is famous under the name of "Modus Ponens" (detachment). This isomorphism is presumably the reason why monological logics are still popular as tools for modelling legal reasoning.

### **3. Why the law does not constitute institutional facts**

An important characteristic of institutional rules, which is lacking in the law, is that the rules function as if they were independent. They depend for their existence on human practice, but as soon as they exist, they independently constitute institutional facts. A laser beam does not become a laser beam because of express application of a rule of language, nor does an illegitimate chess move ask for express application of a rule of chess. Rules underlying institutional facts are so to speak *self-applying*; they need not expressly be applied by a human being in order to constitute institutional facts.

Legal rules are not self-applying. Sometimes they appear to be, but that is just an illusion. It is always possible to dispute the application of a rule of law, even if the rule's preconditions are met. For instance, even the rule defining theft is amenable to discussion. Should it be applied if the misappropriation serves a higher goal than the preservation of property? If not, the person who fulfills the preconditions of the definition of theft is not a thief. He would have been in case that definition had been self-applying.

It might still be argued that legal rules are self-applying, because the discussion is not about the application of the rule but about the nature of the rule. The 'real' rule may have hidden conditions, which make that the rule is not applicable even if all manifest conditions have been met. As a consequence we cannot be certain how the institutional reality looks like.

This theory cannot be refuted in an absolute sense, but it is highly unlikely. It would imply that we can never be certain about the conditions of legal rules and that as a consequence we all live in an institutional reality that we can never know. The whole idea of institutional facts makes no sense if these facts remain forever unknown to us.

We must conclude that the law does not consist of a set of constitutive rules underlying institutional legal facts. From this conclusion it follows that the mentioned reason to use monological logics for modelling legal reasoning is deceptive. Since the practice of legal dialogues also points in a different direction, we might look for a different model.

#### 4. Law as a procedure

In the context of distributive justice, Rawls [1972, p. 85 f.] distinguished between three types of justice. First there is *substantive justice*, which relates to a situation which is just in itself. For instance, the division of a cake into three equal pieces may be called just (according to some egalitarian standard).

Second there is *imperfect procedural justice*. This type of justice is invoked in case we need a procedure to achieve substantial justice and we cannot establish the nature of what is substantively just independently. Rawls mentions in this context the example of a criminal trial (as far as the establishment of the facts is involved).

Third we have *purely procedural justice*, where the outcome of a procedure is just, exactly because it is the outcome of the procedure. Elections and a lottery are examples of purely procedural justice. Of course the outcome of the procedure is only just if the procedure has been applied correctly.

We propose to look at *the law as something purely procedural*. The procedure consists of an argument in the form of a dialogue, where the rules of law define which argument moves can legitimately be made. Next to the traditional rules there are procedural rules defining the roles of the parties in the dialogue. The outcome of the dialogue determines what counts as the law.

Before elaborating the view of the law as something purely procedural, we want to point out what is maybe the most important difference between our view and the view of the law as a set of constitutive rules. This difference is that in our view the law depends on an actual procedure. It is not possible to establish the law without following a procedure. This procedure need not be an official legal procedure. It is even possible to conduct a legal dialogue in the mind of one man, but it must still be a dialogue to be law.

The outcome of the procedure depends on the argument moves which are actually made, and as a consequence different outcomes may all be equally legitimate. This phenomenon has been described by Berman and Hafner as the "indeterminacy of the law" [Berman & Hafner 1987]. The view of the law as the outcome of a procedure explains indeterminacy. Only if the rules of law sufficiently constrain the allowed courses of the dialogue to allow only one outcome, the law is determinate.

#### 5. A dialogical model of legal reasoning

##### 5.1. Basic ideas

To analyze legal dialogues, we developed a dialogical model of legal reasoning [Hage & Leenes, 1992]. Our model works with reasons pro and contra a conclusion. A reason is a set of one or more facts, with an underlying rule which makes these facts relevant for the conclusion of the reason. To draw a conclusion, one must collect the reasons which plead for and against it. In the end it may be necessary to "weigh" reasons.

We consider legal disputes to be dialogues between two parties about a specific proposition, which is called the *conclusion* of the dialogue. One party, the *proponent*, defends the conclusion, the other party, the *opponent*, does not accept and maybe even denies the conclusion. Both parties are allowed to make argument moves [cf. Skalak & Rissland, 1991], such as adducing reasons and asking for justifications.

A dialogue often contains subdialogues, the conclusion of which is a fact or rule in the dialogue one level higher. The rules for the main dialogue are also used in the subdialogues. The structure of dialogues is recursive [Naess, 1966].

Some moves in a dialogue *commit* the party which makes them to accepting specific beliefs. Ideally a dialogue ends when the opponent is committed to the conclusion, or when the proponent is committed to the denial of the conclusion. A dialogue also ends when the proponent stops defending the conclusion, without actually being committed to its denial.

In a legal dialogue three belief sets are involved. A belief set is a set of beliefs (facts and rules) to which a party is committed. Both parties are committed to the beliefs in their own set (which may be empty). Next to these sets it is sensible to make use of a *common belief set*, which contains beliefs to which both parties are committed. These beliefs are for instance those which are dictated by common sense, or by generally accepted rules of law.

In a dialogue both parties seek to make such moves that the other party is committed to its opponents point of view. Moreover, they also try to avoid to become committed to their opponents point of view themselves. The dialogue is the process of making argument moves which in the end leads to some result concerning the conclusion.

## 5.2. The process of reasoning

An argument comes into existence when some party, the proponent, *proposes* some thesis which is not accepted by the other party, the opponent. It is not necessary that the opponent denies the thesis; refusal to accept is sufficient. The thesis then becomes the conclusion of the argument.

If the opponent refuses to accept the conclusion, he may invite the proponent *to produce reasons* for it [Alexy, 1978, p. 361]. However, the opponent is only allowed to ask for reasons if he himself is not already committed to the conclusion.

There are two grounds for *being committed to some belief*. Either one has performed an argument move which commits one to a belief, in which case the belief is in one's own belief set, or the belief is in the common belief set.

By making argument moves *a party commits himself to beliefs*. For instance, by adducing a reason, one commits oneself both to the factual beliefs contained in it and the rule underlying the reason. And by accepting a reason adduced by the other party, that is, by not asking for a justification of the reason, one also commits oneself to the factual beliefs within the reason.

The *common belief set* is a set of factual beliefs and rules which are assumed by default. Parties in a dialogue are committed to the beliefs in the common set.

If a party is committed to a certain belief, but nevertheless does not want to accept it, he must *adduce reasons against that belief*. This comes down to adducing reasons for the denial of the belief, and this procedure is just a case of adducing reasons for a belief.

*Adducing a reason* consists of mentioning other factual beliefs which purport to be reasons in favor of the conclusion.

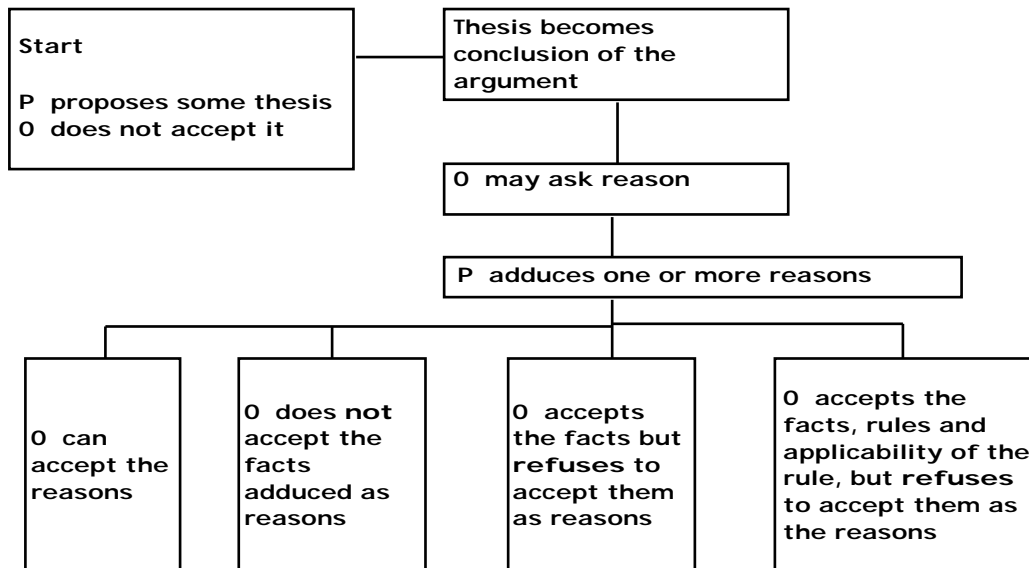


Figure 1: Schematic overview of the beginning of the dialogue

If the proponent has adduced one or more reasons in favor of the conclusion, the opponent can choose from several tactics, some of which can be combined. The first possibility is *to accept the reason(s)*, and do nothing else. In that case the opponent commits himself to the conclusion and the dialogue ends.

The second possibility is that the opponent *does not accept the facts* adduced as reasons. This situation is analogous to not accepting the conclusion and is dealt with in the same fashion.

If the opponent accepts the facts, he can nevertheless refuse to accept them as reasons. The third possibility is that the opponent asks the proponent to provide the rule underlying the reasons. If this happens, the proponent must *identify the rule* on the basis of which the adduced facts constitute a reason in favor of the conclusion.

Now the opponent can *accept the rule* or not. If he accepts the rule, he will also accept the reason, because he already committed himself to the facts. If he does not accept the rule, and is not committed to it either, he can ask the proponent to give reasons in favor of the rule.

Even if the opponent both accepts the facts adduced as a reason and the rule underlying the reason, there is a possibility that he does not accept the reason itself. For he may say that *the rule should not be applied to the facts*. If this happens, usually the opponent must provide reasons why the rule should not be applied. However, sometimes the proponent must provide reasons why the rule should be applied.

There are two possible reasons why a rule should not be applied to a set of facts. The first and most obvious reason is that the *facts do not satisfy the conditions* of the rule. The second is that there should be made an *exception to the rule*, although the facts satisfy the rule conditions.

In the first case, it is not clear beforehand which party has the burden of proof. Sometimes the proponent must give reasons why the rule conditions are satisfied in this case. At other occasions, the opponent must give reasons why the rule is not applicable. It is possible that a *meta-level discussion about the burden of proof* results, which can be analyzed within the same framework as object-level discussions.

Even if it is established that the rule conditions are not satisfied by the facts, the proponent can still argue that the *rule must be applied analogously*. This is a new thesis for which he may have to argue if the opponent does not accept it.

In the case of an *exception to the rule*, the party who wants to argue the exception should provide reasons for that. Typically he adduces reasons based upon a meta-rule. Of course the other party can argue for an exception to the exception etc.

Finally, if the opponent accepts the facts, the rule, and its applicability, and therefore also the reason adduced by the proponent, it is still possible for him to refuse to accept the conclusion. But then he must *adduce reasons against the conclusion* himself. In that case the proponent has all of the above mentioned possibilities to challenge those reasons.

If at the end of a discussion both reasons pro and contra the conclusion remain, the decision about the conclusion depends on weighing these reasons. The proponent has the responsibility to *argue why his reasons should weigh more heavily* than his opponent's.

### **5.3. Possible outcomes of a discussion**

In the case where at the end of the discussion both parties agree to what reasons plead in favor of the conclusion, and what reasons plead against it, there are two possible outcomes. First it may be the case that a discussion about the weights has determined which group of reasons ought to win, or that at the end of the discussion only reasons for or against the conclusion remained. In this case both parties are committed to the conclusion or its denial, depending on the nature of the reasons and their weights.

Second, it may be the case that the main discussion has ended without commitment of either party to one or more reasons. In this case reason dictates neither acceptance nor rejection of the conclusion.

If both parties agree to the reasons, but not to their relative weights, there usually is no rational solution to the problem whether the conclusion should be accepted or not. The number of reasons itself is not sufficient to determine which conclusion must be drawn, since one important reason may theoretically outweigh several less important ones.

In case there is at least one reason on which parties do not agree there are two possibilities. The first is that the acceptance of the disputed reason(s) does not make a difference to the acceptance of the conclusion. The conclusion should then be accepted or rejected on the basis of the undisputed reasons, and the disputed reason is left out of consideration.

The second possibility is that the disputed reason does make a difference. Under this second possibility, neither the acceptance nor the rejection of the conclusion is dictated by reason.

### **5.4. The common set, the neutral party and the burden of proof**

We have already encountered the common set as an element in the setting of a dialogue whose function it is to resolve possible impasses in the dialogue. The common set provides solutions to impasses because it contains rules and facts which are to be assumed by default. However, it is often difficult to determine whether a fact or rule is contained in the common set. In actual discussions, the common set is not a neat explicitly listed collection of rules and facts. Just like common sense knowledge, with which it largely coincides, the common set is never fully known.

Therefore, in legal dialogues a decision procedure is invoked to determine whether a specific rule or fact is in the common set. This decision procedure consists of an appeal to the *neutral party* (judge or arbiter). The neutral party has as one of its most important tasks to determine whether a belief element is in the common set or not.

Where the common set does not give the answer to a specific question, a decision about a belief can sometimes be forced by giving one of the parties the *burden of proof*. If a party has the burden to prove something, it is implied that if the proof fails, the belief which should be proved is rejected.

The assignment of the burden of proof is sometimes governed by rules. In the case these rules lack, the neutral party in the dialogue has the task to assign this burden to one of the other parties.

Since it is not possible to offer here a more detailed description of the dialogical model of legal reasoning, interested readers are referred to [Hage & Leenes, 1992]. Below, we illustrate the model by means of an analysis of a particular piece of legal reasoning.

## 6. An illustration of the model

### 6.1. The case

The following example gives an impression of how the dialogical model can be used to analyze legal reasoning. The case is based on the doctrine of "a third party in good faith" as laid down in art. 3:86 and 3:87 BW (Dutch Civil Code). These legal rules concern the transfer of property between a person who has no power of disposal and a person who acts in good faith and assumes he is buying from a proprietor.

The case runs as follows:

Albert owns an antique clock. On October 25th, 1988 Bernard steals the clock. A few days later Bernard sells the clock as an auctioneer to Cornelis at a reasonable price. On June 6th, 1991 Albert discovers the clock at Cornelis' home and asks how Cornelis obtained the clock. Cornelis tells him the whole story, after which Albert wants to revendicate his clock.

### 6.2. The debate

The debate on this case will be between the Proponent (P) and the Opponent (O). Commentary on the argument moves is in italics.

P     Albert (A) can revendicate the clock.  
           *Proposes the conclusion of the dialogue.*

O     Why?  
           *Asks for reasons.*

P     A is the proprietor.  
           *Provides a reason.*

O     Why?

P     1. A was the initial owner of the clock.  
       2. He never lost the ownership of the clock.

*The two assertions together constitute one reason for the thesis "A is the proprietor".*

- O I do not agree with 2 because ...  
*Denial of a part of the reason. Although not (yet) committed to provide reasons for the denial he provides them to speed up the debate. The consequence of this argument move is that the role of opponent and proponent changes here, since the subdiscussion is about a new thesis proposed by O.*
1. The clock is a personal property.
  2. The clock is stolen from A by Bernard (B).
  3. B got a hold on the clock.
  4. B had no power of disposal.
  5. Cornelis (C) paid a reasonable price.
  6. C assumed B was the proprietor.
  7. C obtained the clock in good faith.
- All these assertions together constitute one reason for the denial.*
- P I agree with the facts, but why are they a reason for the conclusion?  
*Two argument moves: acceptance of the facts and a demand to show their relevance.*
- O The rule of article 3:86 section 1 BW  
*O. provides the underlying rule. To avoid complications, we identify rules of law with statutory rules.*
- P I accept the rule, but the rule should not be applied to the facts.  
*Again two moves; acceptance of the rule and denial that it should be applied. P is - by the way - committed to acceptance of the rule of 3:86 section 1 BW, since such rules are in the common set.*
- O Why?  
*By denying that the rule should be applied, P has committed himself to a new thesis, thereby giving O the opportunity to attack the thesis and reverse the initiative in the debate. O takes his chance by asking for a reason.*
- P 1. B is an auctioneer.  
2. C bought from B.  
*Conditions which together create an exception to the rule.*
- therefore:  
3. A can revendicate the clock within 3 years after the theft.  
*Conclusion of 1 and 2. The arguments (1 and 2) create an exception to the applicability of article 3:86 section 1 BW. This exception itself leads to a new legal consequence which is stated in 3.*
- O What is the underlying rule?
- P The rule of article 3:86 section 3 subsection a BW.
- O I accept the rule, but the rule should not be applied to the facts.
- P Why?
- O Because application of the rule would be contrary to the rule's purpose.

- P Why?
- O 1. The purpose of art. 3:86 section 3 subsection a with regard to public sale is to avoid the difficulty for the initial owner in finding the person who sold the personal property. As a consequence the initial owner often is unable to recoup his losses from this person.  
 2. B stole the clock from A.  
 3. C knows he bought the clock from B.  
 4. A is able to recoup his losses from B.  
*1 states the purpose of the rule, while 2-4 state that application of the rule in the present case would be contrary to that purpose.*
- P Why should we follow the rule's purpose, instead of its conditions?  
*Relevancy of the purpose of the rule.*
- O Because a rule should not be applied if this application would be contrary to the rule's purpose.  
*The rule which makes the purpose relevant.*
- P I do not see why conflict with the purpose of the rule implies that the rule should not be applied.  
*The rule is not accepted.*
- O The purpose of the rule in this case is more important than the applicability of the rule.
- P I do not agree.

*If the parties in the discussion cannot solve a discussion by themselves, and the common set does not commit either one party to a solution, an arbiter has to resolve the matter. This is the case in a situation as the present one, where there exists disagreement about a legal meta-rule about which there is no general agreement in the legal community.*

*Depending on the decision of the arbiter, P or O wins the discussion, unless new reasons are produced which plead in the other direction than the one supported by the arbiter.*

## 7. Conclusion

This example shows how a debate can be analyzed in terms of our dialogical model. Such an analysis can be the basis for an evaluation. It is possible to establish which party has won (which part of ) the debate, under the condition that the decisions of the arbiter are known.

As soon as the dialogical model is formalized, a decision procedure can be defined which establishes the winner of the debate. That would create the possibility to evaluate the outcome and the individual steps in a formalized debate. This possibility in its turn opens perspectives for an intelligent tutoring system, based upon debates between a student and the computer. In the context of the Archimedes-project, we started to build such a system, the main ideas of which are described in the next section.

The Archimedes tutoring system is based on a game, because games (if they are good) motivate people to play. The idea behind the game is that the student must try to beat the computer in a simulated legal argument about a case in the domain of the system. The argument consists of a dialogue in which both the student and the computer can make argument moves [Skalak & Rissland, 1991]. On basis of the represented domain knowledge, an underlying system of dialogical reason based logic [Hage, 1991][Hage & Leenes, 1992] evaluates the discussion and determines who wins.

If the student makes bad argument moves, the tutoring system can adapt its level, and/or provide hints. These hints range from remarks about the student's performance to the presentation of legal materials and a study advice. The tutoring system is linked to a hypertext-like information-network and provides suitable entry points into that network. In this way the student receives relevant information in the form of text concerning the law, case law and doctrine.

The tutoring system must fulfill four roles. First it must play the student's opponent in the legal debate. Second it must monitor the student's performance and adapt the student profile and correspondingly the tutorial approach. At this point the computer can give hints on which argument move is best and give the student an adequate entry into the information network. Providing this entry we consider as the third role of the tutoring system. Finally it must play the arbiter who determines which argument moves are permitted, makes decisions on open questions, and decides which party in the dispute wins (figure 2).

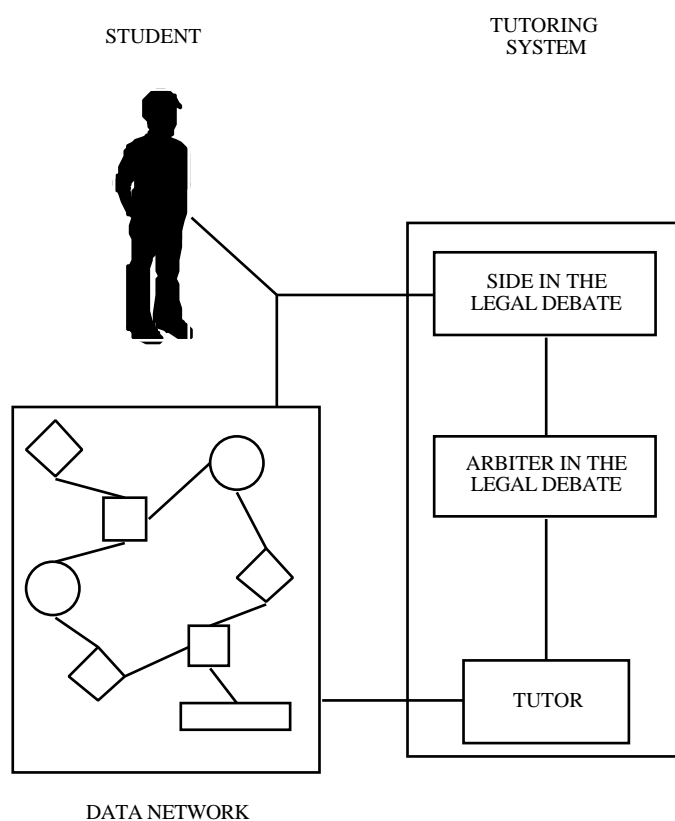


Figure 2

In this paper we tried to draw attention to a dialogical approach to legal reasoning. For this purpose we first argued why the seeming attractiveness of monological approaches is ill-founded. Second we gave an informal description of possible steps in a legal dialogue. And finally we showed how a dialogical approach of legal reasoning can be put to practical use in an intelligent legal tutoring system.

We are aware that we only offered the beginnings of a new approach. The next steps should include formalization of legal dialogues and a logic by means of which the outcome of dialogues can be evaluated. Such a logic should be compared to rival approaches, especially applications of non-monotonic reasoning in law [Prakken, 1991] [Sartor, 1991].

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