

# About the logical relations between cases and rules

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**Abstract.** The two main types of law are legislation and precedents. Both types have a corresponding reasoning pattern determining legal consequences: legislation can be applied and precedents followed. The separate modelling of these two reasoning patterns using logical techniques has recently seen considerable progress. About the logical links between the two less is known, although progress has already been made. This document focuses on such logical relations. The main question is: to what extent can the application of legislation and precedent adherence be considered as two sides of the same logical coin? Findings from the boundaries of logic and law will serve as a starting point.<sup>1</sup>

## 1. Introduction

The establishment of legal consequences is not a free activity, but is bound by the law as it applies at the time of establishment. For the establishment of legal consequences, the law must therefore be ‘found’ (cf. the Dutch term ‘rechtsvinding’). Legislation and precedents are important, perhaps the most important, sources of law. The role of legislation and precedents for finding and establishing the law in a concrete case varies from country to country and from ‘jurisdictional sphere’ to ‘jurisdictional sphere’ (cf. Summers 2005). The relationship between legislation and precedents, and the extent to which precedents are regarded as formal sources of law (in the sense that the rules deriving from them are considered to be *legal* rules; compare Hart’s rules of recognition, Hart 1961, 1994) are, for example, to a certain extent coloured by the concrete institutionalisation in an existing legal system. The differences are smaller than is sometimes thought, as evidenced by comparative law research (MacCormick & Summers 1997). An important and - looking back - not very unexpected conclusion is that rules and precedents are significant both in legal decision making and in the development of law, regardless of whether precedents are officially considered as formally binding or otherwise have normative force (p. 532, but see p. 536f. for remaining differences in the treatment of precedents). MacCormick & Summers even conclude that the view to consider precedents only as *de facto* binding (which in some civil law countries is occasionally expressed to save the existing traditional view that precedents are not binding) is ‘at least highly misleading and at most highly fictional’. They argue that precedents are *de jure* binding, even if that is not explicitly recognized.

In this article we take an appropriate distance from the actual institutionalisation of the relationship between legislation and precedents and consider their logical role in the

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<sup>1</sup> This text is a translated, adapted and extended version of Verheij 2007.

establishment of legal consequences. Our basic question is: To what extent are the logical roles of legislation and precedents in the establishment of legal consequences distinct? Using a slightly different wording: Can a legal system where the establishment of legal consequences is based only on legislation be logically distinguished from one using only precedents?

For a good understanding of these questions, I must indicate what I (in this essay) mean by the term 'logical differences'. Here, logical differences are differences in formal patterns of inference and their properties. There could, for example, be formal differences in the inferential patterns associated with legislation and precedents, in the way in which legislation and precedents are a source for the drawing of conclusions, in their interpretation, with respect to the genericity or specificity of rules and precedents, and from the perspective of counterarguments. In the following, these possible reasons for logical differences will be treated one by one. We will use the method of specifying argumentation schemes as proposed by Verheij (2003). Argumentation schemes are semi-formal rules of inference, which can be defeasible, contingent and context-dependent. The study and specification of argumentation schemes has roots in informal argumentation theory (see Walton 1996) and is recently influential in argumentation research with a more formal orientation. Some other examples of recent work include Bex et al. 2003, Verheij & Bex to appear 2009, Gordon et al. 2007, Girle et al. 2003, Reed & Rowe 2004. A bonus of this essay is that it shows a new use of the method of argumentation schemes, namely as a tool to study the relations between styles of reasoning.

The present essay originates from a desire to integrate formal treatments of argumentation on the basis of legislation and on the basis of precedents. Although recent influential formal approaches to reasoning on the basis of legislation (in particular Prakken & Sartor 1996, Hage 1996) have been extended to include a treatment of precedents (Prakken & Sartor 1997, Hage 1997), these do not attempt to explain why the ground-breaking analysis of precedent-based argumentation by Ashley (1990) is so different in flavour, and whether this is necessary or an accident of history. The existence of - in different ways - hybrid approaches (e.g., Skalak & Rissland 1992, Verheij et al. 1998, Bench-Capon & Sartor 2003, Roth & Verheij 2004) adds to the relevance of answering our main question. Here, while not achieving, nor aiming at, the formal sophistication of the mentioned approaches, an attempt is made to understand to what extent an integrated logical approach of rule-based and case-based argumentation is possible or not. As such, it is more an argument for a future agenda and less a completed formal analysis (see also the end of section 7).

## **2. Application of legislation and following a precedent**

How are legislation and precedents used for the drawing of conclusions? The basic forms are the application of legislation and the following of precedents. Application of legislation can be summarized as follows:

### *(1) Application of legislation*

There is a rule with conditions A, B, C, ... and conclusion Z.

In the current case, the conditions A, B, C, ... are fulfilled.

THEREFORE

Conclusion Z can be drawn.<sup>2</sup>

In words, if the conditions of a rule are fulfilled, the conclusion of the rule can be drawn.

For the specification of the nature of following precedents, there exist two possible approaches. First, precedents can be regarded as themselves having a regulatory nature (as has already been mentioned: either *de jure* or *de facto*). One example is the Dutch Supreme Court decision Lindenbaum-Cohen (HR January 31, 1919, NJ 1919, 161) in which a redirection of the notion of unlawfulness, to include social norms next to written law as sources of obligations to repair damages, was formulated in the form of a rule much like a statutory regulation. Precedent adherence then takes the form of applying a rule formulated in the precedent. In this approach, precedent adherence and application of legislation both come logically down to the following of a rule backed by a source of law. For the present essay, in which we are looking for logical *differences*, we will leave this approach for what it is, as it is clear from the start that the approach will not lead to very interesting logical distinctions.

The second approach to precedent adherence is case analogy. The core idea is that the analogical following of a precedent case requires a relevant agreement with the case at hand. This second, more characteristic core of precedent adherence, apparently more distinct from the application of legislation, is for the present essay of more interest than the first approach. It can be made explicit as follows:

(2) *Analogical following of a precedent*

There is a precedent with A, B, C, .... as factors relevant for conclusion Z.

The current case matches the factors A, B, C, ... of the precedent.

THEREFORE

Conclusion Z can be drawn.

In words, if a case equals a precedent at the relevant factors, the conclusion of the precedent can be drawn. Note that here no distinction is made between positive and negative relevance (unlike in most of the formal work mentioned in the introduction).

With respect to these two inference patterns three comments are in place. First their format: here we use the technique of argumentation schemes (as used in informal argumentation theory research) for the specification and analysis of inference patterns that people use when reasoning. In particular, the work of Walton (1996, 2005) is a relevant source for this semi-formal style of analysis. The approach used here follows that of Verheij (2003), where a connection is made with knowledge representation methodology.

Secondly, a comment about the use of argumentation schemes: they can have exceptions and their validity may be conditional. For example, it is not true that on the basis of scheme (1) the conclusion of a rule always follows if the conditions are met. Exceptions to the rule are possible. Also precedent adherence is subject to counterarguments: are there other precedents with a closer match to the current case, but with a different conclusion? With respect to the scheme for precedent adherence, the question is also at issue whether the principle of *stare decisis*, on which it is based, is valid in the legal system to which the present case belongs. If not, the scheme's

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<sup>2</sup> The consequent of this scheme is phrased a bit too much as an action-license, and should be replaced by simply 'Z'. See scheme (3) below. The phrasing here is meant to be easier to read.

validity breaks down. Still a scheme is intended to express an ‘inference license’: in principle and under the right conditions, the scheme can be used to draw conclusions based on them. The echo of Toulmin’s (1958) argument model is obvious: a concrete inference license requires a generic license (Toulmin’s ‘warrant’), to which objections can be raised (‘rebuttal’) and which might need a foundation (‘backing’).<sup>3</sup> In the rest of this essay, some of the properties of the schemes (1) and (2) are addressed in further detail. Given the space available, exceptions and counterarguments are not treated. See Verheij (2003, 2005) for a formal treatment of argumentation and argumentation schemes that fits the present discussion.

Thirdly, a comment on the content of the inference patterns: the displayed content is intended to specify an argumentation pattern, but not absolute correctness. Here the limits of specification become relevant: the varied uses of a scheme - if only by all variations in phrasing - have a too wide range to do them all justice in one concise scheme. The specification of an argumentation scheme is therefore by its very nature flexible (see also the discussion of Walton’s work by Verheij 2003). Moreover, the specification of an argumentation scheme can be biased by a goal. A central purpose for scheme specification in argumentation theory is to serve as a practical tool for the analysis and evaluation of argumentative texts. In contrast, in this text argumentation schemes are deployed with a research goal: here the specification of patterns of reasoning is a methodological tool for the investigation of the logical connections between reasoning on the basis of legislation and of precedents.

What happens if we look at the two schemes, the eyes slightly narrowed, and focus on their logical form? *Then both have the same form:*

(3) A, B, C, ... --> Z  
 A, B, C, ...  
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 Z

When looking at them in this way (and only so, as will become clear below), both schemes can be considered as a variant of the time-honoured rule of inference Modus ponens. The drawing of a conclusion already used the same wording in the two schemes (and see note 2). The conditional structure A, B, C, ... --> Z has been instantiated in two ways in the two schemes, namely as ‘There is a rule with conditions A, B, C, ... and conclusion Z’ and as ‘There is a precedent with A, B, C, ... as factors relevant for conclusion Z’. The minor premise A, B, C, ... differs in a related way in choice of wording.

At this point, you might feel somewhat cheated: of course the schemes have been *constructed* in such a way that they have the same form. That such a biased construction is possible, is first a consequence of the mentioned flexibility of argumentation schemes. To this extent, this analysis indeed balances on the verge of deception. But there is a second, and more important, cause that this construction is possible: there is indeed a logical relationship between the application of legislation and the analogical following of precedents, and the given analysis (3) makes this connection visible. The abstract reconstruction explicitly shows how (1) and (2) are related.

Let us look at a number of other possible objections.

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<sup>3</sup> See Hitchcock & Verheij 2006 for recent interdisciplinary research on Toulmin’s argument model.

### 3. Sources of law

A first objection is that the Modus ponens form (3) of the application of legislation and the analogical following of a precedent ignores a central difference between the two, namely the source of the conditional connection as expressed in the first premise. This objection indeed points to a first central difference between the two patterns of reasoning. Is it also a logical difference? No. The conditional connection, or rather, the inference license, has a different source, but has logically speaking the same structure. This view is based on the following two schemes:

(4) *Legislation as the source of rules*

The rule with conditions A, B, C, ... and conclusion Z is based on legislation G.

G is valid legislation.

THEREFORE

There is a rule with conditions A, B, C, ... and conclusion Z.

(5) *Precedents as the source of relevant factors*

In precedent G the factors A, B, C, ... are relevant for conclusion Z.

G is an authoritative precedent.

THEREFORE

There is a precedent with A, B, C, ... as factors relevant for conclusion Z.

Scheme (4) makes explicit how rules are based on legislation. Note that a similar scheme can be provided for precedents as the (de jure or de facto) basis for rules, but that we have skipped that use of precedents for its too close similarity to the use of legislation (cf. section 2). Scheme (5) specifies how a precedent can be the basis for factors being relevant for a conclusion.

We can again abstract from the concrete reading of these schemes, thereby clarifying the underlying logical structure:

(6)  $G \rightarrow (A, B, C, \dots \rightarrow Z)$

G

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A, B, C, ...  $\rightarrow Z$

This structure is logically a special case of Modus ponens with a conditional sentence as conclusion and a particular nested conditional sentence as main premise. The structure makes explicit that a concrete inference license (as shown here: A, B, C, ...  $\rightarrow Z$ ) may be based on a source without further logical structure (G). In the case of legislation that basis is the validity of the particular piece of legislation; for precedents the authority of a precedent.

The nested conditional sentence  $G \rightarrow (A, B, C, \dots \rightarrow Z)$  can result in a slightly different wording of the respective first conditions in the argumentation schemes (4) and (5), as follows:

*From legislation G the rule with conditions A, B, C, ... and conclusion Z follows.*

*From precedent G the relevance of the factors A, B, C, ... for conclusion to Z follows.*

In this way it is stressed that an inference license (in the form of a rule or relevant factors) is a consequence of a source that itself is logically unstructured. This can serve as a stepping stone for a perspective on the notorious interpretation of legislation and precedents. Indeed, the schemes allow the specification of positions concerning rules and relevant factors, but what if such positions are themselves up for discussion? How does one determine which rule follows from legislation and which factors are relevant for a conclusion in a precedent? That is the topic of the next section.

#### 4. Interpretation

Legislation and precedents are indeed a source of law, but in order to determine the precise content of legislation and precedents interpretation is needed. Often interpretation is a straightforward process requiring no specific legal knowledge: the interpretation of legal terms coincides with their everyday usage (cf. what in Dutch legal theory is referred to as ‘grammatical interpretation’). However, such literal interpretation of legal terms often does not comply with their legal meaning, and deviations from a naïve reading of the source are necessary.

One possible objection against the presently considered logical connection between legislation and precedents for determining legal consequences is that it leaves no room for the necessary interpretation of legislation and precedents. Indeed, in the schemes (4) and (5), the interpretation of the source is used as a starting point, namely in the first premises of the schemes. For instance, in scheme (4) the first premise is ‘The rule with conditions A, B, C, ... and conclusion Z is based on legislation G’, thereby - according to this objection - precluding the issue of interpretation.

In a certain sense, this objection is justified. The schemes (4) and (5) and the associated abstraction (6) do not resolve the issue of interpretation. The point is however that interpretation is not a logical problem, but one of substance. The answer to the objection is then that the ‘interpretation sentences’, which appear in (6) in a logical-abstract form as  $G \rightarrow (A, B, C, \dots \rightarrow Z)$ , can themselves be the conclusion of an argument. An argument with an interpretation sentence as its conclusion contains the substantive considerations that lead to the interpretation. For example, assume that a literal, ‘grammatical’ reading of a source G (for example, a statutory provision or a ruling by the Supreme Court) leads to the interpretation  $A, B, C, \dots \rightarrow Z$  of the corresponding inference license, while according to the underlying purpose of the source a different interpretation  $A', B', C', \dots \rightarrow Z'$  is correct, it may not be  $G \rightarrow (A, B, C, \dots \rightarrow Z)$ , but  $G \rightarrow (A', B', C', \dots \rightarrow Z')$ , which is the interpretation sentence. If the rule purpose outweighs the rule’s literal reading, the second interpretation follows from the argument. If the goal is denoted as D, and I and I’ abbreviate the mentioned grammatical and teleological interpretation sentence, then this means that not  $D \rightarrow I$ , but  $D \rightarrow I'$  holds. In this situation I’ can be derived (from  $D \rightarrow I'$  and D) and not I.<sup>4</sup>

#### 5. Genericity and specificity

Another difference between rules and precedents - and perhaps intuitively the most important one - is the genericity of rules as compared to the specificity of precedents.

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<sup>4</sup> One’s favourite argumentation formalism can be used to fill in the details.

Legislation provides generic conditions for a generic conclusion. Only upon application of the legislation the conditions and conclusion become specific. From this perspective, the rule that thieves are punishable has as a generic condition that someone is a thief and as a generic conclusion that that person is punishable. When the rule is applied the unspecified person is as one might say 'filled in'. In this way application of the theft rule can imply that John is a thief because he is punishable.

In order to show genericity and specificity explicitly in a scheme we will use the convention that capital letters express generic states of affairs (such as rule conditions and rule conclusions) while lower-case letters stand for specific states of affairs (such as concrete facts and their (legal) consequences).<sup>5</sup> 'A' might stand for the generic 'Someone is a thief' and 'a' for the corresponding instance 'John is a thief'. Thus we arrive at the following adjustment of scheme (1):

- (7) There is a rule with conditions A, B, C, ... and conclusion Z.  
 In the current case, the conditions A, B, C, ... are fulfilled by a, b, c, ...  
 THEREFORE  
 Conclusion z can be drawn.

Note that the scheme shows how a concrete conclusion z that corresponds to the generic conclusion Z can be drawn.

Logically, genericity can best be made explicit through the use of variables and their instantiations. We can adapt the basic logical scheme (3) to emphasize the roles of genericity and specificity:

- (8)  $A(x), B(x), C(x), \dots \rightarrow Z(x)$   
 $A(t), B(t), C(t), \dots$   
 -----  
 $Z(t)$

The formula  $A(x)$  can be regarded as a schematic representation of all its instances  $A(t), A(t'), A(t''), \dots$ . Note that scheme (8) shows the relationship between the instantiated rule conditions and the conclusion better than (7): in (8), the variable  $x$  in the conclusion is instantiated in such a way that it fits the instantiation of the rule conditions, namely by in both cases filling in  $t$  for  $x$ . In the example of the theft rule: if John is a thief, it is also John who is punishable, and not Peter or Mary. While, in (7), one cannot see that the instantiations  $A / a, B / b, C / c, \dots$  dictate the instantiation  $Z / z$ , in (8) this link is made explicit.

In conclusion, we have found an analysis of the genericity of legislation and its application leading to specific conclusions based on specific facts. We will use this (well-known) reconstruction in order to proceed to the analogical following of precedents. Precedents are by their nature specific because they are attached to a concrete case. In a precedent, a concrete conclusion follows on the basis of concrete facts.

For this story it is relevant whether this observation implies that the logical agreement between the application of legislation and the following of precedents as established in scheme (3) - that we have been able to keep up until now - is lost. We have replaced (3) by (8) to deal with the genericity of legislation. What does this mean

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<sup>5</sup> Here we follow the elegant, concise formal style of Loui & Norman 1997.

for the scheme of the analogical following of precedents (2)? Let us consider the following adjustment of scheme (2):

- (9) There is a precedent with A, B, C, .... as factors relevant for conclusion Z.  
The current case matches the factors A, B, C, ... of the precedent by the currently obtaining facts a, b, c, ... .  
THEREFORE  
Conclusion z can be drawn.

The difference with scheme (2) is that in (9) the concrete factual similarities between the current case and the precedent have been made explicit. In the light of the discussion of genericity and specificity, there is now a problem that has to do with our convention that capitals stand for generic states of affairs and lower-case letters for specific ones. The problem is that the first premise of scheme (9) describes the relevant factors and a corresponding conclusion in a precedent as generic states of affairs, while a precedent is by its very nature a specific decision in a specific case. This suggests that we are using a wrong representation of the nature of a precedent.

There are two ways to solve this problem. The first stresses the specificity of precedents:

- (10) There is a precedent with a, b, c, .... as facts relevant for conclusion z.  
The current case matches the facts a, b, c, ... of the precedent by the currently obtaining facts a', b', c', ... .  
THEREFORE  
Conclusion z' can be drawn.

The difference between (9) and (10) is that in the latter scheme the concrete facts and the corresponding concrete conclusion of the precedent are used.

A logical analysis of (10) that uses variables and their instances in a way analogous to the step from (7) to (8) looks like this:

- (11) A(t), B(t), C(t), ... --> Z(t)  
A(t'), B(t'), C(t'), ...  
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Z(t')

The difference with (8) is that here the first premise is an instantiated conditional sentence instead of a generic one (by the use of a logical expression t instead of a variable x). Logically (8) and (11) are very different in nature: the former scheme is valid in standard interpretations of logic, whereas the latter is not, which is a high price to pay.

The second way to treat the problem that (9) does not do justice to the specificity of precedents, is by a slight change of perspective on precedents and their analogical following. As follows: precedents are indeed specific in the sense that they amount to a concrete decision based on concrete facts in a concrete case, but one *abstracts from* such concreteness when a precedent is followed analogously. In *Donoghue v Stevenson* [1932] AC 562 (HL), a concrete liability because of a rotten snail in a bottle of ginger beer was at issue, but in its role of precedent it is rather the more general liability of a



manufacturer for its products that counts. In other words: a precedent is concrete when perceived as a decision in a case, but generic when perceived as a source of law.

In fact, we already anticipated on this view of precedents and their analogous following in the way in which (9) is phrased. Not coincidentally, we speak in (9) of relevant factors, and not of relevant facts, in order to underscore the genericity of a precedent as a source of law. (See Ashley 1990 for more on factors.)

In this view (8) can remain the common ground that underlies both the application of legislation and the analogical following of precedents. The difference that legislation is generic, while precedents are specific, has turned out to not be a necessary logical difference by acknowledging that - as a source of law (rather than as a decision) - precedents are generic in nature. If (11) instead of (8) were chosen as encompassing logical structure, we would not only be left with an invalid scheme, but also the concreteness of the case underlying the precedent would be falsely emphasised.

## 6. Counterarguments

One may further argue that the logical differences between reasoning with cases and rules only become apparent when they are considered in the context of the defeasibility of legal reasoning and argumentation. Indeed, the way in which an argument based on legislation or on precedent is subject to counterarguments at first sight seems to be logically different. A prominent kind of counterarguments for legislation-based reasoning are those based on exceptions to legislative rules, while for precedent-based reasoning counterarguments often take the form of other, contrasting precedents. More concretely, and continuing our style of analysis, when a legislative rule is applied (scheme (1)), one can argue that there is an exception to the rule. Scheme (1) might therefore be extended with the following line:

(extension of 1) UNLESS There is an exception E to the rule with conditions A, B, C, ... and conclusion Z.

Similarly, when a precedent is analogically followed (scheme (2)), there can be another precedent that blocks its use. In one important way of distinguishing precedents, there is a more specific precedent in which the conclusion does not hold. Scheme (2) might then be extended thus:

(extension of 2) UNLESS There is a precedent with A, B, C, ..., K, L, M, ... as factors relevant for Z, but without conclusion Z.

Here it is assumed that K, L, M, ... are new factors, not among A, B, C, ..., thereby making the precedent a more specific one. For the two extensions of the schemes (1) and (2) it obtains that when the UNLESS-clause is fulfilled the scheme does not lead to its conclusion (see Verheij 2003, 2005 or another recent argumentation logic for filling in formal detail).

Intuitively, these kinds of counterarguments (and there is here no room to consider other kinds; see the literature mentioned in the introduction for more) express the intuition that counterarguments to legislation-based arguments are 'local', while those for precedent-based arguments are 'global': exceptions to rules are 'points', whereas contrasting precedents are 'wholes'. The local/global distinction is suggested here by

the single E representing an exception as opposed to the list A, B, C, ..., K, L, M, ... representing the relevant factors of a precedent. Have we finally encountered a genuine logical difference? Yes and no. Here we encounter the philosophical problem that there is no fixed boundary between logic and non-logic (cf. the existence of abstract and concrete logics; Verheij 1999). If we choose to stop the analysis at this point, we have found a genuine logical difference. This is a reasonable option, however, one that involves a moment of *choice*. We can also choose to continue our search in order to find a common, more abstract, logical basis for the counterarguments associated with legislation and precedents. Let us follow that road a bit. An abstract summary of the relevant inference licenses and ‘inference blockades’ (a neologism, hence the quotes) involved in the two kinds of arguments counterarguments mentioned is helpful:

<p>A, B, C, ... --&gt; Z  A, B, C, ... E -/-&gt; Z</p>	<p>A, B, C, ... --&gt; Z  A, B, C, ... K, L, M, ... -/-&gt; Z</p>
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On the left, there is the abstract version of the inference license for a legislation-based argument based on scheme (1) (see also scheme (3) where the same abstraction is performed), and the abstract inference blockade when there is an exception E as in the extension of scheme (1). On the right, there is the inference license for a precedent-based argument as in scheme (2) and an abstract inference blockade for the more specific precedent A, B, C, ..., K, L, M, ... as in the extension of scheme (2).

The similarity is striking. Seen from this perspective the *only* remaining local/global difference is that E occurs by itself, whereas the precedent involves a series of distinguishing factors K, L, M, ... *Both are just examples of the nonmonotonicity of the logic of argumentation in the face of counterarguments.*<sup>6</sup>

## 7. In conclusion

The conclusion of this essay is that the different roles that rules and precedents play in the establishment of legal consequences are substantive, institutional and empirical in nature, not logical. This conclusion is based on an analysis of the argumentation schemes related to legislation and precedents, their role as sources of law, their interpretation, their genericity or specificity, and their counterarguments. We have argued that both legislation and precedents imply inference licenses according to the same basic logical pattern. Admittedly these inference licenses have a different source (namely legislation as opposed to precedent), but that is not a logical difference. Also interpretation fits the logical mould as outlined here. Even the genericity of rules and the specificity of precedents does not lead to a logical difference because precedents have a generic nature when they are adhered to. Finally we found a common ground for kinds of counterarguments associated with legislation and precedents. There are other possible logical differences that cannot be treated here, perhaps the most important one being the analogical use of a precedent that is not *a fortiori* (in contrast with the *a fortiori* analogical use of a precedent in scheme (2)). For lack of space further

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<sup>6</sup> In fact, this observation suggests a direction for the further development of argumentation logics that I am currently pursuing. In my DefLog, exceptions to rules are naturally expressed as  $E \rightsquigarrow x(A \& B \& \dots \rightsquigarrow Z)$ , where x denotes dialectical negation, or ‘negation-as-defeat’. The logical role of a more specific, contrasting precedent would be expressed as  $x(A \& B \& \dots K \& L \& \dots \rightsquigarrow Z)$ . Apparently, when E and K & L & M ... are equivalent, these two expressions should also in some sense be logically equivalent.

development must be postponed to another opportunity. I expect that a similar ‘deconstruction’ of a logical difference is also possible for the non *a fortiori* type of precedent-based analogy based on my experience with the formal modelling of a similar phenomenon in the context of rules (Verheij *et al.* 1998, with a section on the analogical application of rules).

Finally a comment on legal relevance of this semi-formal conceptual study. The analysis leads to the primacy of substance rather than of form, thereby leaving room for the reasonable as opposed to the rational (cf. Toulmin 2001). In legal practice, it is of similar importance to keep the primacy of substance in mind. Also in the law form is not an end in itself, but merely a means to achieve goals on a human scale. Seen in this light, this essay actually is an argument for reasonableness and fairness and against mandatory legalism.

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