

Law and defeasibility

JAAP HAGE

Faculteit der Rechtsgeleerdheid, Universiteit Maastricht, Postbus 616, 6200 MD Maastricht, The Netherlands
E-mail: jaap.hage@metajur.unimaas.nl

Abstract. The paper consists of three parts. In the first part five kinds of defeasibility are distinguished that is ontological, conceptual, epistemic, justification and logical defeasibility. In the second part it is argued that from these, justification defeat is the phenomenon that plays a role in legal reasoning. In the third part, the view is defended that non-monotonic logics are not necessary to model justification defeat, but that they are so to speak the natural way to model this phenomenon.

Key words: defeasibility, legal justification, non-monotonic logic

1. Introduction

During the last few decennia quite a bit of literature about so-called defeasible reasoning in the law has been published.¹ Nevertheless, the question what this defeasibility precisely amounts to has received scarce attention.² Intuitively, the defeasibility of legal reasoning is a characteristic of the law, or of legal reasoning, and its understanding would be an understanding of what goes on in the law. Logical systems, such as non-monotonic logics, would only be means to capture a phenomenon that exists independently of these systems.

Recently, the question whether legal reasoning is really defeasible has been raised with some urgency.³ It seems therefore time to pay systematic attention to the nature of defeasibility in general, and to the relevance of defeasibility for the law in particular. Another topic that deserves attention is whether the analysis of legal reasoning, assuming that it is defeasible, requires the use of some non-monotonic logic. It has recently been argued that it does not.⁴

The structure of this paper is as follows: First I will try to pin down the notion of defeasibility, and in that connection I will distinguish between five kinds of defeasibility, that is ontological, conceptual, epistemic, justification and logical defeasibility. The second step is to investigate whether the law, legal knowledge, legal reasoning, or legal justification is defeasible in one of the distinguished senses of defeasibility. The answer will be affirmative. Given this affirmative answer, I will address the question whether legal reasoning, where it is defeasible, should be analysed by means of a so-called non-monotonic logic. Again, the answer will be affirmative.

2. Kinds of defeasibility

Although it is often argued that legal reasoning is defeasible, it is seldom or never specified what this alleged defeasibility amounts to. The first step in filling in this gap is to distinguish defeasibility from non-monotonicity.

2.1. NON-MONOTONICITY AND DEFEASIBILITY

Monotonicity and non-monotonicity are characteristics of systems of (formal) logic. A system of logic is monotonic, if and only if it is such that if a set of sentences S' is a superset of S , the set of conclusions C' that follow according to this logic from S' is a superset of the set C of conclusions that follow from S . A system of logic is non-monotonic if and only if it is not monotonic.

As can be seen from these definitions, monotonicity and non-monotonicity are characteristics of logical systems, and have as such little to do with the law or with legal reasoning, or even with reasoning in general. Possibly a non-monotonic logic is useful to model legal reasoning, because legal reasoning is defeasible in a sense that is still to be specified. But even then the non-monotonicity of the logical system is something else than the defeasibility of the reasoning that is modelled by means of it.⁵

2.2. ONTOLOGICAL AND CONCEPTUAL DEFEASIBILITY

‘Defeasibility’ was originally a technical legal term, standing, according to Collins English Dictionary, for the capability of an estate or an interest in land of being defeated, or – what boils down to the same thing – being rendered void. In his paper *The ascription of responsibility and rights*, Hart extended the use of this notion to all *concepts* that have the property that there are a number of conditions of application, but also one or more circumstances that, if they occur, end the *prima facie* applicability of the concept. The concept of a contract is a typical example. A contract that has come into existence after an offer and acceptance can be invalidated if one of the parties involved invokes a defeating condition, such as fraudulent misrepresentation, or undue influence. In this connection it is crucial that the defeating conditions are actually *invoked*; the mere fact that they *occurred* is not sufficient to defeat the contract. Therefore, defeaters are to be distinguished from ordinary conditions for the existence of a contract, which do not need explicit invocation.

For the understanding of this kind of defeasibility it is also crucial that the defeat of the contract has retro-active force.⁶ If defeat would operate *ex nunc* there would merely be a change in the facts: before the defeat the contract

was valid, and after the defeat it is invalid. Such a change in the facts is a very common phenomenon, and there is no need to have a special concept, that of defeasibility, to denote it. For instance, if an open door is closed, the door was open before the event and it is closed afterwards. It would be rather peculiar to say that the fact that the door was open is defeated by the event that the door was closed.

The case of a defeated contract is special, because of the retro-active force of the defeat. As long as the contract is not defeated, it is valid, but as soon as it has been defeated, it is considered to have been invalid all of the time. This is a rather uncommon phenomenon, and deserves for that reason the special name of defeasibility. Since this kind of defeasibility concerns the retro-active change of the *facts*, and not our beliefs about the facts, I propose to call it *ontological defeasibility*.

In his discussion of defeat in *The ascription of responsibility and rights* Hart connected defeat not so much to facts as to concepts. Concepts such as '(valid) contract' would be defeasible because they cannot be adequately characterised without reference to the conditions that would defeat their applicability. One may introduce a special term, *conceptual defeasibility*, for the defeasibility of concepts, although in my opinion it is not very elucidating to connect defeasibility to particular concepts, rather than to the phenomena denoted by these concepts.

2.3. EPISTEMIC AND JUSTIFICATION DEFEASIBILITY

Most, if not all, of our beliefs are amenable to revision. Some changes in the set of all our beliefs occur spontaneously, for instance because of sensory perception, or because we forget things that we used to know. Other changes are generated by the insight that beliefs should rationally be accepted or rejected given what else we believe. This insight may lead us to accept new beliefs that should rationally be accepted, or to reject beliefs that we held, because they should rationally be rejected. It is possible to call the revisability of our beliefs 'defeasibility',⁷ and I will use the term *epistemic defeasibility* for this kind of defeasibility.

In my opinion epistemic defeasibility as a separate notion is not very interesting, because it is merely another term for a phenomenon that is already known as revisability. Moreover, the revisability of beliefs is a psychological phenomenon, which has as such only indirectly to do with reasoning or logic. For this reason I will further ignore epistemic defeasibility.

There is, however, another kind of defeasibility, closely related to and easily confused with, epistemic defeasibility, which is more interesting. We accept some of our beliefs because it is *justified* to accept them given our other beliefs. For instance, we believe that John is punishable, because we

both believe that John owns pornography, and that owning pornography is punishable. If we stop believing that owning pornography is punishable, the belief that John is punishable loses its justification. The same holds if we acquire the beliefs that Johns owns pornography purely for scientific issues and that owning pornography for scientific issues is not punishable. To say it differently, the belief that John is punishable, which used to be justified given the original belief set, is not justified anymore given the new belief set. I will call this kind of defeat, which results from changes in the beliefs that underlie another belief, *justification defeat*.

Normally if one's beliefs are not justified anymore, one abandons them, which means that epistemic defeat is a natural consequence of justification defeat. But this does not always happen. An exception would for instance be that one does not realise the impact of the changes in one's belief set and consequently does not (yet) make the rationally required changes. Moreover, sometimes new beliefs are acquired or old beliefs are lost without there being reasons (in the sense of justificatory reasons) for it. Justification defeat and epistemic defeat apparently not always go hand in hand, and – next to their conceptual difference – this is a reason to distinguish them well.

2.4. JUSTIFICATION DEFEAT AND DEFEASIBLE REASONING

There is a close connection between justification defeat and the defeasibility of reasoning. Many arguments are used to justify their conclusions. This means that the person, who adduces such an argument, if sincere, intends to show by means of it that the argument's conclusion is justified. If, on the arrival of new information, the conclusion turns out not to be justified anymore, the original argument by means of which the conclusion was justified, loses its force. *In this sense*, it may be said that the argument turned out to be defeasible too. Notice that on this interpretation, the defeasibility of the argument is the result of the defeasibility of the justification that was given by means of the argument, and not the other way round. Defeasibility is not primarily a characteristic of arguments, but of justification.

2.5. DEFEASIBILITY AND 'INCOMPLETE' KNOWLEDGE

From the kinds of defeat that I will distinguish, justification defeat has the strongest relation to the non-monotonicity of some systems of logic. This is particularly clear when justification defeat occurs because of additions to one's belief set.⁸ If the belief that John is punishable is not justified anymore because of the additional beliefs that that Johns owns pornography purely for scientific issues, and that owning pornography for scientific issues is not

punishable, this is quite similar to the phenomenon that a valid argument from a set of premises becomes invalid if more premises are added. The justificatory relation between a belief set and a particular belief corresponds to the derivability relation between a set of premises and a possible conclusion from these premises.

In this connection it is important to distinguish between two senses in which a belief may be said to be justified. The sense that is at stake here is that of *relative justification*. A belief is justified relative to a set of beliefs, if and only if it is rational to accept this belief if one accepts (all beliefs in) the belief set.⁹ Relative justification must be distinguished from *absolute justification*. A belief is absolutely justified if either it is absolutely justified in itself, or if it is justified relative to a set of beliefs that are themselves absolutely justified. Absolute justification is a status of beliefs that is like truth in the sense that it can be passed from the premises to the conclusion of a good argument.¹⁰ Relative justification, on the contrary, is more like validity. A relatively justified belief ‘follows’ from the belief set, but whether the beliefs in the belief set are correct remains open.

Justification defeat concerns the question whether a belief is justified relative to one’s belief set, *where the contents of the belief set are not specified*. It occurs because of changes in the belief set, with the effect that a belief that was justified relative to the old belief set is not justified relative to the new belief set. It cannot occur with respect to a specified set of beliefs, because a belief is either justified relative to a particular set, or not, but it is not possible that is first justified relative to some belief set and later not justified anymore relative to this same set.¹¹

Defeasible reasoning is sometimes described as reasoning with incomplete knowledge. However, a direct consequence of the analysis presented above is that justification defeat is not a consequence of incomplete knowledge. With regard to the issue whether a belief is justified relative to some belief set, the information cannot be incomplete. All the relevant information is by definition included in the belief set. This information is sufficient to decide whether a belief is justified *relative to this belief set*, although it may be insufficient to decide whether the belief is true. Because justification defeasibility deals with relative justification, and not with truth or absolute justification, incomplete information does not play a role in connection with justification defeat.

2.6. LOGICAL DEFEASIBILITY

Sometimes the notion of defeasibility is also used in connection with conditionals (logical operators) and with rules. A conditional $p \rightarrow q$ can be said to be defeasible if one or more of the following are the case:

1. if $p \rightarrow q$ is true, then it is not necessarily the case that $p \& r \rightarrow q$ is true (no ‘strengthening of the antecedent’¹²);
2. if both $p \rightarrow q$ and p are true, then it is not necessarily the case that q is true;
3. if both $p \rightarrow q$ and p are true, then it is not necessarily the case that q can be derived validly (where validity is taken in a broader sense than deductive validity, because otherwise this third possibility would coincide with the second).

A rule ‘if conditions then conclusion’ can be said to be defeasible if it is not necessarily the case that if the conditions are satisfied, the conclusion holds.¹³

Both the defeasibility of conditionals and of rules are defined in connection with logical systems in which defeasible conditionals and rules operate. The defeasibility that is at stake is not primarily a phenomenon outside logic that can be modelled by means of some logical theory, but rather an aspect of some logical theories. For this reason I will disregard these kinds of ‘logical defeasibility’ as phenomena that are less interesting in connection with the defeasibility of the law or legal reasoning.

More generally, it seems to me that in the discussions about defeasibility in connection with the law, the intended kind of defeasibility – if there exists a clear intention at all – is mostly justification defeasibility.¹⁴ For this reason I will confine my discussion of law and defeasibility in the rest of this paper to justification defeasibility.

3. Is legal reasoning defeasible?

The next question to deal with is whether justification defeat plays a role in legal reasoning. This question should be answered affirmatively if there is *some* role for justification defeat in legal reasoning. It is not necessary that all legal reasoning is justification defeasible. In the following sections, I will discuss three reasons why legal reasoning might be defeasible.

3.1. JUSTIFICATION DEFEAT AND THE BURDEN OF PROOF

At least some legal conclusions can turn out to be unjustified in the light of new information that was not taken into account in drawing them. Let me give two examples. The first example concerns the division of the burden of proof. Suppose that Violet speeded and is prosecuted. If the prosecutor succeeds to prove the speeding and nothing else happens, the judge is justified in her conclusion that Violet is punishable. However, if Violet defends herself by pointing out that her child was seriously ill and that she speeded under

force majeure to bring her child in time to the hospital, acceptance of this defence by the judge would take the justification of this conclusion away. In other words, the information that Violet acted under force majeure functions as a justification defeater for the conclusion that Violet is punishable for speeding.

It is also possible to give a different interpretation to this example based on the division of the burden of proof. Bayón has pointed out that the division of the burden of proof can also be explained by means of procedural rules that allow a judge to convict a defendant if a transgression was proved, while force majeure was not proved.¹⁵ Under this interpretation, that focuses on procedural aspects rather than on the question whether the conclusion that the suspect is punishable is justified, no defeat seems to be at stake.

Arguably, however, justification defeat plays a role under this interpretation of the burden of proof too. The procedural rules that indicate under which circumstances a judge can convict a suspect reflect the circumstances under which a judge is justified in believing that the suspect is punishable.¹⁶ By default a judge is not justified in assuming that somebody is punishable (presumption of innocence). Therefore it must be proved that the suspect committed a fact that is punishable. When this has been proved, the judge is *pro tanto* justified to believe that the suspect is punishable. However, if it has also been proved that there was a ground of justification, the belief that the suspect is punishable is not justified anymore. Therefore the procedural rules only allow the judge to convict a suspect if it was proved that he committed a crime, and if it was not proved that there was a ground of justification. Both references in the procedural rules to proof, rather than to fact, are signs that some form of defeasible reasoning is at stake.¹⁷

3.2. JUSTIFICATION DEFEAT AND THE CONTEXT OF DISCOVERY

Even if the distribution of the burden of proof is disregarded, there is evidence that justification defeat plays a role within legal reasoning. It is not uncanny to distinguish two ‘phases’ in legal reasoning that leads to a solution for a particular concrete case.¹⁸ In the second phase, sometimes called the context of justification¹⁹, first order justification²⁰, or internal justification²¹, the legal consequence of a particular case is presented as the outcome of a deductively valid argument. The major premise of this argument is a (universally quantified) material conditional with a generic case description as its antecedent and the corresponding legal consequence as its consequent. The minor premise is the description of (the relevant facts of) the case at hand. The first phase, labelled as the context of discovery²², second order justification, or external justification, consists of a series of (one or

more) arguments in which the truth (or validity) of the major premise of the first argument is established.

The idea behind this distinction between two phases is that legal judgments must be universalisable. If some case has a particular legal consequence, all cases that are similar in all relevant aspects should have a similar legal consequence. The major premise in the context of justification specifies both which aspects of the case are relevant for the legal consequence that is attached to it, and what this legal consequence is. In the rest of this paper, I will refer to it as a *case-legal consequence pair* (CLCP). The CLCP is a specification of what the law is for cases like the one at stake. The first phase of the argument is to determine the contents of this CLCP.

If legal reasoning is conceptually divided into two phases along the lines sketched above, the context of justification in which the CLCP is applied to the case at hand, can be represented as a form of deductive reasoning and justification defeat plays no role in it. If the conclusion of this second phase would be incorrect, the same counts for the CLCP. Justification defeat, if it plays a role in the law, should be looked for in the first phase, that of discovery.²³

It seems obvious to me that justification defeat plays a role in the context of discovery. Let me first return to the example of Violet who was found guilty of speeding, but who was nevertheless not punishable because a ground of justification applied. The conclusion that Violet is not punishable for speeding can be legitimated by the following deductive argument:

CLCP: Precisely those who have speeded and did not have a ground of justification for speeding are punishable for speeding.

Case facts: Violet speeded, but had a ground of justification for doing so.
Therefore: Violet is not punishable for speeding.

The context of discovery in this connection consists of one or more arguments that end up in the CLCP of the deductive argument above. The first step in this context might be that there exists a rule that makes speeding punishable and that therefore those who have speeded are punishable for speeding. Pro tanto, the belief that those who have speeded are punishable for speeding is justified. However, if grounds of justification and their effects are taken into account, this belief loses its justification. Instead one is pro tanto, namely in the light of both the rule that makes speeding punishable and the rule(s) about grounds of justification, justified in the belief that precisely those who have speeded and did not have a ground of justification for speeding are punishable for speeding. Apparently justification defeat plays a role when two or more rules are combined into a CLCP.

Let me now mention the second example of justification defeat, which not only illustrates how justification defeat plays a role in the context of discovery when several legal rules are combined into a single CLCP, but also how facts

about the non-legal world play a role in this connection. Suppose that in a particular country, say Taxopia, taxes on vehicles are raised. Vehicles are categorised according to their weights, with a certain amount of taxes specified for each category. For this purpose, three pieces of legislation were drafted. The first piece introduced the taxes on vehicles. It also empowered the government to develop a system of categories by means of which vehicles can be categorised. The second piece of legislation, made by the government, introduced this system. Moreover, the Minister of Finance was empowered to make decrees by means of which certain amounts of tax are attached to the categories in which vehicles are subdivided. The Minister exercised this power in the third piece of legislation. Since in Taxopia, even more than in many other countries, taxes are a means of making policy, it was decided by means of a fourth piece of legislation that the vehicle taxes for cars are increased with 20%. So Taxopia has ended up with four pieces of legislation, three of which regulate the taxes of vehicles in general and the fourth of which deals especially with taxes on cars, and refers for the amount of the additional tax to the general regulation about vehicles, to which it makes an exception by increasing the tax.

The description of the tax law of Taxopia as presented above followed the (main) lines of the legislation, that is, of the legal sources. It is also possible to represent the same law in the form of CLCPs by identifying a number of case types and to specify for every type its fiscal consequences. These case types should ideally be mutually exclusive, and together exhaust all legal possibilities.²⁴ Suppose, for instance that the legislation distinguishes five categories. The first one is essentially occupied by bicycles and other non-motorized vehicles. The second one is occupied by small motorised vehicles such as most motorcycles and mopeds. The remaining three categories are essentially occupied by various sizes of cars, but also contain some heavy weight motorcycles, tractors etc. Since not all vehicles in the last three categories are cars, the vehicles in the three categories must for tax reasons be divided into vehicles in the categories 3–5 that are cars and vehicles in the categories 3–5 that are not cars. So we end up with eight sets of vehicles, each with its own amount of vehicle tax. The sets are taken such that all members of each set have the same fiscal consequences, while it is not possible to join two or more sets without members of the same set having different fiscal consequences.

In this connection it is important to notice that the amount of sets does not only depend on the legislation, but also on other facts in the world. It is, for instance, important to know whether there are any other vehicles than cars in the categories 3–5, or whether there are cars in the categories 1 and 2. Moreover, the number of distinguishable sets may change without changes in the legislation, for instance because heavier motor cycles are built, thereby introducing non-cars in category 5.

Let us call the first way to describe (part of) a legal system description by sources, and the second way description by CLCPs. If we only have a description by sources available, legal reasoning, which is then *reasoning by sources*, involves a process of theory construction in which all the rules that have impact on the case at hand must be considered, interpreted and if necessary combined. This process, which may be identified with the context of discovery, involves defeasible reasoning, because taking a new rule into consideration may bring about that a CLCP which was justified in the light of the sources that were originally taken into consideration is not justified anymore. The same counts if new beliefs about the world (about which vehicles there are, and which of them are cars) are taken into consideration. In our example, taking into consideration the special rule about cars, makes that the general CLCP about vehicle taxes loses its justification.

If we have a set of CLCPs available, we can justify legal decisions in concrete cases by pointing to their generic cases and the legal consequences attached to them. Ideally (when the CLCPs are exhaustive and mutually exclusive) it is not possible that a concrete case falls under more than one relevant²⁵ CLCP, so it is not necessary to look any further as soon as the relevant CLCP has been found. Reasoning *with* CLCPs, which might be identified with the context of justification, is non-defeasible. Reasoning *about* the CLCPs however, the context of discovery, is justification defeasible.

It is noteworthy that it is also possible to justify the legal solution for a particular case directly by means of defeasible reasoning by sources. It is not necessary to formulate first a general CLCP and subsume the case under it, before the legal solution of the case can be justified. It may be necessary that for every case with its legal solution such a CLCP should exist, but from this necessity it does not follow that this CLCP must play a role in the justification of the solution for this case. The arguments in the context of discovery that lead to the justification of a CLCP can be reformulated (by instantiating them) to the effect that they lead immediately to the solution for the case at hand. If this approach is taken, the argument that leads to the solution for the concrete case is completely subject to justification defeat.

It seems clear that defeasible reasoning plays a role in the law, but this does not imply that all legal reasoning is defeasible. We have seen that it is possible to split legal justification into two phases, the first of which, the phase of discovery, contains defeasible reasoning, while the second phase, that of justification consists of deductive, and therefore non-defeasible reasoning. I have briefly argued, however, that this division can be circumvented by letting the phase of discovery deal directly with the legal consequences of the concrete case at hand. If this approach is taken, the only kind of reasoning that is necessary is defeasible. Therefore my conclusion would be that in the law we can both encounter defeasible and non-defeasible

reasoning, but that it is not well possible to replace the defeasible part by non-defeasible reasoning, while it is, at least in a number of cases, possible to skip the non-defeasible part.

3.3. THE DEFEASIBILITY OF LEGAL RULES

A third reason why legal reasoning might be defeasible is based on the assumption that legal rules are defeasible in the sense that it is possible to find implied exceptions that can often not be specified in advance. This assumption is broadly shared.²⁶ Bayón nevertheless has a problem with it, because in his opinion it is not a necessary characteristic of legal rules that they are thus defeasible. A legal system might make it impossible to allow exceptions to rules, even if they are over-inclusive, or if some relevant principle was not taken into consideration in drafting the rule. I will discuss Bayón's problem with the view that legal rules are defeasible by means of an example.

Probably like other legal systems, the Dutch law has a regulation for the transfer of movable property by a non-owner to a third party who acted in good faith. The legal problem that this regulation must deal with is the outflow of a conflict of at least two interests. One interest is that of the owner of the property that was transferred, who wants to remain owner. The other interest is that of the party who acted in good faith and expected to become owner of the transferred property. The Dutch regulation (Section 3: pp.84–86 of the Civil Code) balances these two interests, with the effect that under some circumstances the third party becomes owner of the property, while under other circumstances, the original owner remains owner, anyway for a period of 3 years. The interests of smooth commerce also played a role in the way the topic was regulated.

Let us assume that the regulation of the Civil Code strikes a right balance of the conflicting interests for normal cases. Suppose, however, that the regulation does not work well for some exceptional cases and that if the balance would have to be struck anew for those cases, another outcome would have resulted. One argument for the defeasibility of legal reasoning would be that the regulation provides a good outcome under normal circumstances, but that the regulation should not be applied under particular exceptional circumstances. For instance, in particular cases the regulation may protect the third party in good faith, and in these cases the argument with the conclusion that this third party has become the new owner is *prima facie* correct. However, given new information to the effect that exceptional circumstances are present, this conclusion is not desirable anymore.

There are two extreme ways to deal with exceptional cases in which rules give 'wrong' solutions for cases. One extreme way is to ignore the rule in such

cases and fall back on the principles underlying the rule and all other principles that might turn out to be relevant, and compute the best outcome on the basis of all relevant principles. On this approach, the presence of the rule does not make any difference to legal decision making, because the rule is only applied if its outcome agrees with the outcome of applying the underlying principles. The rule is then superfluous next to the principles; it is merely a ‘rule of thumb’.²⁷ The other extreme way is to apply the rule, without any regard to whether its outcome is correct in the light of the relevant principles. On this ‘entrenched’ model,²⁸ the applicability of a rule makes principles that deal with the case at hand superfluous.

By describing the two mentioned ways as extremes, I suggested that a middle road is possible. This middle road is to take applicable rules as the starting point in legal decision making, but to leave the possibility open to deviate from the rule’s outcome if this is desirable in the light of the relevant principles. Whether this possibility to deviate should be used, does not only depend on the outcome of balancing the relevant principles, but also on the facts that deviating from the rule diminishes legal certainty and the legislator’s authority, both of which are reasons not to deviate from the rule. The amount of weight that is attached to the applicability of a rule as an *independent* reason for the rule’s conclusion, determines whether this middle road runs closer to the first, or to the second extreme.²⁹

Bayón is right when he supposes that it is a matter of the law whether exceptions to rules are possible. It is imaginable that there are legal systems which do not allow exceptions to any rule. However, I do not know any such a system and I wonder whether Bayón knows any. He does not give an example, and I think that there is no such an example. There are very good reasons why a legal system should sometimes allow exceptions to rules, and the account given by Schauer of the over-inclusiveness of rules provides a good enough insight in why that is so.³⁰ Probably the possibility mentioned by Bayón of a legal system that does not allow exceptions to rules is a mere theoretical possibility.

Is such a mere theoretical possibility not enough to conclude that it is not a logical matter that rules are amenable to exceptions? Logic deals with what is logically necessary and the theoretical possibility of a legal system that does not allow exceptions to rules suffices to show that the possibility of exceptions is not logically necessary. At least, that is what Bayón might argue.

Before answering this question, I want to point out that if rules are defeasible, this does not mean that every rule must have an actual exception in one or more cases. It does not even mean that most rules have actual exceptions in one or more cases. It merely means that for every rule it is in theory possible that there is, or will be, some case in which an exception to the rule should be made. Only if this theoretical possibility does not exist,

rules are not defeasible. This holds not only for rules in general, but also for any particular rule. A particular rule is not defeasible if it is not even in theory possible that in some case an exception should be made to this rule. Defeasibility does not require the existence of such exceptions in actual cases, and not even that one can imagine a case in which such an exception would exist. Lack of imagination does not show a rule to be non-defeasible. Non-defeasibility can only be shown if it follows from constraints imposed on the logical behaviour of rules. Unless a legal system adopts the extreme entrenched model of rule application for some, or all of its rules, the constraints on the logical behaviour of rules that might cause them to be indefeasible are lacking. I do not know of any legal system that has adopted the extreme entrenched model for any of its rules.

If there is no actual legal system in which rules are non-defeasible and if it is implausible that such a system could actually exist, is it then logically necessary that rules are defeasible? Or must we make the stronger demand that it is not even imaginable that such a system exists? Asking the question shows the futility of attempts to answer it. When a necessity becomes a logical necessity is a matter of convention, or of pragmatism. Is it useful to treat some knowledge as unrevisable or should we treat as mere ‘domain knowledge’?³¹ In the case of legal rules, I think that it is useful to assume that the defeasibility of rules is a necessary characteristic that deserves study separate from the study of positive law. This means that in my opinion, Bayón’s objection does not cut ice, and that the defeasibility of legal rules provides a third reason why legal reasoning is defeasible.

4. Does legal reasoning require non-monotonic logic?

The next question to deal with is whether we need a non-monotonic logic to represent the phenomenon that a belief that is justified in the light of the set of beliefs B1 is not justified in the light of belief set B2, which has resulted from B1 by making one or more changes to it. Before continuing on this path, I want to discard some issues. First I want to ignore changes involving replacement of one belief by another belief. These changes can be decomposed into abandoning the old belief and adopting the new belief. As a consequence the only changes that remain to be discussed are the abandoning of old beliefs and adoptions of new beliefs.

Second I want to deal briefly with the abandonment of old beliefs. We do not need a non-monotonic logic to deal with this phenomenon. Deductive logic is very well capable to represent that a belief that was justified on the basis of some set of premises is not justified if one or more of these premises are abandoned. A conclusion that follows deductively from a set of premises does not necessarily follow deductively from every subset of these premises. If

'being justified' is (wrongly) taken in the sense of 'deductively following from', a conclusion that is justified by a set of premises need not be justified anymore if one or more of these premises are dropped.

Therefore the only case that needs special consideration is when a belief that was justified in the light of belief set B_1 is not justified anymore in the light of belief set B_2 which is a proper superset of B_1 . This case is quite similar to the characterisation of the non-monotonicity of logical system L by saying that S is according to L derivable from B_1 , while it is not derivable from B_2 . Justification defeasibility deals with the relation 'is justified by', between a belief set and a belief, where non-monotonicity deals with the relation 'is derivable from', between a set of sentences and a sentence. At first sight, therefore, there is much to say for logically representing justification defeat by means of a non-monotonic logic. Nevertheless some authors have objected against this approach, and it is worthwhile to look into their reasons for protesting.

4.1. ALCHOURRÓN'S CRITICISM OF NON-MONOTONIC LOGIC

Non-monotonic logics were developed to deal with the defeasibility of arguments, both inside and outside the law. However, it may be argued that such logics are not useful, or even based on confusion. The idea that the use of non-monotonic logics is based on a confusion, namely the confusion between logic and belief revision, was advanced by Alchourrón. I will present his argument by means of a legal example.³²

Alchourrón approaches the idea of defeasibility from the phenomenon of defeasible conditionals. His basic idea is that a defeasible conditional is a conditional that holds under 'normal' circumstances. The defeasibility of the conditional that if somebody is a thief, he is punishable would boil down to it that thieves are punishable under normal circumstances. Suppose that the conditional that thieves are punishable does not hold for thieves under 12 years old. One way to deal with this is to use a non-monotonic logic, under which the argument from 'John is a thief' to 'John is punishable' is not valid if John is under twelve. Another way to deal with the same phenomenon is to refine the false belief that thieves are punishable into the belief that thieves of 12 years and older are punishable. This belief revision boils logically down to the same thing as using a defeasible conditional in the sense that the circumstances under which it can be derived that a person is punishable is in both cases that this person is a thief and not under 12 years old. And the question then arises what the gain of the defeasible conditional is. In this connection Alchourrón writes:³³

'... when someone has to accomplish the task of representing incomplete knowledge ... he will be confronted with the following dilemma. Either

use conceptually strong sentences (general conditionals) with many interesting consequences and assume all the dangers involved, and hence be ready to revise the premises as often as needed; or use the conceptually weaker defeasible conditionals which will be almost completely secure, at the price of losing most (if not all) of the interesting conclusions. We have to choose between the quiet darkness of Paradise or the risky lights of daily life.'

It seems to me that two points should be noted in connection with Alchourrón's criticism. The first point is that it is indeed possible to deal with defeasibility logically by means of deductive logic in combination with belief revision. Non-monotonic logics are not necessary to handle defeasibility.

This brings me to the second point, namely that it is matter of pragmatics whether one should prefer a non-monotonic logic to a deductive logic in combination with belief revision. Possibly there is no preference that holds universally. Given the quoted passage, Alchourrón had (at least amongst others) scientific theory construction in mind, when he expressed his preference for belief revision above non-monotonic logic. If one takes the purpose of scientific theory construction as to give precise descriptions of law-like connections, Alchourrón's preference for belief revision is understandable, because the use of a non-monotonic logic only masks the incorrectness of the theory that can only be applied defeasibly. For instance, Newtonian mechanics is – in a sense – wrong, because it only gives the right outcomes when small velocities are involved. However, even when dealing with scientific theory construction, one might prefer relatively simple laws with a restricted scope of application³⁴ (and consequently the use of a non-monotonic logic to model law application) above universally applicable laws that buy their broad scope of application at the cost of a highly complex content (e.g. the more complex content of relativistic mechanics). The question that needs to be addressed in this connection is whether the nature of legal justification would lead to a preference for belief revision, or for the use of a non-monotonic logic.

4.2. SOETEMAN ON LEGAL JUSTIFICATION

Soeteman precisely gives the necessary type of argument for belief revision and against the use of a non-monotonic logic.³⁵ In his opinion real justification must always be based on a deductively valid argument. He writes:

‘... as long as an argument cannot be analysed deductively, the conclusion is not warranted. As long as an argument is not

reconstructed as deductively valid an alternative conclusion is still possible and the conclusion therefore is not completely justified.'

Moreover, Soeteman emphasizes that such a 'complete justification' is of the greatest importance in law, because of the weighty consequences of legal judgements. His point is that legal conclusions, because of their importance, must be completely justified, and that a conclusion is only completely justified if an alternative conclusion is impossible.

There are at least two things that may be said about this argument. First, it may be highly desirable that legal conclusions are beyond any doubt, but conclusions beyond any doubt are seldom to be reached within human affairs, and therefore the demand for such indubitable conclusions might be a demand for the impossible. Obviously, we should strive for the best, but I will argue that the use of a non-monotonic logic does not interfere with this endeavour.

The second remark starts with reminding of the difference between absolute and relative justification. A conclusion is justified relative to a set of premises, if acceptance of this conclusion is rational for those who accept the premises. A conclusion is justified absolutely if it is either absolutely justified in itself, or if it is justified relative to premises that are themselves absolutely justified. It seems to me that Soeteman's strive for impeccable legal conclusions asks for conclusions that are absolutely justified, and not merely relatively. A person who is sent to prison will not feel that he is treated justly if the judge's opinion follows deductively from a set of premise that includes the false premise that he has committed the crime for which he was sent to prison. What is needed for impeccable legal justification in Soeteman's sense is that the conclusion follows deductively from true premises.

Non-monotonic logic can, according to Soeteman, only justify that a conclusion under the presupposition of a normality hypothesis. Without this hypothesis, the argument is unconvincing. If the normality hypothesis is added to the premises, however, the argument becomes deductively valid, and the conclusion of the argument has become unavoidable for those who accept the premises. For instance, the argument that John is a thief, that, barring exceptions, thieves should be punished and that therefore John should therefore be punished, is defeasible, but can be analysed deductively by adding the premise that in John's case there is no exception to the rule that thieves should be punished.

There are two arguments that can be raised against this approach. The first argument is that if one wants to use logic to model justification, logic has the task to answer the question whether acceptance of some belief is justified in the light of one's other beliefs. These other beliefs are in this connection fixed. It is not a viable strategy to make additions to them, in order to make a conclusion that seems to be justified in the light of what is accepted, follow

deductively. To be more concrete, it is not viable to add the premise that if John is a thief, he is punishable to the premise that John is a thief, in order to derive deductively that John is punishable. The truth of this premise can only be established if one knows whether John is punishable, and the very function of the argument is to establish that this is the case. In the setting in which the argument plays a role, it is only given that John is a thief, not that he is punishable. The question that logic must answer is whether it is rational to accept that John is punishable, given that he is a thief and nothing else.³⁶

My general point here is that logic typically plays a role in contexts in which the available premises do not allow the deduction of the conclusion. The demand that the premises are completed to make them entail the conclusion makes logic useless in these contexts, because the truth of the additional premises cannot be established. It will not do to state that the argument presupposes these premises nevertheless. What the argument presupposes is that the premises provide sufficient support for the conclusion to make it rational to accept the conclusion on the basis of the premises. This presupposition concerns the rationality of belief change, not the truth of one or more premises.³⁷

The second argument against Soeteman's approach, according to which a defeasible argument is replaced by a deductively valid argument with an additional (normality) hypothesis, is that it moves the cause of uncertainty from the validity of the defeasible argument to the truth of the additional premise. The relative justification of the judge's conclusion has been achieved, but the absolute justification has not become any stronger, because the possible reasons why John should after all not be punished remain the same in both cases. If there is a ground of justification, this is handled under deductive logic by the falsity of the premise that there is no ground of justification. Under a non-monotonic logic it is handled by making an exception to the rule that thieves are liable to be punished. It seems, therefore, that the difference between deductive logic with an uncertain premise, and non-monotonic logic with certain premises does not make a difference. The use of non-monotonic logic does not increase uncertainty in comparison to deductive logic in combination with dubitable premises.

One might argue, however, that there is a difference, because the judge that uses deductive logic must establish that there is no exception to the rule before he can punish John, while, if he uses a non-monotonic logic, he would be free to disregard the presence of a possible exception as long as this presence has not been argued. Such an argument would assign logic a too important role, however. Logic as such cannot determine the investigatory tasks of a judge. Under a non-monotonic logic just as well as under a monotonic logic, the judge may have the task to gather all information that might be relevant for his judgement. If this information includes that there is

an exception to the rule that thieves should be punished, the verdict under the use of a non-monotonic logic will be the same as under the monotonic logic, namely that John should not be punished.

More generally, the logical analysis that one chooses for the analysis of legal justification needs not have any influence on the outcome of legal judgements. Everything that can legally be accomplished with the use of deductive logic together with belief revision, can also be accomplished with the use of a non-monotonic logic and vice versa. Therefore, the undeniable importance of legal justification need not have any impact on the choice of the logic by means of which legal decision making is analysed. Which logic one uses is a matter of pragmatics, and – as I have argued in the first part of this section – non-monotonic logic is *prima facie* the obvious candidate to deal with justification defeat.

5. The nature of logic

Although non-monotonic logic is *prima facie* the obvious candidate for the logical analysis of justification defeat, there is still a lot of resistance against this kind of logic. One possible explanation of this phenomenon is that non-monotonic is not considered as a ‘real’ logic at all. The criticism of Alchourrón discussed in section 4.1 seems to illustrate this. To deal with such criticisms, I will pay some attention to the nature of logic.

The function of logic lies in the evaluation of arguments. In an argument, one or more reasons are adduced to support the acceptance of a conclusion. Two questions arise in this connection: are the statements that mention the reasons true, and – assuming that these statements are true – is it rational to accept the conclusion? The function of logic is traditionally taken to provide standards with the help of which the second of these questions can be answered.

Formulated thus, the function of logic is quite broad. Logic would, for instance have the task to answer the question whether it is rational to accept the conclusion that John is punishable, on the assumption that John is a thief. More precisely, the question of rationality can be formulated as whether it is more rational to accept the conclusion as true, to reject it as false, or to postpone judgment, under the assumption that the premise is accepted as true.

In comparison to this broad function, modern logic has been restricted in at least two ways. Firstly, the scope of logic has been minimized by removing everything that might be seen as domain knowledge out of the realm of logic by treating it as ‘content’, while logic is taken to deal with the ‘form’ of arguments only. Secondly, the standard for acceptance of an argument’s conclusion has become that the conclusion must be true, given the truth of

the premises, thereby declaring arguments that provide their conclusion with less support as invalid. To state it more briefly: logic has been restricted to deductive logic.

There is, however, no necessary connection between rational acceptance and deduction. In fact, the very existence of justification defeat presupposes that there may be circumstances that a belief is justified relative to a belief set, even though it does not follow deductively from this set. Restricting logic to deductive logic has the disadvantage that it excludes induction, abduction, and many forms of practical reasoning³⁸ from logical evaluation, or condemns them to invalidity, namely if measured by deductive standards.

This disadvantage is avoided if logic is taken as *the study of standards for rational acceptance*. On this view, logic deals with arguments in the sense of sentences adduced to support the acceptance of some other sentence. Deductive logic as the study of necessary relations between the truth values of sentences has *as such* nothing to do with what we should rationally believe. It only provides data (q must be true if both $p \rightarrow q$ and p are true) that may be considered relevant for a theory of rational belief (revision). The following quotation from a paper by Israel illustrates the point:³⁹

‘The rule of modus ponens is, first and foremost a rule that permits certain kinds of syntactical transformations on (sets of) formally characterized syntactic entities. (Actually, first and foremost, it is not really a rule at all; it is “really” just a two-place relation between on the one hand an ordered pair of well-formed formulas, and on the other hand, a well-formed formula.) adherence to a set of deductive rules of transformation is not a sufficient condition for rational belief; Real rules of inference are rules (better: policies) guiding belief fixation and revision.’

If one adheres to this view of logic, the use of non-monotonic logic rests on confusion with regard to the nature of logic. This confusion is that one tries to make logic do what it was not meant to do, namely make it provide standards for the evaluation of holding beliefs on the basis of other beliefs. However, if one adopts the broader view of logic as standards for rational acceptance, it is precisely the purpose of logic to provide such ‘policies for belief fixation and revision’. More or less the same point can be made by pointing out that on the deductive view logic deals with truth and with relations between truth values of sentences. On the broader view, logic deals with justification.

On the deductive view, logic is essentially monotonic. If a conclusion must be true given a set of premises, this same conclusion must still be true given even more premises. The monotonicity of deductive logic follows immediately from the deductive nature of the logic. Moreover, the notion of truth

with which deductive logic deals, is, metaphorically speaking, itself monotonic. If a sentence is, given a number of facts, true, it cannot become false in the light of even more facts.⁴⁰

If logic deals with justification, things become completely different. Justification is by definition relative, namely relative to the premises on which the justification is based. A judgment that is justified by a set of premises is *justified relative to these premises*.⁴¹ If the set of premises is changed, the justification relative to the old set of premises does not amount to justification relative to the new set of premises, not even if the new set is an extension of the old set. Just as truth is, metaphorically speaking, monotonic, justification is, metaphorically speaking, non-monotonic. Logic according to the broad view deals with justification, and is therefore essentially non-monotonic.

The only reason I can think of to prefer deductive logic is that one believes, as Israel does, that only deductive logic is ‘real’ logic, and that, for instance, justification has nothing to do with logic as such, but at most with one use logic is put to. It does not make much sense to have a discussion about the proper meaning of the word “logic”, so I will not argue that Israel’s view is wrong. Instead I would like to say that a tool to evaluate whether a conclusion should rationally be accepted in the light of what else one believes, whether it is called ‘logic’ or something else, should not have the property of monotonicity.

6. Conclusion

In this paper I have tried to answer three questions, namely what defeasibility is, whether it occurs within the law, and whether we need a non-monotonic logic to deal with defeasible legal reasoning. My conclusions were that it is possible to distinguish several kinds of defeasibility, but that the most interesting kind for our purposes is justification defeat. Justification defeat is the phenomenon that a conclusion that is justified in the light of one belief set is not justified in the light of another belief set (that is a superset of the former).

Justification defeat plays a role in the law, both in the division of the burden of proof and in the context of discovery in which CLCPs are formulated that can be used in deductive justification of legal conclusions.

Non-monotonic logics almost mimics justification defeat (if ‘is justified by’ is replaced by ‘is derivable from’), and they are therefore very useful for the logical analysis of justification defeat. It is, however, always possible to replace these logics by a combination of deductive logic and belief revision. Under some circumstances this might be useful, but despite Soeteman’s argument to the contrary, legal justification seems not to fall under these circumstances.

Notes

¹ For example Raz (1975), Schauer (1991), MacCormick (1995), Prakken and Sartor (1997, 2004), Verheij (1996), Hage (1997) and Prakken (1997).

² One exception is Prakken and Sartor (2004).

³ Bayón (2001).

⁴ Soeteman (2003). See also the updated version of that paper and Bulygin's review of the present paper in this issue.

⁵ Non-monotonicity as a characteristic of logical theories and defeasibility are not always well distinguished. For instance, Hage (1997, p. 4) calls the phenomenon that additional information can make a conclusion underivable which would be derivable in the absence of this information the defeasibility of arguments. Prakken and Sartor (2004) adduce the non-monotonicity of common sense reasoning to illustrate what they call inference-based defeasibility. The very notion of inference-based defeasibility already presupposes that defeasibility has something to do with inferences, that is with arguments, instead of what these arguments attempt to capture, namely justification.

⁶ The importance of retro-active force that distinguishes defeat from merely a change in the facts was not emphasized by Hart in his *Ascription*.

⁷ See, for instance, Pollock (1995, p. 40). Bayón (2001) argues that this kind of defeasibility is the only kind that is relevant for the law.

⁸ That justification defeat also occurs when beliefs are taken out of one's belief set was pointed out to me by Carolus Grütters.

⁹ In the present paper I treat justification as a relation between beliefs. This is a bit narrow, and in Hage (2004), I treated justification as a relation between 'acceptances', where acceptances include beliefs amongst other 'things' such as rules, principles and values.

¹⁰ The idea of absolute justification often plays a role in discussions of legal justification (see, for example, Soeteman 1989, 244f.), but I wonder whether it makes sense. It can only make sense if there are some beliefs that are absolutely justified in themselves, because otherwise the recursive definition of absolute justification could not bottom out. However, it is not at all clear to me what it might mean that a belief is absolutely justified in itself, if it is not that the belief is true. And if it means that the belief is true, the notion of absolute justification collapses (in the case of beliefs) to that of truth, and is superfluous. For the sake of the present discussion, however, I will ignore my doubts about absolute justification.

¹¹ This is liable to exception for the case that one modifies the logic by means of which justified beliefs are derived from what else one believes. The exception can be avoided if the notion of a belief set is replaced by the broader notion of an acceptance set. An acceptance set includes everything that one accepts, including beliefs, but also including rules, principles, and – in this connection particularly relevant – standards for reasonable inference. More about acceptance sets in Hage (2004).

¹² Cf. Alchourrón (1993).

¹³ Prakken and Sartor (1996).

¹⁴ Prakken and Sartor (2004) distinguish three aspects of defeasibility in the law, that is inference-based defeasibility, process-based defeasibility, and theory-based defeasibility. In Section 3.1 I will say more about process-defeasibility. If my view that justification defeasibility is the relevant notion in the law is correct, the distinction between inference-based defeasibility and theory-based defeasibility collapses, because in both cases the issue at stake is whether it is justified to hold one (inference-based defeasibility) or more (theory-based defeasibility) beliefs in the light of what else one believes.

¹⁵ Bayón (2001).

¹⁶ It seems to me that where Prakken and Sartor (2004) distinguish process-based defeasibility as one of three aspects of defeasibility in the law, they have this characteristic of legal procedures in mind.

¹⁷ In general defeasibility plays a role when conclusions are not based on which facts obtain, but on which facts have been proved. Facts about the past do not change, but beliefs about the past, including what has been proved about the past, tend to evolve in the course of time. As a consequence, beliefs that are based on what was proved are liable to lose their justification if relevant facts that did not count as proved before, come to count as been proved.

¹⁸ The quotes around ‘phases’ are to recognise that the two phases are not always separated in time, but are rather two logically distinguishable aspects of legal reasoning.

¹⁹ Bayón (2001) and Soeteman (2003), implicitly.

²⁰ MacCormick (1995, 101f).

²¹ Alexy (1978, p. 273).

²² The context of discovery can be taken in at least two ways. One way is to see it merely as a psychological process, the contents of which are not interesting, which leads to a hypothesis that can possibly be justified in the legitimization phase. The other way is to see it as a phase of non-deductive reasoning. Only on this interpretation of the context of discovery can it be equated with external, or secondary justification, and can it be seen as a kind of justification at all. Presently, I take the context of discovery in this second sense.

²³ This view is shared by Bayón (2001) and Soeteman (2003).

²⁴ This approach is inspired by the treatment of generic cases in Alchourrón and Bulygin (1971), Chapter II, which may be consulted for a more precise presentation.

²⁵ Relevant in the sense that the legal consequence of the CLCP in question deals with the issue at stake.

²⁶ Bayón (2001) gives a number of references in footnote 21. These include Alexy (1996, pp. 88–89), Sartor (1995, 120f.) and Prakken (1997, pp. 47–48). He might also have included Hage (1997, 106f).

²⁷ Schauer (1991, p. 77), but see also 104f.

²⁸ Schauer (1991, p. 52). See also Raz (1975, p. 73), who writes that mandatory norms are exclusionary reasons.

²⁹ This way to deal with rules is at least similar to what Schauer calls *rule-sensitive particularism*. See Schauer (1991, p. 97) and the literature mentioned there.

³⁰ Schauer (1991, 31f).

³¹ I argued for this Quinean perspective on (legal) logic in Hage (2001).

³² The following is based on Alchourrón (1993, 69f).

³³ Alchourrón (1993, p. 83).

³⁴ Cf. in this connection what Toulmin writes about Snell’s law in Toulmin (1953, p. 57f).

³⁵ Soeteman (2003). See also his contribution to this volume.

³⁶ Arguably it is not rational to accept the conclusion merely on the basis of this single premise. It is not my aim here to defend a logic that includes domain knowledge, although I believe that domain knowledge and logic cannot well be kept apart. Cf. Hage (2001).

³⁷ The premises needed to make the argument deductively valid will often resemble the rules of inference that license to draw the conclusion from the premises. It is, however, an important difference whether one accepts a premise as true, or a rule of inference as valid. This difference becomes very clear if the rule of inference licenses arguments that are not deductively valid. Cf. Toulmin (1958, 94f).

³⁸ I take practical reasoning here both in the sense of real life reasoning (as opposed to, for instance, philosophical and mathematical reasoning) and in the sense of normative reasoning.

³⁹ From Israel (1980). I replaced the abbreviation ‘wff’ with ‘well-formed formula’.

⁴⁰ This may be different in contexts where truth is identical to being justified, and the law might be such a context. In Hage (2004) I adopt the theory that the law is what the best (justified) theory about the law says it is. If this view is correct, the ‘monotonicity of truth’ does not hold.

⁴¹ This should not be confused with the false view that the conclusion of a justificatory argument runs that this conclusion is justified relative to the premises. That the justification of a conclusion is always relative does not mean that justified conclusions are themselves relativised. The relativity is presupposed, rather than stated.

A similar point might be made with regard to value judgements (and all judgments based on the application of some standard). Every value judgment is relative to a standard, but the judgment itself is in general not relativised to this standard.

References

- Alchourrón, C. E. (1993). Philosophical Foundations of Deontic Logic and the Logic of Defeasible Conditionals. In Meyer, J. and Wieringa, R. (eds), *Deontic Logic in Computer Science*, 43–84. Wiley: Chichester.
- Alchourrón, C. E. and Bulygin, E. (1971). *Normative Systems*. Springer: Wien.
- Alexy, R. (1978). *Theorie der juristischen Argumentation*. Suhrkamp: Frankfurt am Main.
- Alexy, R. (1996). *Theorie der Grundrechten*, 3e Auflage. Suhrkamp: Frankfurt am Main.
- Bayón, J. C. (2001). Why is Legal Reasoning Defeasible? In Soeteman, A. (ed.), *Pluralism in Law*, 327–346. Kluwer Academic Publishers: Dordrecht.
- Hage, J. C. (1997). *Reasoning with Rules*. Kluwer Academic Publishers: Dordrecht.
- Hage, J. C. (2001). Legal Logic, Its Existence, Nature and Use. In Soeteman, A. (ed.), *Pluralism in Law*, 347–374. Kluwer Academic Publishers: Dordrecht.
- Hage, J. C. (2004). Law and Coherence. *Ratio Juris* 16: 87–105.
- Hart, H. L. A. (1949). The Ascription of Responsibility and Rights. *Proceedings of the Aristotelian Society* 49: 171–194.
- Israel, D. J. (1980). What's Wrong with Non-monotonic Logic? In *Proceedings of the First Annual Conference on Artificial Intelligence*, 99–101.
- MacCormick, D. N. (1995). Defeasibility in Law and Logic, In Bankowski, Z. et al., *Informatics and the Foundations of Legal Reasoning*, 99–118. Kluwer Academic Publishers: Dordrecht.
- Pollock, J. L. (1995). *Cognitive Carpentry. A Blueprint for how to Build a Person*. MIT Press: New York.
- Prakken, H. (1997). *Logical Tools for Modelling Legal Argument, A Study of Defeasible Reasoning in Law*. Kluwer Academic Publishers: Dordrecht.
- Prakken, H. and Sartor, G. (1996). A Dialectical Model of Assessing Conflicting Arguments in Legal Reasoning. *Artificial Intelligence and Law* 4: 331–368.
- Prakken, H. and Sartor, G. (eds.) (1997). *Logical Models of Legal Argumentation*. Kluwer Academic Publishers: Dordrecht.
- Prakken, H. and Sartor, G. (2004). The Three Faces of Defeasibility in the Law. *Ratio Juris* 17: 118–139.
- Raz, J. (1975). *Practical Reason and Norms*. Hutchinson: London.
- Sartor, G. (1995). Defeasibility in Legal Reasoning. In Bankowski, Z. et al., *Informatics and the Foundations of Legal Reasoning*, 119–158. Kluwer Academic Publishers: Dordrecht.
- Schauer, F. (1991). *Playing by the Rules*. Clarendon Press: Oxford.
- Soeteman, A. (1989). *Logic in Law*. Kluwer Academic Publishers: Dordrecht.
- Soeteman, A. (2003). Do We Need A Legal Logic? In Folgelklou, A. and Spaak, T. (eds), *Festskrift till Ake Frändberg*, 221–234. Iustus Förlag: Uppsala.
- Toulmin, S. E. (1953). *The Philosophy of Science. An Introduction*. Hutchinson: London.
- Toulmin, S. E. (1958). *The Uses of Argument*. Cambridge University Press: Cambridge.
- Verheij, H. B. (1996). *Rules, Reasons, Arguments. Formal Studies of Argumentation and Defeat*. Ph.D thesis. Maastricht University.