

The Logic of Analogy in the Law

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ABSTRACT: This paper deals with two issues in the field of reasoning by analogy in the law. The one issue is whether there exists such a thing as analogous rule application, or whether there is only the 'normal' application of a broadened rule. It is argued that if rules, as the entities made by a legislator, are distinguished from generalised solutions for cases, the idea of analogous application of rules makes sense. It is also shown how the so-called 'reason-based model of rule application', in contrast to the traditional *modus ponens* or *subsumption* model, makes it easy to give a logical account of analogous rule application. The other issue is how to argue logically about whether two cases are sufficiently similar to adopt the outcome of the one case for the other case. Section 3 provides a general logical model to establish this. The model is based on the comparison of the reasons for and against a particular solution in the two cases.

KEY WORDS: analogical rule application, case comparison, nature of rules

1. TWO QUESTIONS WITH REGARD TO ANALOGY IN THE LAW

Reasoning by analogy plays an important role in the law. It also raises several hard questions. One question is how to give an attractive logical account of what goes on in reasoning by analogy, and especially one particular variant of it, that is analogous application of rules. Is there such a thing as analogous rule application, or is it just a matter of normal application of a broadened rule? This question is the topic of section 2.

Another question is when two situations are sufficiently similar to treat them similarly. This question plays an important role in connection with legal case-based reasoning. A past case has been decided in a particular way, and the issue arises whether a new case is sufficiently similar to decide it in the same way. Issues like this do not only play a role in the common law tradition, where *stare decisis* is in a number of situations obligatory, but also in the civil law tradition, where case law plays an important role as supplement of statutory law. Whether two cases are sufficiently similar is not primarily a logical issue and it is difficult to say something in general about it. Nevertheless, it is possible to do some logical theorizing in this connection, and in section 3 I will describe the outlines of a logic for case-based reasoning.¹ This

logic helps to answer the question whether two cases are sufficiently similar to justify similar treatment.

2. THE LOGIC OF ANALOGOUS RULE APPLICATION

In this section, I will present a logical account of analogous rule application. Before doing so, I want to deal with a possible criticism of this enterprise.

2.1. Rules proper and case legal consequence pairs

It is sometimes argued that there is no logic of analogous rule application, because the analogy at issue is not so much a special form of reasoning with a rule, as well as a way to formulate a different rule that can be applied in a normal fashion (Kloosterhuis, 2002, 42ff; Prakken, 1997, 27ff; Soeteman, 1989, 239). This view seems to me to be only partly correct. To see why, we must distinguish between legal rules proper and what I will call *case legal consequence pairs* (CLCPs).

Legal rules proper are a kind of ‘things’ which, if they exist (are valid), bring about that certain facts obtain. For instance, the rule that thieves are punishable is something that can be made and destroyed (usually by means of legislation). During the period between creation and destruction (abrogation), it is a valid rule of law and brings about that thieves are punishable.

The situation that thieves are punishable can be described by the CLCP that consists of a generic case (somebody is a thief) and a generic legal solution for this case type (this person is punishable). This CLCP must be distinguished from the legal rule proper. Although both rules and CLCPs are general and *in this sense* rule-like, rules differ from CLCPs in that they are constitutive, while CLCPs are descriptive. The rule that thieves are punishable, *makes* that thieves are punishable. The CLCP that thieves are punishable is *true* in a particular legal system, because thieves are punishable in this system.

Since CLCPs are descriptive, they only deal with (are about) the type of cases that they mention. They cannot be applied analogously, because the very idea of application does not make sense for descriptive sentences.² Although CLCPs cannot be applied, let alone applied analogously, it is possible to adduce the facts that make them true as a reason why another one is true too. In Dutch property law there is a proper rule (laid down in section 5:42 of the Civil Code) that the owner of a piece of land is not allowed to have a tree on it less than two meters from the border with somebody else’s piece of land. Suppose that two persons *rent* pieces of land that border on each other. Their case does not fall under the rule, which only deals with *landowners*. It is possible, however, to argue that the fact that landowners have this

duty, is a good reason why persons who rent the land, or even all persons who have rights to bordering pieces of land should have the same duty. Then the legal system would not only impose a duty on landowners, but also on other persons who have rights to bordering pieces of land. The case of these other persons is not dealt with by a proper rule, but the broad CLCP which is about persons who have rights to bordering pieces of land is made true by the legal system. The mentioned case then falls under this broad CLCP and has the same legal consequences as a case with landowners, a case which is dealt with by a proper rule.

Let us return to the question whether there exists something as the analogous application of a rule. If legal rules are taken in the sense of CLCPs, rules cannot be applied analogously, because CLCPs only deal with the cases they strictly are about.³ So, if rules are taken in the sense of CLCPs, the view that analogical reasoning with rules does not involve anything special and that the analogy at stake is rather an argument why another 'rule' (in the sense of a CLCP) holds too, is correct. However, I prefer to distinguish between rules, which are constitutive, and CLCPs, which are descriptive, and if this distinction is made, the question whether rules can be applied analogously is to the point.

2.2. The reason-based model of rule application

A rule is applied analogously if

1. it is applied to a case that does not satisfy its conditions (otherwise it would be normal application),
2. because the case is sufficiently similar to cases that do satisfy the rule conditions.

The problem to be dealt with, then, is how such application can be accounted for logically. Does it make sense at all to say that a rule is applied to a case, if this case does not satisfy the conditions of the rule? In this subsection I will try to show:

- that it makes sense to apply a rule to a case in which it is not applicable,
- how it makes sense, and
- which logical issues arise in determining whether a rule should be applied analogously.

A legal rule in the narrow sense of a rule that brings about (rather than describes) its legal consequences, consists of a condition part, which specifies under which circumstances the rule is applicable, and a conclusion part, which indicates which legal consequences result from

application of the rule. ‘Applicable’ and ‘application’ are, in this connection, technical terms. I will use the term ‘applicable’ to express that a case (to which the rule is applicable) satisfies the conditions of the applicable rule. I use the term application to denote the phenomenon that the consequence of the rule that is applied is attached to a case to which the rule is applied. Application is, in this usage, not the drawing of a logical consequence, but the (mental) addition of a rule’s conclusion to the facts in the world. By applying the rule that thieves are punishable to a particular person, the status of being punishable is *assigned* to this person. This assignment will normally only take place with thieves, but it is imaginable that under special circumstances it can also take place with non-thieves, e.g. embezzlers. In this way, the idea of analogous application of a rule makes sense.

While the ‘logic’ of rules is usually taken to be that of conditional sentences, where rule application is an argument of the type ‘modus ponens’,⁴ this approach is not necessary. In fact, the possibilities not to apply a rule even if its conditions are satisfied and to apply a rule analogously, strongly suggest that this modus ponens model of rule application is not satisfactory.⁵ For these reasons I have proposed the so-called *reason-based model of rule application* (Hage 1997, 2003 and 2005)⁶ According to this model, a rule should be (and is) applied to a case, if and only if the reasons for application outweigh the reasons against application. If a rule is applicable to the case, that is: if the case satisfies the conditions of the rule, this is a reason to apply the rule, while the non-applicability of the rule is a reason against application. Apart from these two reasons, there may be other reasons for and against application of a rule to a case. The reason-based model of rule application as such does not indicate what these reasons might be; this is left to the law. If a rule applies in a case, its legal consequences are attached to this case. Let me illustrate this by means of some examples that deal with the rule that thieves are punishable.

Example 1

- John is a thief.
- The rule that thieves are punishable is applicable to John’s case. This applicability is a reason to apply the rule to this case.
- The case does not mention any reasons why the rule should not be applied, so it is assumed that there are no such reasons (reasoning by default).
- There is one reason to apply the rule and no reasons not to apply it. Since it is assumed (as a matter of logic) that a non-empty set of reasons outweighs the empty set, the reasons for application of the rule outweigh the reasons against application.

- Therefore (as a matter of logic) the rule applies to John's case and its consequence (John is punishable) is attached to the case.

Example 2

- John is an embezzler (not a thief).
- The rule that thieves are punishable is not applicable to John's case and this is a reason not to apply the rule to this case.
- Embezzlement is similar to theft and there is – I assume for the sake of the example – no rule that makes embezzlement punishable. These two facts together are a reason to apply the rule about theft to cases of embezzlement too (analogous rule application).
- The rule about theft is a rule of criminal law and this is a reason to increase the weight of the rule's non-applicability as a reason against application of the rule (no analogy in penal law).⁷
- There are both a reason to apply the rule and a reason not to apply the rule to John's case. Since the case does not mention any other reasons, it is assumed (by default) that there are no such reasons.
- A decision must be made which reason outweighs the other one.
- If the similarity between theft and embezzlement is taken to outweigh the difference, the reason for application outweighs the reason against application, and the rule is applied. Since
 1. the rule is not applicable and
 2. the reasons for application are based on the similarity of the case types, this is a case of analogous application.
- If the non-applicability of the rule, strengthened by the prohibition to apply rules analogously in penal law, is taken to outweigh the similarity between theft and embezzlement, the reason against application outweighs the reason for application, and the rule is not applied. John is not punishable on basis of the rule that thieves are punishable. (Refusal to apply the rule analogously)

As these examples illustrate, the idea of analogous application of rules makes sense and it is possible to give a logical account of it in the form of the reason-based model of rule application. This account does not tell under which circumstances a rule should be applied analogously, but only how analogous rule application can be constructed logically.

3. THE LOGIC OF CASE-BASED REASONING

Analogical application of rules is not the only way in which reasoning by analogy plays a role in the law. The other major role of analogy in

the law is in case-based reasoning. If one case has been decided ⁸ in a particular way, this is a reason why:

- similar cases should be decided similarly (pure analogy);
- cases with more support for the same outcome should be decided similarly (a *fortiori* argument).

In this connection two issues should be distinguished, namely

- which case facts are relevant for the similarity and whether they contribute to, or detract from the similarity;
- the logical mechanism that governs the role of these case facts.

3.1. The logic of case-based reasoning

The issue which case facts are relevant for the similarity and whether they contribute to, or detract from the similarity is not a logical one and will not concern us here. I will just assume that:

1. a case consists of a number of facts;
2. some of these facts are reasons that plead for a possible legal consequence;
3. some of these facts are reasons that plead against a possible legal consequence;
4. these reasons all have a dimension of strength.

A complication in this connection, which I will ignore here, is that some case facts are not ‘hard’ facts, but legal consequences based on other case facts, which in turn may be based on other case facts ... etc. Obviously, the recursion of facts must bottom out on ‘hard’ facts. This complication can be ignored, because my assumptions do not distinguish between reasons that are ‘hard’ facts and reasons that are legal consequences.

I will also ignore the phenomenon that some relevant case facts are not immediately reasons for or against a decision, but rather reasons why some other reasons have more or less weight than usual, or why facts that normally would be reasons do in the present case not count as reasons (exclusionary reasons). The presence of these facts is taken into consideration via the facts that do count as immediate reasons and their weights as reasons.

A final remark concerning the strength of reasons: the logic of case-based reasoning developed here does not make any other demands on this characteristic than those discussed below. Strength can therefore be taken to be purely qualitative. By assuming additional

characteristics, e.g. transitivity of the relation 'stronger than', the logic of case-based reasoning can be made more powerful.⁹

Given these four assumptions, it is possible to distinguish, in connection with two cases and a (possible) legal consequence, four sets of reasons:

- a. the facts of the 'old' case that plead as reasons for legal consequence C;
- b. the facts of the 'old' case that plead as reasons against legal consequence C;
- c. the facts of the 'new' case that plead as reasons for legal consequence C;
- d. the facts of the 'new' case that plead as reasons against legal consequence C.

Old case		New case	
Legal consequence: C		Legal consequence: ?	
Pro-reasons C old	Con-reasons C old	Pro-reasons C new	Con-reasons C new

In the rest of this subsection I will describe in the form of a number of rules a semi-formal logic that deals with legal case-based reasoning and in particular with the question whether the fact that legal consequence C was actually attached to an old case can be adduced as a reason to attach legal consequence C to a new case too.

Rule 1 (reason for analogy):

The fact that legal consequence C was actually attached to old case OC can be adduced as a reason to attach legal consequence C to the new case NC too, if (but not necessarily only if)¹⁰:

- a. NC supports C precisely as much as OC (proper analogy, based on equal support),
- or
- b. NC provides better overall support for C than OC (a fortiori analogy, based on better support).

Rule 2 (equal support):

A case NC provides precisely as much support for legal consequence C as another case OC, if:

- a. the reasons in NC that plead for legal consequence C (pro(NC, C)) are the same¹¹ as the reasons in OC that plead for legal consequence C (pro(OC, C)),
- and

- b. the facts of NC that plead against legal consequence C ($\text{con}(\text{NC}, C)$) are the same as the facts of OC that plead against legal consequence C ($\text{con}(\text{OC}, C)$),
and
- c. the reasons $\text{pro}(\text{NC}, C)$ provide as a group the same weight-support for C as the reasons $\text{pro}(\text{OC}, C)$
and
- d. the reasons $\text{con}(\text{NC}, C)$ provide as a group the same weight-support against C as the reasons $\text{con}(\text{OC}, C)$.

Rule 3 (as a group same weight-support):

The reasons in set S1 provide as a group the same weight-support for (against) C as the reasons in set S2, if (but not necessarily only if):

- a. the reasons in S1 and S2 all plead for (against) the same legal consequence C,
and
- b. for every reason s that is an element of both S1 and S2 it holds that the weight of s as an individual reason for (or against) C is in both sets identical.¹²

The rules 1–3 together specify when an old case provides support for assigning a particular legal consequence to a new case by means of proper analogy. Because of the stringent conditions these rules place on proper analogy, it seems that they will seldom be applicable. However, because they provide sufficient, but not necessary conditions, their range of application may turn out to be broader than what seems at first sight. For instance, it is possible that an old case provides evidence for the conclusion that two sets of reasons provide equal support for a legal consequence, even if the rules 2 and 3 are not applicable. Then rule 1 can be applied, even though rule 2 is not applicable. Let me give an artificial example:

OC {a, b, d}:

pro C: a, b

con C: d

NC {a, d, e}:

pro C: a, e

con C: d

The two cases OC and NC are different, because in the old case fact b obtained, while in the new case fact e takes its place. However, the difference may be deemed unimportant. One can decide that the facts b and e are sufficiently similar and consequently that the two cases also count as sufficiently similar to conclude that NC provides

precisely as much support for C as OC. In that case, OC provides support for assigning legal consequence C to NC.

For a fortiori support, the rules are more complex:

Rule 4 (better overall support):

A case NC provides better overall support for legal consequence C than another case OC, if (but not necessarily only if):

- a. NC provides better numerical support for C than OC, and equal or better weight-support,
or
- b. NC provides equal or better numerical support for C than OC, and it gives better weight-support.

Rule 5 (better numerical support):

A case NC provides better numerical support for legal consequence C than another case OC (which then, and only then, gives less numerical support than NC), if and only if:

- a. the facts of NC that plead for legal consequence C are a proper superset of the facts of OC that plead for legal consequence C ($\text{pro}(\text{NC}, C) \supset \text{pro}(\text{OC}, C)$), and
the facts of NC that plead against legal consequence C are a (not necessarily proper) subset of the facts of OC that plead against legal consequence C ($\text{con}(\text{NC}, C) \subseteq \text{con}(\text{OC}, C)$),
or
- b. the facts of NC that plead against legal consequence C are a proper subset of the facts of OC that plead against legal consequence C ($\text{con}(\text{NC}, C) \subset \text{con}(\text{OC}, C)$), and
the facts of OC that plead for legal consequence C are a (not necessarily proper) superset of the facts of NC that plead for legal consequence C ($\text{pro}(\text{NC}, C) \supseteq \text{pro}(\text{OC}, C)$),

Rule 6 (better weight support):

A case NC provides better weight-support for legal consequence C than another case OC (which then, and only then, gives less weight-support than NC), if (but not necessarily only if):

- a. the facts of NC that plead for legal consequence C provide as a group more weight-support for C than the facts of OC that plead for C, and
the facts of NC that plead against legal consequence C provide as a group equal or less weight-support against C than the facts of OC that plead against C,

or

- b. the facts of NC that plead against legal consequence C provide as a group less weight-support against C than the facts of OC that plead against C, and
the facts of OC that plead for legal consequence C provide as a group more or equal weight-support for C than the facts of NC that plead for C.

Rule 7 (as a group more weight-support):

The reasons in one set, called S1, provide as a group more weight-support for (against) C than the reasons in another set, called S2, (and then, and only then, the reasons in S2 provide as a group less weight-support for (against) C), if, and only if:

- a. the reasons in S1 and S2 all plead for (against) the same legal consequence C,
and
- b. S2 is a (not necessarily proper) subset of S1
and
- c. there is at least one reason that as an individual reason has more weight in S1 than in S2,
and
- d. there is no reason that as an individual reason has more weight in S2 than in S1,

Because the rules 4 and 6 specify sufficient but not necessary conditions, it is possible that, for instance, rule 6 is applicable while rule 7 is not applicable. This increases the practical relevance of these rules.

3.2. An example

The following case, which was decided by the Dutch Supreme Court,¹³ illustrates the logic of case-based reasoning as exposed above:

3.9.1 *Caustic soda case*

Employees of a community centre placed a bag with household refuse along the street, in order to be taken away by the cleansing department. Unknown to the employees, the bag held a container with caustic soda. A cleaner put the bag into the dustcart, and due to some malfunctioning of the cart's mechanism, part of the caustic soda was swept into his face, as a consequence of which he suffered serious damages to his eyes. The cleaner sued the operator of the community centre for the damages.

Even though the employees of the community centre were unaware of the presence of caustic soda in the bag, their behaviour was held to be negligent, because the

court assumed a duty of care not to place a container with an unknown liquid in it, only protected by a cardboard box and a plastic bag, along the street to be taken away by the cleansing department, unless one has good reasons to assume that the liquid is not dangerous, or keeps the bag under control and warns those who want to handle the bag for its possibly dangerous contents.

Somewhat later the following case was brought before the Supreme Court¹⁴:

Yew case

Defendant's garden bordered on plaintiff's pasture, on which plaintiff held two horses. The pasture was fenced off by means of netting. Defendant had a heap of waste in his garden, near to plaintiff's meadow, on which he deposited a yew tree. Plaintiff's horses ate from the yew and died as a consequence. (Yew is poisonous for horses.) Plaintiff sued defendant for the damages. Defendant argued that he neither knew, nor should have known that the yew was poisonous for horses.

In both cases the defendant created a dangerous situation to which plaintiff fell victim. Moreover, in both cases the risk for defendant was quite high, while the costs defendant had to make to avoid the danger were low. And, finally, the cases have in common that defendant was not aware of the danger he created. Given these similarities, it is well arguable that the cases should have similar decisions, and that therefore defendant in the second case should be held negligent as well.¹⁵

This is not what actually happened, however. The Dutch Supreme Court held that in the yew-case, defendant was not expected to know that yew is poisonous for horses. Under these circumstances, defendant was not held negligent. Apparently there is a legally relevant difference between, on the one hand, card boxes with an unknown content and, on the other hand, yew. In connection with card boxes with an unknown content, one should assume that the content may be dangerous, unless there are positive indications to the contrary, while in connection with yew, one does not have to take possible risks into account. This difference may be summarised by saying that in the caustic soda case the creation of the danger was recognisable, while in the yew-case the creation of danger was not recognisable. By pointing out this difference, the cases can be distinguished, with the result that in the one case defendant was held negligent, and in the other case he was not held negligent.

Let us take a closer look at both lines of argument. I will start from the assumption that both cases are similar. Since both cases have the same reasons pleading for and against the decision that defendant was negligent, they seem to provide equal support for this decision. This would be different if the reasons in both cases had different weights. In the absence of evidence why this should be the case, one can work with the default assumption that the same reasons in different cases have equal weights. On this assumption, the cases provide equal

support for the decision that defendant was negligent, which makes that the caustic soda case can be used as a precedent for the yew case.

Suppose, presumably counterfactually, that in the yew case the potential damages were even higher than in the caustic soda case. Then the reason based on the amount of damages in the yew case has a bigger weight than the similar reason in the caustic soda case. On the default assumption that all other similar reasons have the same weights in both cases, the Yew case provides better weight support and as a consequence also better overall support for assuming negligence than the caustic soda case. The caustic soda case can then be adduced in an *a fortiori* argument for the conclusion that in the yew case negligence should be assumed too.

Let us now have a look at the cases from the point of view of the Dutch Supreme Court, who found that in the caustic soda case defendant should have taken the possible danger into account, while in the yew case this was not the case. On this reading of the cases, the caustic soda case had one reason to assume negligence that was lacking in the yew case. In all other respects the cases were similar. On this reading, the caustic soda case is more suitable for the assumption of negligence than the yew case. As a consequence the two cases can be distinguished and the caustic soda case can, at least *prima facie*, not be adduced as a precedent for the yew case. Obviously, this does not exclude that the two cases should be decided in the same way. Only one line of argument that the two cases should have the same outcome is blocked.

Notice that this argument line (based on similarity of the cases) would still be blocked if the reasons *pro* negligence in the yew case would weigh more than the same reasons in the caustic soda case, for instance because the potential damages were higher in the yew case. Then the two cases would, from a logical point of view, and in the absence of other relevant information, be incommensurable, and that excludes arguments based on similarity.

4. RELATED RESEARCH

Because of the focus on rule application as an argument of the form *modus ponens*, logical analyses of analogical rule application are scarce. Most of them are attempts to model analogous rule application as complex versions of *modus ponens* arguments.¹⁶ Klug, for instance, proposes to analyze the analogical application of the rule $M \rightarrow P$ by replacing this formulation of the rule by $(M \vee N) \rightarrow P$, where *N* stands for 'being similar to *M*'.

More interesting from a logical point of view is the discussion by Tammelo (1969, 129) in which analogical rule application is analysed as having the following logical form¹⁷:

Rule: $\forall x(Mx \rightarrow Px)$
 Fact: legally-similar-to(M, a)
 Therefore: Pa

This approach is different from that of, for instance, Klug, because it accounts for analogical rule application by means of a special rule of inference, rather than by adapting the formalisation of the rule. This special rule of inference allows derivation of the conclusion of the rule for cases that are legally similar to those for which the rule was written. What is especially attractive in this approach is that it mimics legal reasoning by analogy as it seems to take place in legal practice and that it does not prejudice which cases qualify for analogous rule application. Whether a type of case is legally similar to another type of case is left to the legal domain.

In comparison to the reason-based model of rule application described above, this approach has the advantage that it deviates less from legal practice. A relative disadvantage is that it makes less clear which logical factors (reasons for and against rule application) are involved in determining whether a case is legally similar to another case.

The starting point of much logical research on case-based reasoning in the law is the work of Ashley (1991). In this work the analysis of cases in terms of reasons ('factors') that plead for or against a particular outcome takes a central place. The emphasis in Ashley's work is not so much on logic, however, but on the implementation of a reasoning program that uses information about cases (which factors are involved in them) to construct arguments why a case is, or is not, a precedent for another case. Roth (2003) has elaborated Ashley's starting points into a logical account of case-based reasoning in the law. Other work on case-based reasoning in the law (e.g. Branting, 1991 and Prakken and Sartor, 1998) takes the *ratio decidendi* of a case as its starting point, and thereby interprets cases as evidence for the truth of a CLCP, thereby disregarding the idea that case-based reasoning is a form of reasoning by analogy.

5. CONCLUSION

In this contribution I hope to have shown:

- that the idea of analogous rule application makes sense;
- how it is possible to give a logical account of analogous rule application which is not a form of *modus ponens* reasoning;
- how it is possible to give a logical account of arguments about the similarity of cases in connection with the question whether an argument by analogy should be used.

NOTES

¹ This logic is described in more detail in Hage 2005, chapter 3, and in particular, 4.

² Try, for instance, to apply the sentence 'Horses have four legs' to horses. It is not even clear what one is expected to do.

³ If my argument above is correct, rules in the sense of CLCPs cannot be applied at all, so the issue of analogous application could not even arise.

⁴ See section 4.

⁵ Some would argue that it is not really possible to make an exception to a rule, or to apply a rule analogously (the rule would 'really' run differently than seems at first sight). This argument seems to presuppose that the logic of rule application is *modus ponens*, rather than support it as a conclusion.

⁶ A more extensive discussion of the logical treatment of analogy in the law, which contains an early version of the reason-based model of rule application and its use for modelling analogical rule application, is Verheij and Hage (1994). The reason-based model of rule application can be formalised in Reason-based Logic (Hage 1997 and 2005).

⁷ The prohibition of analogous rule application in criminal law can also be interpreted more strongly, for instance as a decisive reason why the rule should not be applied analogously. Then there would be no need to balance the reasons for and against analogous application: because of the prohibition, the rule should not be applied analogously.

⁸ One might think that if a particular kind of case should be, or should have been decided in a particular way, this can also function as the starting point of reasoning by analogy. This would be a misunderstanding, however. The reasons that play a role in determining how this type of case should be decided also play a role in determining how the new case should be decided and the fact that the old case should be decided in a particular way does not add anything to these reasons. If the old case *actually* was decided in a particular way, this does add something to the reasons underlying this decision, namely the force of precedent. This force is lacking in case of hypothetical decisions. The role of reasoning with hypotheticals is therefore confined to the realm of psychology, in the context of discovery.

⁹ This theme is developed in Hage 2005, chapter 4.

¹⁰ Here and in some of the following logical rules I only give sufficient conditions for taking a reasoning step. I leave the possibility that they are not necessary conditions on purpose open.

¹¹ To avoid technical complications, I assume that the reasons in the two sets can be identical. In practice they will only be similar in the sense that they are facts of the same type. E.g. the fact that John is a thief is not identical to the fact that Peter is a thief, but they are similar. The technical complications that follow from this issue can be dealt with (Hage 2005, chapter 4), but are left out of consideration here.

¹² The weight of an individual reason is treated as primitive here, but in Hage, 2001a I elaborate upon the weight of reasons.

¹³ HR 8-1-1982, NJ 1982, 614.

¹⁴ HR 22-4-1994, NJ 1994, 624.

¹⁵ The relevance of these similarities is based on an earlier case (HR 5-11-1965, NJ 1966, 136) in which a variant of the Learned Hand formula was accepted for Dutch law.

¹⁶ For overviews, see Klug 1982, 109f. and Kloosterhuis 2002, 42f.

¹⁷ In the end, Tammelo rejects this argument form as logically invalid and adopts a similar 'solution' as Klug.

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