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Argumentation Structures in Legal Dossiers

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ABSTRACT

This paper argues that the best chance of utilising AI & Law models of legal argument in practice in the near future may be in desiging legal argumentation management systems. Such systems do not have a knowledge base and inference engine but allow the user to structure a legal case dossier in terms of the argumentation structure of a case, so that better overview over the dossier is obtained and documents can be better retrieved, compared and drafted. To obtain insight in how such systems should be designed, a case study is presented in which a dossier of a solicitor representing a client in a Dutch civil dispute is analysed according to its argumentation structure. The resulting structures are visualised using the Araucaria software tool. Special attention is paid to the creation of the argumentation structure over time in the course of the dispute, and to the argumentative tactics and strategies employed by the solicitor.

1. INTRODUCTION

While argumentation is one of the central themes of AI & Law [12], little research addressing this theme has yet found its way to legal practice. Most research takes the 'knowledge representation and reasoning' approach, in which formal or computational models of legal argument are designed and applied to knowledge bases with formalised knowedge to produce automatic reasoning systems. While this research is theoretically very interesting, several obstacles, such as the well-known knowledge engineering bottleneck, have so far prevented the scaling up of these systems to practical applicability. It has been suggested [6, 10] that a more modest kind of system, sometimes called argument-support, sensemaking or argument-management system, has better chances of making the theoretical models of legal argument practically applicable in the near future. Such a system (below called LAMS for Legal Argument Management System) does not have a knowledge base and inference engine but allows the user to structure a collection of case-related documents in terms of the argumentation structure of a case. The structure would capture the main issues, the main positions and arguments taken by the parties with respect to the issues, the available evidence related to them, and so on. Incoming documents could be indexed according to this structure and new documents (either outgoing documents or internal analyses of a case) could be drafted according to the same structure and linked to relevant background documents (statutes, case law, journal articles, testimonies, letters, etcetera.)

The potential for practical use of such systems lies in the fact that legal professionals often find it difficult to maintain overview over case-related information, for instance, to see what are the main issues, disagreements and arguments in the case. Arguably they can be helped if the case dossier[1] is organised using the structure of the argumentation in the case as a leading principle. However, although some advanced commercial systems for case file management exist (such as CASEMAP, see www.casesoft.com), according to Lauritsen [6] these do not provide support for capturing a realistic argumentation structure of a case. The latter is possible to a greater extent in argument visualisation tools, such as Araucaria [11], Argumed [14] or Rationale (www.austhink.com/rationale/). However, these tools basically are stand-alone tools for visualising the structure of single documents and provide only weak facilities for linking a visualisation to a dossier. Therefore, further research on developing LAMS is needed.

This paper aims to contribute to this research in the context of Dutch civil procedure. A case study is presented in which the dossier of a solicitor representing a client in a civil dispute is analysed acccording to its argumentation structure. The aim of the case study is to obtain insight in this structure, so that requirements can be formulated for the design of LAMS. In our case study we are not only interested in the argumentative structure of individual documents but also in the way a case dossier is built over time in the course of a case.

Unlike most AI & law research on legal argument, which makes ad-hoc use of actual legal cases as example material, our case study amounts to a systematic analysis of the argumentative structure of an entire case dossier. As yet, little such research of actual legal discourse exists. The Amsterdam pragma-dialectic school of argumentation theory has

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[1]By case dossiers we mean the total of all legal documents involved in a case, for instance the case files of a case that a lawyer is handling.

carried out several case studies of the analysis of individual judicial decisions; e.g. [7]; see also [5]. In AI & Law Conrad & Dabney [3] have made a more systematic analysis of types of arguments occurring in American case law, while Prakken [8] has analysed the case files of a simple Dutch civil case, especially to see how much is left implicit. Our case study adds to this research in two respects. Firstly, except for [8], the other work focuses on the structure of judicial decisions, while we have also analysed the documents written and exchanged by the adversaries before the final decision. Secondly, almost all other research focuses on the static structure of individual documents, while we have also investigated how the argumentative structure of a dossier evolves over time.

The structure of this paper is as follows. In section 2 the approach taken in our case study is described, after which in Section 3 the main aspects of our dossier analysis are explained and our main findings on these aspects are presented. In section 4 some conclusions are drawn and speculations are given about the future of LAMS in legal practice.

2. OUR APPROACH

Our case study used the case dossier of a solicitor representing an employee suing his employer for damages resulting from injuries caused by an accident during working time. (The solicitor who had handled the case assured us that the case is representative of this kind of injury disputes.) The employee was hired by a company to carry out paintwork in the company's office. During this work the employee fell off his ladder by accident and his knee was injured. The employee held the employer liable for the resulting damages on the basis of Article 7:658 of the Dutch Civil Code, which says that an employer is obliged to take measures and give instructions in order to make sure that an employee will not be injured while doing his job. The lawyers representing the employer and the employee first tried to settle the case out of court but when this failed, the employee decided to summon his employer to appear in court. In the court proceedings the usual turns were taken, after which the judge decided in favour of the employer.

The main part of our case study consisted of an analysis of the argumentative structure of the documents in the dossier. In addition, interviews were conducted with the solicitor to obtain further information, especially on the tactics and strategies he had used during the case.

In analysing the individual documents, first the support relations between statements within a single argument and the conflict relations between statements in different arguments were identified. These relations were visualised using the Araucaria argument visualisation software [11]. Then implicit premises were identified and incorporated in the Araucaria charts using the software's special notation for implicit premises. Finally, it was studied to what extent the various arguments found instantiate argumentation schemes known from the literature.

Figure 1 displays an example of an argumentation structure made with Araucaria.[2] In this figure boxes contain statements, vertical and diagonal links between boxes express support links between statements and horizontal links

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[2]We are aware of the fact that the characters in the used figures are too small to read, but it is mainly the format that counts.
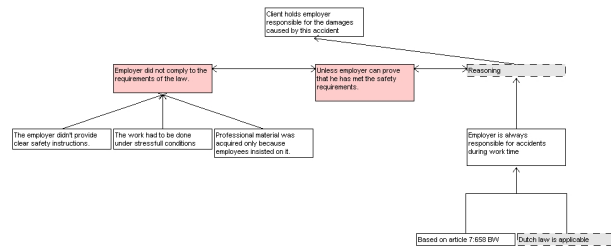

Figure 1: Argumentation structure of the letter from the lawyer to the employer.

between boxes express that the linked statements are incompatible; thus attack relations between arguments can be displayed. The top box in the figure is the main conclusion of the argumentation structure (namely, that the employer is liable for the employee's damages). A grey dashed box means that the statement contained in the box was left implicit in the analysed piece of argumentation. Supporting statements can be combined in two ways. When joined into one supporting arrow (as on the right), the link expresses a 'linked argument', in which all premises are needed to make the conclusion supported. When separately pointing to the same statement (as on the left), the links express a 'divergent' argument, in which either premise alone suffices to support the conclusion.

To analyse the development of the argumentation structures during the case, the dossier was divided into a number of phases, after which it was determined which of these phases were the most important to the argumentation in the case. The dossier contains many kinds of documents, such as correspondence, medical information, financial information, notes, concept-letters, and the formal documents exchanged in court. Not every document contributes to the argumentation structure. For example, correspondence between the client and the lawyer about the date and time of their next appointment is not of relevance for the argumentation in a case. However, it must be kept in mind that every document can become of relevance at a later moment in time. For instance, a note of a telephone call by the secretary of one of the parties can seem irrelevant but could be used at a later stage as evidence for an argument. Thus seemingly unimportant information can become relevant for the argumentation in a case and can contribute to the argumentation structure.

In our case study only the most important documents in the dossier were analysed, namely those in which the argumentation structure is developed or expanded. This left us with seven phases: (1) First explaining letter of the lawyer to the client. (2) Letter from lawyer to employer to hold him responsible. (3) Writ of summons. (4) Statement of defence. (5) Statement of reply. (6) Statement of rejoinder. (7) Decision of the judge. Analysis of the development of the argument structures through these phases may provide insights in the dynamic aspects of legal argument, such as the strategy, tactics and typical patterns in defence and attack relationships used in practice.

3. ANALYSED ASPECTS

In analysing the various documents the focus was especially on the following aspects: the support and attack relations between statements; the sources of the ultimate premises; implicit premises; the application of argument schemes; and the temporal and strategic aspects of the argumentation. Our findings with respect to these aspects were as follows.

3.1 Relations between statements

In identifying the support and attack relations between statements the main difficulty was to determine whether several premises for the same conclusion are intended to be linked or not. While this problem does not arise when the premises provide the conditions of a legal rule (in which the logical relation between the conditions usually is clear), in many other cases the nature of the support relation was highly ambiguous.

For instance, 'recklessness' is one of the linked premises for the conclusion that the employee is liable. The employer gave two reasons why the employee was reckless, but it cannot be judged from the text itself whether an attack on one of them can be enough to refute the 'recklessness' premise. It seems that in such cases the party who states the reasons leaves it to the judge to determine whether one reason alone suffices to refute the argument or whether they must be combined.

3.2 Sources of premises

It is to be expected that in practical LAMS hyperlinks from statements to the sources on which they are based will be very useful. Therefore we looked at the sources from which the ultimate premises of the arguments were derived. We found premises derived from the following sources: regulations, case law, scholarly writings, witness reports, expert information and situationreconstruction.

3.3 Implicit premises

Natural language leaves a lot implicit. For instance, background knowledge that is common between the dialogue participants is often left implicit for reasons of economy of speech. In our case study we found that much was left implicit in the arguments. In particular, when an argument is based on a regulation, the specific rule is often not mentioned, since most of the time both parties (being professional lawyers) will know which rule is meant.

3.4 Argumentation Schemes

There is increasing consensus in the literature that legal arguments can be categorised in terms of argumentation schemes. Such schemes are stereotypical patterns of (often nondeductive) reasoning and come with a set of critical questions that specify ways to attack applications of the scheme. While argumentation schemes were not explicitly mentioned in AI & Law until recently, Prakken [9] argues that AI & Law research on legal argument has in fact taken an argumentation-scheme approach from the very beginning of the field.

We therefore investigated to what extent the arguments in the dossier made use of such schemes and their critical questions. We especially looked for Walton's schemes of presumptive reasoning [15] and the legal argumentation schemes discussed in [9]. Among Walton's schemes relevant for legal reasoning are those of witness and expert testimony,

the scheme from (good or bad) consequences and the scheme from analogy. Prakken discusses, among other things, schemes for evidential reasoning, rule application and precedent-based reasoning. It should be noted that the Araucaria tool (like most other argument visualisation tools) abstracts from the nature of the support and attack relations between statements. Although the user can tag support links with the name of a scheme and let the system display the scheme and its critical questions in a separate pop-up screen, Araucaria does not enforce that the relevant support and attack links conform to this format. Accordingly, users of Araucaria must model the fact that an argument instantiates a certain scheme in a careful formulation of the statements in the boxes.

In our case study we found applications of several argumentation schemes. The most frequently used was the scheme 'argument from analogy', because almost every detail in the arguments was supported by a case law decision that resembles this case and that has the preferred outcome.

In our case study we found applications of several argumentation schemes. The most frequently used are the schemes from rule application [4] and analogy [1, 15]. The entire case revolves around article 7:658 BW so the main arguments are about whether this rule applies. Among other things, the issue arose whether a certain statutory exception to this rule applied to the case.

Furthermore, almost all arguments on the two vague terms in article 7:658, which are whether the employer has done enough to ensure a safe working situation, and whether the employee has been reckless, were supported by case comparisons. For instance, the employer argued that in a case where an experienced employee cuts herself while making sandwiches, the employer was not held liable by the Supreme Court, since the action was one that the employee performed every day and the duty of the employer does not include warning for dangers that are commonly known. The employee argued against this citation that he was not an experienced painter and that the work he did when he fell was not something he did every day. Thus the employee created his counterargument using a critical question of the scheme from analogy, viz. whether there are relevant differences between the compared cases.

The employee also attacked the employer's citation by citing a case in which an employee fell from a ladder while changing a lightbulb and in which the judge held the employer liable for this accident since it happened during working hours and the employee had not been reckless. This citation uses another critical question of the scheme from analogy, namely whether there is another case that resembles the current one and which has a different outcome.

Finally, we found an example of abductive reasoning, in which the employer argued that the employee's financial loss was not caused by the accident but by something else: "That the employment contract between the employer and the employee has been terminated has nothing to do with the accident in question. The employment relationship was disturbed. So, the supposed loss of ability to earn money is not a result of the accident."

3.5 Temporal Aspects

That an argumentation structure of a case changes over time is obvious. Every phase in a case brings new information, because with every turn one party responds to the

argumentation of the other party. In every phase a party brings in more arguments for a claim or for the supporting argument of the claim, or the party brings in counterarguments for the point of view of the opponent. To analyse how exactly this happens, we compared the structures identifed in the different stages of the dispute. Our most important findings are as follows.

One aspect that was investigated was whether the structure just expands over time or whether it happens that existing elements are changed or deleted in the course of the dispute. We found that the latter usually does not happen. We think that this is because parties want to keep their position stable, since a lawyer who frequently changes his position reveals that he probably does not have a strong case. We did find, however, that the structure becomes more detailed over time at the points on which both parties disagree. Especially the last two phases of the dispute, in which the parties have the opportunity to argue in court (phases 5 and 6) are good examples of just expanding the structure. This is because procedural rules restrict the parties in providing new information. On the other hand, a more extended argumentation for their claim is allowed, so parties will not change the core of their argumentation but just expand it by citing more precedents and adding more counterarguments.

We found in particular that both parties often elaborate their arguments by citing case law in support of their own position and by critising the case law citations provided by the other party. This kind of reasoning, called case-based reasoning, has traditionally been one of the main aspects of AI & Law models of legal argument. Since as stated above the Araucaria tool abstracts from the nature of the support and attack relations between statements, the case-based nature of an argument must be expressed in a careful formulation of the statements in the boxes.

3.6 Strategic Aspects

When a lawyer handles a case he does not only apply formal and material rules of law. To win a case strategy is also very important. Every lawyer has his own way of dealing with a case and this will differ per case, per opponent and even per deciding judge. An analysis of the different phases combined with interviewing the solicitor gave us the following insights in the solicitor strategy.

The moment in which certain information about a case is disclosed to the opposing side can have an important impact on the outcome of the case. The discussion about the information, for example, can be more elaborate when the information is released immediately at the beginning of a case. This may result in a different outcome than when information is held back until late so that the other party has only little time to respond to it. In our case study we found that the following strategy was applied. Certain information that was already available to the lawyer at earlier stages of the dispute, was not disclosed to the opposing party untill later stages. This is especially apparent from the difference between the letter of the lawyer to his client, in which he first analyses out the case, and the letter from the lawyer to the employer, in which he holds him liable.

Figure 2 shows the argumentation structure of the letter from the lawyer to his client. In this letter the lawyer explains the legal status of the case, the arguments the client can put forward and the counterarguments the employer might put forward. Figure 1 shows the argumenta-

tion structure of the letter of the lawyer to the employer. When comparing the two figures it becomes obvious that in the first letter much more information is given. Naturally the lawyer will not give away the counterarguments the employer could put forward. For strategic reasons information that the lawyer already has is not given away immediately. The lawyer who handled this case informed us that lawyers often keep information to themselves until the very last moment, because the counterparty will then have the least time to respond to it. Of course this is restricted by rules of procedural law.

Another point to mention is that the final verdict of the judge was much shorter and less detailed than the documents of the adversaries. The judge left several arguments of the parties unaddressed; in particular, he did not discuss at all the applicability of the case law cited by the adversaries.

4. CONCLUSION

In this paper we analysed the argumentation structure of the dossier of a legal case, in order to obtain insight in how a legal argumentation management system should be designed. Of course, from a single case study no firm conclusions can be drawn but we hope that our study has provided some initial insights and has convinced the reader of the practical importance of the research issues addressed. We especially recommend that in future research the dynamic aspects of legal argument are taken into account.

We now summarise and comment on our main findings. To start with, we found that the creation of the argumentation over time was largely incremental, which suggests that the need for revision tools may not be very strong. Secondly, we found that it was often difficult to reconcile the language of the opposing sides. This issue clearly needs to be adddressed in the design of practical LAMS. While the user's own documents are under his full control, incoming documents may need to be annotated or otherwise processed before they can be added to the argumentation structure. Alternatively, ontologies may be used [2]. Another finding was that several arguments found in the dossier could be classified as an instance of an argumentation scheme known from the literature. This suggests that it may be worthwhile to design LAMS such that they can capture and utilise the structure of such schemes. Finally, we found that even in this relatively simple case the visualised argumentation structures rapidly become very large. This is another important design issue for LAMS. While a system like Rationale already provides advanced facilities for maintaining overviews, we hypothesise that some of the recent literature may have put too much emphasis on argument *visualisation*. What is more important is to capture the underlying logical and rhetorical structure of a dossier. Once this structure is in place, it can be used for desiging useful functionality. This may be visualisation but equally important are search, summarisation and possibly other things.

We end with some speculations on the future use of LAMS. We may expect that such systems will help lawyers to reduce the time needed for obtaining an overview of the constituents of a dossier. Structuring electronic dossiers and their content using XML-schemata will enable referential mechanisms between documents within the dossier and the documents explaining aspects of the case, such as the claims and arguments, and other documents such as the law, evidence or previously decided cases that back up the claims. Visu-

Figure 2: Argumentation structure of the letter from the lawyer to his client.

alisation of the argumentation structures can then serve as an abstract summary of the case at hand and can be used for navigation purposes. Combining argument structuring techniques with tools from the semantic web and ontologies research [2] may further increase the usefulness of a LAMS. A working environment that enables both content management and argumentation structuring would help law firms to reduce transfer costs of dossiers from one lawyer to the other and allow case comparison and reuse of knowledge. We are currently working on such an environment and we aim to empirically test our hypothesis that the use of LAMS results in more effective legal processes.

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