

Supporting laymen in finding relevant court decisions

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Motivation

- Workload of judiciary is **very high**
- Alternative dispute resolution mechanisms can reduce workload
 - mediation
 - negotiation
 - arbitrage
- People need to know what their **chances** in court are!

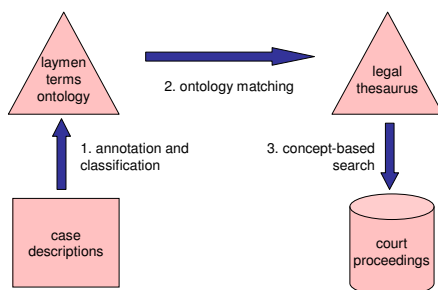
Aim

- Support laymen with information about their legal position
 - find relevant case-law
 - help to determine **BATNA**
 - Best Alternative To a Negotiated Agreement
 - expected outcome of a court proceeding
 - *helps to decide when to start/ stop negotiation*
- **BEST**: BATNA Establishment using Semantic web Technology

Domain and use case

- Restricted to **tort-law**
 - “onrechtmatige daad”
- **Dataset**: 68.000 court proceedings
 - <http://www.rechtspraak.nl/>
 - more higher court than lower court
- **Users**: laymen in field of law
- **Input**: case descriptions in laymen terms
- **Output**: information that helps to prepare a legal judgment
 - relevant court proceedings

Approach

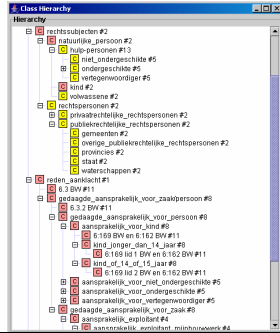


Current status

- **Step 1:**
 - Dutch *tort law ontology* has been developed
 - manual annotation of case descriptions
 - automatic classification of case descriptions into legal concepts
- **Step 2:**
 - via law article numbers
- **Step 3:**
 - using a statistical text retrieval system
 - exploit legal doctrine knowledge

Tort law ontology

- Elements
 - tort law structure
 - kinds of damage
 - entities subject to law
 - objects in tort-law
- Format
 - OWL (DL-based)



Manual annotation

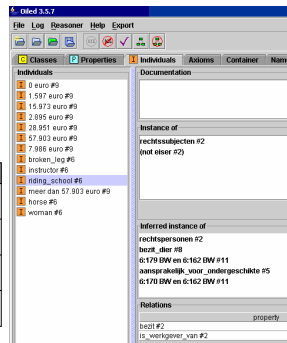
- A woman, who is an experienced horse rider, fell during a riding lesson after the horse without a clear indication started to rear. The horse landed on her and the woman was seriously injured. The woman signed a contract with the riding school, stating that the riding school cannot be held liable for any injuries. The woman would like to get a compensation for her injuries. Is this possible?

Individuals	Instance of	Restriction(s)	
		Property	Individual-filler
Woman	Plaintiff	Has_damage	Broken_leg
		Has_contract_with	Riding_school
		Handles	Horse
Horse	Animals	Causes_directly	Broken_leg
Broken_leg	Physical_damage	-	-

Automatic classification

- DL based classification
 - **FaCT** reasoner
- Result:

Party	Grounds for liability
Riding school	Possession of an animal 6:179 BW
	Their subordinate 6:170 BW
	Unlawful act 6:162 BW
Instructor	Unlawful act 6:162 BW



Summary step 1

- Tort law ontology which combines **expert view** and **laymen view**
- Shown on 7 cases that DL-based ontology can be used to predict grounds for liability
- *Student-project of Ronny van Laarschot*
- Result of step 1: law article numbers

Step 3: Retrieving Court Decisions

- Goal:
 - find **court decisions** in which argumentation is based on same grounds for liability
- Problem:
 - searching for article number:
 - gives non-relevant cases
 - article number only casually mentioned
 - misses relevant cases
 - article number not explicitly mentioned

Concept based search

- Thesaurus-based information retrieval
 - keyword based search doesn't give good results
- Using of-the-shelf software from Collexis
 - exploits "fingerprint" technique
 - vector with relative weights of terms in thesaurus
 - similar documents have similar fingerprint\
- **Research question:** how to make a good fingerprint for specific type of liability

Initial Experiments

- Experimental **setup**:
 - fingerprints created for
 - “aansprakelijkheid voor misleidende reclame”
 - “aansprakelijkheid voor ondergeschikten”
 - “aansprakelijkheid voor niet-ondergeschikten”
 - “aansprakelijkheid voor opstallen”
 - based on
 - manual analysis of law text
 - manual analysis of relevant court proceedings
 - automatic analysis of relevant court proceedings (12 in total)
 - search result for each fingerprint evaluated by expert

Findings

- **Result** for different types of liability **differs** very much
 - “misleidende reclame”: 80% precision in top 10
 - “opstallen”: 10% precision in top 10
- **Manually created** fingerprint performs **better** than automatically created fingerprint
- Fingerprints based on **court proceedings** perform **better** than those based on law text
- Hypothesis:
 - IR fails because situations described in court proceedings for same type of liability differ very much

Follow-up experiments

- Adding **legal doctrine** knowledge
 - which **phrases** are typical for proving specific types of liability?
 - fingerprints are based on these phrases
 - e.g. *ter uitoefening van het bedrijf, NJ 2002/75, niet ondergeschikte opdrachtnemer, zeggenschap had over de gedragingen*

Results

- **Higher precision** for all types of liability
 - 91% in top 25 for “*ondergeschikten*”
 - 84% in top 25 for “*opstallen*”
 - 50% in top 10 for “*niet-ondergeschikten*”
- Recall cannot be calculated
 - result is a ranking of all documents
 - we do not now how many relevant documents exist

Conclusions

- Ontologies can be used to:
 - **describe cases** in laymen terms
 - determine type of liability
- Terminology used in case description, law text and court proceedings differs from each other
- **Concept-based search** is required to retrieve relevant court decisions
 - article numbers are not sufficient
- Comparison of words in court proceedings does not distinguish types of liability
 - adding **doctrine knowledge** improves precision
 - seems specific characteristic for the legal domain