



UvA-DARE (Digital Academic Repository)

Making sense of legal texts

de Maat, E.

Publication date
2012

[Link to publication](#)

Citation for published version (APA):

de Maat, E. (2012). *Making sense of legal texts*. [Thesis, fully internal, Universiteit van Amsterdam].

General rights

It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations

If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: <https://uba.uva.nl/en/contact>, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.

Contents

1	Introduction	1
2	Parsing Structure.....	9
2.1	Structure of Dutch Laws.....	10
2.2	Numbering	12
2.3	Automated Detection.....	13
2.3.1	Separating the Different Parts of a Law	14
2.4	Splitting the Body of a Document in Parts and Articles	14
2.5	Splitting Articles	16
2.6	Recognising Quoted Text to be Added Elsewhere.....	17
2.7	Tables, Images and Other Content.....	19
2.8	Experiment.....	19
2.9	Conclusions.....	24
3	References.....	27
3.1	References to Documents	29
3.2	References to Parts of Documents	30
3.3	Resolving References.....	31
3.4	Experiment.....	33
3.5	Generalisation to Other Sources	34
3.6	Conclusion.....	35
4	Classification of Sentences.....	39
4.1	Norms	46
4.1.1	Obligations.....	46
4.1.2	Rights.....	47
4.1.3	Application Provisions.....	47
4.1.4	Penalisations	48
4.1.5	Calculations.....	48
4.1.6	Delegation.....	49
4.1.7	Publication provision	50
4.2	Definitions.....	50
4.2.1	Definitions	50
4.2.2	Type Extensions	52
4.3	Deeming Provisions	52

4.4	Lifecycle and maintenance.....	53
4.4.1	Enactment Date.....	53
4.4.2	Short Title	54
4.4.3	Change Provisions.....	54
4.5	Experiment: Pattern-based Approach.....	56
4.5.1	Results.....	59
4.6	Experiment: Machine Learning Approach	62
4.6.1	Data representation	63
4.6.2	First Experiment: Pre-processing	64
4.6.3	Second Experiment: Generalisation Across Laws	66
4.6.4	Analysis.....	68
4.7	Conclusion.....	70
5	Creating Model Fragments.....	73
5.1	Sentences Dealing With the Law.....	77
5.1.1	Scope Declaration.....	77
5.1.2	Repeal	77
5.1.3	Insertion.....	78
5.1.4	Replacement	79
5.1.5	Renumbering.....	80
5.1.6	Enactment Date.....	80
5.1.7	Short Title	81
5.1.8	Application Provision	82
5.1.9	Delegation.....	82
5.1.10	Publication Provision.....	83
5.2	Experiment.....	84
5.3	Sentences Dealing With Subject Matter	88
5.3.1	Normative Sentences	89
5.3.2	Definitions and Deeming Provisions	96
5.4	Example: Converting Frames to OWL	97
5.5	Experiences	102
5.6	Integrating models	103
5.6.1	Linking Provisions that are Related to Other Provisions as a Whole.....	104
5.6.2	Linking Concepts to Their Definitions.....	104
5.6.3	Linking Concepts That Represent the Same Class	105

5.6.4	Example.....	107
5.7	Conclusion.....	109
6	Applications.....	111
6.1	Semantic Network for the Dutch Tax and Customs Administration	111
6.2	MetaVex.....	112
6.3	Conclusion.....	118
7	Conclusions and Future Work	119
7.1	Regularity of Legislative Sources	122
7.2	Architecture for an Integrated Application	123
7.3	Future Expansions	126
7.4	Text First or Model First?.....	128
Appendix A	Detecting Structure Using JAPE	131
A.1	A Short Introduction to JAPE.....	131
A.2	Detecting Headings	132
A.3	Detecting Fixed Elements	133
Appendix B	Detecting References using JAPE	137
B.1	Basic References.....	137
B.2	References to Ranges.....	138
B.3	Multiple References	141
B.4	Zooming-In Layered References.....	142
B.5	Zooming-Out Layered References.....	143
B.6	Putting It All Together.....	143
Appendix C	Sentence Classification Patterns.....	145
C.1	Patterns for Obligations and Duties	145
C.2	Patterns for Short Titles.....	145
References	.....	147
Summary	.....	155
Samenvatting	.....	161
Acknowledgements	.....	167
SIKS Dissertation Series	.....	169