



**University of
Zurich^{UZH}**

Faculty of Law

Challenges of the Datafication of Law

**Anglo-German Dialogue Meeting in Zurich,
5 April 2019**

Prof. Dr. Tilmann Altwicker

LL.M. (CEU), DAS ETH in Applied Statistics



Thesis

Datafication of law as «game changer» of legal scholarship in the 21st century



William Turner, The Fighting Temeraire (1839)



The National Gallery, London



Structure

- I. Is there such a thing as legal data at all?**

- II. What is the added-value of legal data analytics?**

- III. What are typical challenges of legal data analytics?**



**University of
Zurich^{UZH}**

Faculty of Law

Part I:

Is there such a thing as legal data at all?



Datafication of Law (1)

- Datafication = production and availability of computer-readable data
- Legal data?
- Law = social construct, not measurable
- But: «Double nature of the law» (Alexy)
- «Law» is also a social practice
- «Legal data» = «Law-related social facts» (Rottleuthner)
- Texts, relationships and decisions



Datafication of Law (2)



[Useful Links](#) | [Preferences](#) | [Advanced Search](#) | [Help](#) | [Other Languages](#)

NARROW YOUR SEARCH

DOCUMENT COLLECTIONS

- Case-Law (52777)
 - Judgments (52777)
 - Grand Chamber (3696) ?
 - Chamber (49081) ?
 - Committee (0) ?
 - Decisions (0)
 - Grand Chamber (0) ?
 - Chamber (0) ?
 - Committee (0) ?
 - Commission (0) ?
 - Screening Panel (0) ?
 - Communicated Cases (0) ?
 - Legal Summaries (0) ?
 - Advisory Opinions (0) ?
 - Reports (0) ?
 - Resolutions (0)
 - Execution (0) ?
 - Merits (0) ?

[Press Collection](#)
[Communicated Cases 2008-2011](#)
[HUDOC-CPT](#)
[HUDOC-ESC](#)

FILTERS

LANGUAGE ?	IMPORTANCE ?
French (18084)	3 (28736)
English (18081)	2 (12421)
Turkish (3177)	41 (Case Reports (7146))
Romanian (1583)	1 (4474)
More...	More...
STATE ?	ARTICLE ?
Turkey (9283)	6 (28051)
Italy (5413)	41 (27071)
Russia (4434)	6-1 (23628)
Romania (3248)	35 (10689)

ADVANCED SEARCH

Text ?	<input type="text"/>	Conclusion ?	<input type="text"/>
Case Title ?	<input type="text"/>	Res Num ?	<input type="text"/>
Application Number ?	<input type="text"/>	Date	<input type="text"/> dd/mm/yyyy to <input type="text"/> dd/mm/yyyy
Strasbourg Case-Law ?	<input type="text"/>	Separate Opinion(s) ?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Rules of Court ?	<input type="text"/>	Domestic Law ?	<input type="text"/>
Applicability ?	<input type="text"/>	International Law and Other Relevant Material	<input type="text"/>
ECLI ?	<input type="text"/>	Keywords ?	<input type="text"/>

[Search in Document Sections](#)

52777 Results Found Sort by: Relevance

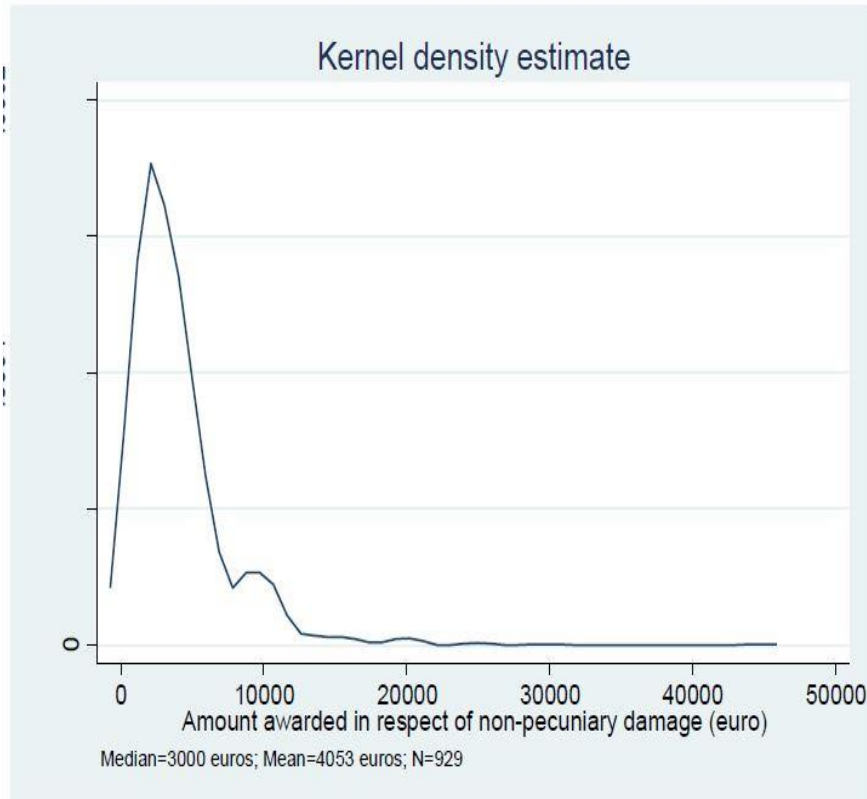
CRITERIA Document Collection: Grand Chamber OR Cha... x

- new CASE OF ABUHMAID v. UKRAINE**
 31183/13 | Available only in [English](#) | Judgment (Merits and Just Satisfaction) | Court (Fifth Section) | 12/01/2017
 Preliminary objection joined to merits and dismissed (Article 34 - Victim) Preliminary objection joined to merits and dismiss... [more...](#)
[Case Details](#) [Press Release](#) [Related](#)
- new CASE OF SAUMIER v. FRANCE**
 74734/14 | Available only in [French](#) | Judgment (Merits and Just Satisfaction) | Court (Fifth Section) | 12/01/2017
 No violation of Article 1 of Protocol No. 1+14 - Protection of property (Article 1 para. 1 of Protocol No. 1 - Possessions) (... [more...](#))
[Case Details](#) [Press Release](#) [Related](#)
- new CASE OF KIRINS v. LATVIA**
 34140/07 | Available only in [English](#) | Judgment (Merits and Just Satisfaction) | Court (Fifth Section) | 12/01/2017
 Violation of Article 6 - Right to a fair trial (Article 6 - Civil proceedings Article 6-1 - Reasonable time) Violation of Art... [more...](#)
[Case Details](#) [Press Release](#) [Related](#)



Example: Damages as Legal Data

Figure 1: Distribution of the amount awarded in respect of non-pecuniary damage (full sample)



Altwicker-Hamori et
al., (2016) 76 (1)
ZaöRV 1



**University of
Zurich^{UZH}**

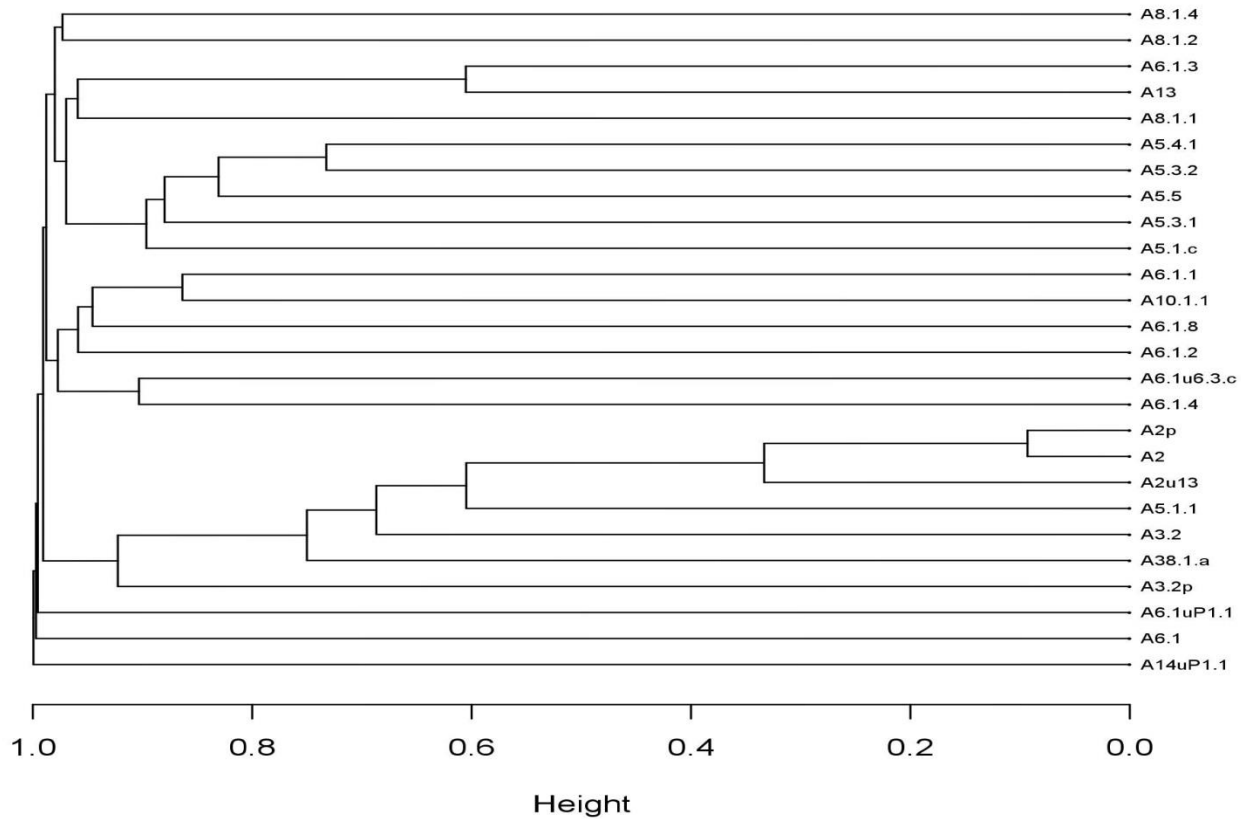
Faculty of Law

Part II: How to make sense of legal data?



Cluster Analysis

Cluster (d = jaccard, link = average), threshold = 25





Regression Analysis

	Model 1	Model 2	Model 3
Protected interest: Life, physical and mental integrity	0.72 (0.17)***	0.73 (0.17)***	0.71 (0.18)***
Protected interest: Physical liberty	-0.59 (0.15)***	-0.58 (0.13)***	-0.60 (0.15)***
Protected interest: Private and family life	0.41 (0.20)**	0.43 (0.21)**	0.37 (0.20)*
Protected interest: Personal and political freedoms	-0.47 (0.19)**	-0.44 (0.18)**	-0.49 (0.20)**
Protected interest: Property	-0.10 (0.16)	-0.13 (0.16)	-0.11 (0.16)
State: Turkey	0.39 (0.10)***	0.48 (0.12)***	0.40 (0.10)***
State: Old member states	0.63 (0.11)***	0.62 (0.11)***	0.64 (0.11)***
Victim type: Legal person	0.42 (0.21)**	0.41 (0.22)*	
Type of opinion: Presence of separate opinion		-0.54 (0.23)**	
Sex: Female			-0.06 (0.06)
Nationality: Non-national of respondent state			0.18 (0.20)
Constant	7.32 (0.23)***	7.48 (0.27)***	7.76 (0.07)***
<i>N</i>	929	929	904

*Significant at 10%; **Significant at 5%; ***Significant at 1%. Standard errors, clustered at the case level, in parentheses. Dependent variable: Natural logarithm of non-pecuniary damage. Omitted categories: Procedural rights, New member states, Unanimous opinion, Natural persons, Male, National of respondent state. Models 1 and 2 are estimated on full sample. Model 3 is estimated on the subsample of natural persons.



Model-based Predictions

$$\log(y_i) = \beta_0 + \beta_1 V_{1i} + \beta_2 V_{2i} + \beta_3 V_{3i} + \beta_4 V_{4i} + \beta_5 V_{5i} + \beta_6 S_{1i} + \beta_7 S_{2i} + \beta_8 L_i + \varepsilon_i$$

$i = 1, \dots, n$

Model 1

- y_i = Amount awarded in respect of non-pecuniary damage
- V_1 = Protected legal interest 1 (life, physical and mental integrity)
- V_2 = Protected legal interest 2 (physical liberty)
- V_3 = Protected legal interest 3 (private and family life)
- V_4 = Protected legal interest 4 (personal and political freedoms)
- V_5 = Protected legal interest 5 (property)
- S_1 = State: Turkey
- S_2 = State: Old member states (accession before 1990)
- L = Victim type: Legal person



**University of
Zurich^{UZH}**

Faculty of Law

Part III: What are typical challenges of legal data analytics?

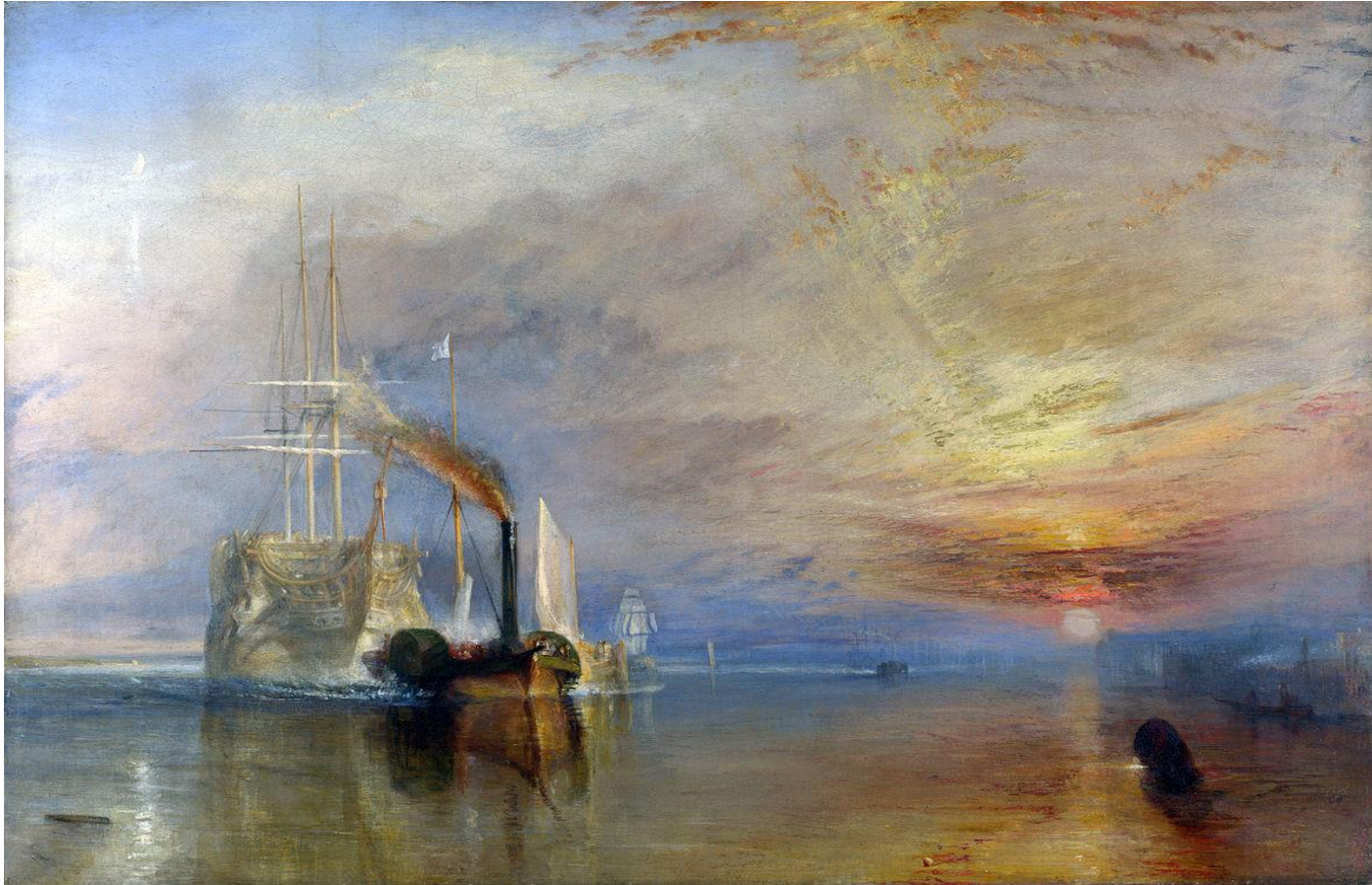


Challenges

- Data quality: missings, no «data generating consciousness» of courts
- Narrowing the scientific perspective: what about normative dimension of the law?
- Identity: loss of «proprium» of legal scholarship?



William Turner, The Fighting Temeraire (1839)



The National Gallery, London



Sources

Alexy, Robert: 'Die Doppelnatur des Rechts' (2011) 50 *Der Staat* 389

Altwicker-Hámori, Szilvia; Altwicker, Tilmann; Peters, Anne, 'Measuring Violations of Human Rights: An Empirical Analysis of Awards in Respect of Non-Pecuniary Damage under the European Convention on Human Rights' (2016) 76 (1) *ZaöRV* 1

Augsberg, Ino: 'Some Realism About New Legal Realism: What's New, What's Legal, What's Real?' (2015) 28 *Leiden Journal of International Law* 457

Morgan, Matthew: Talk on The Fighting Temeraire (2016):
<https://www.youtube.com/watch?v=8O-fna8HrWw>

Rottleuthner, Hubert: 'Rechtswissenschaft als Sozialwissenschaft', in E. Hilgendorf and J. C. Joerden (eds.), *Handbuch Rechtsphilosophie* (2017) 251

Turner, William: The Fighting Temeraire (1839):
<http://www.nationalgallery.org.uk/paintings/joseph-mallord-william-turner-the-fighting-temeraire>