

Annotating legal argument schemes

A parametric approach

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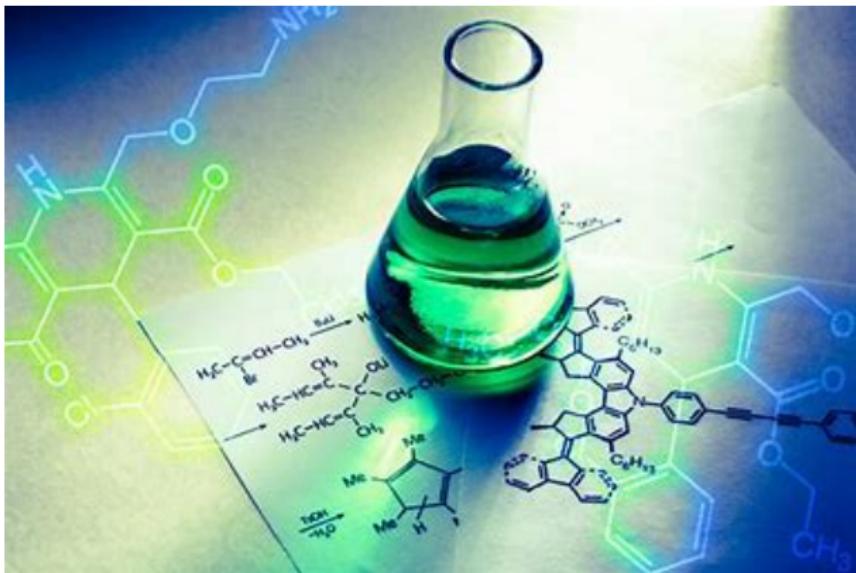
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Motivation

Highlight the potential of the Periodic Table of Arguments as an alternative argument classification framework in the legal field compared to Walton's schemes

The Periodic Table of Arguments



The Periodic Table of Arguments

- Minimal conceptualization of argument types (premise and conclusion + lever)
- Parameters
 - Argument form (alpha, b̄eta, gamma and delta)
 - Argument substance (combination of fact, value and policy statements)
 - Argument lever (keyword)
- Argument type identification procedure (ATIP)

The Periodic Table of Arguments

β	subject	PERIODIC TABLE OF ARGUMENTS												predicate	α		
1															1		
	Cmp from comparison	Pa from parallel		Mi from measure	Ma from measure	An from analogy		Cas case to case	Crr from correlation	Exa from example	Ef from effect	G from genus	Cau from cause	Sig from sign	Ax axiologic argument	De deontic argument	
	PP	PV	PF	VP	W	VF	PP	PF	PF	PF	PV	PF	PF	PF	PV	PP	
	Cns from consistency	O from opposites	T from truths		Di from distinctions	Pe petitio principii									Au from authority	U from utility	
2															Ba ad baculum	Ch from character	
γ	subject														Em from emotion		
															Car ad cunctam	H ad hominem	
															Eth ethic argument		
2																predicate	8

For more info please visit www.periodic-table-of-arguments.org

Benefits of the PTA

Visser et al., 2018 conclude that the annotations of both classification frameworks “provide invaluable training and test datasets for argument mining techniques. In particular, the US2016G1tvWAGEMANS corpus opens up new avenues in automatic scheme identification by providing the means to break down the objective into simpler classification tasks” [P. 323].

Legal field

"Walton's notion of argumentation schemes has had a profound influence on AI and Law" (Atkinson & Bench-Capon, 2021)

Reconstruction

- Analogy arguments statutory interpretation (Macagno & Walton, 2017)
- Constructive reconstruction

Walton *Analogia legis*

Argumentation scheme 3a: Argument from *analogia legis*

PREMISE 1 (RULE)	If x is P , then x has the right/is A .
PREMISE 2 (BORDERLINE)	It is not clear whether a (a borderline case) is P .
SIMILARITY PREMISE	a is similar to b .
PREMISE 3 (PRINCIPLE OF CLASSIFICATION)	b was classified as P because of the factors f_1, f_2, \dots, f_n .
REDEFINITION PREMISE	If x has the factors f_1, f_2, \dots, f_n , then x is P .
PREMISE 4 (FACTORS)	a has f_1, f_2, \dots, f_n .
CONCLUSION	Therefore, a is P .

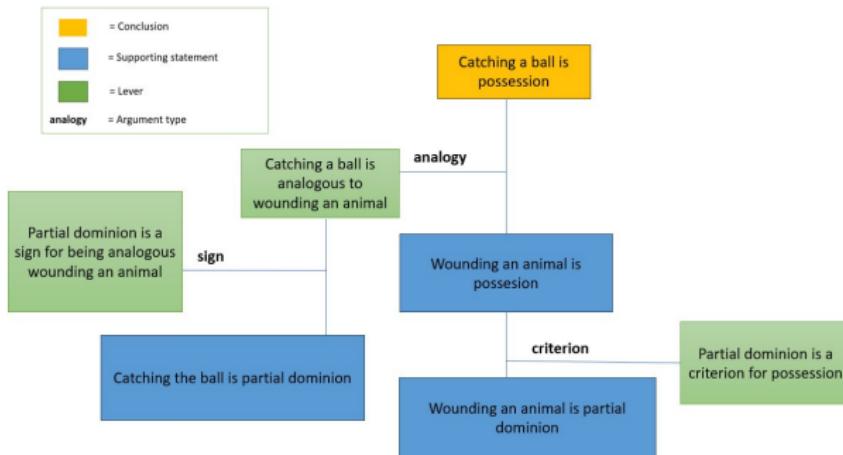
Example Walton's *analogia legis*

Similarity premise	Catching a ball is analogous to wounding an animal
Premise 3	Wounding an animal is possession, because one establishes partial dominion
Redefinition premise	If x establishes partial dominion and control, then x is possession
Premise 4	Catching a ball is establishing partial dominion
Conclusion	Catching a ball is possession

PTA Analogia legis

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Contributions

- Reconstruction of Walton's schemes into PTA structures

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- Highlight potential use of PTA
 - ① More explicit representation of argument types and functions
 - ② Systematic classification of argument schemes

Reconstruction steps

- ① Determine main argument
- ② Identify common terms
- ③ Remaining premises function as argument or lever support in reasonable position (Gamma arguments)