

Identifying the Human Values behind Arguments

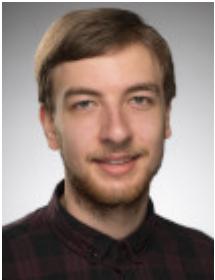
ACL 2022



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Wachsmuth²



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Identifying the Human Values behind Arguments

Background

Wealthy countries should provide
a universal basic income



Such income would improve
the lives of many people

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Wealthy countries should provide a universal basic income



Such income would improve the lives of many people



Such income would improve working capabilities and conditions

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“Epistemological Why”

- Why is this true?

Wealthy countries should provide a universal basic income



Such income would improve the lives of many people

epistemological support



Such income would improve working capabilities and conditions

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“Epistemological Why”

- Why is this true?

Wealthy countries should provide a universal basic income

“Ethical Why”

- Why is this good?

epistemological support

Such income would improve working capabilities and conditions

ethical support

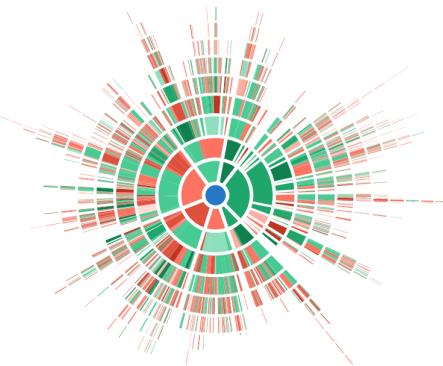
It is good if people *have a comfortable life*

Identifying the Human Values behind Arguments

Background

“Epistemological Why”

- Why is this true?
- Ever branching reasons (infinitely?)



Source: kialo.com

Wealthy countries should provide a universal basic income

Such income would improve the lives of many people

Such income would improve working capabilities and conditions

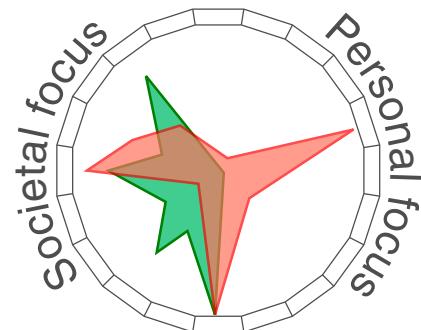
It is good if people *have a comfortable life*

epistemological support

ethical support

“Ethical Why”

- Why is this good?
- Leading to *values* (finite set)



Identifying the Human Values behind Arguments

Values in Argumentation Frameworks

Value priorities are one aspect of argument strength (Bench-Capon, 2021)

“Consider the arguments *We should raise taxes to reduce inequality* and *We should not raise taxes as people have a right to spend their money as they wish*. Which is stronger? I would say the former and Boris would say the latter. It is a matter of the values to which one subscribes.”



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Values in Argumentation Frameworks

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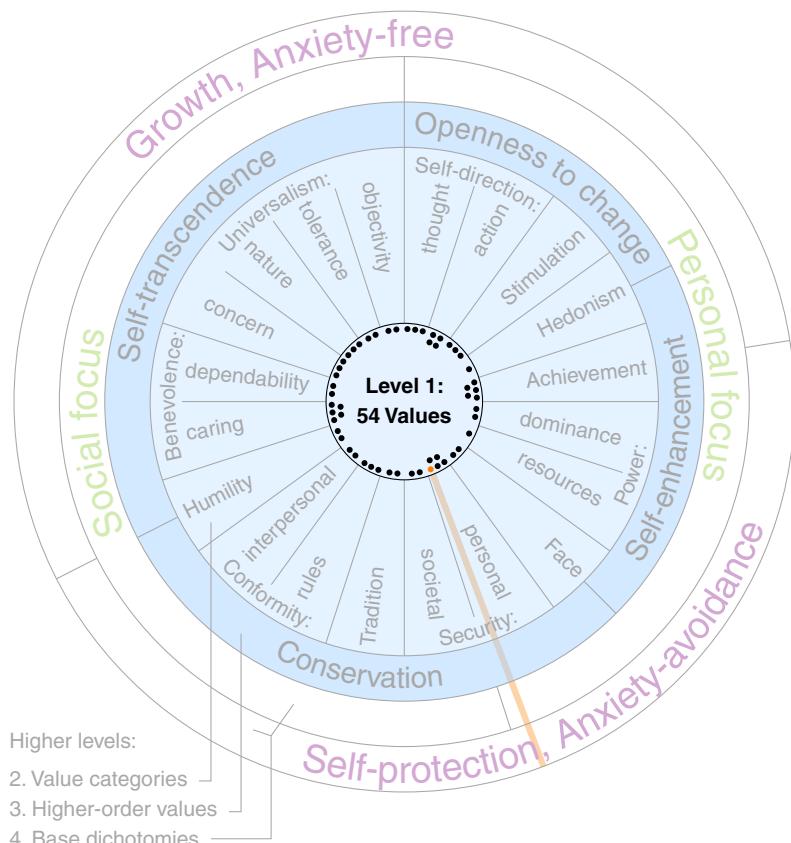
Audience-specific value-based argumentation framework (Bench-Capon, 2003)

$$\text{VAF}_a = \langle AR, \text{attacks}, V, \text{val}, \text{valpref}_a \rangle$$

- Set of arguments AR
- Irreflexive binary relation attacks on AR
- Set of values V
- Function $\text{val} : AR \mapsto V$
- Preference relation valpref_a on V^2 for audience a

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Value Taxonomy



Example value: *Have a comfortable life*

E.g., arguments listing

- subsistence income
- having no financial worries
- a higher general happiness
- a prosperous life

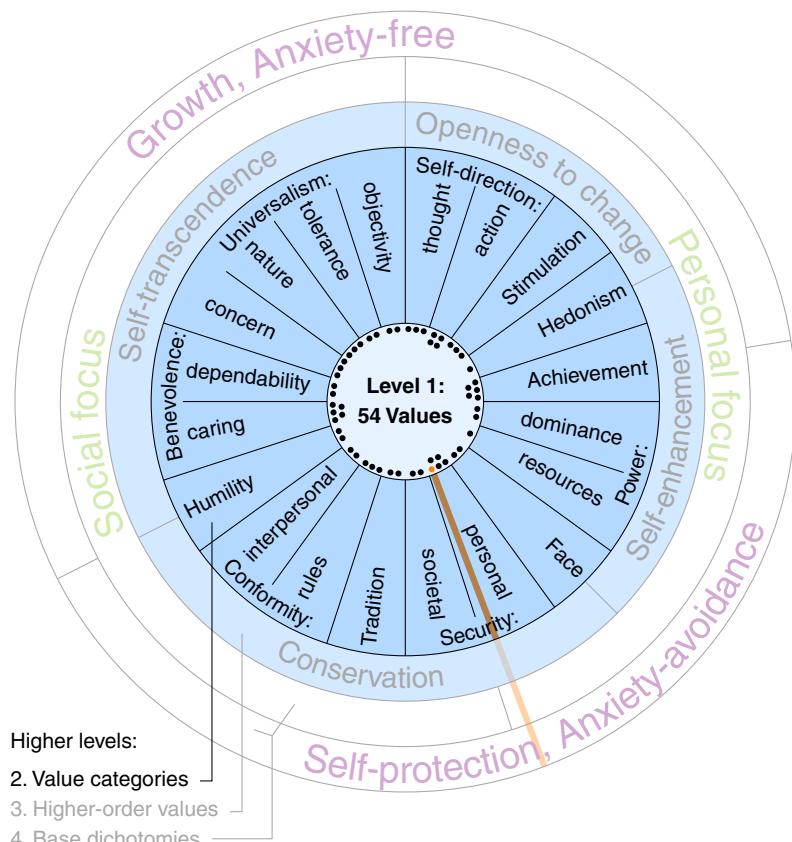
Higher levels:

2. Security: personal
3. Conservation
- 4a. Personal focus
- 4b. Self-protection, Anxiety avoidance

Taxonomy based on Schwartz et al., 2012 (mostly); Rokeach, 1973; Brown and Crace 2002; and the World Value Survey

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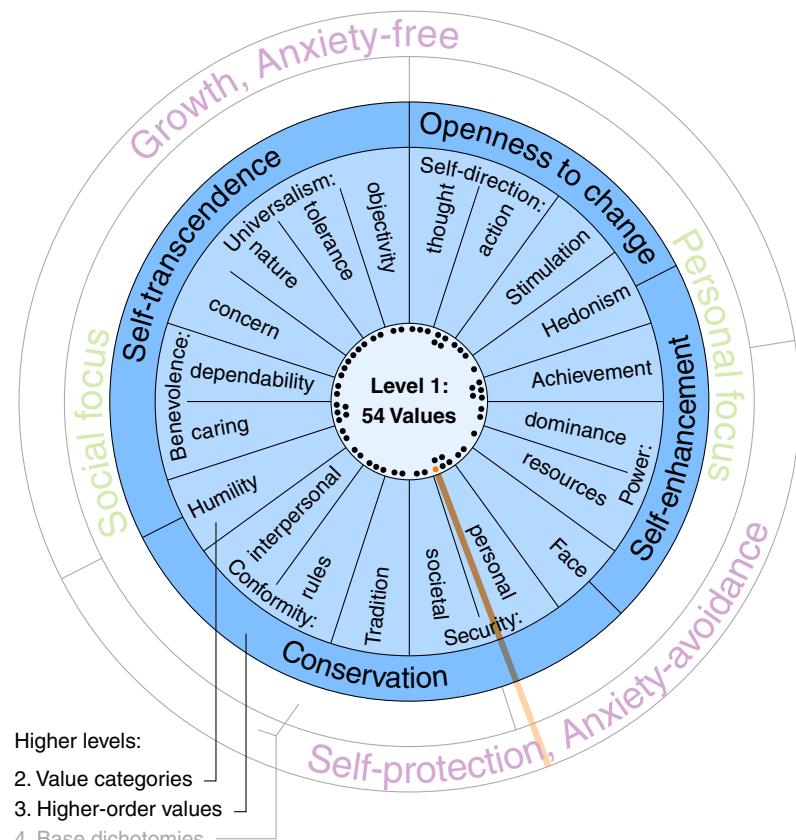
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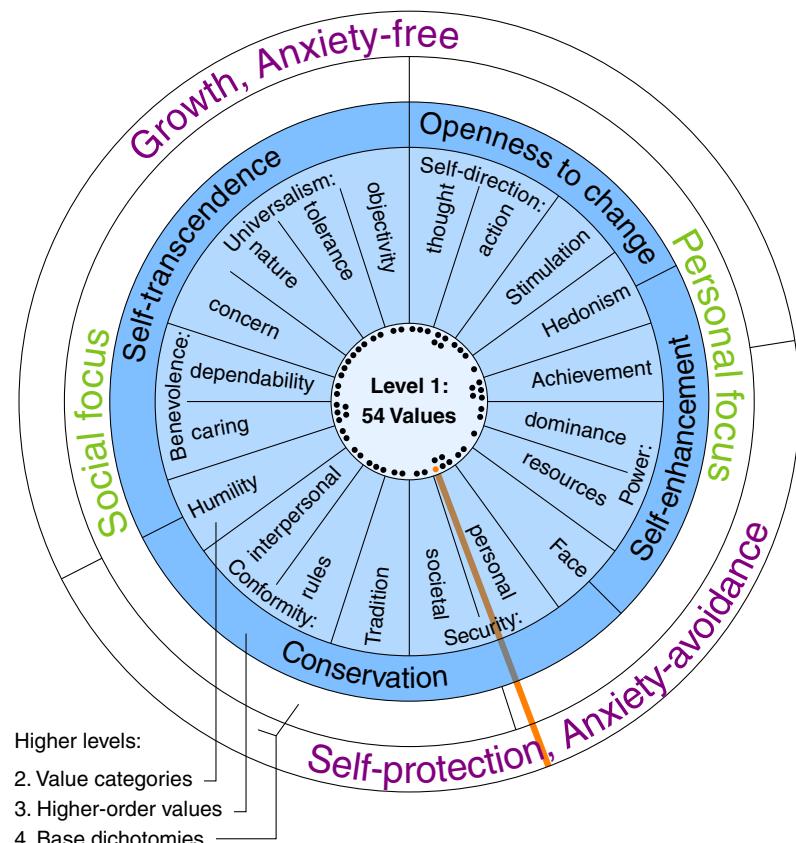
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Identifying the Human Values behind Arguments

Dataset: Webis-ArgValues-22

Part	Source	Conclusions		Premises		
		Total	Pros	Cons		
Africa	Editorials	23	50	37	13	
China	QA website (in Chinese)	12	100	59	41	
India	Curated pro/con list	40	100	60	40	
USA	IBM-ArgQ-Rank-30kArgs	71	5020	2619	2401	
Total		146	5270	2775	2495	



Annotation:

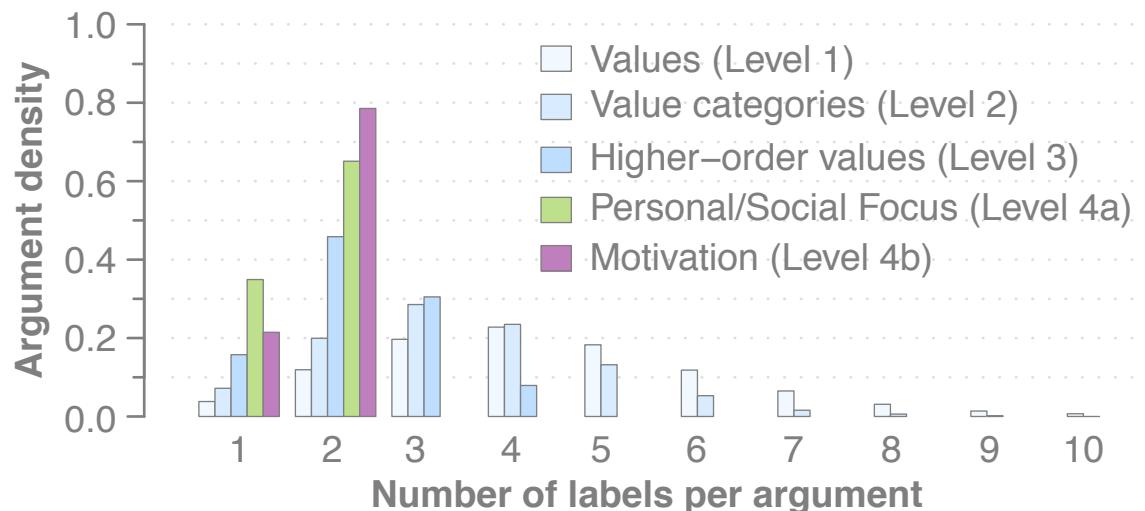
Crowdsourced (MTurk)

3 annotators/argument

2:40 minutes/argument

Value-wise α of 0.49

Values propagated up



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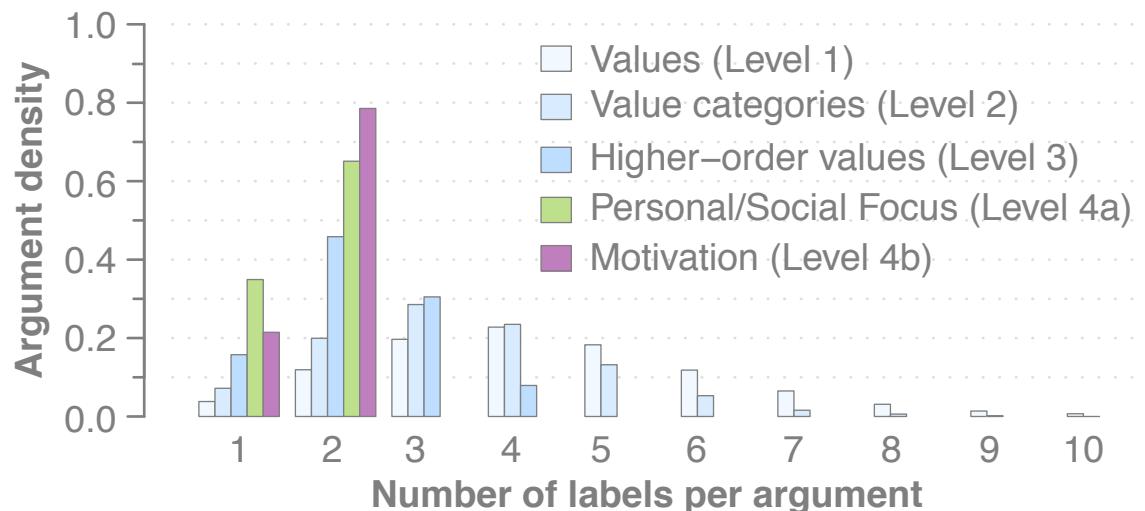
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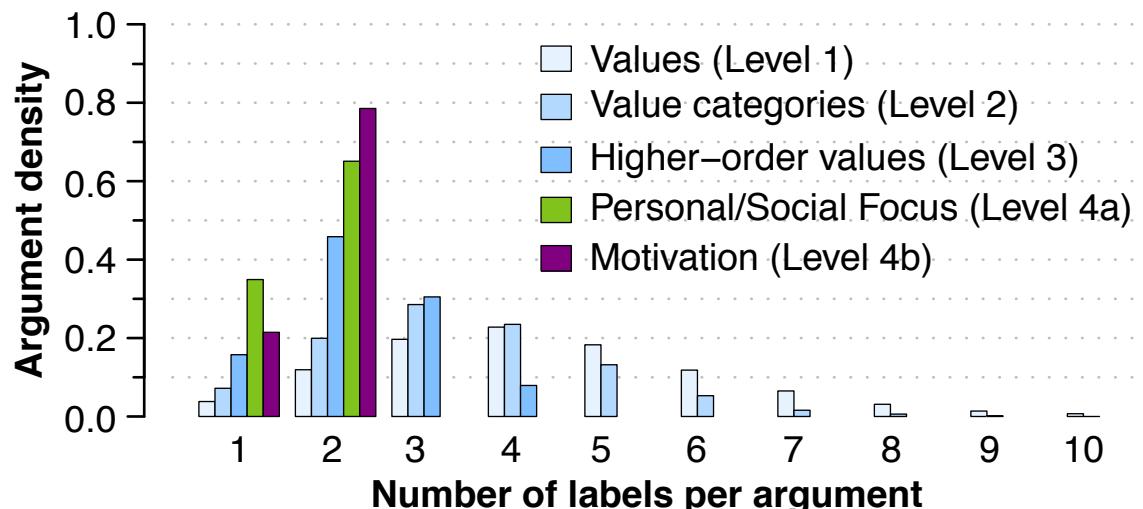
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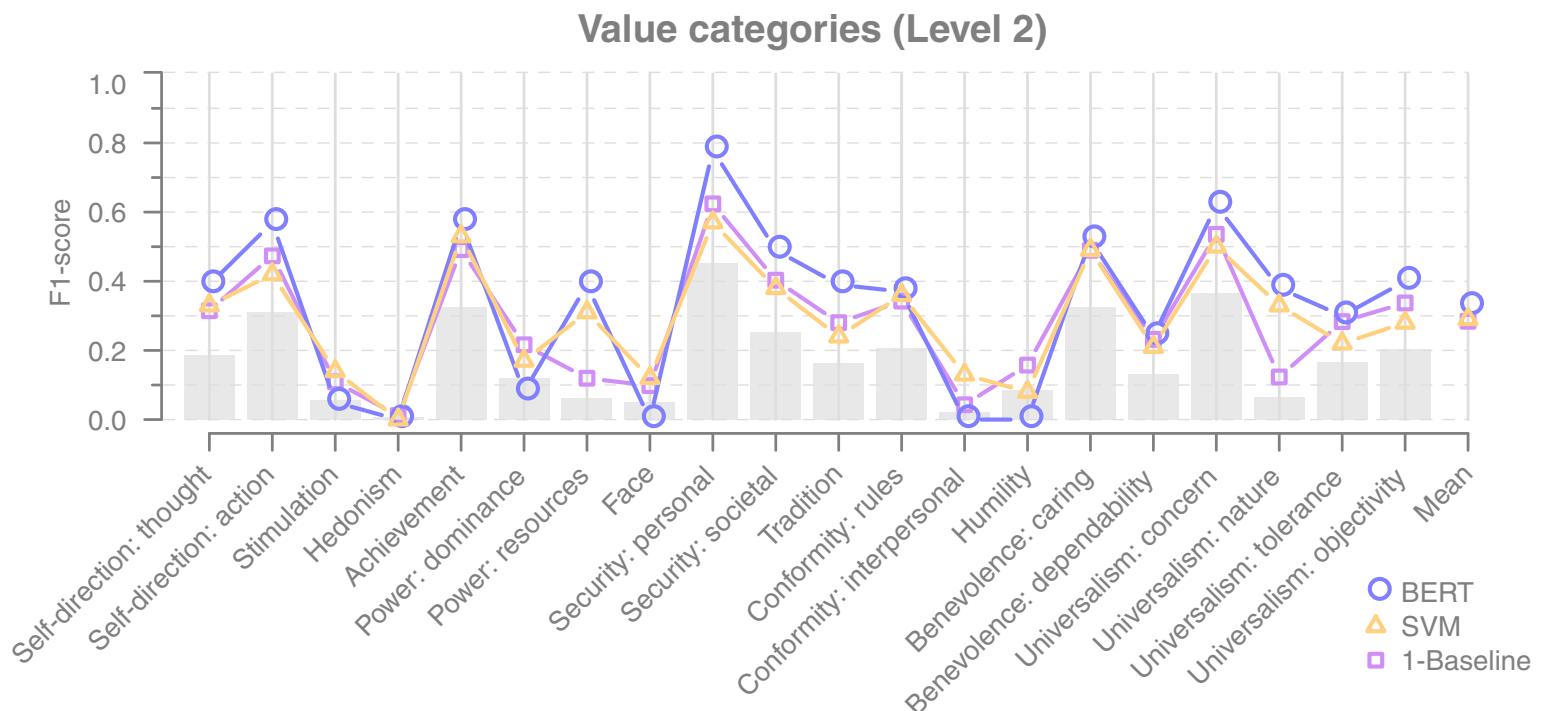
Examples

Argument	Values	Part
○ Pro “South Africa’s COVID-19 lockdown was too strict”: The economic ramifications of the lockdown have been huge, and have been felt hardest by those who were already most vulnerable.	Have a comfortable life, Have a stable society, Have equality	Africa
○ Pro “We should protect our privacy in the Internet age”: The leaked personal information will be defrauded by fraud gangs to gain trust and carry out fraudulent activities.	Have privacy, Have a stable society, Be compliant	China
○ Con “Rapists should be tortured”: Throughout India, many false rape cases are being registered these days. Torturing all of the accused persons causes torture to innocent persons too.	Have a safe country, Have a stable society, Be just	India
○ Pro “We should adopt an austerity regime”: An austerity regime will help to reduce the deficit of the country.	Have no debts, Have a stable society, Be responsible	USA

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Automatic Identification: Trained on USA; Tested on USA

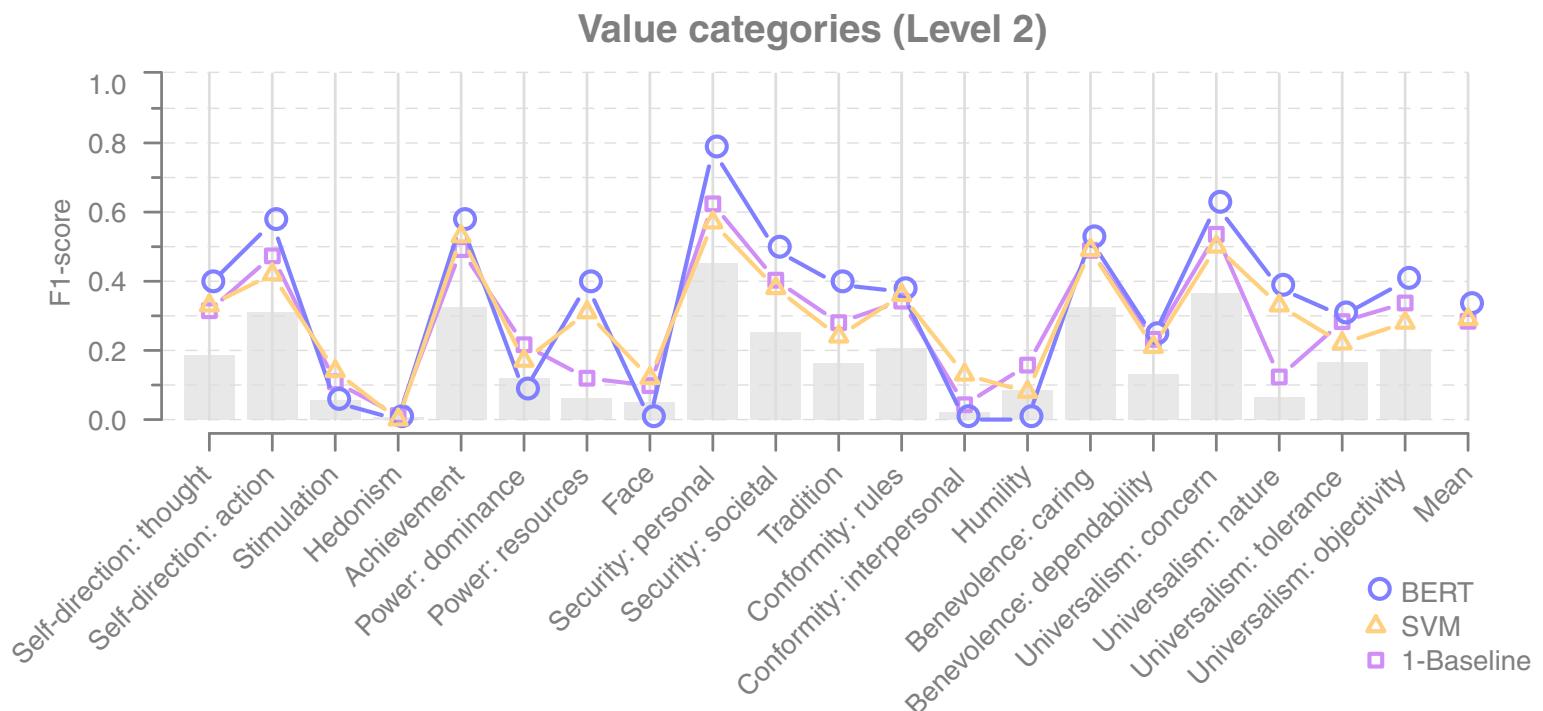
Model	Level 1				Level 2				Level 3			
	P	R	F ₁	Acc	P	R	F ₁	Acc	P	R	F ₁	Acc
BERT	0.40	0.19	0.25	0.92	0.39	0.30	0.30	0.84	0.65	0.78	0.71	0.67
SVM	0.21	0.19	0.20	0.88	0.30	0.30	0.30	0.77	0.66	0.68	0.67	0.65
1-Baseline	0.08	1.00	0.16	0.08	0.18	1.00	0.28	0.18	0.60	1.00	0.75	0.60



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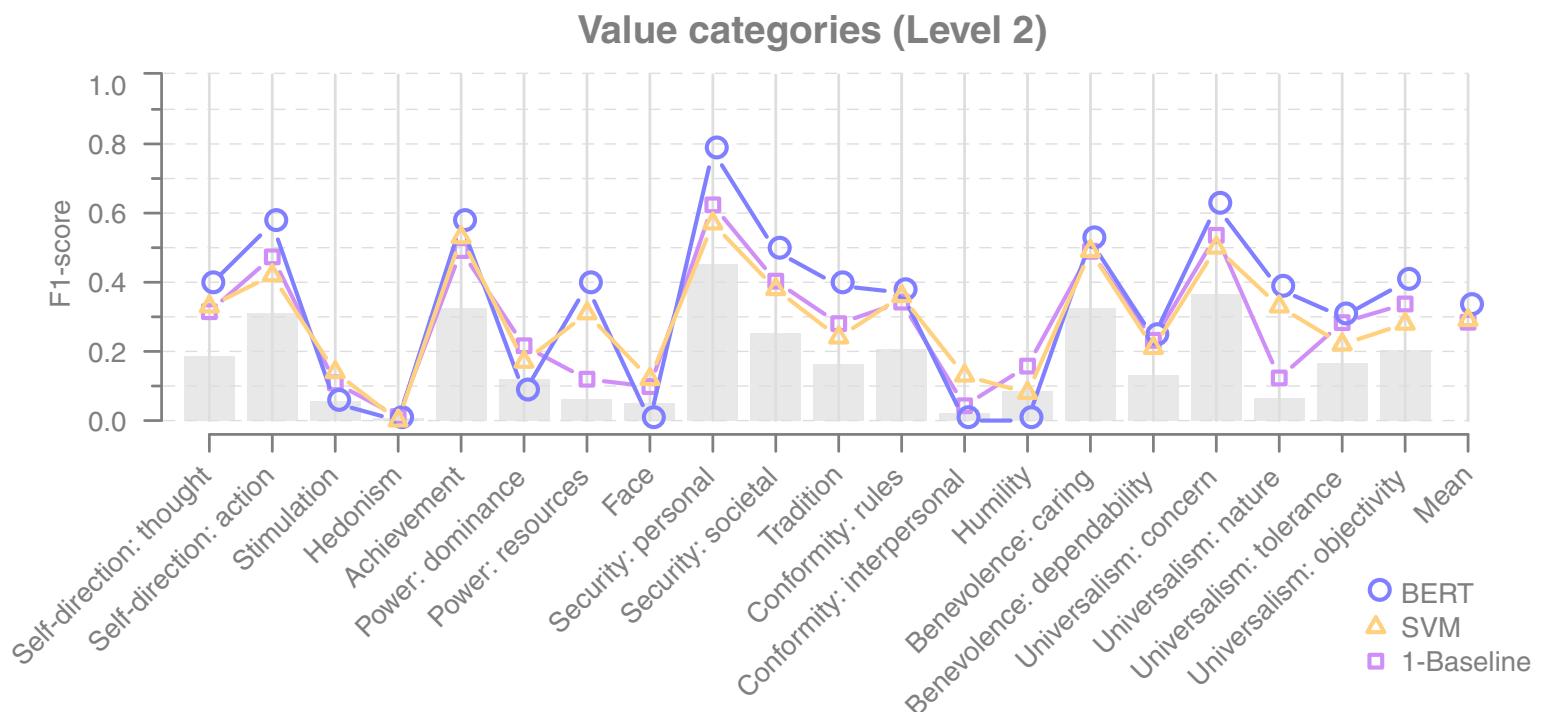
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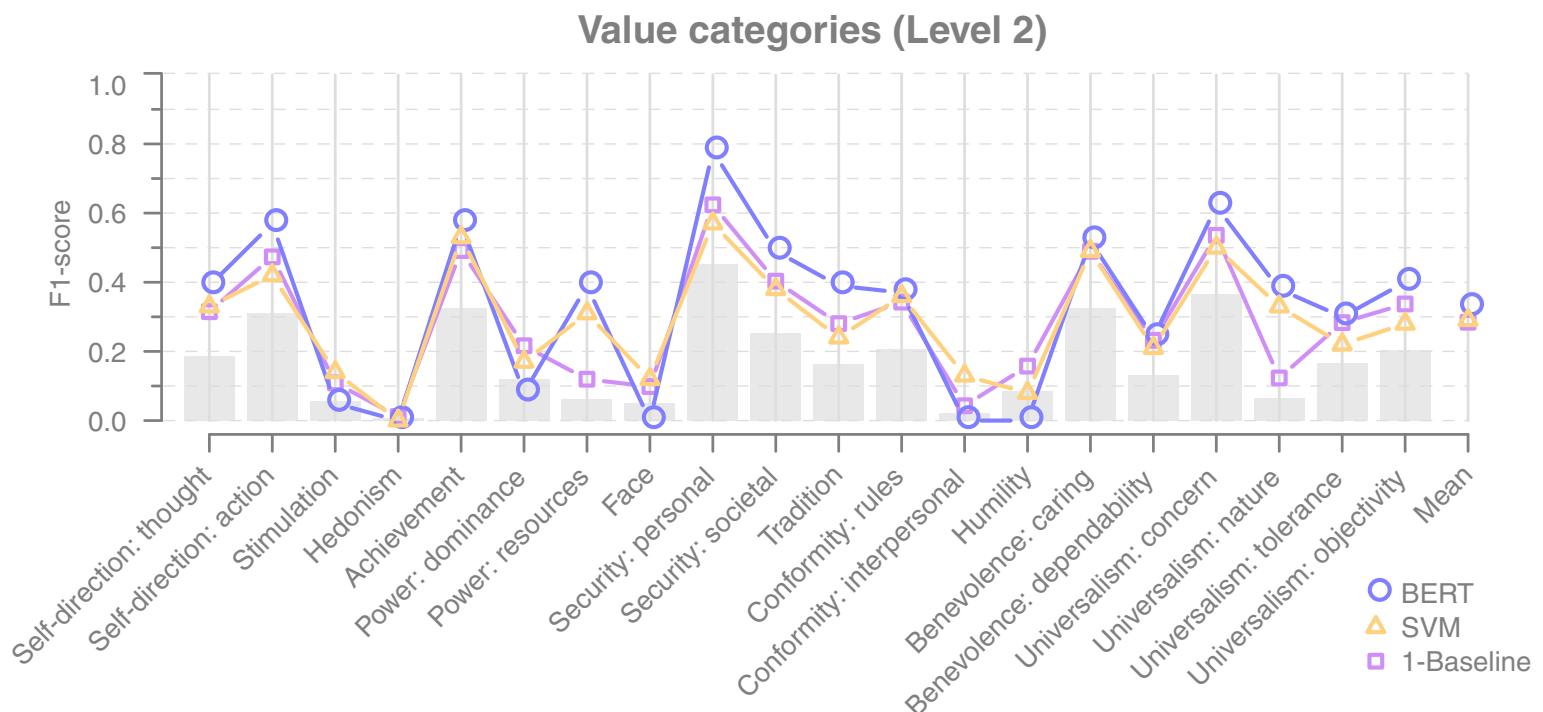
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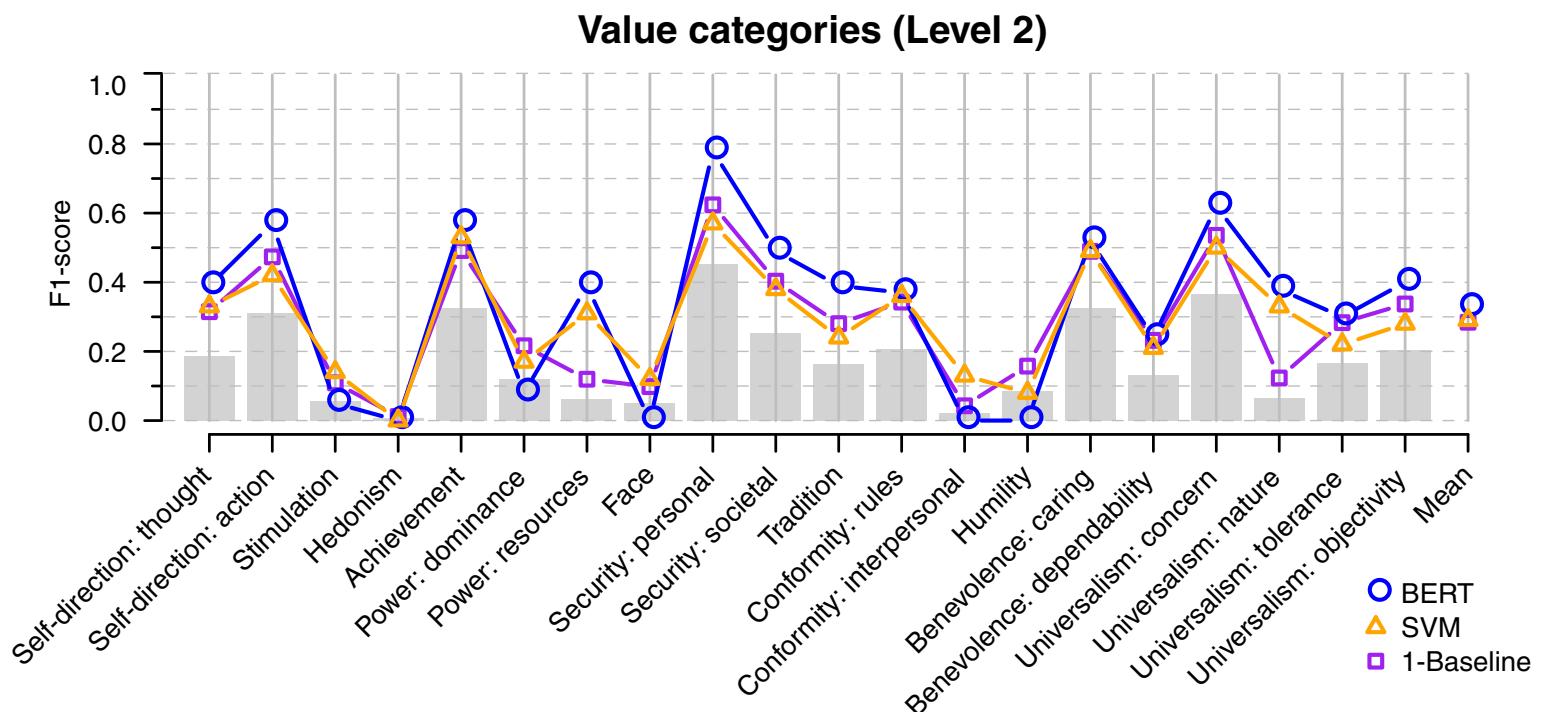
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Automatic Identification: Trained on USA; Tested on X

Measure: F_1

Model	Level 1				Level 2				Level 3			
	Africa	China	India	USA	Africa	China	India	USA	Africa	China	India	USA
BERT	0.20	0.21	0.30	0.25	0.38	0.37	0.41	0.34	0.60	0.68	0.71	0.71
SVM	0.21	0.21	0.25	0.20	0.29	0.30	0.27	0.30	0.53	0.57	0.57	0.67
1-Baseline	0.16	0.13	0.12	0.16	0.27	0.23	0.21	0.28	0.63	0.65	0.62	0.75

Identifying the Human Values behind Arguments

Automatic Identification: Trained on USA; Tested on X

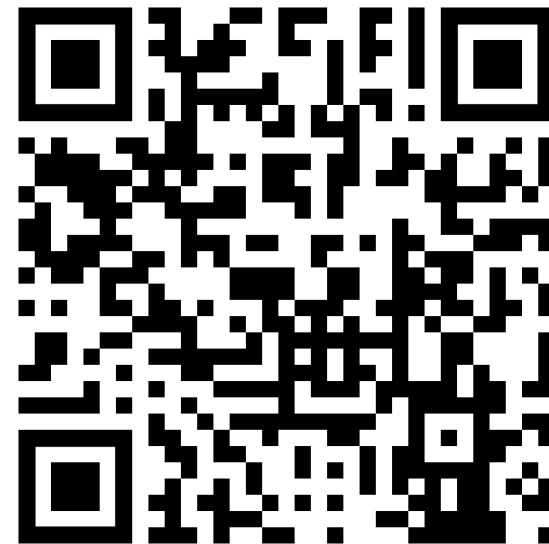
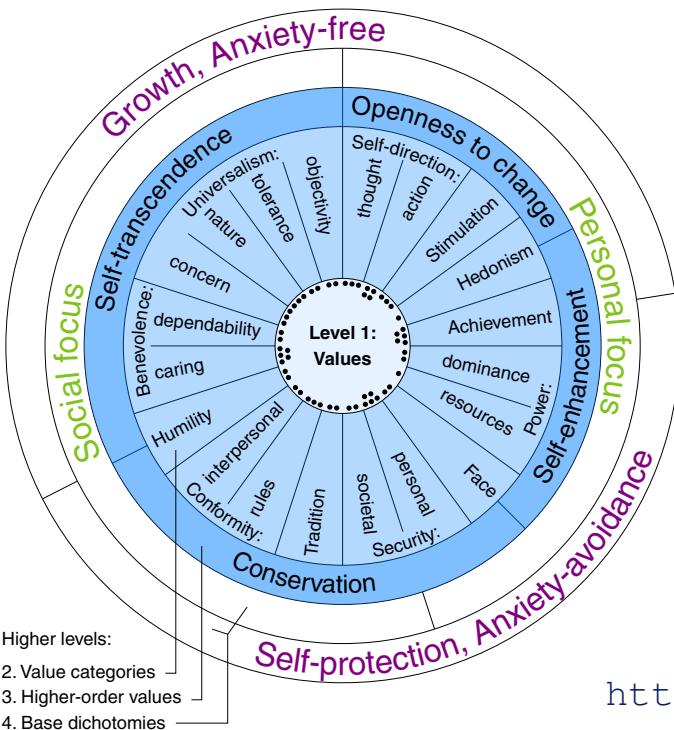
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Conclusion

- ❑ “Ethical Why” – the human values an argument resorts to
- ❑ Multi-level value taxonomy with 54 values based on social science research
- ❑ Labeled dataset of 5270 arguments and first classification experiments



paper, code, data

https://publications.webis.de#kiesel_2022b