

Aspect-Based Sentiment Analysis for Literary Criticism: Experts vs. Social Critics on Literary Prizes

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INTRODUCTION & MOTIVATION

FWO-Project: "Evaluation of literature by professional and layperson critics. A digital and literary sociological analysis of evaluative talk of literature through the prism of literary prizes (2007-2017)"¹

- "How do social critics react to authors, texts, critics in the context of literary prizes online?"; contrastive in 3 languages DE/ENG/NL in the period 2007-2017 (e.g. *Ingeborg-Bachmann-Preis* vs. *Büchner-prize*)
- Gain insight in the literary evaluative criteria & the differences in evaluation practices across platforms and media
- Goal:
 - Compare professional and social critics (via ABSA)
 - Finetuning of models via annotation



EXPERIMENTS

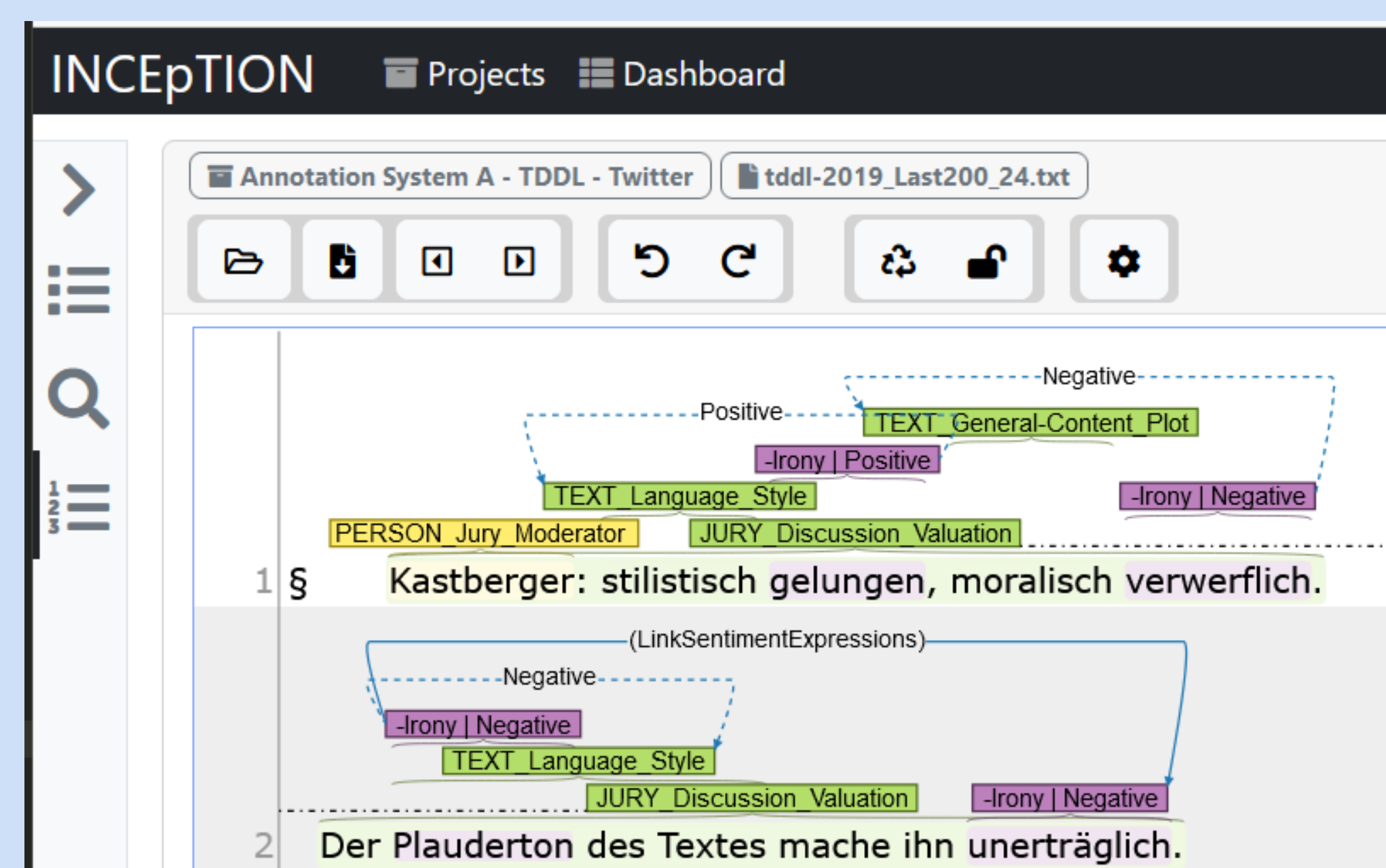
Corpora:

Social media posts in German and English related to literary prizes, collected with hashtags, e.g. #tddl, #tddl19, #bachmannpreis... + jury reports/press releases/...

Task:

- Domain adaptation of ABSA to literary criticism via pre-trained German/English BERT, fine-tuned for Aspect Category Classification and Aspect Sentiment Analysis
- 80% training data, 20% to determine the accuracy
- ABSA subtasks:
 1. Automatic Aspect Term Extraction (AATE)
 2. Aspect Category Classification (ACC)
 3. Aspect Polarity Classification (APC)
- 2 Polarity approaches:
 - Using aspect embeddings only
 - Using an additional context window of 5 adjoining words in either direction → best results

CORPUS ANNOTATION & ANALYSIS: Annotation stats & examples



Method: Aspect-Based Sentiment Analysis (ABSA), cf. De Greve (2021)

Three Layers:

1. Aspects or Feature Expressions (FE):
 - 7 main categories: "Text", "Reading", "Contender", "Jury", "Onsite Audience", "Meta" & "Allo-References"
 - 54 subcategories: e.g. "Characters", "Form", "General", "General Content or Plot", "Language or Style", "Point of View or Narration"...
2. Named Entities (NE): "Event", "Organisation", "Person" & "Product"
3. Polarity or Sentiment Expressions (SE): "positive", "neutral", "negative"

German Model: Automatic Aspect Term Extraction				
	Precision	Recall	F1-score	Support
I (Inside)	0,44	0,67	0,53	997
B (Beginning)	0,64	0,61	0,62	736
Macro avg	0,54	0,64	0,57	1733
Weighted avg	0,52	0,64	0,57	1733

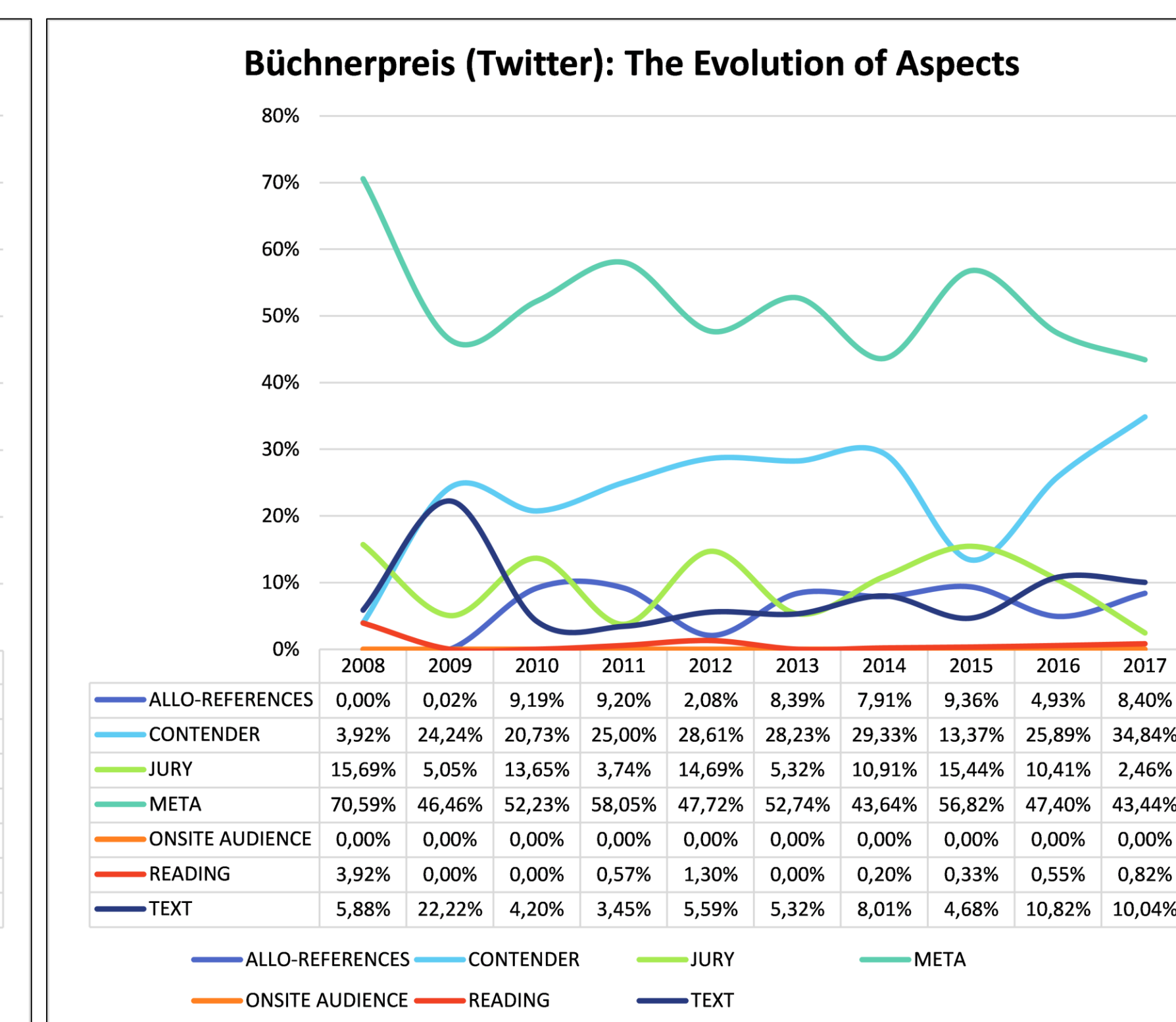
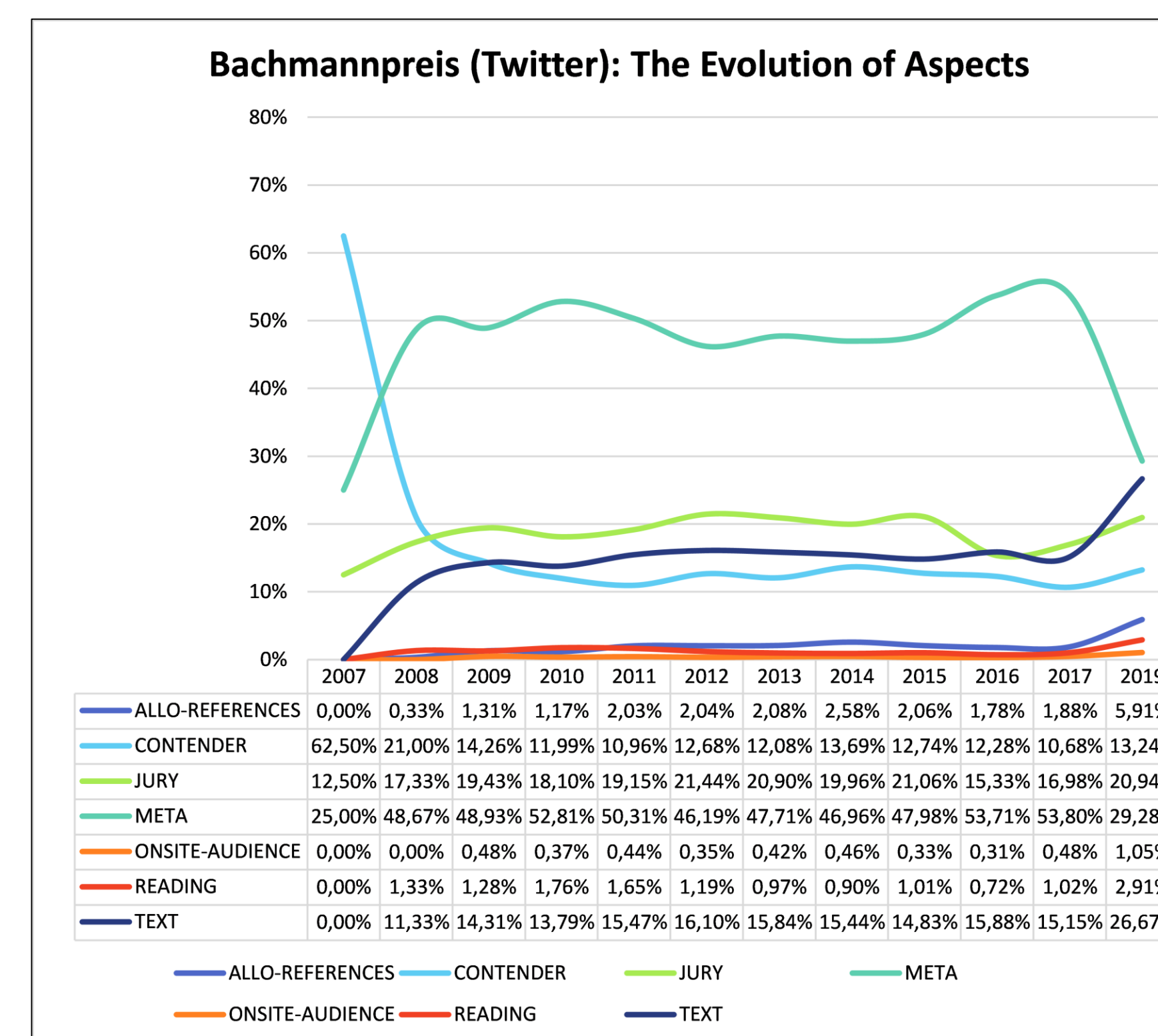
German Model: Coarse-Grained Category Classification Results				
	Precision	Recall	F1-score	Support
Text	0,87	0,83	0,85	408
Reading	0,78	0,69	0,73	42
Onsite Audience	0,73	0,67	0,7	24
Meta	0,87	0,86	0,86	415
Jury	0,75	0,88	0,81	311
Contender	0,92	0,82	0,86	198
Allo-References	0,74	0,68	0,71	76
ACCURACY: 0,83				
Macro avg	0,71	0,68	0,69	1475
Weighted avg	0,84	0,83	0,83	1475

German Model: Aspect Polarity Classification Results (no irony)				
	Precision	Recall	F1-score	Support
Positive	0,71	0,60	0,65	424
Negative	0,71	0,81	0,76	526
ACCURACY: 0,71				
Macro avg	0,71	0,70	0,70	950
Weighted avg	0,71	0,71	0,71	950

CONCLUSION & FUTURE WORK

Conclusions:

- Evolution of aspects over time shows divergence in social media coverage
 - Bachmann prize live-streamed vs. "academy (oeuvre) prize is not
 - Contrary to received opinion, social critics are critical & focused on the core business (texts), not (just) "eventification"
- Irony/sarcasm relatively rare/ hard to detect, annotated but not used



Future work:

- Synthetic data? few-shot/zero-shot approaches? (Cf. Borst et al 2023)
- Finetuning of (closed-source!) gpt-3.5 or open-source LLM models
- Multimodal models

References:

Borst, Janos, Lino Wehrheim, Andreas Niekler, and Manuel Burghardt, 'An Evaluation of a Zero-Shot Approach to Aspect-Based Sentiment Classification in Historic German Stock Market Reports', *Preprints of Communication Papers of the 18th Conference on Computer Science and Intelligence Systems*, 2023, 51–60

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Project Website



GitHub

