Computational Narratology between Text Surface, Deeper Structure and Readers

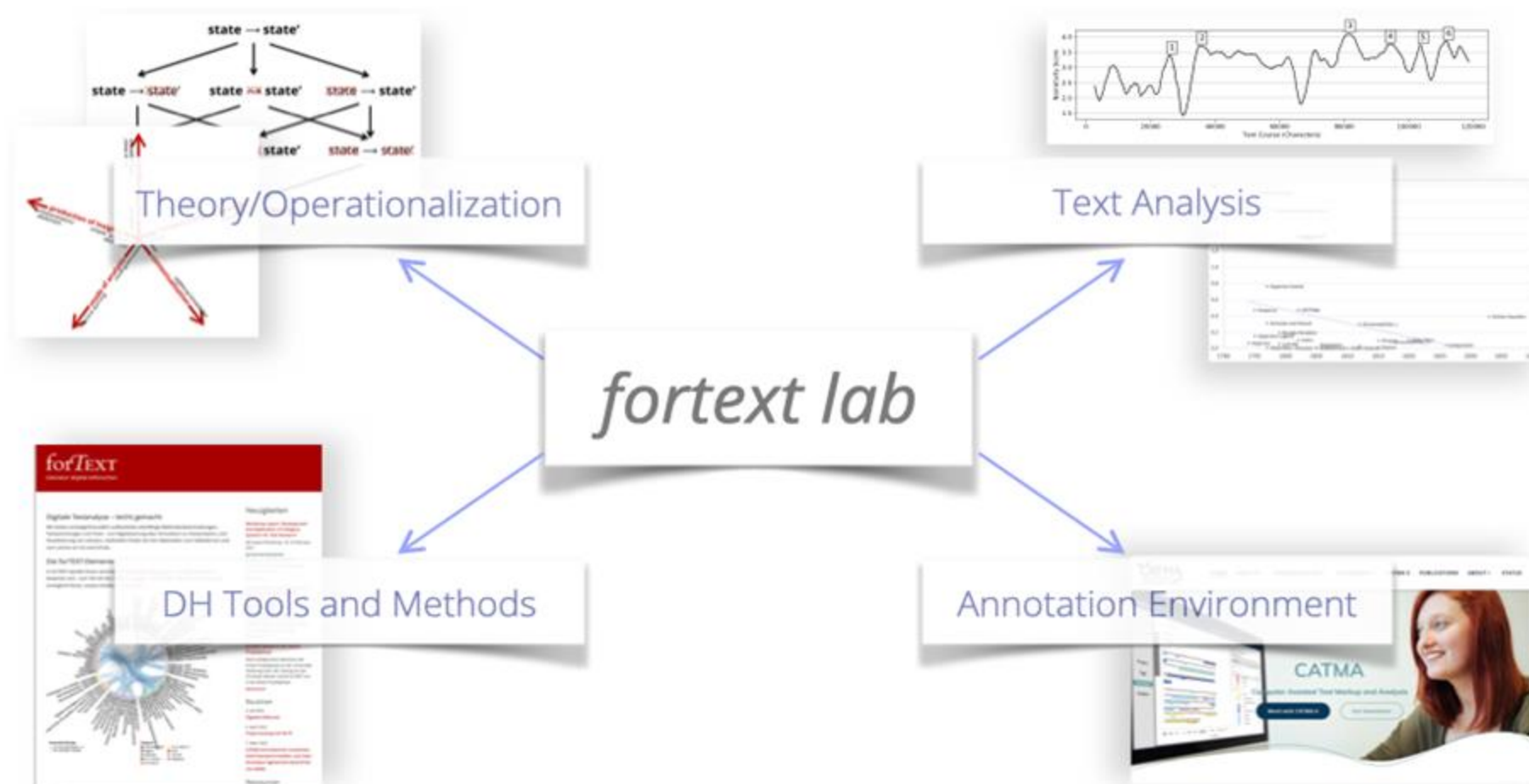Evelyn Gius (Technical University of Darmstadt)

MITE final workshop

From critical analysis to formal representation: literary characters, interpretations, and ontologies

21-23 October 2025, Trento

Overview

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- Preface: My Background / the fortext lab
- Two Major Challenges for Computational Narratology
  - From Theory to Text
  - From Text to Everything Else(?)
- Towards a Model for Narratological Text Analysis
  - The Conceptual Perspective
  - The Analysis Perspective
- Outlook:
  - Towards A Comprehensive Model for Computational Narratology?

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Theory/Operationalization

Text Analysis

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DH Tools and Methods

Annotation Environment

cf. https://lab.fortext.org

Research discussed in this Talk

- EvENT (2020-2024): Modelling events in narrative theory + automated recognition of events in German prose

- PLANS (2024-2026): Developing and implementing a multifaceted concept for the detection of plot units

Presentation partly based on the talk by Hans Ole Hatzel & Haimo Stiemer

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PLANS Project Report
October 2025

Project Leadership: Chris Biemann, Evelyn Gius
Project Associates: Hans Ole Hatzel, Haimo Stiemer

DFG Deutsche Forschungsgemeinschaft · Computational LITERARYSTUDIES

→Funded by the German national funding agency DFG in the priority program 2207 Computational Literary Studies

→Collaboration with Chris Biemann, University of Hamburg

Two Major Challenges for Computational Narratology

1: From Theory to Text

Computational Narratology

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Narrative Theory for Computational Narrative Understanding

Depart...

sense inference, and event detection. While this work has brought an important empirical lens for examining narrative, **it is by and large divorced from the large body of theoretical work on narrative within the humanities, social and cognitive sciences.** In this posi-

Abstract

Over the past decade, the field of natural language processing has developed a wide array of computational methods for reasoning about narrative, including summarization, commonsense inference, and event detection. While this work has brought an important empirical lens for examining narrative, it is by and large divorced from the large body of theoretical work on narrative within the humanities, social and cognitive sciences. In this position paper, we introduce the dominant theoretical frameworks to the NLP community, situate current research in NLP within distinct narratological traditions, and argue that linking computational work in NLP to theory opens up a...

cultural functions, the NLP community has drawn on a wide range of theoretical perspectives on narrative (both implicit and explicit), without the benefit of situating those perspectives within a broader organizing theoretical structure. Such an organizing structure can encourage terminological consistency and methodological clarity in terms of research goals, while also illuminating the points of contact between seemingly unrelated research agendas.

This position paper seeks to provide the beginnings of such a unifying framework for the computational study of narrative. Drawing on the multiple expertises of literary and textual studies on the one hand and natural language processing on the other, our aim is to provide an overview of the different...

Narrative Theory in Computing and Computational Narratology

Challenge 1:
Connect Theory to Text Phenomena

The Gap:
- NLP lacks intension
- CN lacks measurement
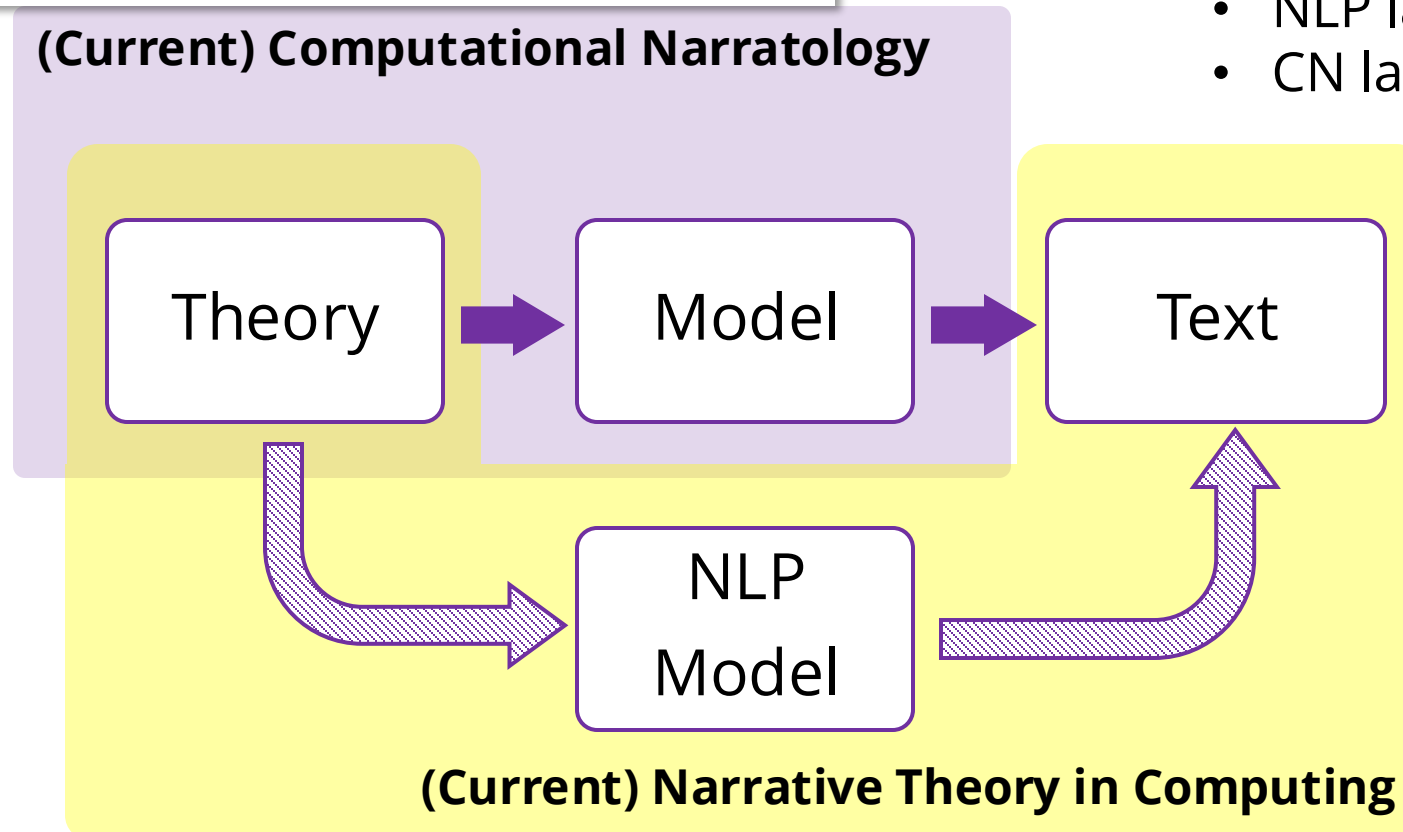
Challenge 1: The Missing Link

Model =
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a) a conceptual (narratological) understanding of how texts work

b) workflow of formalizing / operationalizing phenomena for their analysis (cf. *modelling*)

(Current) Computational Narratology

Theory → **Model** → Text

NLP Model

(Current) Narrative Theory in Computing
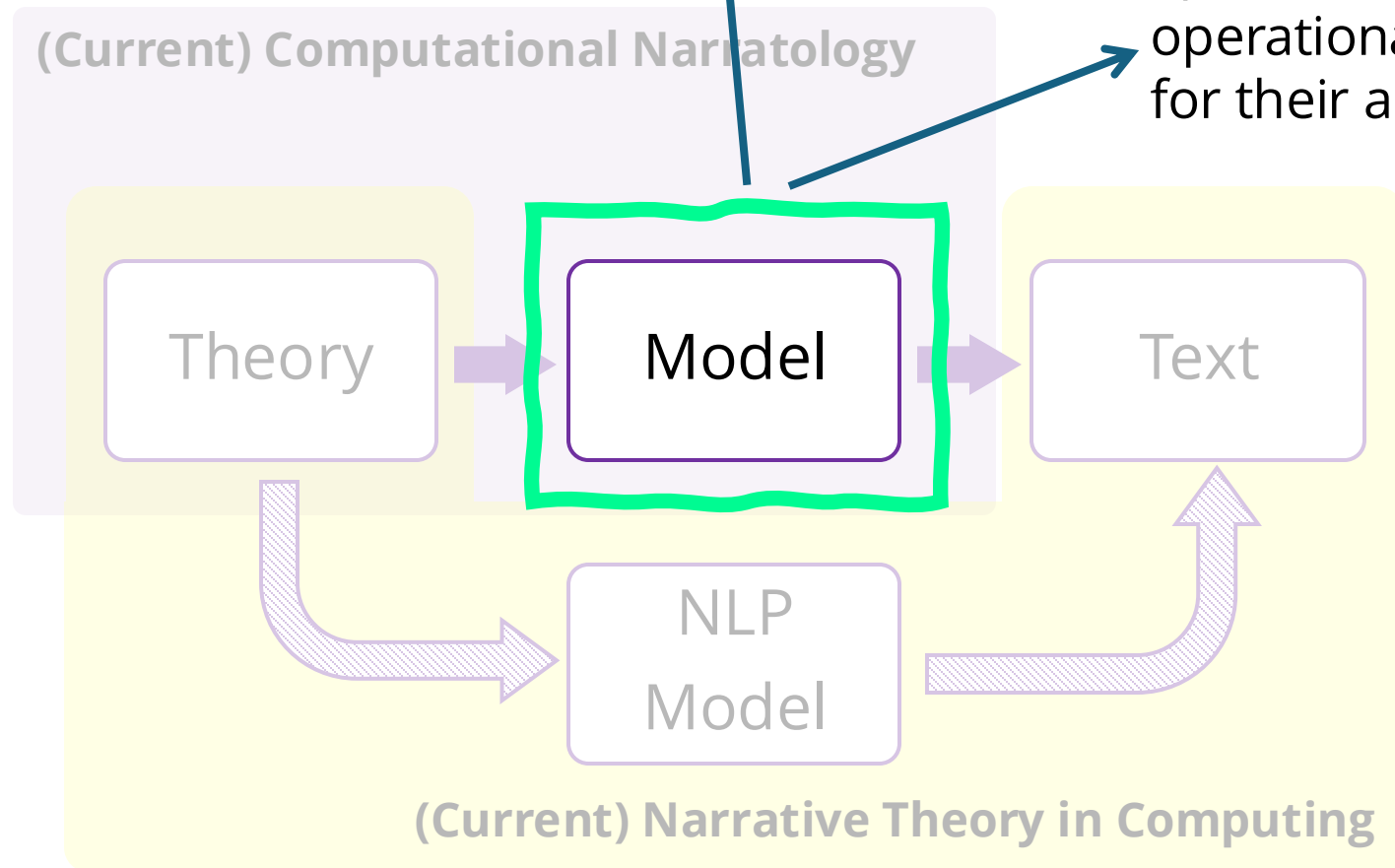
Two Major Challenges for Computational Narratology

2: From Text to Everything Else(?)

Narratology and Text Analysis

- Narratological phenomena are linked to different dimensions of a narrative.

- Classical narratologists primarily focus on two main dimensions, the What and the How.
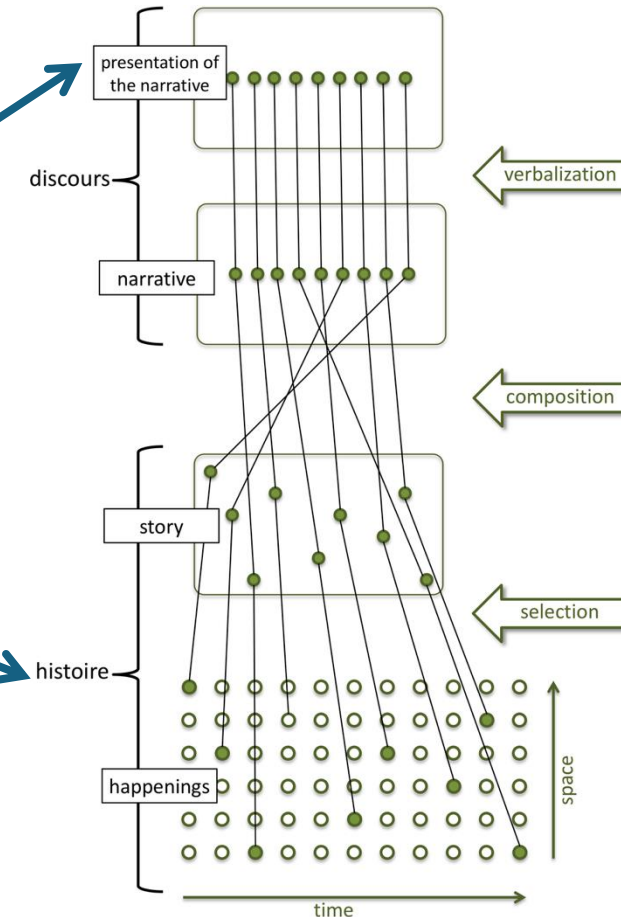
WHAT
(is told)
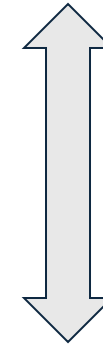
HOW
(it is textually represented)

Computational Narratology (Gius)

Narratology and Text Analysis

→ **Challenge 2 for
 (Computational) Narratology**

The *What* of a narration
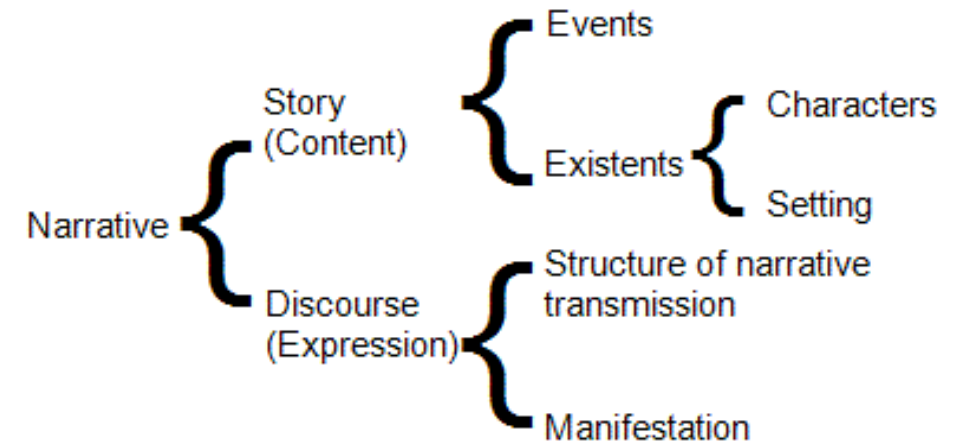can only be accessed
through its *How*

But HOW?!

Model of idealtypical narrative
constitution (cf. Schmid 2005)

Narratology and Text Analysis

Models of narrative texts or
narrative constitutions
take into account
the multidimensionality
of narrative texts

BUT not the multidimensional
interdependence of particular
phenomena.

E.g. Chatman's model of narrative (Chatman 1978, p.26) [diagram abridged].

Challenge 2:
Accessing the What through the How

???

HOW — WHAT

TEXTUAL
PHENOMENA
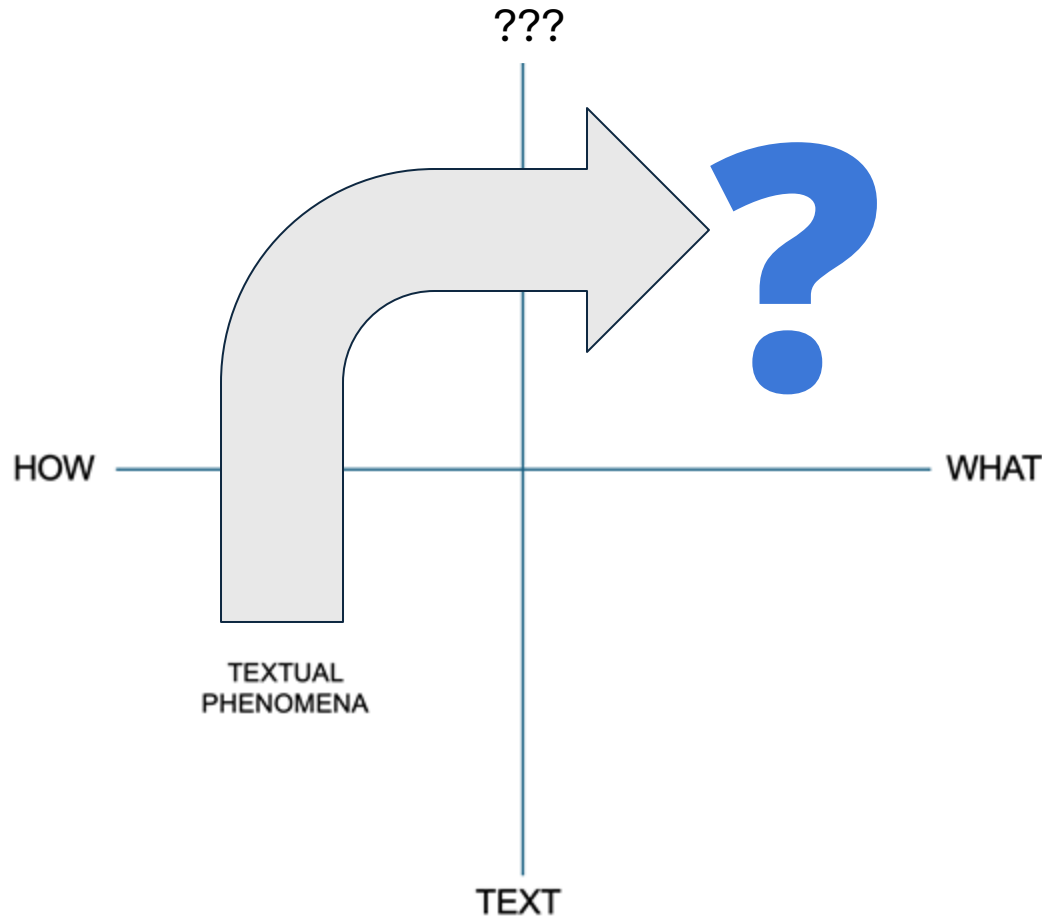
TEXT

Computational Narratology
(= computational approaches to narrative)
so far

- …relies primarly on quantitative NLP methods (and thus the textual surface / the *how* dimension)

- … but often claims to draw conclusions about the *what* of the narrative.

Towards a Model for Narratological Text Analysis
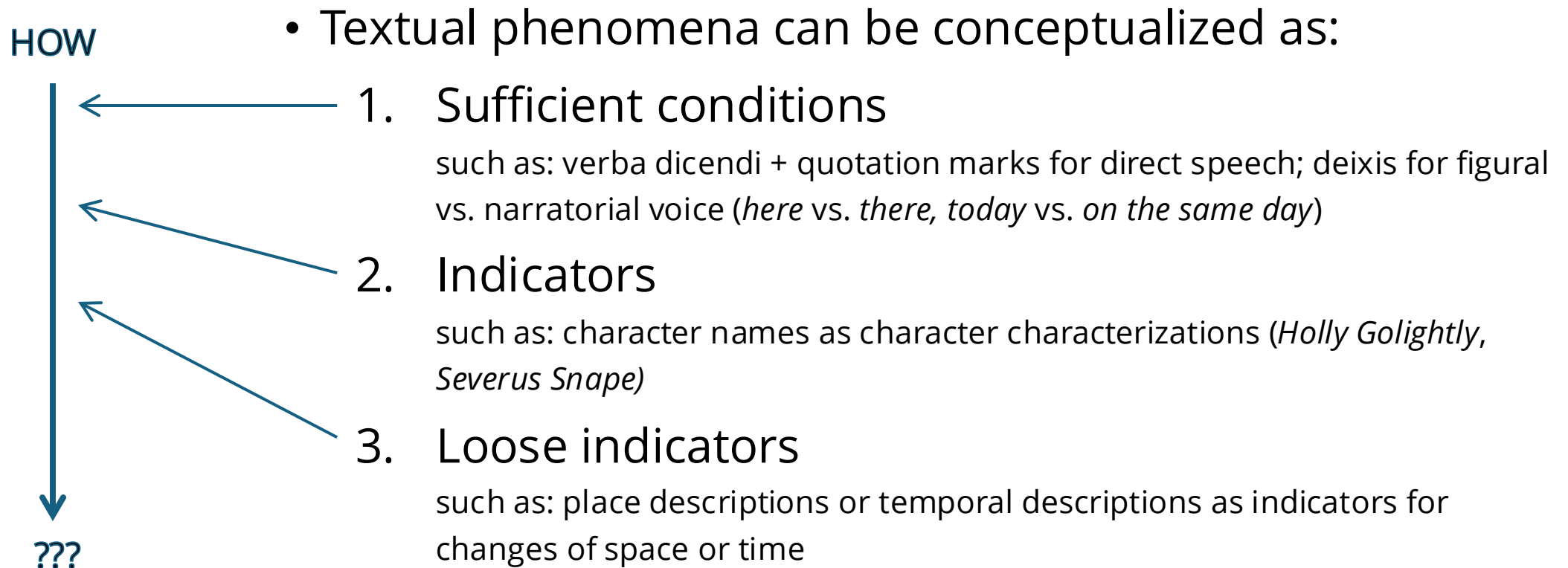
The Conceptual Perspective

Computational Narratology (Gius)

"Natural" Location of Narrative Phenomena

How		What
narrative mode, speech representation, perspective/focalization	order, duration, frequency	time, space, events, characters

Hypothesis: It is a continuum from surface structures to deep structures

HOW ──▶ WHAT

Accessing Phenomena through the How

HOW

- Textual phenomena can be conceptualized as:

  1. Sufficient conditions

     such as: verba dicendi + quotation marks for direct speech; deixis for figural vs. narratorial voice (*here* vs. *there, today* vs. *on the same day*)

  2. Indicators

     such as: character names as character characterizations (*Holly Golightly, Severus Snape)*

  3. Loose indicators

     such as: place descriptions or temporal descriptions as indicators for changes of space or time

???

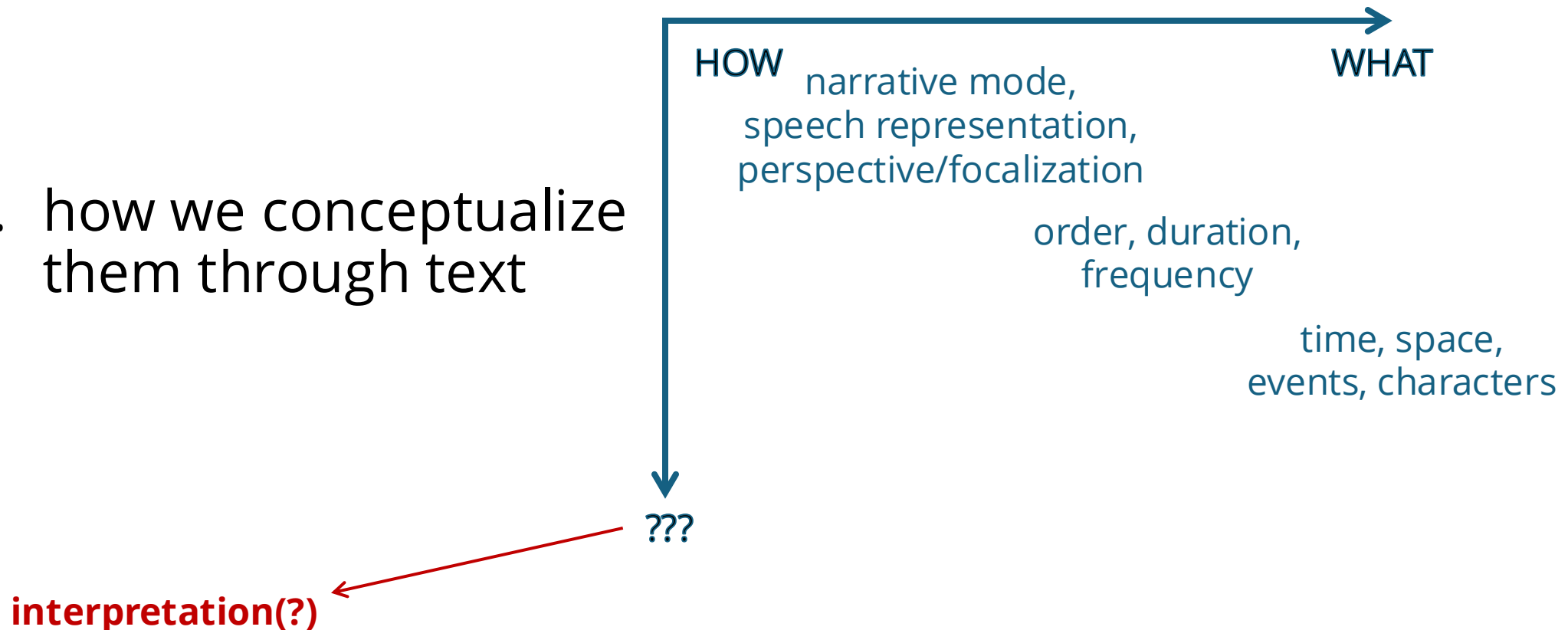**Here, the continuum goes from text to [something else]**

The Conceptual Perspective

1. where phenomena are "located"

HOW   WHAT

narrative mode,
speech representation,
perspective/focalization

2. how we conceptualize them through text

order, duration,
frequency

time, space,
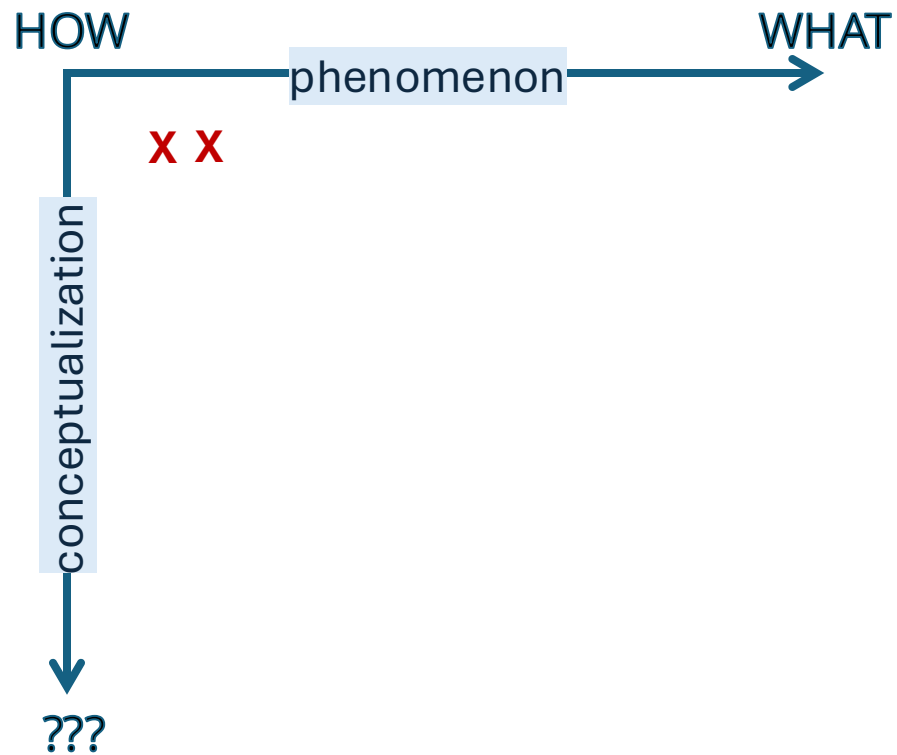events, characters

???

interpretation(?)

Towards a Model for Narratological Text Analysis

The Analysis Perspective

Narratological Analyses in EvENT & PLANS

- Character mentions
- Character speech
- Agency of characters
- Actant roles
- Events
- „Topics"
- Narrative similarity
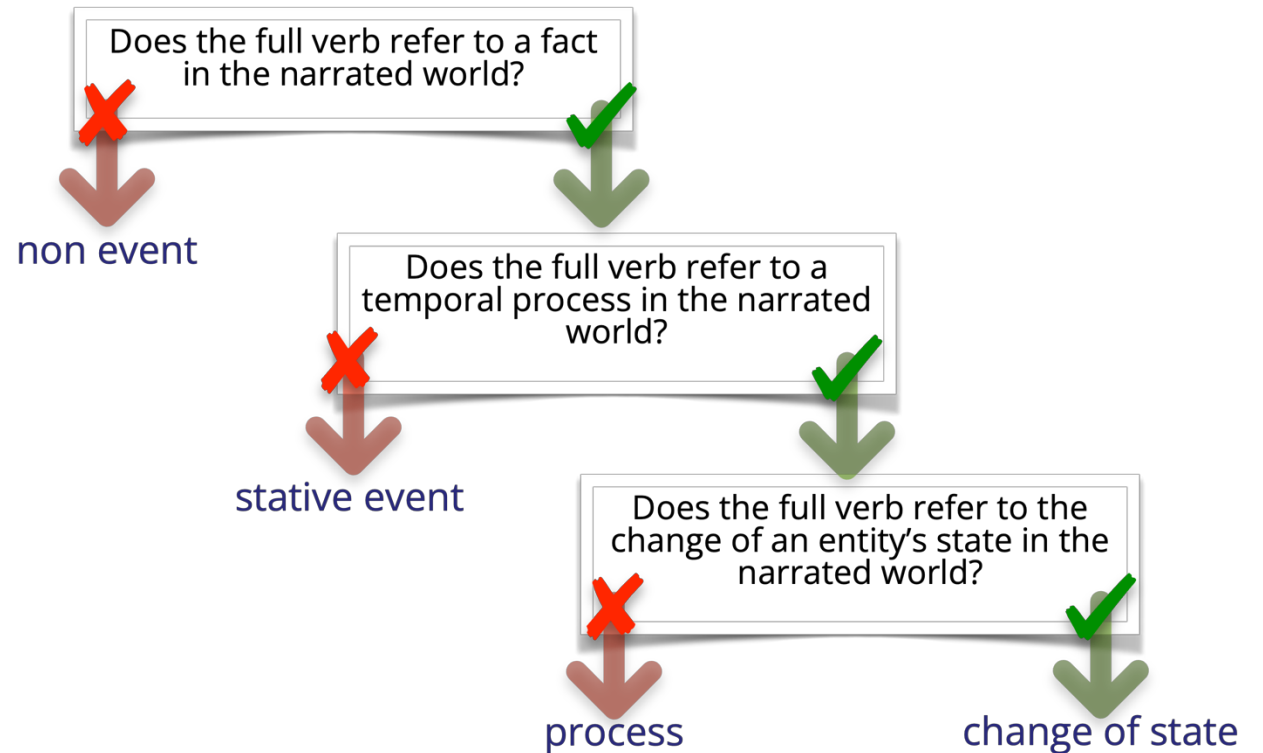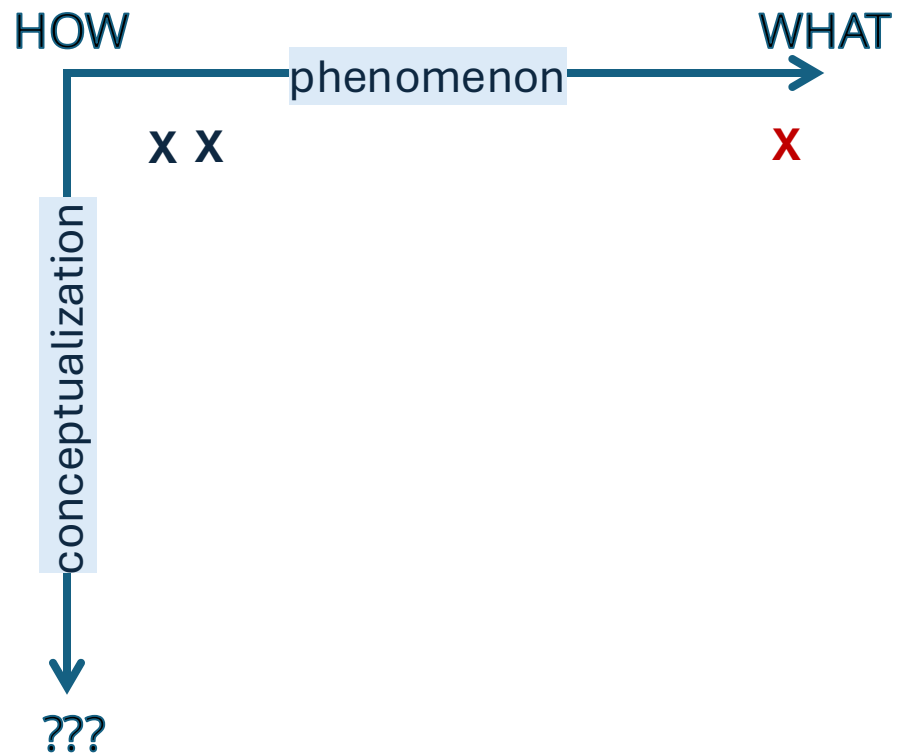- Keyness I
- Keyness II

Computational Narratology (Gius)

Text: Character Mentions and Speech

HOW ——— phenomenon ——→ WHAT

x x

conceptualization ↓

???

- Character mentions → reference to characters at word (phrase) level
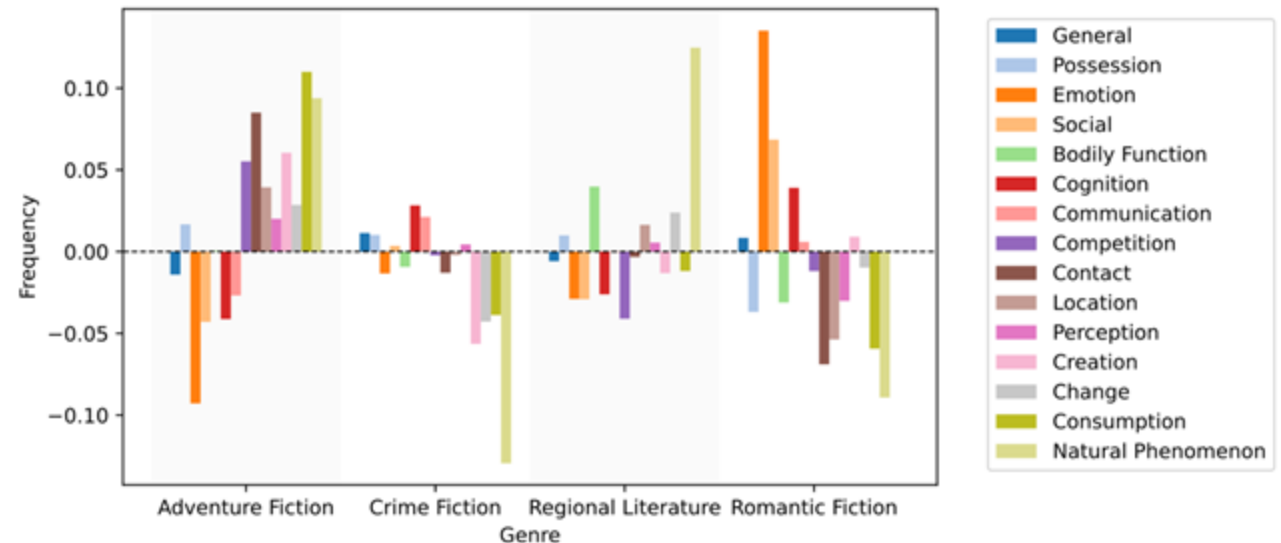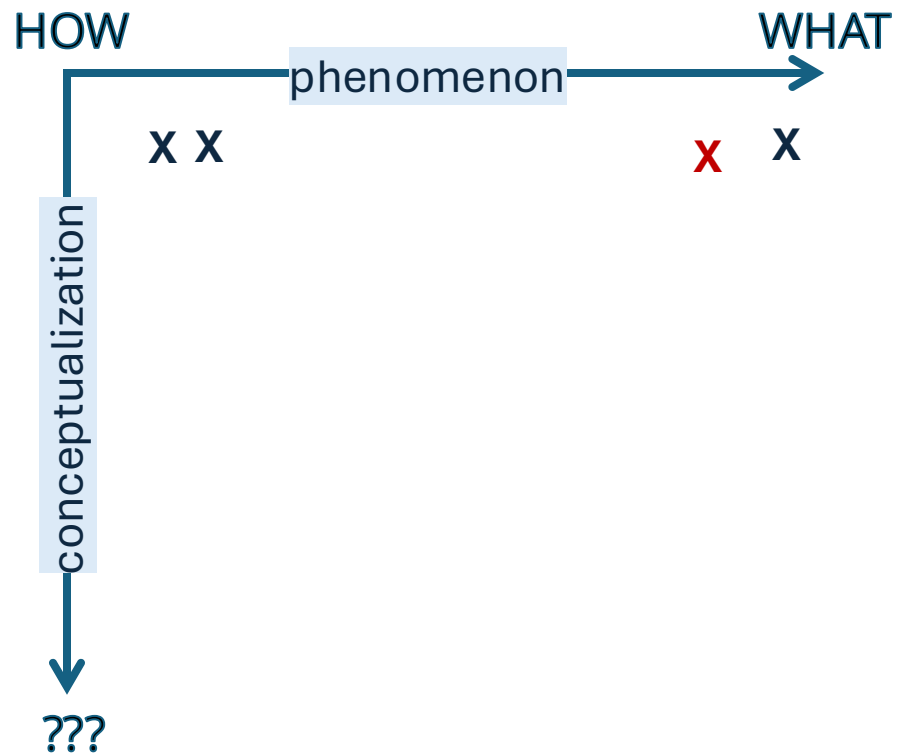- Character speech → direct speech

Text: Representation of Event(fulnes)s

Events → verb meaning in the context of minimal sentences

HOW ——— phenomenon ——→ WHAT

x x   x

conceptualization

???

Does the full verb refer to a fact in the narrated world?

✗ → non event

✓ → Does the full verb refer to a temporal process in the narrated world?

✗ → stative event

✓ → Does the full verb refer to the change of an entity's state in the narrated world?

✗ → process

✓ → change of state

cf. Vauth, Michael, and Gius, Evelyn. 2021. "Richtlinien Für Die Annotation Narratologischer Ereigniskonzepte." Zenodo. https://doi.org/10.5281/zenodo.5078174.
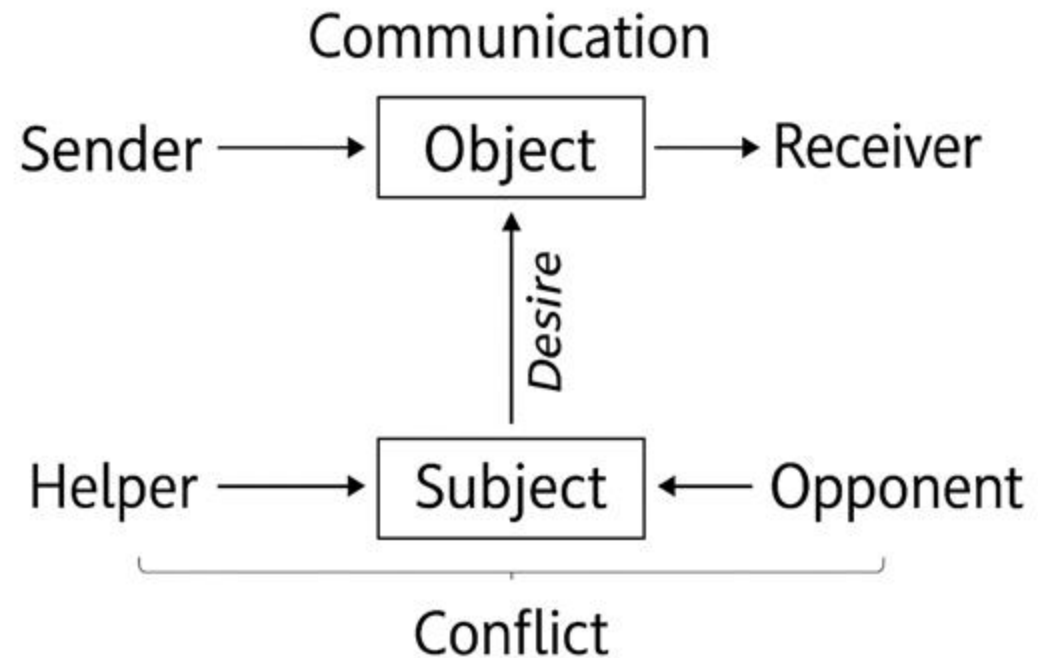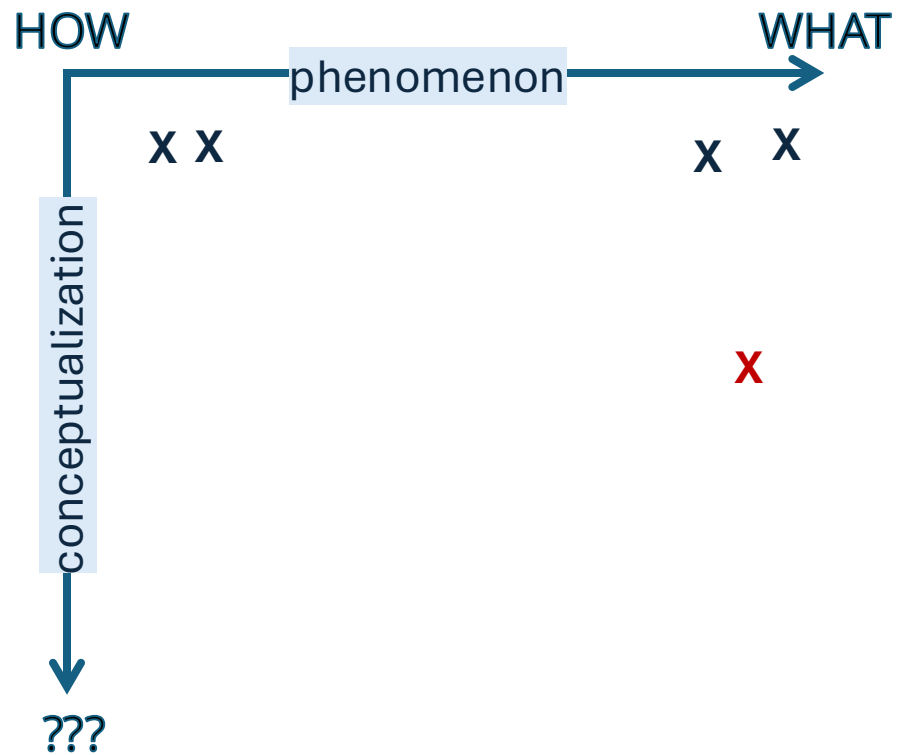
Text: Semantic Verb Classes

„Topics" → semantic profile of a text based on verb classes/semantic fields (Levin/GermaNet)

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HOW   WHAT

phenomenon →

x x   x x

conceptualization

↓

???

cf. Hans Ole Hatzel, Stiemer, Haimo, Chris Biemann, and Evelyn Gius. (accepted). "Scalable Verb-Based Literary Semantics."
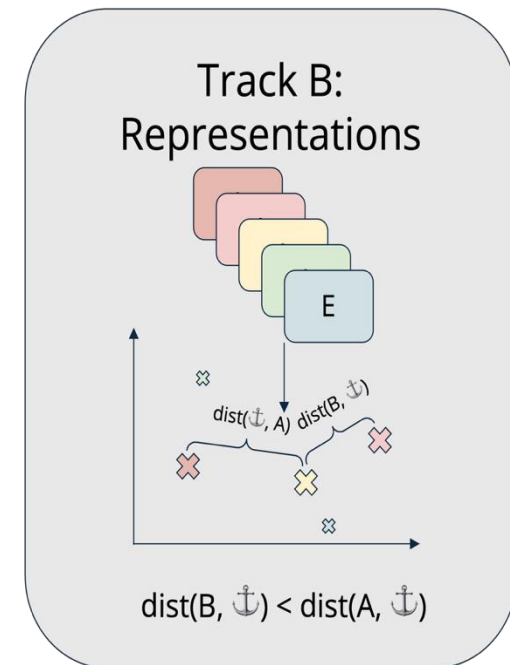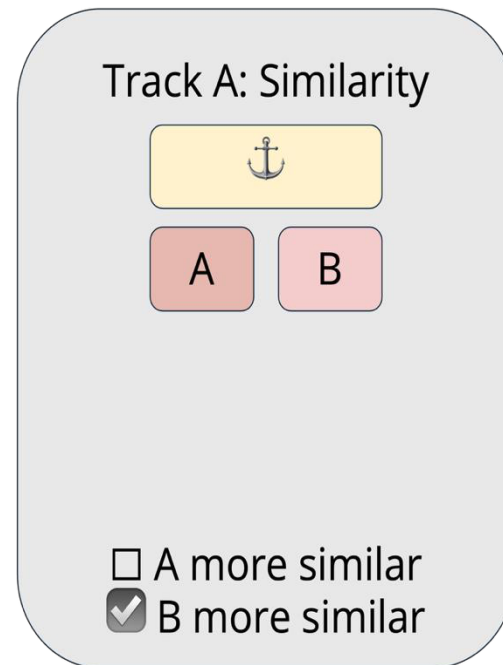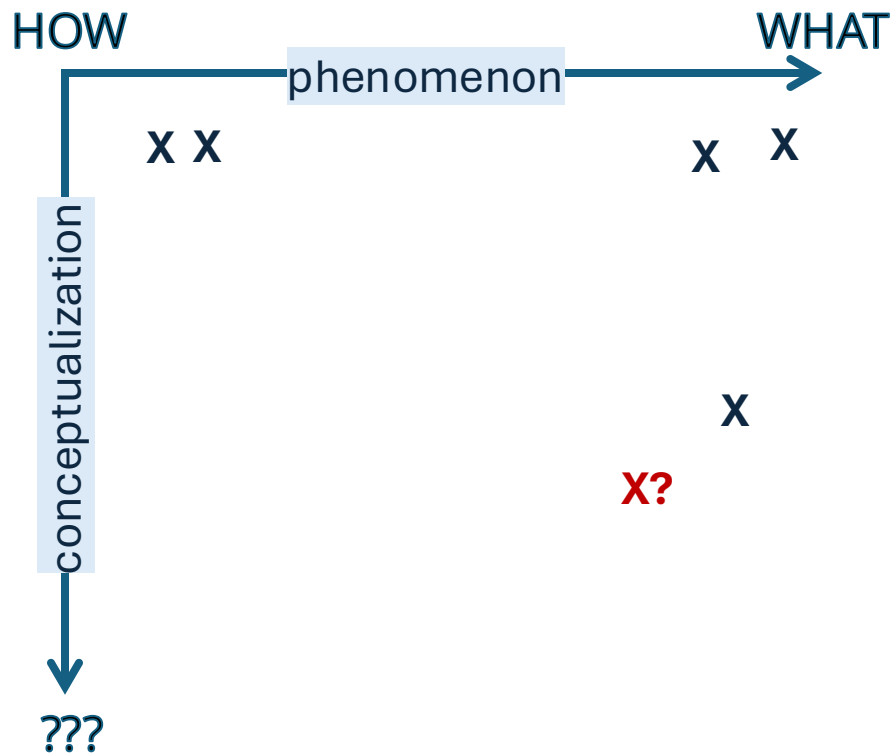*CHR2025, 8-12 December, Luxembourg.*

"Deep Structure": Agent Roles

Actant roles → 6 overall functions for entities (characters, but also other entities)

HOW

phenomenon

WHAT

x x

x x

conceptualization

x

???

Communication

Sender ⟶ Object ⟶ Receiver

Desire

Helper ⟶ Subject ⟵ Opponent

Conflict

Computational Narratology (Gius)

"Deep Structure": Narrative Similarity

Narrative similarity → As perceived by readers in summaries with regard to the abstract theme, course of action and outcomes

HOW   WHAT

phenomenon

x x   x   x

conceptualization

x

X?

???

Track A: Similarity

⚓

A   B

☐ A more similar
☑ B more similar

Track B: Representations

E

dist(⚓, A) dist(B, ⚓)

dist(B, ⚓) < dist(A, ⚓)

SemEval 2026 Task 4: Narrative Similarity and Narrative Representation Learning

Readers: Keyness I

Keyness I → relevance of events (minimal sentences) indicated by frequency in multiple summaries of the text

HOW   WHAT

phenomenon →

x x   x   X

conceptualization

X

X?

X

???
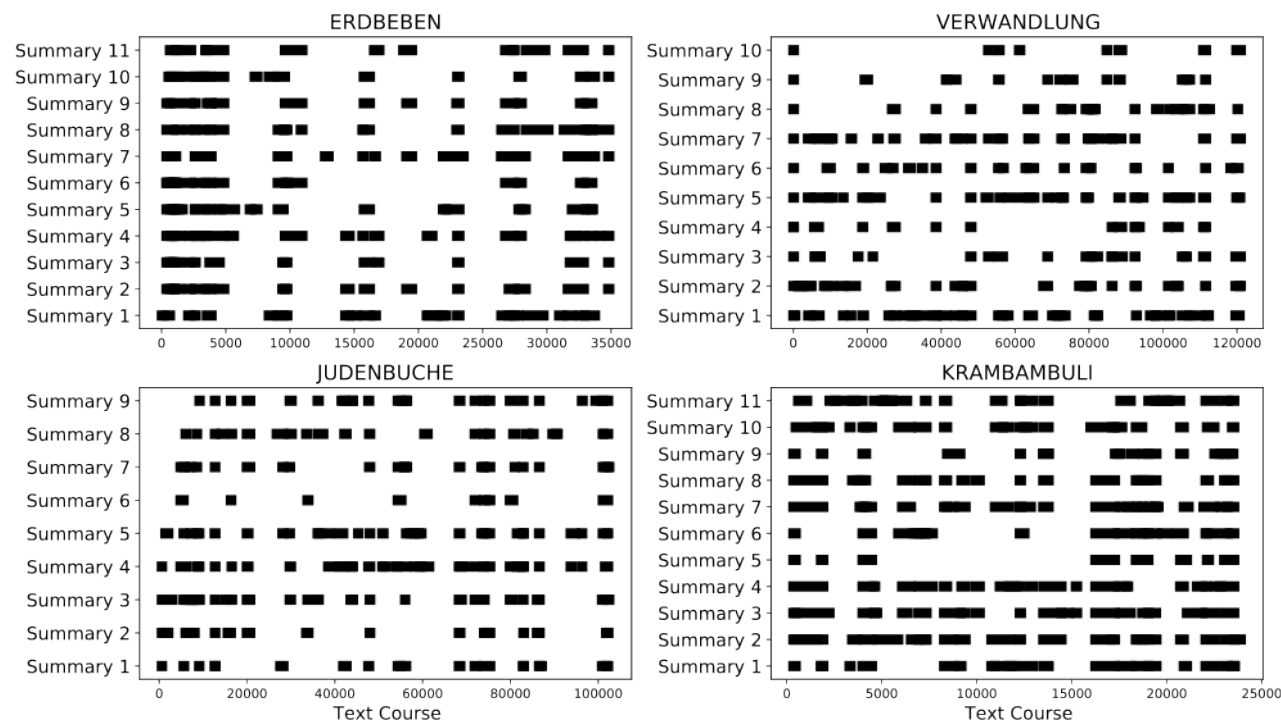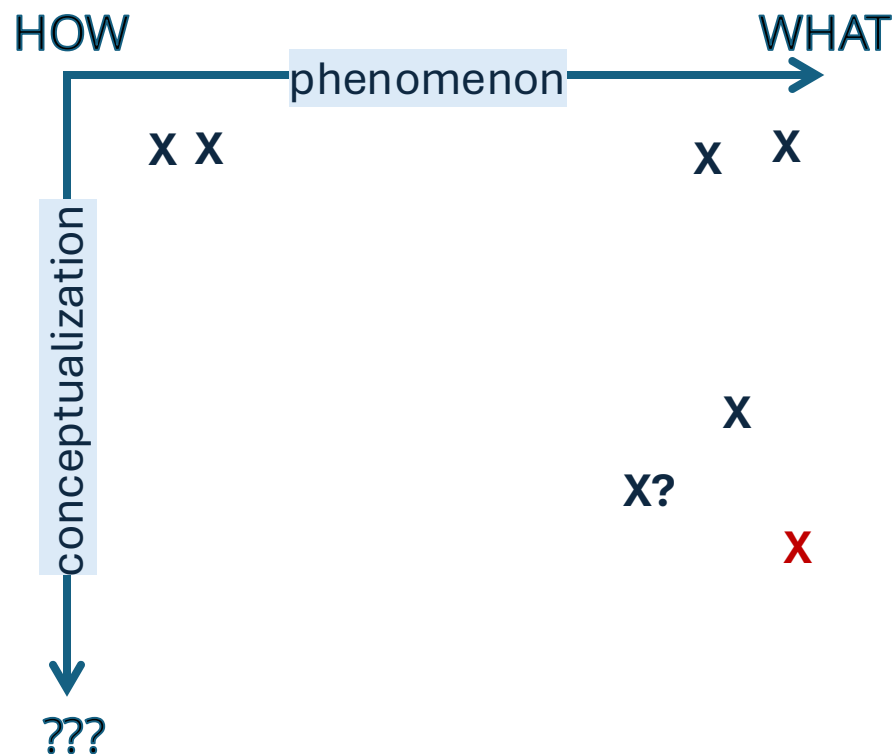
cf. Gius, Evelyn, and Michael Vauth. 2022. "Towards an Event Based Plot Model. A Computational Narratology Approach." *Journal of Computational Literary Studies* 1 (1). https://doi.org/10.48694/jcls.110.

Readers: Keyness II

Keyness II → relevance of sentences indicated by reading speed/pauses

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HOW

WHAT

phenomenon

X X   X   X

conceptualization

X

X?

X

X

???

Pause: 00:00:51

00:00:00   00:01:24   00:01:83   00:02:53
A sentence with time stamps. A second sentence.
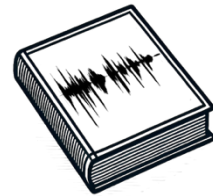
cf. Stiemer, Haimo, Hans Ole Hatzel, Chris Biemann, and Evelyn Gius. 2025. "Pause Im Text. Zur Exploration Semantisch Konditionierter Sprechpausen in Hörbüchern." *DHd 2025*, 275–78. https://doi.org/10.5281/ZENODO.14943031.

Combining the approaches: Participation and Character Mentions (Text + Text)
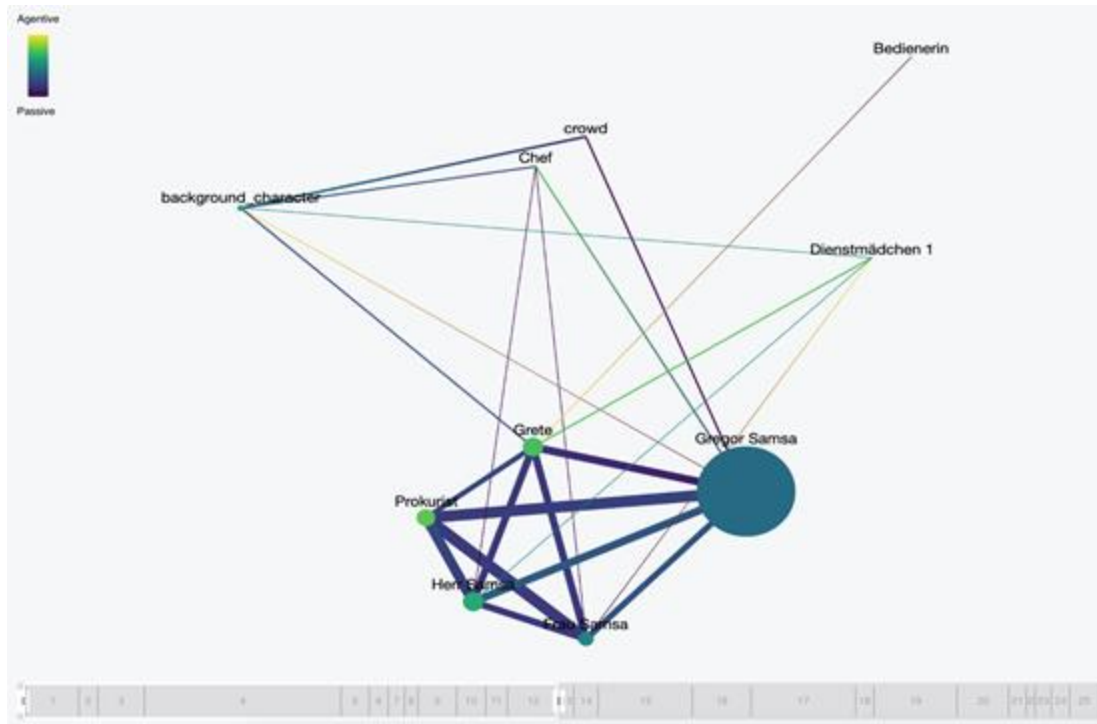
Interactional networks including the degree of agentivity of characters

https://character-network.ltdemos.informatik.uni-hamburg.de/

Combining the approaches:
Keyness (Reader Summaries) and Narrativity (Readers + Text)
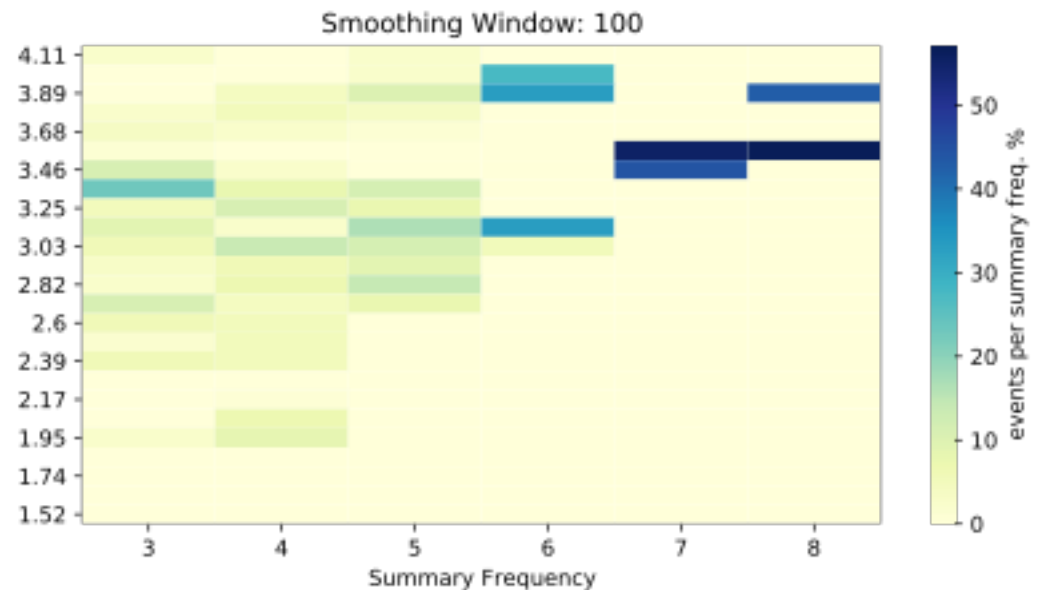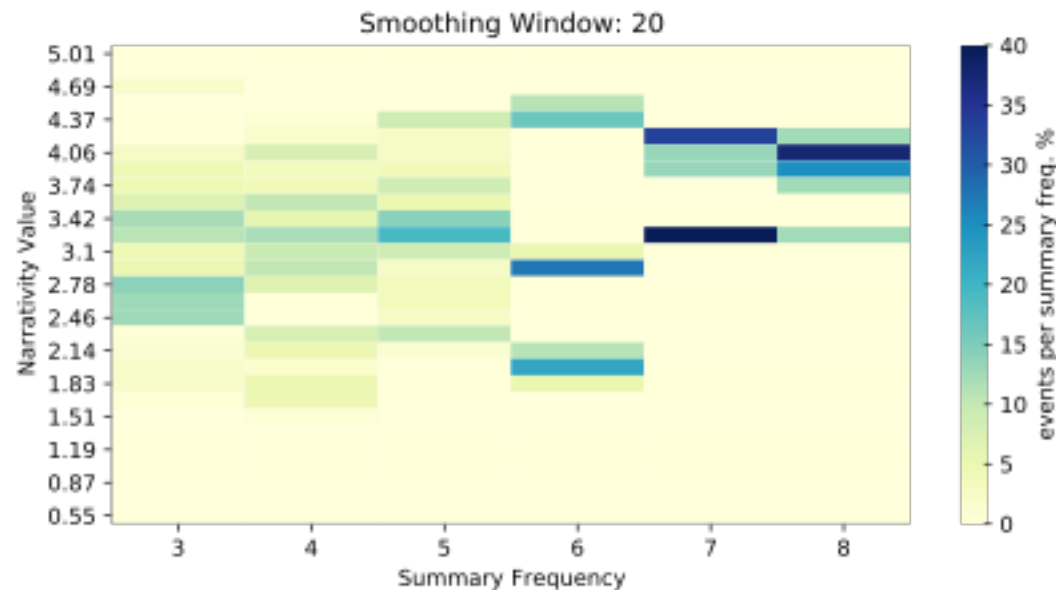
→ stative events are closer to non-events than to events

Combining the approaches:
Keyness and Pace in Audiobooks
(Readers & Readers)

- Professional readers read key passages more slowly (meaning they emphasize them)
  (Preliminary data but robust correlations)
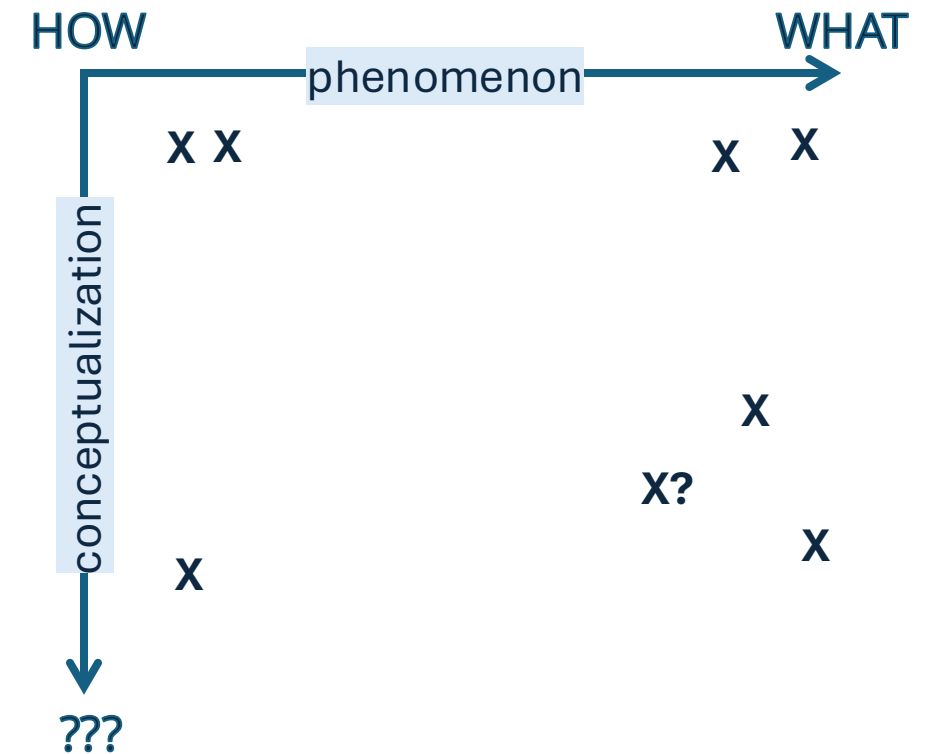
That's Almost It…

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  - The Analysis Perspective
- **Outlook:**
  - **Towards A Comprehensive Model for Computational Narratology?**

Computational Narratology (Gius)

Outlook

Towards A Comprehensive Model for Computational Narratology?

What I have tried to say so far

- Narrative phenomena are located at different levels of the narrative (most prominently, on the How or the What or a mix)

- Regardless of their location, we can access them exclusively through the How, i.e. their textual representation

- Nevertheless, there are different possibilities of analyzing the What of narrative (and probably also the How)

- Humans are ok / good at finding the What through the How, but it is difficult to come up with a procedure for computational approaches (unless you use LLMs)

- A workaround is the conceptualize also what-phenomena via their textual representation

HOW   WHAT

phenomenon

X X   X   X

conceptualization

X

X?

X

X

???

What I have tried to say so far

- Narrative phenomena are located at different levels of the narrative (most prominently, on the How or the What or a mix)

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- Nevertheless, there are different possibilities of analyzing the What of narrative (and probably also the How)

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- A workaround is the conceptualize also what-phenomena via their textual representation

If we take this seriously,
on top of clarifying the how-what and the text-??? relations,
we need to take into account
two more conceptual issues

Towards a Comprehensive(?) Model of Narrative Texts

Instances of literary communication:
Author – Text – Reader

Strictly speaking, further instances (implied author, narrator, implied reader, etc.)
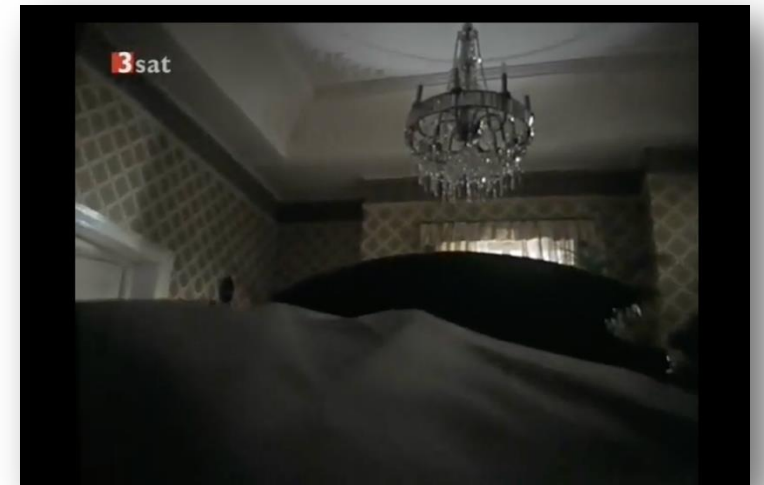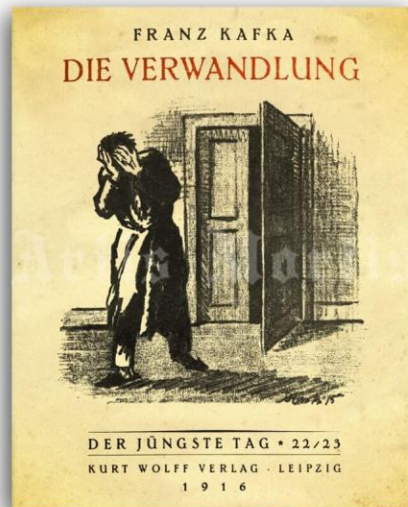
+ **Context**

i.e., other texts, actions associated to texts (e.g., producing, transmitting, appropriating literary texts), culture …

Text

Author(s) ⟷ Reader(s)
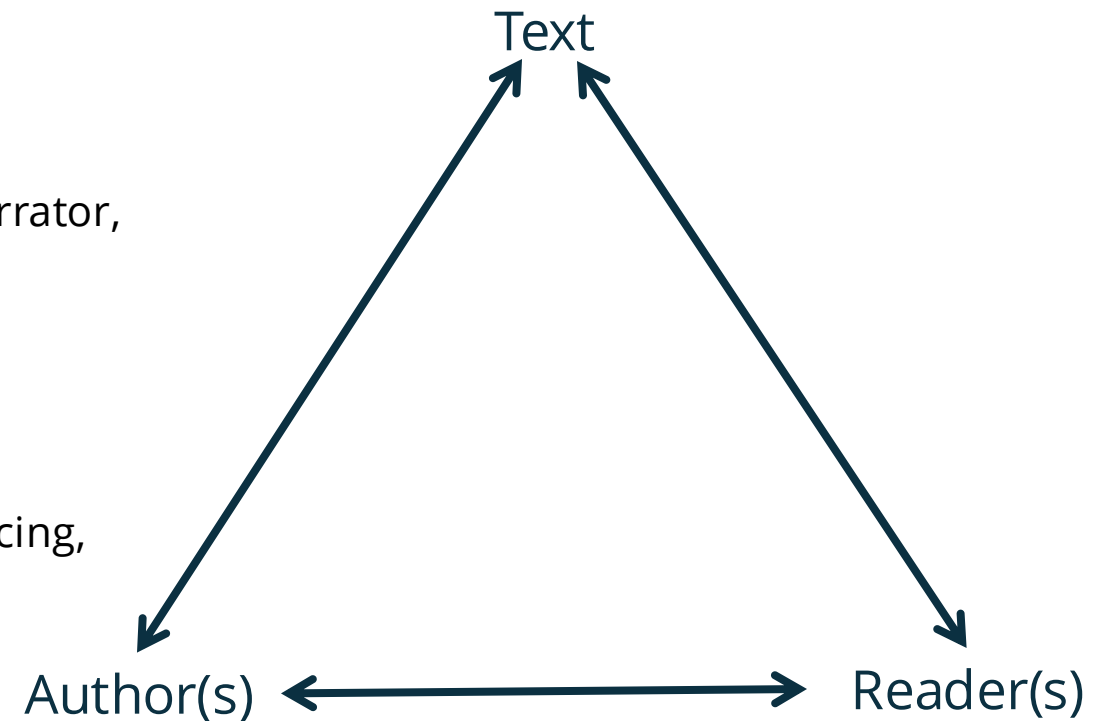
Towards a Comprehensive(?) Model of Narrative Texts

\+ (more) **modalities**

THANK   YOU!