Multimodal Text Interpretation: Modelling the Whole Process
Martin Siefkes
BreMM15: Second Bremen Conference on Multimodality
21–22 Sept 2015, Bremen, Germany

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Multimodal Text Interpretation
Modelling the Whole Process

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Overview

- Different Perspectives

- Modelling the Whole Process

- Intermodal Patterns

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Different Perspectives on Multimodality

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Different Approaches – Different Perspectives

- Semiotic modes (semiotics; e.g. van Leeuwen 2011) versus

- Perceptual modes (psychology, e.g. Calvert et al. 2004)

- Integration and compositionality of meaning (e.g. Kress/van Leeuwen 2001, Stöckl 2004)

- Textual functions (e.g. Kress/van Leeuwen 2001, Halliday/Matthiessen 2004, Liu/O'Halloran 2009, Unsworth 2011)

- Reading paths (e.g. Bucher 2011, Hiippala 2012)

- Genre and discoursive context (Bateman 2008, O'Halloran/Smith 2011, Norris/Maier 2014)

- Relations between modes (e.g. Wildfeuer 2011, Elleström 2011, Fricke 2012, Siefkes 2015)

- Rhetorical relations and narrative structure (e.g. Bateman/Wildfeuer 2011, Wildfeuer 2014)

- Multimodal metaphors (e.g. Forceville/Urios-Aparisi 2009)

- Social embedding of discourses (e.g. Machin/van Leeuwen 2007, Kress 2009)

Is an Integrative Perspective Possible?

- Different approaches are complementary in their perspectives

- Can we model the different aspects as steps in a process model?

- The perception and interpretation of multimodal texts can then be understood as a complex, multi-stage sign process

- The order of the steps is NOT temporal, but analytical

- On this basis, results from different approaches can be integrated

Modelling the Whole Process

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A Multimodal Text Interpretation Model

- Can we construct a process model that considers all these aspects?

- After each stage of the analysis, a text / discourse representation is enriched with the results

- Detailed analysis schemata exist, but mostly result in static, not process-oriented representations

- MuTIM aims to provide a framework for modelling the various steps, and provide representations for the outcome of all analysis steps (including representations before semantic analysis)

- Long-term goal: integration of results of computational approaches, that exist already for various modes: language (NLP), image analysis, facial recognition (incl. facial expression), gesture recognition (all by trainable statistical models)

- Risk of computational approaches (i.e. information extraction): return to monomodal approaches

- What about intermodality?

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Steps of Analysis (1)

1. Delimitation of the text from other texts, signs, and non-semiotic context

2. General categorization

    a) Identification of the multimodal text type (film, website, brochure, …)

    b) Identification of the genre (action film, political website, tourist brouchure, …)

    c) Identification of the semiotic modes present (language, image, gesture, …)

    d) Which of these modes are embedded in others? (gesture in film or comics; music in film; ...)

3. Syntactic parsing: separation of each mode into units that determine or distinguish meaning

4. Analysis (parsing) of intermodal expression relations

    ➢ spatial & temporal relations, overlap, colours, brightness, …

Steps of Analysis (2)

5. Determination and empirical verification of reading path(s)

6. Semantic analysis (interpretation) of the parsed expressions
   – Determining reference (to objects and situations), assigning propositions

7. Disambiguation of polysemous expressions
   – through context, background knowledge, semantic frames

8. Intermodal reference unification (e.g. to persons, objects, places)

9. Determination of intermodal content relations

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Steps of Analysis (3)

10. Analysis of Intermodal Patterns
    – through context, background knowledge, semantic frames

11. Wider inferences (based on background knowledge)

12. Large-scale textual structures (e.g. thematic and narrative organisation, suspense structure, etc.)

13. Situation and context

14. Stylistic features that relate this text to other texts (by the same or other authors)

15. Aesthetic description and evaluation of the text

Intermodal Patterns

Intermodality – The Missing Link(s)

- Intermodality research thinks about the contributions of modes to the overall textual ensemble

    ➢ concentrates on the configurations across modes

- Intermodality can be described as looking for patterns across modes

- Patterns come in two types

    i. configurations / collocations: statistically more frequent

    ii. holistic patterns: with additional meaning(s) or perceptual qualities

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Three Types of Patterns

- Process patterns

- Functional patterns

- Semiotic patterns

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Process Patterns

- Patterns in the process of interpretation (described in MuTIM)

- It is possible to perceive multimodal texts in different ways:

  - for an illustrated text: to read the text and look at images afterwards; to look at each image when the text reaches it; to look at an image only when the text explicitly refers to it ("cf. image x"); to quickly glance over the images and look closer when the text starts to talk about the topic; etc. The number of patterns multiplies when we include captions.

  - for exhibited artworks: description then artwork; other way around; glance at artist's name, artwork, then description; etc.

- Patterns of complete and incomplete perception

Functional Patterns

- Describe different ways semiotic functions can be distributed over modes

- General textual functions (SFL: ideational, interpersonal, textual)

- Further separation for specific genres, e.g.

  a) Interpersonal function of social media profiles: positive presentation of a person, gaining followers, notifications about people in the network, etc.

  b) Textual function of social media profiles: demonstrating which parts belong to the profile (e.g. posts by, and general information about, a specific profile); what belongs to the timeline; how you can change to another profile; etc.

  c) Ideational function: imparting information, announcing events, etc.

Semiotic Patterns

1) Which modes are present?
   - modes can be necessary or optional for a pattern to be present

2) Which conditions apply for each separate mode?
   a) Expression conditions
   b) Content conditions

3) Which conditions apply for the relations between modes?
   a) Expression relations
   b) Content relations

4) What holistic qualities does the pattern have?
   a) Holistic qualities of expression
   b) Holistic qualities of content

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Example 1: Posts & Tweets

- Post / tweets form the content part of a social network

- Similarities: which modes are involved and what they do

- Together with other patterns, this patterns defines the genre "profile on a social network website"

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@stilomet

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Researching #semiotics, #multimodality,
linguistics, gesture in multimodal
interaction, and digital humanities.

📍 Chemnitz, Sachsen

🔗 siefkes.de

📷 309 Fotos und Videos

TWEETS
1.165

FOLGE ICH
177

FOLLOWER
109

FAVORITEN
190

Profil bearbeiten

Tweets Tweets & Antworten Fotos & Videos

🔁 Martin Siefkes retweetete

Cathy Davidson @CathyNDavidson · 1 Std.
Exciting! Call for papers (due Nov 1), HASTAC 2016: Impact! from DH
to digital activism, impacts in the world. hastac.org/opportunities/…

↩ 🔁 2 ⭐ 2 ••• Kurzfassung anzeigen

🔁 Martin Siefkes retweetete

DISCONEX @DISCONEXproject · 57 Min.
CfP: @europeanisa Workshop on 'Living the "new normal": Post-crisis
politics of money, debt and time' in Tübingen bit.ly/1W4ENRz

↩ 🔁 1 ⭐ •••

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---

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@larand We got off the boat in the 1850s from Ireland. @akulbe @tomcat @rabryst

☆

⟲

⏱ 2m 💬 ↰ Reply ↻ via Wedge

⊖ Mute user ⚑ Report

Martin Siefkes

Chronik   **Info**   **Freunde** 28   **Fotos**   **Mehr ▼**

Informationen aktualisieren

Aktivitätenprotokoll anzeigen   •••

🧳 Arbeitet bei Technische Universität Chemnitz
und Universität Bremen
Vorher: Iuav University of Venice

🏛 Hat hier studiert: Technische Universität Berlin

🏠 Wohnt in Chemnitz

📍 Aus Karlsruhe

🗓 Geboren am 2. Juni 1977

✏️ **Status**   🖼 **Foto/Video**   ▶️ **Lebensereignis**

Was machst du gerade?

Martin Siefkes
51 Minuten · 🌐 ▼

Hope to see some of you in Bremen next week! #Bremm15 #DNC1

👍 Gefällt mir   💬 Kommentieren   ➡ Teilen

Schreibe einen Kommentar ...   📷   ☺

FREUNDE · 28

Stephan Debus   Alexandra Nothnagel   Christian Trautsch

Martin Siefkes
1 Std. · 🌐 ▼

Then, there's this year's DiscourseNet Congress (24 to 26 Sept).

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pattern_no: 01, pattern_name: post in social network

Mode	Expression	Content & Function
image	type: image or symbol height: 2 or 3 font rows position: left	implied connection with the account (direct, e.g. face of user, or indirect, e.g. topic of interest)
text	element_1: name, style: bold [element 2: handle, style: no spaces] element 3: time stamp element 4: body of post	element_1: real name of account owner OR alias element_2: alias for account owner element 3: time of writing relative to page load OR absolute time (for older entries) element 4:
symbols (interactive)	element_1: answer symbol [element_2: share / retweet symbol] element 3: like symbol	element_1: answering a post or tweet element_2: resend from own account element_3: mark preference / bookmark
fields (interactive)	[field for text entry] position: below post OR below profile	entering text to answer a post / tweet
graphic_elements	element_1: white background element_2: grey background	element_1: background for posts element_2: separates posts

Example 2: Header Images

- Header images are used in profiles of social networks as well as on other websites (the example shows the website of a university library)

- Always placed above the general content, sometimes with overlaid text (e.g. profile or site name

- This example is more widely used than example 1, across various more specific genres (such as the genre "profile on a social network website")

mutedtempest [Places in Which to Settle in A 49

mutedtempest [interstellar] and then i did a th 4

mutedtempest [boy venting] Okay, im trying to 4

mutedtempest [rl/mute! i'm honestly not as u 46

mutedtempest [meme, bu

1am   12am   12pm   11pm 8pm   7pm 4am   3am

STATISTIKEN

Karma: 125.13

🐾 Wie erhält man mehr Karma?

Profil-Ansichten: 5628
Eingeladene Freunde: 0

Plurks: 8727
Plurk-Antworten: 191031

Mitglied seit: 2011-3-14
Letzter Login: 2015-9-14

mutedtempest @mutedtempest

32 Jahre alt, weiblich
Uppsala, Sweden

Privaten Plurk senden

A BUTT WITHIN A BUTT WITHIN A BUTT

Kyouraku Shunsui at Eachdraidh and
Town of Salem. I'm a grad student and
complete bum. Hi.

Beziehung:
Single

karma 100

FREUNDE

mutedtem.. als Freund hinzufügen

Alle Freunde (125)

FANS

Plurks von mutedtem.. folgen

Alle Fans (11)

Universitätsbibliothek
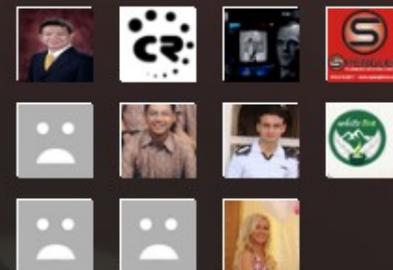
TU Chemnitz → Universitätsbibliothek

Bibliothek A-Z

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Suchen & Finden

Publizieren

Kurse & E-Learning

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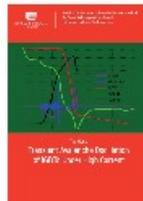→ Fragen | Anregungen | Kritik

⇒ Facebook
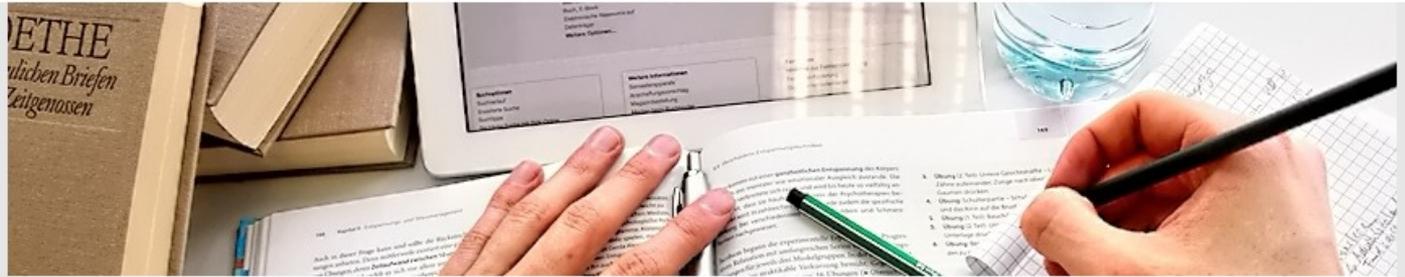
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Ihre Suche im Bibliothekskatalog...

Willkommen

Neuerscheinungen

— Aktuellste Neuerscheinung

Aktuelles / ubLOG

- Die Universitätsbibliothek auf Facebook
- Ca. 11 000 E-Books auf Zeit
- Firmenlauf, der 6. Streich .... 2015!

→ Zum ubLOG

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pattern_no: 02, pattern_name: header image		
Mode	**Expression**	**Content & Function**
image	element_1: type: image height: max. half of visible page position top of page	implied connection with the account; general or typical semantic content; visualisation that is relevant to the institution described in the text
text	element_1: title of page, style: larger than average element 2: body of page	element_1: name of institution/user OR topic of site element_2: content of the site
[menu (interactive)]	element_1: position: top of page expression_relation (image: element_1, menu: element_1): overlap OR next to	element_1: opening subsites or tabs

Conclusions

1. Multimodal text interpretation is a multi-stage sign process

   ➢ Signs in all present modes are parsed, decoded or interpreted, relations between them are analysed, and integrated

   ➢ MuTIM: analysis steps that need to be taken for a full model of the process

2. Intermodality: additional aspects of multimodal (in comparison to monomodal) sign processes

   ➢ Pattern-based approach: consists of defining a set of patterns for each text type (e.g. film) and genre

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