

# **COMBINING METHODS IN AI-INFORMED RESEARCH OF NEWSWRITING**

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## **Abstract**

Investigating real-life writing processes of journalists at their workplaces requires combining newsroom ethnography with linguistic analysis. But how to combine research frameworks and methods? In this paper, we start with the methodological requirements of researching real-life writing processes. We then outline a typology of state-of-the-art methods in writing research : version analysis for tracking intertextual chains, progression analysis for identifying writing strategies, variation analysis for revealing audience design and meta-discourse analysis for investigating language policy making. Finally, we explain challenges of combining such perspectives and methods in research projects.

**Keywords :** newsroom ethnography, version analysis, progression analysis, variation analysis, metadiscourse analysis

## **1. Introduction**

Doing writing research from an applied linguistics perspective means investigating individual, collaborative, and organizational writing and text production as language-based activities in complex and dynamic real-life contexts. In doing so, micro and macro levels, product and process perspectives, as well as theoretical and practical questions are combined in transdisciplinary approaches. Appropriate methods have to be deliberately chosen and transparently explained across disciplinary boundaries. Methodological questions need to be clarified, such as: which method fits which problem – and how should and can various methods complement each other? In this paper, we start with the methodological requirements of researching real-life writing processes (§ 2). We then outline a typology of state-of-the-art methods in writing research (§ 3) and

explain challenges of combining perspectives and methods in research projects (§ 4).

## 2. Requirements of AL-informed research of newswriting

Newswriting represents a relevant case for applied linguistics (AL). As a “user-friendly linguistics” (Wei 2007: 117), AL has always been oriented towards practice with a twofold goal: understanding and improving language use. From a production perspective, it deals with the reflection and optimization of speaking and writing for certain communicative tasks and domains, including language learning or workplace communication (e.g. Cicourel 2003; Alatis, Hamilton & Tan 2002; Candlin 2003). AL can investigate the repertoires of strategies and practices that individuals or language communities use when they make linguistic decisions (e.g. Cook 2003: 125; Zhong & Newhagen 2009) in discussions or writing processes. Then, these repertoires can be expanded through knowledge transformation processes, e.g. in training, coaching, and organizational development.

In the present paper, we thus conceive AL-informed journalism writing research as a joint activity of researchers, practitioners and society at large. They collaborate to investigate (i) individual or collaborative writing (ii) as mental, material, and social activity (iii) in digital environments, (iv) *in situ*, (v) in order to understand and improve it.

- i     **Investigating individual or collaborative writing:** Depending on the research object and underlying key concepts such as authorship, AL-informed writing research investigates the activity of subjects of varied complexities. They range from individuals to peer groups and entire organizations in complex contexts. Suitable methods enable researchers to capture and analyze the corresponding activities. Eye tracking, for example, can capture pupil movements in highly computerized settings. They are interpreted as shifts of the focus of attention by individual human text processors. In addition, comparing versions of an organization’s editorial guidelines over time reveals the big picture of their evolving explicit quality discourse.
- ii    **Investigating writing as mental, material and social activity:** Writing takes place within and between people, as well as at their bodily interface. Analyzing inner, mental activities related to writing in natural contexts requires indirect methods and procedures, such as retrospective verbal protocols (e.g. Camps 2003; Ericsson & Simon 1984; Greene & Higgins 1994; Smagorinsky 1994). Writing as material activity can be captured in

real-time, using video recording (e.g. Van Waes & Mangen 2012) or keystroke logging (e.g. Flinn 1987; Van Waes & Van Herreweghe 1995; Spelman Miller 2006; Strömquist, Holmqvist, Johansson, Karlsson & Wengelin 2006). Social aspects of writing, however, such as balancing workflows and editorial quality discourse in organizations, call for methods such as network analyses or dynamic modeling that capture the complexity of writing on macro levels too.

- iii **Investigating writing at digital workplaces:** In computerized environments, most material text production activities such as archive research or editing is performed at computers. The same computers can be used by researchers to automatically collect data, for example about pausing times between linguistic units. As these data are available in digital formats, they can be analyzed using algorithms.
- iv **Investigating writing *in situ*:** Knowing in advance that one would like to investigate a particular kind of contemporary writing processes puts researchers in a comparably comfortable position: They can develop a methodology and choose methods and recording procedures that capture as many as possible of the relevant aspects of text production in appropriate depth and breadth. Then, the field can be prepared according to the research question, e.g. by building trust within the organization and installing logging software. In contrast, investigating writing *ex post* limits the researchers to available traces from a field that was not designed to support research.
- v **Investigating writing in order to understand and improve it:** In transdisciplinary action research, interventions are considered crucial procedures. Writing at specific workplaces is investigated mainly in order to improve it, for example by elaborating the writers' repertoires of text production practices.

We applied this understanding of AL-informed writing research in the IDÉE SUISSE project which focuses on the interplay of language policy, norms, and practice in the newsrooms of an entire public service media organization in Switzerland: the broadcasting company SRG SSR Idée Suisse. Using logging and screen recording software, journalists' collaborative writing activities were recorded *in situ*. In addition, editorial conferences and negotiations with peers such as video editors and cameramen were videotaped. Finally, journalists, media managers, and policy makers were interviewed and policy documents were analyzed, following the principles of Progression Analysis (see below, § 3.2). The research project aimed to understand and develop the broadcaster's competence to fulfill its public mandate.

### **3. State-of-the-art toolkit: Four complementary types of methods**

In this second section, we outline a typology of four methodological perspectives in AL-informed research of newswriting that is the joint activity of researchers, practitioners, and society at large. The methods applied provide empirical evidence of material, cognitive, social, or socio-cognitive aspects of writing. Respective state-of-the-art methods focus, for example, on material differences between text versions (3.1), individuals' writing strategies (3.2), variation of practices within and across organizations' writing (3.3), and communities' metadiscourse reflecting their written communication (3.4).

#### **3.1. The material focus: Tracking intertextual chains with version analysis**

First and foremost, applied linguistics investigates stretches of language in context (e.g. McCarthy 2001: 115). From this material perspective, AL-informed writing research emphasizes the intertextual nature of writing: new texts and text versions are created and differ from earlier ones. Material changes to the linguistic products are captured with version analyses. By version analysis, we understand the method of collecting and analyzing data in order to reconstruct the changes that linguistic features undergo in intertextual chains. The methods and procedures applied originate in comparative text analysis.

Prototype version analyses trace linguistic products (e.g. Sanders & Van Wijk 1996) and elaborate on the changes in text features from version to version, be it at one single production site or across a series of sites. In projects similar to *IDÉE SUISSE*, a quote from a politician's original utterance was traced throughout the intertextual chain of correspondents, local and global news agencies, broadcasters, and the follow-up discourse in social media (Perrin 2011). Other mediallyinguistic studies draw on version analyses to reveal how texts change throughout the intertextual chains (e.g. Van Dijk 1988; Bell 1991; Luginbühl, Baumberger, Schwab & Burger 2002; Robinson 2009; Lams 2011).

The very minimal variant of version analysis limits the empirical access to one single version, with implicit or explicit reference to other versions that were not explicitly analyzed (e.g. Ekström 2001). This variant of version analysis is

widespread in the framework of Critical Discourse Analysis (Van Dijk 2001; see also critiques by Stubbs 1997 or Widdowson 2000). Another frequent, yet empirically denser, variant of version analysis focuses on changes performed at one single production site. The “voie tranquille” analysis in the IDÉE SUISSE project draws on data from one single site, the TÉLÉJOURNAL newsroom. There, the news piece emerges in four states: drafting, main writing session, cutting session, and speaking in the booth.

Of course it could be argued that the journalist’s office, the cutting room, and the speaking booth are different production sites within one media production plant. They differ for example in terms of technical tools (hard- and software facilities for editing text, video, and spoken language), social environments (cutters as collaborators) and dominant activity (spoken vs. written text (re-)production). Taken to the limit, the discussion shows that the context of writing keeps on changing: Colleagues may call, send messages, or show up and add information that modifies the task; new source texts appear on the screen; and, most of all, the text produced so far, with its power to trigger thoughts when re-read by the journalist, is altered through every single insertion and deletion (e.g. Chin 1994; Jacobs & Perrin 2014).

This fine-grained understanding of constantly changing contexts points towards a shift of focus from the stabilized version to the dynamics of writing processes. Comparing various versions of texts is sufficient to gain empirical evidence of material text changes. However, in itself, it provides hardly any data on the context of material activity. In order to develop such knowledge, additional methodological approaches are required. They focus, for example, on whether the writers were conscious of their actions, like progression analysis (3.2); whether the practices are typical of certain text production institutions, like variation analysis (3.3); or how the practices and related norms are negotiated in organizations, like metadiscourse analysis (3.4).

### **3.2. The mental focus: Identifying writing strategies with *progression analysis***

From a cognitive perspective, AL-informed research of newswriting emphasizes individuals’ language-related decisions in writing processes. What exactly do journalists as individual authors do when they produce their texts?

What are they trying to do, and why do they do it the way they do? Such mental reflections of material changes are captured with Progression Analyses. By Progression Analysis, we understand the multimethod approach of collecting and analyzing data in natural contexts in order to reconstruct text production processes as a cognitively reflected activity in context.

Progression Analysis combines ethnographic observation, interviews, computer logging, and cue-based retrospective verbalizations to gather linguistic and contextual data. With Progression Analysis, data are obtained and related on three levels<sup>1</sup>.

Before writing begins, Progression Analysis determines through interviews and observations what the writing situation is (e.g. Quandt 2008). Important factors include the writing task, the writers' professional socialization and experience, and economic, institutional, and technological influences on the workplaces and workflows. In the IDÉE SUISSE project, data on the self-perception of the journalists investigated were obtained in semi-standardized interviews about their psychobiography, primarily in terms of their writing and professional experience, and their work situation. In addition, participatory and video observations were made about the various kinds of collaboration at the workplace.

During writing, Progression Analysis records every keystroke and writing movement in the emerging text with keylogging (e.g. Flinn 1987; Lindgren & Sullivan 2006; Spelman Miller 2006) and screenshot recording programs (e.g. Degenhardt 2006; Silva 2012) that run in the background behind the text editors that the writers usually use, for instance behind the user interfaces of news editing systems. The recording can follow the writing process over several workstations and does not influence the performance of the editing system. From a technical point of view, it does not influence the writers' performance either, since it operates automatically and without changing the user interfaces of the editing software. Nevertheless, knowing about the recording alters writers' behavior, with decreasing effect over time. This is why, in projects such as IDÉE SUISSE, the first four weeks of data are excluded from analyses.

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<sup>1</sup> The approach was developed to investigate newswriting (e.g. Perrin 2003; Sleurs, Jacobs & Van Waes 2003; Van Hout & Jacobs 2008) and later it was transferred to other application fields of writing research, such as children's writing processes (e.g., Gnach, Wiesner, Bertschi-Kaufmann & Perrin 2007) and translation (e.g., Ehrensberger-Dow & Perrin 2009).

After the writing is over, Progression Analysis records what the writers say about their activities. Preferably immediately after completing the writing process, writers view on the screen how their texts came into being. While doing so, they continuously comment on what they did when writing and why they did it. An audio recording is made of these cue-based retrospective verbal protocols (RVP). This level of Progression Analysis opens a window onto the mind of the writer. The question is what can be recognized through this window: certainly not the sum of all (and only) the considerations that the author actually made, but rather the considerations that an author could have made in principle (e.g. Camps 2003; Ericsson & Simon 1993; Hansen 2006; Levy, Marek & Lea 1996; Smagorinsky 2001). The RVP is transcribed and then encoded as the author's verbalization of aspects of his or her language awareness, writing strategies, and conscious writing practices. As doing an RVP strongly influences writers' awareness, this level of Progression Analysis is normally limited to one RVP per writer, at the end of the investigation.

In sum, Progression Analysis allows researchers to consider all the revisions to the text as well as all of the electronic resources accessed during the production process; to trace the development of the emerging text; and, finally, to reconstruct collaboration at workplaces from different perspectives. The main focus of Progression Analysis, however, is the individual's cognitive and manifest processes of writing. Social structures such as organizational routines and editorial policies are reconstructed through the perspectives of the individual agents involved, the writers under investigation. If entire organizations are to be investigated with respect to how they produce their texts as a social activity, then Progression Analysis has to be extended by another two methods: variation analysis (3.3) and metadiscourse analysis (3.4).

### **3.3. The social focus: Revealing audience design with *variation analysis***

From a social perspective, AL-informed writing research focuses on how social groups such as journalists collaborate when they write and how they customize their linguistic products for their target audiences. Which linguistic means, for example which gradient of normativity and formality, does an organization choose for which addressees? Such social language use is captured with variation analyses. By variation analysis, we understand the method of

collecting and analyzing text data to reconstruct the special features of the language of a certain community of discourse and/ or practice (Pogner 2012).

Variation analyses investigate the type and frequency of typical features of certain language users' productions in certain communication situations such as writing for a specific audience. What variation analysis discerns is the differences between the language used and the related practices in one situation type from that of the same users in another (e.g. Koller 2004) or from the language and practices of other users in similar situations (e.g. Fang 1991; Werlen 2000). In the IDÉE SUISSE project, variation analyses can reveal whether language properties of the newscast TAGESSCHAU and the newsmagazine 10 VOR 10, competing in the same German television program of the Swiss public broadcaster, differ according to their program profiles.

Such broadly-based variation analysis is able to show the special features of the language used by specific groups of writers. However, what the method gains in width, it loses in depth. Why a community prefers to formulate its texts in a certain way and not another cannot be captured by variation analysis, which, similar to version analysis, neglects access to mental aspects of writing. It would be possible to regain some of that depth using a procedure that examines not only the text products, but also the institutionalized discourses connected with them: the comments of the community about its joint efforts, the community's meta-discourse (2.4).

### **3.4. The socio-cognitive focus: Investigating language policing with *metadiscourse analysis***

From a socio-cognitive perspective, AL-informed writing research focuses on text producers' collaboration and metadiscourse (e.g. Mey 2005), such as correspondence between authors, quality control discourse at editorial conferences, and negotiations between journalists, photographers, and text designers. What do the various stakeholders think about their communicational offers? How do they evaluate their activity in relation to policies – and how do they reconstruct and alter those policies? Such socio-cognitive aspects of language use are captured by metadiscourse analyses. By metadiscourse analysis, we understand the method of collecting and analyzing data in order to reconstruct the socially- and individually-anchored (language) awareness in a discourse



community. The basis for analyzing the metadiscourse of text production is conversation and discourse analysis.

Metadiscourse analyses investigate spoken and written communication about language and language use. This includes metaphors used when talking about writing (e.g. Gravengaard 2012; Levin & Wagner 2006), explicit planning or criticism of communication measures (e.g. Peterson 2001), the clarification of misunderstandings and conversational repair (e.g. Häusermann 2007), and follow-up communication by audiences (e.g. Klemm 2000). In all these cases, the participants' utterances show how their own or others' communicational efforts and offers have been perceived, received, understood, and evaluated. The analysis demonstrates how rules of language use are explicitly negotiated and applied in a community.

*In situ* research allows for metadiscourse analyses of oral negotiations. In some case stories from the IDÉE SUISSE project, cutters challenge the journalists' ethics and aesthetics or appear as representatives of a critical audience. On a macro level of the project, interviews and document analyses reveal policy makers' and media managers' contradictory evaluation of and expectations towards the broadcasters' – and the journalists' – ability to fulfill the public mandate of promoting public understanding. Whereas media policy makers expect the Swiss national broadcasting company to foster public discourse through stimulating contributions, media managers tend to consider this public mandate to be unrealistic (Perrin 2011).

Thus, the focus of metadiscourse analysis scales up from negotiations about emerging texts at writers' workplaces, to organizational quality control discourse and related discussions in audiences and society at large. Integrating metadiscourse analyses extends the reach of writing research from a single author's micro activity to organizational and societal macro structures. However, for empirical evidence of writers' actual behavior, metadiscourse analysis must be combined with progression analyses (3.2) or, in more coarse-grained studies, at least with variation analyses (3.3).

In sum, by applying and combining methods of the four types, researchers investigate real-life newswriting from product and process perspectives, as cognitive and social activity, and on micro and macro levels. In contrast, analyzing only text products, as often practiced in empirical approaches to written

language, risks falling short of explaining writing in its variegated dynamics and purposes, as a playful, epistemic, and communicative activity in complex contexts. However, applying, let alone combining, innovative methods in multi-perspective real-life research of newswriting causes methodological problems which can be carefully addressed – albeit not completely solved yet.

#### **4. Key challenge: Combining perspectives and methods**

In this last section of the paper, we explain challenges of combining perspectives and methods in projects of newswriting research. Researchers investigating real-life writing in general (Brizee, Sousa & Driscoll 2012 ; Olson 1987 ; Pogner 1999 ; Spilka 1993 ; Sullivan & Lindgren 2006 ; Thompson 2009) tend to combine a multitude of approaches and perspectives in order to develop a vivid, life-like representation of their object under investigation. The downside of combining methods can be theoretical incommensurability. Due to their theoretical foundation, scientific methods differ considerably from everyday methods such as driving a car: they can be expected to be more explicit and consistent. However, the theoretical grounding of scientific methods does not mean that every method matches every theory<sup>2</sup>. Working with multimethod approaches therefore requires methodologically pragmatic approaches (Feilzer 2010; Johnson & Onwuegbuzie 2004) and a distinctive meta-theoretical position towards ontology and epistemology as developed, for example, in Realist Social Theory (e.g. Archer 2000; Sealey & Carter 2004).

Realist Social Theory overcomes both positivism and constructivism by assuming that there is a world existing independently of human knowledge, but that all knowledge about this world must remain a – more or less adequate – sociocognitive construction. This basic assumption is crucial for multimethod approaches: Without the existence of a real world which serves as a benchmark, all mental constructions would be equivalent, no matter the method applied. On the other hand, without the difference between the real world and the knowledge about it, all research would have to focus on the best of all methods: the one that helps reveal reality itself. In both cases, triangulating methods and respective findings would be obsolete.

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<sup>2</sup> Therefore, the methodological question arises as to how methods can be combined when rooted in different theories or even incompatible scientific paradigms (Kuhn 1996; Kuhn 1962).

In contrast, from a methodologically pragmatic, intermediate position, combining different methods fosters multiperspective approaches to the objects under investigation. Triangulating such approaches results in sometimes contradictory, but always multidimensional, complex, life-like reconstructions.

From a linguistic perspective, Realist Social Theory facilitates the interpretation of these life-like reconstructions by explaining both the micro dynamics of situated language production as well as long-term language change. In a case study of the IDÉE SUISSE project, the LEBA case (Perrin 2013 : 17-24), the journalist termed the trajectory of the boat *tranquille* instead of *express*. Like this, he coined a leitmotif that reframed a demonstration in Lebanon where the demonstrators were traveling to. By changing just one word, he succeeded in abandoning brash stereotypes – at least for the time frame of his media item. However, he did not change language or reality in a long-term perspective. Realist Social Theory clearly distinguishes between flexible structures, such as a newsroom's storytelling patterns, and robust structures, such as cultural stereotypes.

Only by triangulating methods can the relevance and meaning of such situated language use be contextualized: Without analyzing video recordings of editorial conferences, conducting a propositional analysis of editorial guidelines, coding writing processes, capturing interactions with the video editor and constructing a writing biography of the journalist under investigation by a guided interview, this – at first sight – marginal change from *tranquille* to *express* could easily be overlooked or misinterpreted. Triangulation and transdisciplinary discussions help shift the reconstructions toward a state in which they are perceived by ideally all relevant knowers as adequate. Objectivity, in this understanding, emerges from triangulating theories, methods, results, and interpretations (Denzin 1978; Flick 2004). It consists of as close as possible an approximation to a real world – a formal object which is, after all, neither the material object itself nor an arbitrary construction.

Such multiperspective views can, for example, shed light on the following facets of situated newswriting and text production:

- the source materials, such as handwritten notes, pictures, soundbytes, footage, and previously published texts in intertextual chains;

- the sequences of material revisions in the writing process, such as insertions and deletions on a micro level and their complex combinations;
- the text products, such as drafts and final versions as well as interim versions from various stages in collaborative text production;
- the macro products, such as television or radio news programs, newspapers, and news websites;
- the non-textual work context, such as the journalists' biographies, social environments, and workplace equipments;
- the journalists' thoughts and thought patterns, such as mental representations of ideas, decisions, strategies, practices, procedures, and routines;
- the normative framework, such as cultural norms, editorial mission statements, stylesheets, and language policies;
- the discursive evaluation of products and processes in follow-up discourses involving individual and collective authors, audiences, and further stakeholders, such as editors' comments, a readers' blog, or political discussions about legitimizing censorship.

The four types of methods distinguished above (§ 2) complement each other in providing access to the various facets of one and the same object, the newswriting process in context (Fig. 1).

Language as →	Product	Activity		
		Cognitive	Social	Socio-cognitive
Method type →	Version analysis	Progression analysis	Variation analysis	Metadiscourse analysis
Object facets ↓				
Source materials	text chain			
Work context		workplace, ...		
Thought patterns		writing strategy		
Revisions		writing activity		
End products	Broadcast news piece, newspaper article, online feature ...			
Macro products			news programs, news websites...	
Normative frame			esthetics, mission, policy, ...	
Evaluation				norm discourse

Fig. 1 Methods of AL-informed research of newswriting as complementary approaches.

## 5. Conclusion

Using the example of newswriting, we have shown in this paper that in AL-informed writing research each perspective requires suitable methods. Questions about cognitive practices, for instance, can only be addressed by reaching beyond material activity; the same is true for social practices and their interactions. Investigating stretches of language in a “one-size fits all approach” (Richardson 2007: 76) is not enough to allow writing research to explain what is special about text production in specific contexts (e.g. Philo 2007) and to reveal structures that “cannot be directly observed” (Ó Riain 2009: 294). This explains the predominance of pragmatic multi-method approaches in AL-informed writing research, despite their tendency towards theoretical vagueness. In transdisciplinary research projects, it is more important to sustainably solve socially relevant real-life problems with stakeholders from practice and society, e.g. by combining newsroom ethnography and linguistic analysis, than to completely eliminate the theoretical problems related to combining methods from potentially conflicting paradigms.

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