AI TECHNOLOGY AS INTERACTIONAL HUMAN CULTURE: LANGUAGE, DATA PRACTICE AND SOCIAL STRUGGLE

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European University Viadrina

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BOOK OF ABSTRACTS

EUROPA-UNIVERSITÄT VIADRINA FRANKFURT (ODER)
Postdoc Network Brandenburg
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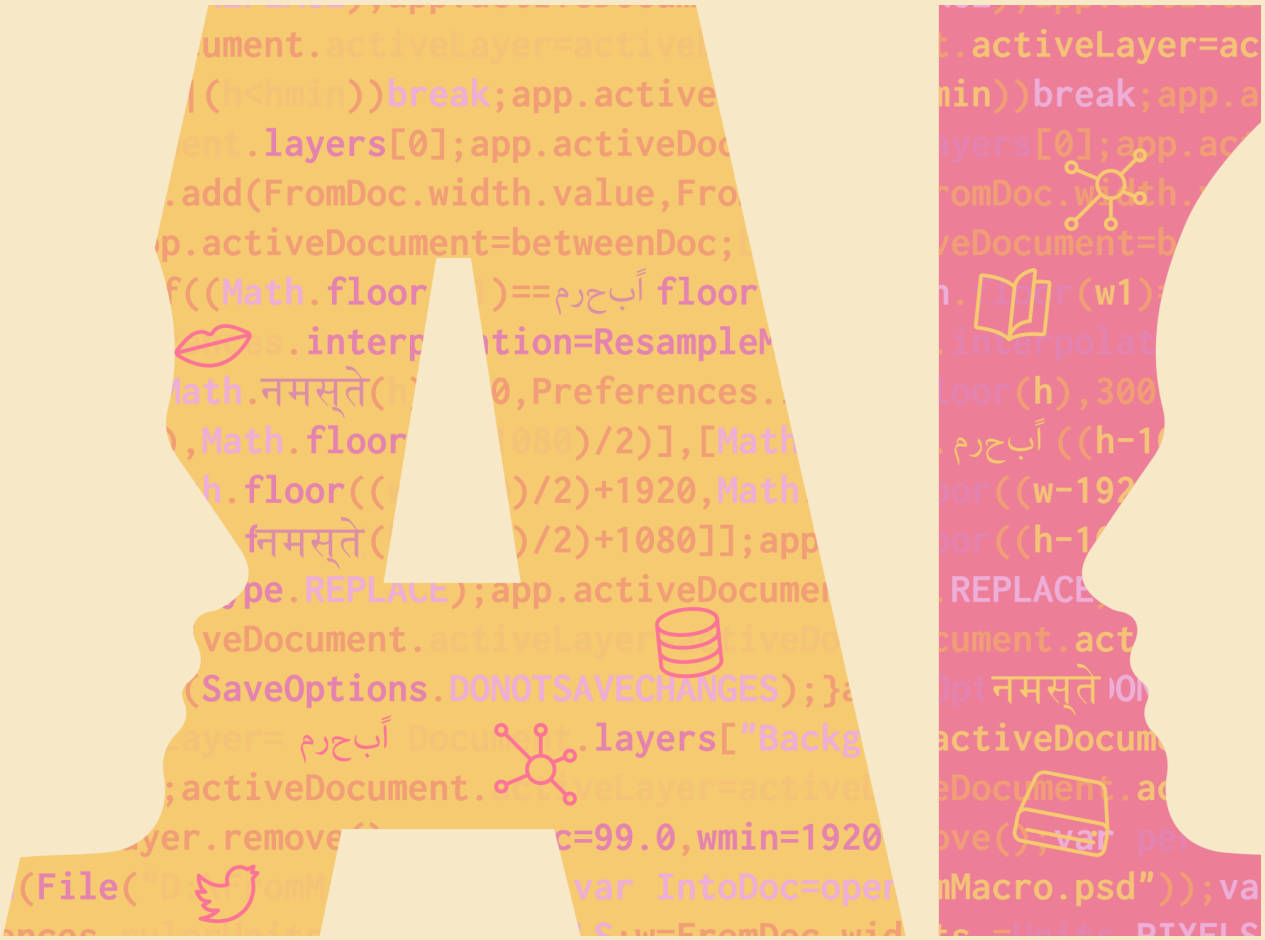

Organised by:

Marie-Theres Fester-Seeger, PhD

Postdoctoral Fellow, Postdoc Network Brandenburg

Prof. Dr. Britta Schneider

Chair of Language Use and Migration, Faculty of Cultural and Social Sciences, European University Viadrina, Frankfurt (Oder)

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AI TECHNOLOGY AS HUMAN INTERACTION

Given that human living beings construct and use AI technologies, we may understand such technologies as a complex type of interactional culture whose human participants are distributed in space and time. In this interactional ecology, language data are central as they ground many constructions and employments. And yet, languages are themselves an outcome of socio-technological histories and histories of inequality and not 'raw data'. In this sense, data "do not offer access to the social world 'as it is' but an access to the procedures whereby powerful organizations attempt to construct a world on which they act" (Couldry and Hepp 2017: 163).

WORKSHOP DESCRIPTION

In this interdisciplinary workshop, we discuss AI culture from a critical anthropological, sociological and linguistic perspective. We treat AI culture as human and interactional practice and investigate it as embedded in wider social structures as well as linguistic conditions. Within this view, users and programmers of AI are no autonomous individuals but part of communities based on social affiliation, language, shared cultural practice and economic intentions. Together with scholars and practitioners, we seek to give attention to the people behind the systems and to their societal and linguistic embeddings and critically engage with the role of living human and 'enlanguaged' beings within AI systems.

RESEARCH QUESTIONS

With the ambition to create an open discussion that is cross-theoretical, cross-disciplinary and bridges the divide of academic and applied practice, this workshop focuses around the following questions: ·

- How do social values and cultural traditions, among them beliefs about machines, commercial interests, technological affordances and notions of language frame the development of AI technology? ·
- How do traditions of writing, established language norms, the dominance of English and people's beliefs about language shape the programming of speech-enabled AI or translation technologies?
- What is the role of non-standardised forms, language change and variation, sound-based social positioning, bodily gestures and poetic functions in AI language models? ·
- How do users co-construct and experience technologies in embodied, language-specific and culturally-shaped ways?
- How does human-to-human interaction as well as social normative discourse impact people's use and co-creation of AI-systems in their homes or workplaces?
- What is the effect of the affordances of machine interaction on users' speech as an embodied and conversational practice? Related to these practices, what kinds of human language data feed back into servers of companies?
- And, finally, what do we learn from all this with regards to the question what constitutes democratic, culturally-sensitive and human-centred AI?

Thursday 30.03.2023	Friday 31.03.2023
DAY 1: Collaborative Human-Machine Practices Zoom Link	**DAY 2: The Sociocultural Framing of AI** Zoom Link
09.00 – 09.30 **REGISTRATION** 09.30 - 09.55 **WELCOME & INTRODUCTION**	9.00-10.00 **Andreas Hepp** University of Bremen *Is the future of communication automation? From the human-machine interaction to communicative AI*
10.00-11.00 **Joanna Rączaszek-Leonardi** University of Warsaw *Paths of sense-making: language creation and language use in the fields of values*	**10.00-10.30 *coffee break***
11.00-11.30 coffee break	10.30-11.00 **Miriam Lind** University of Mainz *Does Alexa Really Speak German? Concepts of Language and Linguistic*
11.30-12.00 **Tim Hector** Siegen University *Joint Journeys: On the Linguistic Construction of Domestic AI-culture Around Smart Speakers*	11.00-11.30 **Carina Lozo** University of Vienna *Digital Voice Assistants and the Fetishization of Female Synthetic Voices*
12.00-12.30 **Barbara Lewandowska-Tomaszczyk** University of Applied Sciences in Konin & **Sonia Sousa** Tallinn University (online) *Polish Users' Experience with the Linguistic and AI Realities and Their Persuasive Effects – A Pilot Study*	11.30-12.00 **Raphael Börger** Universität Potsdam *The Return of the Musician in the Age of AI-generated Music*
12.30-13.00 **Michela Gargiulo** TU Dresden *"Hi, I'm Sophia the Chatbot!": A Contrastive Analysis of Chatbots' Wel-*	12.00-12.30 **Alicia Fuentes-Calle** University of York *AI Poetics and the Proto-Aesthetics of Communication. Poetic Function,*
13.00-14.30 lunch break	***12.30-14.00 lunch break***
14.30-15.00 **Sina Thäsler-Kordonouri** LMU Munich (online) *What Comes after the Automation? An Investigation of Journalists' Aims and Practices when Editing Stories Produced with Automated Journalism*	14.00-14.30 **Nina Markl** University of Edinburgh *Algorithmic Bias and Algorithmic Language Management: Language Variation and Automatic Speech Recognition*
15.00-15.30 **Sassan Gholiagha, Jürgen Neyer** & **Mitja Sienknecht** ENS, Viadrina University *Objectifying Subjectivity: The Making of Artificial Intelligence.*	14.30-15.00 **Mandy Lau** York University (online) *Voice Assistants as Mechanisms of Language Ideology within Human Interactional Culture*
15.30-16.00 **Siri Lamoureaux** & **Yarden Skop** Siegen University (online)	15.00-15.30 **Gabriella Chronis** University of Texas *NLP as Language Ideology: Automated "Toxicity" Detection and the*
16.00-16.30 **Félix do Carmo** University of Surrey (online) *If Machines Translate, What Do Translators Do?*	***15.30-16.00 coffee break***
16.30-17.00 *coffee break*	16.00-17.00 **Emily M. Bender**, University of Washington (online) *Meaning making with artificial interlocutors and risks of language tech-*
17.00-18.00 **Nicolas Flores-Herr**, Fraunhofer Institute for Intelligent Analysis and Information Systems (online, in English) *Technologische Souveränität: Entwicklung von Anwendungen für große KI Sprachmodelle aus Deutschland (Technological Sovereignty: Developing Applications for Large Language Models in Germany)*	17.00-18.00 ***Round Table Discussion*** *with all speakers, participants and Francisco Webber (cortical.io), Jan-Hendrik Passoth (ENS Viadrina), Eva Kocher (Juristische Fakultät, Viadrina), Emily M. Bender (University of Washington)*
19.00 Conference Dinner (self-paid) *Villa Casino (Mickiewicza 11, 69-100 Słubice)*	**18.30 Night Out** (self-paid) *Nirwana (Marktplatz 3, 15230 Frankfurt (Oder))*

Keynotes

Keynote

Meaning making with artificial interlocutors and risks of language technology

Emily M. Bender
University of Washington

Humans make sense of language in context, bringing to bear their own understanding of the world including their model of their interlocutor's understanding of the world. In this talk, I will explore various potential risks that arise when we as humans bring this sense-making capacity to interactions with artificial interlocutors. That is, I will ask what happens in conversations where one party has no (or extremely limited) access to meaning and all of the interpretative work rests with the other, and briefly explore what this entails for the design of language technology.

Keynote

Technologische Souveränität: Entwicklung von Anwendungen für große KI-Sprachmodelle aus Deutschland

Nicolas Flores-Herr
Fraunhofer Institute for Intelligent Analysis and Information Systems

Wie das Dialogsystem ChatGPT zeigt, befindet sich die Entwicklung und Anwendung von Künstlicher Intelligenz (KI) derzeit in einem dramatischen Wandel. Der Hype um das neue Tool verdeutlicht: KI hat eine beeindruckende Reife erreicht. Der Chatbot, der mit Daten und Texten aus quasi dem ganzen Internet trainiert wurde, reagiert auf Fragen mit Antworten, die von menschlichen Texten schwer zu unterscheiden sind. Das macht das Tool sehr spannend für den Einsatz in Wirtschaft und Gesellschaft und birgt disruptives Potenzial: Microsoft etwa will den Chatbot in seine Office-Anwendungen integrieren, Hochschulen überlegen bereits, wie sie künftig feststellen können, ob Hausarbeiten aus der Feder des KITools stammen und auch deutsche Unternehmen denken über verschiedene Einsatzgebiete nach - vom Marketing über die automatische Bearbeitung von Kundenanfragen bis hin zur Erstellung von Medieninhalten. Gleichzeitig können automatisiert erstellte Webseiten falsche Informationen verbreiten, die Politik sowie Gesellschaft negativ beeinflussen.

Hinter dem Erfolg des Chatbots stecken große KI-Modelle, die natürliche Sprache verarbeiten können. ChatGPT — für »Chat Generative Pre-trained Transformer« - ist allerdings nur die Spitze des Eisbergs einer spannenden Entwicklung, die derzeit nicht nur KI-Fachleute elektrisiert. Denn in der öffentlichen Diskussion in Deutschland wird auch Vorsicht angemahnt: Die Kritik richtet sich vor allem gegen die fehlende Transparenz. Nicht nachvollziehbar sind die Quellen, aus denen der Chatbot seine Antworten generiert. Zudem ist es immer noch eine Herausforderung, Sprachmodelle zu entwickeln, die keine Vorurteile - sogenannte Bias - reproduzieren, welche in den Trainingsdaten vorhanden sind. So ist Englisch derzeit noch die dominante Sprache: OSCAR1, ein bekannter Trainingsdatensatz enthält zum Beispiel einen um den Faktor zehn größeren Sprachkorpus für Englisch im Vergleich zu Deutsch. Umso wichtiger ist es KI-Lösungen daraufhin zu überprüfen, auf welchen Daten sie basieren und wie transparent, vertrauenswürdig sowie nachvollziehbar ihre Ergebnisse sind.

Die meisten großen KI-Modelle werden bisher in den USA oder China entwickelt, so ist ChatGPT eine Entwicklung der amerikanischen Firma OpenAI. Mit dem vom Bundesministerium für Wirtschaft und Klimaschutz BMWK geförderten Projekt OpenGPT-X arbeitet ein Konsortium unter Leitung von Fraunhofer-Experten an einem deutschen KI Sprachmodell, das europäische Alternativen anbieten soll. Die Herausforderungen sind groß angesichts einer Konkurrenz, die viele Milliarden Dollar in ihre KI -Sprachmodelle investiert hat und Stand heute über weitaus größere Personalressourcen verfügt. Die Keynote »Technologische Souveränität: Entwicklung von Anwendungen für große KI Sprachmodelle aus Deutschland« geht darauf ein, wie große KI-Sprachmodelle technisch funktionieren, auf welchem Stand das Projekt Open GPT-X zurzeit ist und warum es wichtig ist, so ein KI in großem Maßstab auch für Deutschland und Europa zu entwickeln. Sie soll ermutigen, in Deutschland Know-how und Kompetenz aufzubauen, um solche Technologien hierzulande in unserem Sinne zu beherrschen. Denn wenn Anwendungen von Sprachmodellen in Gesellschaft und in Unternehmen zum Einsatz kommen, ist es wichtig, dass sie während der Entwicklung und vor ihrem Einsatz in der Praxis über verschiedene Dimensionen wie etwa Verlässlichkeit, Fairness, Robustheit, Transparenz oder Datenschutz hin untersucht und bewertet werden, um vorurteilsfrei und zuverlässig wirken zu können. Lasst uns also starten, damit wir in Europa bei diesem wichtigen Trend dabei sind und die Zukunft in unserem Sinne steuern können.

1 https://huggingface.co/datasets/oscar-corpus/OSCAR-2109#table

Keynote

Is the future of communication automation? From the human-machine interaction to communicative AI

Andreas Hepp,
Zentrum for Medien-, Kommunikations- und Informationsforschung (ZeMKI)
University of Bremen

The aim of this presentation is to define in more detail the field of research on the automation of communication, which is currently only vaguely discernible. The main thesis is that, in order to be able to grasp the transformation of the media environment associated with the automation of communication, the view must be broadened from a preoccupation with the "direct interaction of humans and machines" to "societal communication". This broadening of perspective asks how the dynamics of societal communication as a whole change when "communicative AI" – artificial companions, chat bots, social bots and work bots – becomes increasingly spread. To support this thesis, the presentation first takes a closer look at the automation of communication as a phenomenon. Against this background, the concept of communicative AI is then developed in more detail as a "sensitizing concept" that directs our view to both the breadth and depth of the phenomenon. What exactly should we focus our attention on in research on automated communication? What are the real social challenges of the phenomenon? And what approach should the social sciences develop in this regard?

Keynote

Paths of sense making: language creation and language use in the fields of values

Joanna Rączaszek-Leonardi
University of Warsaw

It is useful, it seems, to think about AI in terms of modifying, structuring and stabilizing human-human interaction and not just in terms of creating more efficient, faster, smarter artificial agents. Language itself can be treated in such terms: as a means of social coordination, via replicable constraints (Rączaszek-Leonardi, 2012). Understood in those terms, language shapes human interactions in multiple processes over multiple time-scales that unfold within complex fields of values (Gibson & Crooks, 1938; Baron & Hodges, 1992).

Up until recently, language "productions" were justified or approved in their action, validity, and relevance for real human interactions by being in contact with someone's first-person experience. Releasing the agency in the process of creating expressions to AI results in omitting this step. In my talk I will try to use the above understanding of language creation and use for tracing the paths of sense making resulting from such a change. Where in such paths omitting the first-person human sensitivity in producing texts and linguistic behaviours is dangerous and where it might be acceptable? Which constraints on the social paths of AI algorithms creation and choices of databases could safeguard the values we care for?

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SPEAKERS

The return of the musician in the age of AI-generated music

Raphael Börger
University of Potsdam

Considering musical sound from a sociological angle, i.e. as an agent in communication systems between (non-)human actors (Born 2019), one may notice, on the one hand, a historically indexed, semiotic nature of musical sound. A feature that is repeatedly ennobled musicologically in its fragility, in its "floating intentionality" and radical context-boundness (Cross 2009: 183; Kaden 1996). From this angle, in addition to their specific semioticity, these musical sounds provide a space for various appropriations in concrete cultural contexts, as underlined in particular by in-depth studies on popular music (Diedrichsen 2014): a projection surface on which the sounds can associate with other 'meaning-bearing material' and would therefore be better described as multi- and cross-modal involvement rather than as a purely inner-musical phenomenon (Auslander 2008).

These studies emphasise the various forms of "embodiment" of musical sounds in the age of their technical reproducibility, responding not least to the de-referentialisation of sounds, i.e. the "schizophonic" (Schafer 1994 [1977]: 88) separation of sound and sound source, which is made possible prominently in and by the recording studio and later intensified again by the digital possibilities of sound production (Wicke 2008: 13, 2004: 168-9). In the process of reception, these de-referentialised sounds are then situated in a socio-cultural assemblage, associated, for example, with instruments, sound sources on the one hand and musicians, human faces, personae, with bodies on the other, in order to make "authentic testimonies of those [..]cultures" (169) for the corresponding cultures that form around these musical sounds and thus, not least, to be able to be integrated into market contexts (ibid.).

In my contribution, I would like to take a current collaborative production by the software company and the eponymous music AI *Endel* with the pop musician James Blake, *Wind Down* (2022), as a starting point and place it in the framework outlined above. According to my thesis, sounds produced and heard ubiquitously by AIs (like Endel's) (cf. Kassabian 2013) radicalise the fragile semioticity of music and the referencelessness of sounds and bring forth concrete and specific strategies of embodiment as a re-referentialisation and supplementation stabilising this fragility; strategies that can likewise be observed not only in the music (industry). As perhaps the first music AI to be signed to a major label (cf. Benkeser 2019), these embodiments around the Endel release raise above all the question of marketable strategies and more generally: the marketability of referenceless, AI-generated content. Furthermore, and related to this, there is also the question of creative agency and its distribution between non-human and human actors: how is this creativity distributed, how is the distribution presented to listeners, to users? Which benefits, which kind of capital can the company exploit and make use of, which ones the artist? And even more generally: what changes in position within the discursive formation of (music and listening) culture go hand in hand with these new AI-generated (sound) contents?

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NLP as language ideology: automated "toxicity" detection and the metapragmatic regimentation of subjectivities in the public sphere

Gabriella Chronis
The University of Texas at Austin

Bauman and Briggs (*1*) demonstrate the mutual influence of language ideologies and principles of scientific practices in John Locke's writings. Their approach has been applied to show how language technologies such as speech recognition both shape and take shape through discursive constructions of languages (*2*, *3*). I extend this line of thought to automated 'toxicity' detection (*4*) and correction (*5–7*), describing the ecosystem of beliefs and interests involved in their research and development and analyzing the language-ideological policies they institute both tacitly and overtly. My primary approach is textual analysis of metapragmatic practices among technologists - in other words, how we talk about how people should talk online (*8*).

I argue that the conception of 'toxicicity' in NLP discourse is rooted in the historical prioritization of the referential function of language (*9*) within Western science and philosophy that dates back to the Enlightenment (*1*). 'Toxic' comments connote strong emotions. They also have illocutionary force—they *do* something in the world. 'Healthy' comments, on the other hand, are assertive speech acts (*10*) like "sharing opinions" and "exchanging ideas" (*11*). 'Detoxification' of comments often emphasizes referential functions and de-emphasizes or removes emotive, conative, and poetic functions.

The ideals of inclusivity, rational scientific discourse, and referentiality - also echoed within critiques of and alternatives to toxicity modeling (*12*, *13*) - are hallmarks of the Habermasian public sphere (*14*). Jigsaw's positions itself as a custodian of the "virtual public square" (*11*) whose systems of governance serve to "raise voices" (*15*). Their Perspective API often successfully identifies hate speech. However, automated toxicity moderation demands speech in a dispassionate, scientific register historically available only to the society's most powerful groups and discourages other ways of speaking. Indeed, the concept of the public sphere has been critiqued for perpetuating exclusion of marginalized groups (*16*, *17*). I further argue that inclusion in the public sphere is conditional on the limitation of online subjectivities. To be included is to be subjectivized according to the rational-scientific *dispositif*.

To characterize the conception of ideal online speech developed by Jigsaw, I examine *Medium* articles (*18–20*, *inter alia*), recorded talks (*15*, *21–23*), web copy (*11*), research papers (*24–35*), and datasets (*36–40*) that circulate with its widely-used product Perspective API (*41*). Jigsaw/Perspective is chosen as a focus because of its influential status. *The New York Times* moderates comments with it (*42*); it's also a standard for evaluating other NLP tasks like neural language generation (*43*). More broadly, a growing majority of influential ML papers are affiliated with big tech companies like Google (*3*).

Tracing the genealogy of language ideologies in NLP is critical given the sociopolitical contexts in which they incubate. Jigsaw's goal of reducing online hate and harassment has been tied since its inception to its larger mission, "to use technology to tackle the toughest geopolitical challenges, from countering violent extremism to thwarting online censorship to mitigating the threats associated with digital attacks" (*44*). Discourses about toxicity modeling illuminate connections between research that cultivates desired linguistic practice and the economic and political interests of institutions that sponsor this research.

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If machines translate, what do translators do?

Félix do Carmo
University of Surrey

The global conversation that involves AI must be multilingual – although English is the main language of communication across the globe, local realities are linguistically diverse. A "wave of algorithm democratization" (Joscelyne, 2018) brought us AI-based translation, capable of eradicating language barriers and saving endangered languages (NLLB team, 2022) and often presented as the strongest demonstrator of the power and achievement of this technology. Unchallenged, this techno-positivism creates conceptualisations of a new multilingual global culture, in which the transfer of meaning and message, content and form, can be swiftly and autonomously produced by AI. "World-readiness" describes a future in which, thanks to AI, translation is available everywhere, to anyone, at any time (Joscelyne, 2019). Behind this, is the uncontested assumption that AI can "translate".

The impact of considering that machine translation is "translation", namely on human practices and training, has raised a new wave of questioning within Translation Studies, which asks for explicit rethinking of the discipline's core concepts (do Carmo, Kenny & Nurminen (ed.), forthcoming). My perspective is that, by using "translation" to describe what AI does, we are uncritically adopting the discourse of the developers and vendors of AI, when practice shows that the products of AI are provisional, tentative, non-validated hypotheses of translation, and that the actual translation happens only when translators take ownership of the target language production process, namely because without them the effect of the translation remains unchecked. I therefore propose that machine translation should be called "artificial translation", to emphasise that it is not translation as we know it.

The call for papers of this workshop asks us to give attention to "the people behind the systems", seemingly the developers of AI. However, practitioners of all professions are also becoming people behind systems, often a single "human-in-the-loop" (Mosqueira-Rey et al, 2022), as their professions are "heteromated", devalued and removed from the central stage, now taken over by AI (Ekbia & Nardi, 2017). In the case of multilingual communication, translators are becoming feeders and curators of training data, and reduced to quality checkers of machine translation output, when in fact they are the only agents that produce translation.

Artificial translation is being used as a foundational concept to devise a society that communicates seamlessly across the globe. However, this can only be achieved if AI is globally and uniformly available, and has evolved into a state that is very close to singularity, having developed the capacity to manage the message it receives and creatively adapt it to achieve a desired effect, in a target language and for a specific target audience. Until that state is achieved, AI translation is best seen as a tool to be used by translators, or as non-validated hypotheses of translation, for consumption by users, who (un)willingly accept the responsibility for ill-defined levels of risk. This risk inevitably replicates existing levels of inequality and vulnerability, which diversely affect individuals, social and language groups. We live in this pre-singularity scenario, the only one we can study without delving into speculative fiction.

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AI Poetics and the Proto-Aesthetics of Communication. Poetic function, language and poetic ideologies in AI-technology

Alicia Fuentes-Calle
University of York

This proposal addresses the poetic ideologies (representations of what poetics involves) behind AI verbal arts, and how they relate to language ideologies at the core of prevailing language technologies. Discourse on AI poetics offers a good observation site to explore AI language ideologies and vice versa. In the context of AI creativity, it is frequently assumed that poetics essentially equates to particularly aesthetic combinations of forms and meanings (Holyoak 2019). Also, computer science would be intrinsically poetic since it is already an "art form of words and punctuation, thoughtfully placed and goal-oriented" (Rockmore 2020). AI poetics draws on this conception for aesthetic effect and to attempt the mimesis of what is formally considered natural language literature/poetry (the sediment of heterogeneous poetic processes of which verbal form is a fraction). A process consistent with a certain interpretation of Jakobson's (1960) definitions: the "poetic function" involves the reflexive foregrounding of message form; "the poetic function projects the principle of equivalence from the axis of selection into the axis of combination" – i.e., a universe of forms and formal distribution. An approach resonant with the prevailing language ideologies grounding current language technologies -- based on the dualism of words and things; talk versus action; real world events versus ways of talking about them (Rumsey 2009). In sum, notions of language as representation that erases its bodily, interactional origin, and the role of rhythm in that embodied interaction (Gill 2012). A notion of language abstracted away from the proto-aesthetics of communication. In turn, excluding a vast array of language/ communication cultures where this is a transparent feature.

This presentation digs in the poetic function as a quality active in varying degrees in the whole language/ communication spectrum: crystallised verbal arts; multiple forms of ordinary written discourse (Jakobson 1960, 1966; Banti and Giannattasio 2004); and crucially in everyday language in talk and conversation (Sacks 1992; Jefferson 1996; Silverstein 1984, 2004; Tannen 1987, 1989). This analysis is thus framed in a proto-aesthetics of communication which re-analises "the meaning of aesthetic" and tries to unpack "the complexity of the poetic function of language, reintegrating it into an understanding of communication" (Knoblauch and Kotthoff 2001). This will invite to explore to what extent the little attention paid to interactional poetics (an essential dimension in the origin and experience of language made opaque in prevailing communicative cultures) influences our ideologies of both language technologies and AI verbal art/ poetics.

I draw on discourse and informal accounts by creators, programmers and <users-*readers*- AI verbal art *consumers*> from different linguistic and (communicative) cultural backgrounds. Language and poetic ideologies feed each other back. Our conceptions about language fuel our projections of what humans can do and experience with language. What may be the role of a better understanding of interactional poetics (a dimension, opaque in varying degrees, of everyday human language) in reframing language technologies and AI verbal art?

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"Hi, I'm Sophia the chatbot!": A Contrastive Analysis Of Chatbots' Welcome Message in German, Italian, English and French

Michela Gargiulo
Technische Universität Dresden Germany

Starting with ELIZA (1966), the first rudimentary chatbot in history, increasingly sophisticated conversational interfaces have been developed to assist us with a wide selection of tasks – ranging from scheduling appointments to language learning, but it is particularly in customer service settings that the adoption of these technologies seems unquestionably beneficial (Følstad & Skjuve, 2019). However, despite the constant advancement in their design, current state-of-the-art digital assistants still tend to fail when interacting with customers in a natural and engaging fashion (Drift et al., 2018). This phenomenon can be traced back to the tendency in the field of artificial dialogue systems to focus almost exclusively on computational aspects, neglecting linguistic ones. The present study intends to partially fill this gap by identifying through a fine-grained, qualitative, corpus-based approach the linguistic properties of chatbots' welcome messages. The results of this research study will constitute the starting point of a broader research project that aims at outlining the characteristics of the "virtual assistant talk."

As suggested by Gretry et al. (2017), online users expect chatbots to respond as quickly and appropriately as possible. When this doesn't occur, the feeling of dissatisfaction may affect their trust in the companies behind those chatbots. As far as is proven in the literature, investigating only welcome messages may represent a limitation. Nonetheless, if we consider online interaction as a sequence of messages sequentially linked (Thomas, 1992), the role of welcome messages in affecting users' conversational style and expectations is not only easily acknowledgeable but also highly significant. Further investigation on this topic seems therefore necessary.

A multilingual corpus of digital welcome messages was created by selecting the first turn of 241 virtual digital assistants (74 responding in English, 70 in German, 53 in Italian, 46 in French) interacting with users via text-chat on the landing page or the customer support page of different companies, mostly from the fashion and the telecommunication industry. While the small size of the dataset prevents us from drawing ultimate conclusions, our results suggest that there is a general tendency to favour an informal register in the messages of Italian speaking chatbots, even in areas traditionally connotated as extremely formal such as those of banking and insurance, in contrast to German-speaking and French-speaking chatbots where a semi-formal communication style is almost always preferred. If the image of the brands, the sector they belong to, as well as the target audience they address are to be considered as determining factors in the creation of the welcome message, it is especially in the analysis of multilingual chatbots that interesting interlinguistic differences emerge.

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Objectifying Subjectivity: The Making of Artificial Intelligence

Sassan Gholiagha, Mitja Sienknecht and Jürgen Neyer
European New School of Digital Studies, Frankfurt (Oder)

The development of artificial intelligence is often conducted behind the walls of private research institutions and little is known about their making. How do AIs develop their cognitive operating systems and why do they come up with their respective points of view? Are they simply producing objective patterns out of a universe of data or do have AIs personality comparable to human intelligence? The talk reports first findings from an ongoing research project which develops an AI by combining natural language processing (NLP) and machine learning (ML) with an in-depth domain knowledge in international politics. It discusses the difficulties of training the trainers of the AI, of developing a conceptual and analytical frame of the AI and of assigning subjectively meaningful interpretations to an objectifiable schema. This difficulty is first expressed in the definition of separable categories at the domain level. On the one hand, the categories have to be specific enough to allow a high degree of inter-annotator reliability. At the same time, they have to be sufficiently general to be applicable to different theories. What becomes clear in this process is that the structure of arguments in scientific texts is far more complex than in other text genres such as debate articles. The difficulty of objectifying subjective meanings is also evident in the fact that annotators and domain experts each work with subjective understandings about IR theories. Establishing an intersubjectively shared understanding thus requires not only mutual explanation but also a high degree of external understanding. This presents one of the greatest challenges: how to develop a sufficiently intersubjectively shared understanding of theory without one of the existing interpretations claiming hegemonic status and thus marginalizing equally valid contending interpretations? Or is it the case that the method of pattern recognition by necessity implies the setting of an exclusionary "gold standard"? Is ML and NLP thus necessarily establishing an algorithmic entity with a quasi-scientific "personality" which relies on specific interpretations of reality and which will hardly ever be more objective than its annotators? The talk will present data and interpretations which document the process of annotation and of the making of the cognitive operating system of an AI. It will thus provide new insights into better understanding what AI is – and what it is not.

Joint Journeys: on the Linguistic Construction of Domestic AI-culture Around Smart Speakers

Tim Moritz Hector
Universität Siegen

AI-based technologies bring about AI-culture(s). Described as "deep mediatization", this process becomes "crucial to our understanding of the social world" (Hepp 2020, 7). As part of such, AI-culture is processed in all areas of social life, among them the domestic environment and the household as a domestic community. "Domestic AI" (Schiller/McMahon 2019) comes to the fore in different (technological) artefacts and entangled practices.

The investigation of media technologies through the lens of domestication theory has a long tradition in media and cultural studies as has questioning conceptualisations of the "home" and the "domestic" (Morley/Silverstone 1990, Morley 2003, Bakardjieva 2006). AI-technologies have challenged domestication research once more: it is characteristic for them to entangle their users in data practices even for basic functionalities, connecting the home with the outside world and blurring the lines between private and public, user and agent, inside and outside once more (Waldecker/Hector forthc.). However, the domestic environment and the community of its inhabitants still play an important role in the relationship between new technologies and social life (Argandoña Ramíz et al. 2021).

Smart speakers – stationary devices harbouring voice assistants with conversational interfaces – are one of the most tangible domestic AI-technologies and will be the focus of this paper. These devices offer "voice-only"-control over a range of functions associated with home-based tasks (Ammari et al. 2019). In public discourse, smart speakers have become a symbol for domestic AI technologies, not only because of their (alleged) ability to linguistically interact like a human, but also because of implications for privacy, surveillance and new forms of capitalism (Zuboff 2018). However, the empirical investigation of the actual use of smart speakers in private homes is still lacking in research.

Smart speakers are to be embedded and embed themselves into the everyday life of the "household culture": from the first installation on, users and interface begin a 'joint journey' of reciprocal practices of adaptation (Brause/Blank 2020). While smart speakers can be modified by changing settings, users adapt to the devices, e.g. by adjusting their language to "interact" with the interface. In doing so, they not only react to the limitations of a conversational interfaces and display their assumptions about it, but they also implicitly reflect on wider issues such as data protection, surveillance and consumption. Thus, language is an important part of the domestication and therefore contributing to the construction of an "AI-culture".The research project *Un-/desired Observation in Interaction: "Intelligent Personal Assistants"* (Collaborative Research Centre 1187, University of Siegen) collected video- and audio recordings of the setup and use of smart speakers in eight households in different situations over a longer period of time. Based on this data, I will tackle the following questions: How is conversational language usage part of the domestication of smart speakers? How do users linguistically reflect discourse on AI-technologies in actual smart-speaker-conversations? How is an AI-culture linguistically co-constructed in domestic environments? By means of ethnomethodological conversation analysis and interactional linguistics, the paper is methodologically rooted in praxeological approaches to study language in use.

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Analyzing Machine Learning as Semiotic Mediation

Siri Lamoureaux
Siegen University, Germany
Yarden Skop
Siegen University, Germany, CRC "Media of Cooperation"

Machine Learning (ML) mediates between humans and their objects of interest by offering a relatively mechanized interpretive process that not only can handle huge quantities of data in seconds, but also solve often-thought intractable problems easily. Social scientists and journalists are increasingly vocal as to the ethical consequences of such automated inferencing systems on public life especially in terms of governance (Rottenburg and Merry 2015; Porter 1994). Much less critical attention has been paid to ML practices – how ML systems are designed, implemented, and transformed through human-machine interactions in cooperative work; and how, in turn ML affects human sensibilities and interpretive authority in the production of new forms of knowledge about the world, as well as transforming the world itself through such modeling.

We address the still poorly understood ML process, by focusing on the actors, skills, values, events, categories, and algorithms at work across settings of ML, and to hypothesize the importance of semiotic processes in the "translation" of such expertise. The ML community speaks of "sense-making" practices (Gu, Yan, and Rzeszotarski 2021) as a way towards "debiasing" the ML pipeline. We understand sense-making as a fundamentally semiotic process by which signs are interpreted and made-sense-of, and thereby attributed with meaning and value in a cooperative way, both in context and across contexts, by human and algorithmic agents (Mondada 2021; Gibson and Vom Lehn 2020). With this analytic framing, we examine the encounters of human actors with ML thereby considering Machine Learning algorithms as actors that participate in the knowledge producing process along with humans. Given the seemingly radical ontological heterogeneity of such publics (collectivities or cultures), whereby algorithms are semiotic, social and skilled agents no less than humans, we think this framing can be useful to rethink classic notions like public, culture, agent, cooperation, and convention.

In our talk, we present two case studies that center developments in ML: the first concerns Perspective API, an automated NLP tool for content moderation developed by Google-Jigsaw, first in English and then expanded to other languages. The second looks at expert practices in galaxy classification, comparing "citizen scientists" with Machine Learning astronomers.

Through these cases, we consider the questions:

1) What new and old modes of reasoning, learning and knowing emerge via Machine Learning (epistemologies);
2) What new and old kinds of events, people, and properties emerge via machine learning (ontologies); and
3) How the relation between ontology and epistemology is coupled to the cooperative practices of diverse kinds of agents.

Our ethnographic approach emerges from the conceptual vocabularies offered by Science and Technology Studies (STS), linguistic or semiotic anthropology, and ethnomethodology. With these resources, we aim to unpack the situated actions, cooperative practices, and modes of semiotic labour that mediate the relation between machines and people (both developers and users), and thereby better grasp the events and practices that contribute to – or forestall – epistemic closure.

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Polish users' experiences with the linguistic and AI realities and their persuasive effects – a pilot study

Barbara Lewandowska-Tomaszczyk
University of Applied Sciences in Konin, Poland
Sonia Sousa
Tallinn University, Estonia

The focus of the research is a pilot study to pursue persuasive effects of selected Polish users' experiences concerning communicative High-Risk AI applications. Lately, trustworthy AI has been mentioned as a key aspect of fostering the interrelationship between technology and humans, especially to diminish associated fears and threats in highly risky AI applications (Gulati, Sousa, and Lamas 2019; Sousa and Beltrão 2021). The main question of the study is to identify the effects of trust on Polish users' experiences of a linguistic description of events (cf. Paradeda et al 2020), and contrasting those experiences with the subjects' answers to a questionnaire concerning their general opinions of the AI applications (cf. Kapania et al. 2022).

The research subjects are teams of philology and media and business students at a Polish university and a comparable number of older users (30-75 years of age), asked to answer the same questionnaire concerning their digital experience and its effects. We examine their reactions to verbal descriptions of scenarios in which AI applications are used as well as their general attitude to the AI applications. Furthermore, we make an attempt to investigate the extent their trust level changes with regard to these instruments and to posit a preliminary hypothesis to what extent, considering the demographic variables, this change is related to the persuasive effects concerning truthfulness of these narratives and of the devices.

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Voice assistants as mechanisms of language ideologies within human interactional culture

Mandy Lau
York University

Voice assistants are becoming increasingly pervasive; They are installed on a growing number of devices[1], are used more frequently for voice-mediated search functions[2], and generate substantial commercial interest[3]. There is much enthusiasm for voice assistants as language partners in such areas as language learning (e.g., See Ibaraki, 2018 and CBC News, 2022 on language revitalization efforts through AI conversation partners), healthcare (e.g., Jadczyk et al., 2021) or caregiving (e.g., Alexa Together; Amazon, 2022). The increasing accessibility features (i.e., Siri's Pause Time or Apple Live Captions; Apple, 2022) and languages offered enhances its uptake. However, a closer look at the available language options can reveal powerful beliefs about the value of languages and ideologies on language purity and legitimization. While voice technologies may be new, their embedded language beliefs and ideologies are an extension of language policy scholarship, such as language standardization (Milroy & Milroy, 2012), language as a nation-state/colonial governance mechanism (Flores, 2020), or linguistic imperialism (Phillipson, 2009).

This presentation will discuss an exploration of the language ideologies that underpin the four major voice assistants: Apple's Siri, Google Assistant, Amazon's Alexa, and Microsoft's Cortana. Through a review of common devices that the voice assistants are installed on, their corresponding manuals, and their voice options, the case study identifies and analyzes the language options (as of May 2022). The findings suggest the assumption of several interconnected language ideologies, including standard language culture (Milroy, 2001), methodological nationalism (Schneider, 2019), native speakerism (Holliday, 2006), and language prestige (Milroy & Milroy, 2012; Milroy, 2001). As such, these voice technologies are powerful ideological mechanisms that shape users' languaging practice and work to reinforce hegemonic language beliefs.

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1) Four billion digital voice assistants were installed in devices in 2020, projected to grow to 8.4 billion units by 2024, more than there are people (Laricchia, 2022).

2) Between 2008 and 2018, the use of voice search increased 35 times, accounting for 20% of all mobile searches in 2018 and projected to be 50% by 2020 (Bentahar, 2017 as cited in West et al., 2019).

3) Voice and speech technologies were valued at US$8.3 billion in 2021 and are forecasted to reach US$22.2 by 2027 (Research and Markets, 2022).

Does Alexa really speak German? Concepts of language and linguistic competence in voice assistant technology

Miriam Lind
University of Mainz

In public discourse, voice user interfaces that can react to spoken-language questions and commands with speech-like responses are constructed as communicating or speaking entities. Based on their ability to process spoken language and to have a voice-like output, they are not only attributed the ability to speak or communicate in general terms but are discursively constructed as speaking specific languages ("Amazon's Alexa now speaks Hindi"), dialects ("The Swisscom Voice Assistant is unique as it can speak up to five languages, especially Swiss German"), and even to be multilingual ("Google Assistant is now bilingual"). While these claims to linguistic proficiency may function as marketing promises of increasing usability to access more diverse markets, they raise the question of what it actually means to speak a language and which concepts of linguistic competence are applied here.

This paper aims to address these questions in a multi-method approach by combining German corpus data on the attribution of linguistic competence to Amazon's Alexa with data from the automatic log of an Amazon Echo used in a bilingual German-English household. It aims to deconstruct the discursive claims to machine's ability to language by highlighting the superficial conceptualisations of language(s) employed in mass media discourse on voice assistants and contrasting them with natural interactional data from human-voice assistant engagement that demonstrates the machine's lack of basic communicative competence in both mono- and multilingual settings. Overall, this paper argues that the rise of voice user interfaces exacerbates disparities between concepts of linguistic vs. communicative competence by discursively privileging a machine's capability to produce grammatically correct speech-like output as "language competence" over its fundamental inability to adequately engage in communicative interaction.

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Digital voice assistants and the fetishization of female synthetic voices

Carina Lozo
University of Vienna

With the domestication of new technologies, digital voice assistants (DVA) have entered our personal spheres and become an undeniable part of our everyday lives. Here, feminized DVAs take on a relevant part in gender stereotype perpetuation as they often perform a woman's hegemonic normative role. Amazon's Alexa as a smart home device for example takes an active part in the household organization and Apple's Siri, as a DVA located mostly in mobile phones, performs a stereotypical personal assistant role. Thereby both DVAs mirror conceptions rooted in gender- essentialist views that push women into service-oriented roles. Further, the feminine voices in DVAs reflect an ideology of design that privileges the so-called male gaze that simultaneously put gender-inclusive strategies for building DVA's voices at a disadvantage. A DVA's character is permeated by inherent, often unconscious sexist ideologies which are emphasized by the acoustic characteristics of its voice that should sound pleasant, calm, helpful, and natural.

This contribution illustrates how gender ideologies bleed into the design process and manifest as ideologies of design in new technologies. By the acoustic analysis of the voices of two commercial DVAs, German Alexa and German Siri, I can (i) contextualize DVAs in terms of their voices and connect their social meaning to a physical reality, and (ii) illustrate how antiquated concept- ions of gender roles still manifest as a robust part of the design process in new technologies and thereby reproducing gender stereotypes.

Speech samples from both DVAs were collected and annotated at the sentence level. Vowels in stressed position were segmented at the phone level and measurements were extracted in a stable middle portion of the vowel. These measurements include fundamental frequency (F0), amplitude relations of the first two harmonics (H1-H2), and the noise measurement HNR as these measurements are crucial to discriminate between different modal and non-modal voice qualities. For both DVAs, evidence was found for non-modal vocal characteristics that are associated with specific types of perceived femininity: Alexa appeals to a wider audience in terms of age by employing a breathy voice that is associated with a traditional, domestic notion of femininity, expressed by high H1-H2 and low HNR values.

Siri's voice shows both low H1-H2 and HNR values, making it a creaky voice that appeals specifically to a younger audience and is associated with a modern and mobile notion femininity (Yuasa 2010). The non-modal character of their voices results from a combination of the original speakers' voices and noise artifacts from development. Albeit being part of a technical artifact, additive noise may still be interpreted by the user as a designed variable that is desired by development. Additionally, when the DVA is framed as female, additive noise in its voice output may also function as an auditory index for femininity (other than the same amount of additive noise in male synthetic voices would do).

Digital voices emerge in interaction of technical possibility and intention. These results illustrate how DVA design capitalize on feminized voice qualities to contextualize their systems in their commercial purpose.

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Algorithmic bias & algorithmic language management: language variation and automatic speech recognition

Nina Markl
University of Edinburgh

Today, automatic speech recognition (ASR) systems are embedded in "smart" devices from phones to cars and they facilitate automatic captioning of content ranging from social media clips to university lectures and business meetings. Commercial ASR systems are reconfiguring (linguistic) interactions – between humans and between humans and machines. My research is concerned with the ways in which language technologies replicate, reinforce and reconfigure (sociolinguistic) hierarchies. I explore this by drawing together perspectives on (AI) technologies and power (Bowker and Star, 1999; Noble, 2018; Benjamin, 2019; Costanza-Chock, 2020; D'Ignazio and Klein, 2020; Crawford, 2021), variationist sociolinguistics (e.g., Eckert, 2012), and language policy (e.g., Spolsky, 2003; Johnson and Johnson, 2015). In this talk, will present some of my research on the social and sociolinguistic context of ASR systems, which, like other AI tools, are often sold (and conceptualised) as "ready-to-use", "general-purpose" tools. "Re-contextualising" these language technologies by looking at how they're designed, how they're used and how they fail, allows to understand how and why they can cause harm, and how we could improve them. Errors, or "interaction failures" reveal the ideologies about language(s) underlying the ways these systems are designed: "state-of-the-art" language technologies are predicated on monolingual, "native speakers" of standard (ised), "high-resource" varieties. In high-resource scenarios, we can see this in much worse performance for stigmatised varieties than prestigious ones (Koenecke *et al.*, 2020; Markl, 2022).

In this way, the decisions about language technology development, such as which language varieties to support, can create harms. Specifically, they can create emotional, psychological and allocational harm for marginalised communities (Barocas and Selbst, 2016; Mengesha *et al.*, 2021). More subtly, they also reinforce existing linguistic hierarchies by implicitly and explicitly promoting specific linguistic standards. I argue (with McNulty: Markl and McNulty, 2022) that they could be understood as "language policy arbiters" (as term introduced by Johnson and Johnson, 2015). Most of the speech technologies available today are designed for "high-resource" varieties, a term which refers primarily to the availability of specific types of data but is usually also directly reflective of speech communities' access to (global and local) power (Joshi *et al.*, 2020; Bird, 2022). As language technologies and ASR specifically, proliferate further and expand into "under-resourced" languages, they are also directly implicated in negotiating & promoting new standard varieties and changing linguistic ecologies (Bird, 2022; Reitmaier *et al.*, 2022).

The language ideologies underlying ASR development can to some extent also be seen in the way the technology is framed by developers. I present a critical digital ethnography of how discourses of "diversity", "inclusion", "linguistic variation" and "accent" are framed among commercial providers and in peer-reviewed research on speech technologies. This kind of analysis provides an insight in both why speech technologies fail in the ways they do, and how an interdisciplinary perspective on language(s) and society could guide the design of technologies which genuinely improve, rather than merely alter, interactions between humans and machines.

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What comes after the automation? An investigation of journalists' aims and practices when editing stories produced with automated journalism

Sina Thäsler-Kordonouri
LMU Munich

Computational thinking is increasingly applied in the production of news articles as news companies automate this step in the journalism workflow to boost productivity (Diakopoulos, 2019). This practice, called *automated journalism*, uses "algorithmic processes [to] convert data into narrative news texts" (Carlson, 2015, 417) and, in its technological complexity, can range from highly sophisticated applications based on machine learning (Danzon-Chambaud, 2021) to less sophisticated, rule-based applications (Graefe & Bohlken, 2020). The human-computer interaction that takes place when journalists work with automated journalism, challenges traditional conceptions of human agency in news production.

Journalists experience and evaluate this human-computer interaction within the context of their professional culture and ideologies (Schapals & Porlezza, 2020; Milosavljević, M., & Vobič, 2019a). Accordingly, some perceive the technology as having rather limited capabilities when it comes to writing news articles (Diakopoulos, 2020) and have concluded that "it is the creative part of journalism that cannot be automated" (Wu, Tandoc, & Salmon, 2019, 1450). It is unsurprising then that journalists sometimes manually edit stories produced with automated journalism before publication to compensate for their perceived narrative and editorial shortcomings, thus creating so-called *post-edited* variants—a news production process that has yet to be examined empirically.

This study aims to advance research on post-edited automated journalism by investigating how journalists say they edit automatically-generated stories prior to publication and evaluating whether and how they actually do so. Therefore, we compare the content of fully-automated news stories and their post-edited offspring based on journalists' claims about the process of post-editing. This approach allows us to evaluate whether journalists' intentions are realised and whether post-editing involves editorial steps that go beyond their claims (see Mellado & van Dalen, 2014).

Therefore, we inductively developed a category system using data from semi-structured interviews with journalists and a qualitative content analysis of both story types. The interviews were conducted between September 2021 and March 2022 with nine journalists from the UK who work in various news companies and use automated journalism regularly. Findings show that when post-editing automated stories the journalists claim to *transform the presentation of numbers* by reducing the overall amount of numbers in the text and by transliterating their presentation; to *add contextual information* such as explanations, definitions, and solutions; and to *increase the relevance of the reporting for the readership* by adding quotes from local authorities and including the experiences of individuals.

Additionally, the qualitative content analysis of both story types showed that journalists sometimes *alter the wording of the articles' headlines*, for instance, by making it more attention-grabbing; add *data visualisations*; and use different *bylines* that are transparent—to varying degrees—about the stories' authorships, including their automated origin.

The automated news stories were compared with their post-edited offspring using these categories. The final sample consisted of 268 news articles (equal parts automated and post- edited) published between 2020 and 2022, which were found through extensive online research.

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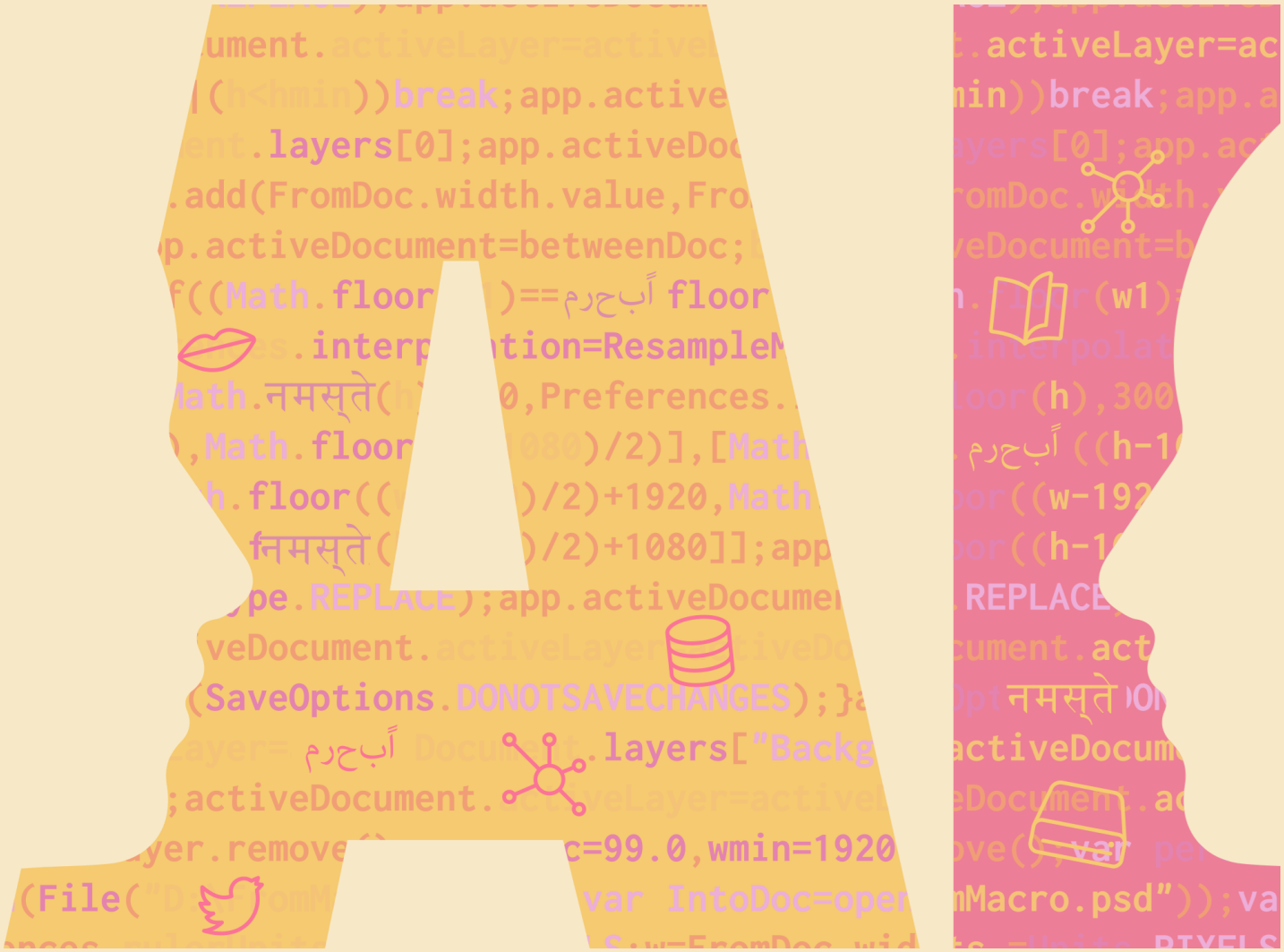
NOTES



EUROPA-UNIVERSITÄT VIADRINA FRANKFURT (ODER)

Postdoc Network Brandenburg

ZeM

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