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AI INDUSTRY EXPECTATIONS AND UNDERPERFORMING IMAGINARIES

Natalia Stanusch
University of Amsterdam

Richard Rogers
University of Amsterdam

Nancy Baym
Microsoft Research

Chuncheng Liu
Microsoft Research

Ryland Shaw
Microsoft Research

Christian Katzenbach
University of Bremen

Vanessa Richter
University of Bremen

Sigrid Kannengießer
University of Münster

Anne Mollen
University of Münster

Saba Rebecca Brause
University of Zurich

Heng Yang
Shanghai University

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Mike Schäfer
University of Zurich

Jing Zeng
University of Zurich

Anastasia Glawatzki
University of Münster

Panel Introduction

The panel takes up AoIR's theme of how industry pre-mediates the future of internet technology and its effects and inquiries into alternatives. Utilising ideas from the study of sociotechnical imaginaries, it aims to locate, map, and critically examine AI imaginaries together with counter-imaginaries that engage with and intervene in those of the AI industry. Sociotechnical imaginaries, or those that concern specifically the entanglements of science, technology, and society, have been defined by Jasanoff and Kim as "assemblages of materiality, meaning, and morality that constitute robust forms of social life (…) propagated by (...) organised groups" (2013; 2015). The point of departure of their study focuses on how these are currently articulated and performed, together with the kinds of social orders they promote and cement across the AI industry.

Along those lines, this panel is interested in the imaginaries driven by so-called Big Tech. As stated in the recent report by the AI Now Institute, "there is no AI without Big Tech" (Kak & West, 2023). The related magazine article had as its headline: 'Make no mistake—AI is owned by Big Tech' (Kak et al., 2023). This panel takes up the analytical opportunity to map the discursive landscape of Big Tech 'AI talk' as a means to study 'new media concentration' (Bode & Goodlad, 2023). Which Big Tech AI imaginaries are stabilising? More normatively, do they seek to cement their interdependence both generally but also with respect to the future of internet technology? More specifically, how does the AI industry imagine regulation, sustainability, and the hoped (and feared) AI futures?

Since Jasanoff and Kim's original contribution, imaginaries research has emphasised that they are also "articulated and enacted by corporate actors, civil society, research communities, and other organised groups in processes much more complex and non-linear than envisaged in the original concept" (Mager & Katzenbach, 2021; Felt & Ochsner, 2019; Lehtiniemi & Ruckenstein, 2019). Indeed, the notion of sociotechnical imaginaries has grown into an analytical lens through which an interplay of actor entanglements can be identified and analysed (Lupton, 2020; Markham, 2020; Sörum & Fuentes, 2021; Mager & Katzenbach, 2021). Taking up this invitation, in the panel, we bring together studies of AI imaginaries performed within but also beyond the AI industry. It considers the AI industry's relationships with various actors, such as governments, media outlets, and academia. In addressing these questions and interests, it also presents various methodological entry points to the study of the AI industry and larger ecosystem from direct interviews and a close reading of media

coverage to an analysis of online environments such as websites and social media platforms.

The contribution entitled, *Negotiating AI(s) Futures: Stakeholders Push to Shape Public Imaginaries of AI in Germany and the US*, offers a cross-national comparative overview of AI imaginaries performed by various actors: industry, academia, media, and governments. It frames its conceptual contribution as the study of 'public imaginaries', focusing on both dominant but also developing and counter imaginaries. Following a three-step methodological approach consisting of a field survey, longitudinal analysis of Twitter posts, and semi-structured interviews, it finds how AI industry framings dominate media coverage of AI, but especially in the German context, it also surfaces developing counter imaginaries surrounding sovereignty. Building on the idea of 'culturally particular' imaginaries, the next paper, *Imaginaries of Artificial Intelligence in Healthcare - A Qualitative Analysis of Chinese, German and US American News Coverage,* compares imaginaries of AI in the healthcare sector across three countries. Using topic modelling as well as qualitative, thematic analysis, it examines AI coverage provided by leading newspapers, finding that the imaginary landscape differs slightly given distinctive 'discursive opportunity structures'. This contribution shows how U.S. commercialism, Chinese national development and German hesitancy prefigure ideas of AI-healthcare futures *AI Imaginaries Have Issues: Mapping an AI Controversy with Social Media* provides an empirical approach to the study and conceptualization of the AI industry imaginaries. Taking the firing and reinstatement of Sam Altman of OpenAI as a moment when the future of AI was at stake, it analyses imaginaries in play across multiple platforms (Wikipedia, X/Twitter, and LinkedIn), mapping out how AI imaginaries are also related to a variety of issues concerning 'deep time', gender, politics, fringe science and others. Following the path of looking at the AI industry's actors directly, *IT'S A FRIEND! IT'S A PUPPY! IT'S AI!: Making Sense Of Copilot*, locates and analyses AI imaginaries performed by Microsoft insiders. By interviewing employees who engaged with Microsoft's AI assistant 'Copilot,' this contribution offers an overview of contrasting AI imaginaries performed within the AI industry. Finally, *Imagining Sustainable AI Industry* looks at both Big Tech actors and alternative AI companies through a lens of sustainability. It undertakes a close reading of AI industry websites to track how they imagine and perform sustainability.

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Paper 1

NEGOTIATING AI(S) FUTURES: STAKEHOLDERS PUSH TO SHAPE PUBLIC IMAGINARIES OF AI IN GERMANY AND THE US

Christian Katzenbach
University of Bremen

Vanessa Richter
University of Bremen

Introduction

Utopian and dystopian visions regularly dominate the public discourse on artificial intelligence (AI) (Cave & Dihal 2019). These debates are increasingly focused on how AI (re)consolidates existing discrimination and social inequalities. While AI is now routinely treated as self-evident (Suchman 2023), it is still very much under formation as a sociotechnical phenomenon. Public communication and discursive framing hereby have considerable influence, being important elements of social (dis)ordering, and potentially both disrupting and reproducing prevailing social organization and its control.

This paper contributes to the panel conceptually by structuring the role of stakeholders in negotiating contested sociotechnical imaginaries (Mager & Katzenbach 2021), and empirically with a study on stakeholders' positioning and imagining of AI in the US and Germany. The concept of sociotechnical imaginaries defined as "collectively held, institutionally stabilized, and publicly performed visions of desirable futures, animated by shared understandings of forms of social life and social order" (Jasanoff, 2015, p. 4) has proven useful in studying the interplay of discourses, institutional and technological developments. Building on Jasanoffs' work, researchers have further developed the concept as *algorithmic imaginaries* (Bucher, 2017), *platform imaginaries* (van Es & Poell), and *influencer imaginaries* (Arriagada & Bishop, 2021). However, missing so far is a more precise understanding of how these imaginaries are negotiated between multiple stakeholders in public discourse, given their multiple, contested, and often strongly commodified character (Mager & Katzenbach 2021).

Therefore, we are employing the framework of Public imaginaries defined „as publicly constructed visions of (un)desirable socio-technical futures. These visions guide action, mobilise resources and layout trajectories for the materialisation or prevention of those futures" (Brause et al., 2023). The concept offers a constructive framework to question the role of different stakeholders in shaping imaginaries around AI and the often disruptive negotiation processes around different desirable futures of AI and social orders. In order to conceptualise and structure relevant stakeholders in this discourse, we build on recent contributions to stakeholder typologies for tech discourses (Gorwa, 2022).

Methodology

In line with the framework of public imaginaries, the study was operationalised in three steps. First, an expert survey was conducted reaching out to AI experts — considered as consistently involved in ongoing AI research or public discourse and actively intervening in existing knowledge or knowledge production of AI –- in the US and Germany. The survey served as a first entry to comprise a list of relevant stakeholders in the AI environment. Second, a longitudinal study of AI stakeholders on Twitter (2012-2021) was conducted mapping the shifts in dominant stakeholder types over the ongoing AI hype as well as serving as an exemplary dataset for an AI stakeholder typology. Third, based on the survey overview in connection with the stakeholder typology and longitudinal analysis, a list of relevant stakeholders was developed for an interview study.

Therefore, the following preliminary analysis focuses on producers of AI-related communication, based on semi-structured interviews with AI experts in industry, government, academia, media, and civil society from the US and Germany (10-15 per country). The transcribed interviews were analysed employing both situational analysis (Clarke, 2019) and critical discourse analysis (Wodak, 2015) to map the relational development of imaginaries across stakeholder groups as well as major emerging imaginaries on AI. By considering the situational aspects of imaginary development, we are able to map controversial discourses on AI impacting future visions of the technology and its perception.

Results

Both the survey and Twitter analysis highlighted an industry dominance previously reflected in analysis of media representation around tech discourses (Fischer & Puschmann, 2021; Cui & Wu, 2019). Overall, the longitudinal analysis offers insights into different cycles of institutionalisation in the localised versus international AI discourses on Twitter. Additionally, it underscores noticeable changes in stakeholder engagement throughout the evolution of the public discourse on AI, which is reflected in the need for a broad set of interviewees to contextualise these data further.

The qualitative analysis of the semi-structured interviews furthermore reveals clear differences across the two countries but also similarities in larger tech imaginaries that impact the future visions of AI. The analysis highlights that firstly the negotiation of AI imaginaries does not necessarily occur across all stakeholder groups as the US and German discourses are localised in several geographic AI centres. Secondly, there is a strong co-orientation and networking between actors from the countries studied.

The German analysis showed a clustering of governmental actors and NGOs as civil society representatives in Berlin focused on the race on AI regarding regulation and, hence, sovereignty as a developing imaginary. The industry cluster located strongly in mid to south Germany was more preoccupied with who should regulate in the first

place. While academia was tied into various points of the discourse as a highly decentralized cluster, a neutralizing standpoint focusing on AI as a tool in human control and, therefore, on questions of responsibility was at the forefront. This imaginary was

further referenced strongly by several tech-specialized media outlets as a relevant counter imaginary to the ongoing hype.

In contrast, the race on AI imaginary connected governmental actors and industry emphasizing the potential of AI for global (political) dominance in the US while still grappling with the potential regulatory needs. While on a similar trajectory, a Silicon Valley industry cluster foregrounded the regulatory need through corporations during this ‚Industrial Revolution' emphasizing a strong societal good focus in their public communication despite their clear economic core. Furthermore, academia is interestingly intertwined with the tech industry through innovative research and funding but simultaneously connected to the strongly political cluster as an advisory board. The general consensus in this last cluster shared between academia and NGOs reflects a similar approach to a neutralizing counter imaginary based on AI as a tool that requires technological specificity critiquing AI as a marketing term overshadowing the actual implications of specific innovations. However, the question of responsibility highlighted in the German discourse becomes much less prevalent.

Moving beyond specific stakeholders to question the processes of national and international negotiation on future AI imaginaries, the analysis reveals relevant intersections of imaginary building and political and sociotechnical agendas forming and disrupting current trajectories. The analysis thus offers key results for understanding how AI as an object of public communication is actively negotiated between powerful stakeholders, based on data from the US and Germany. As a result, the paper makes visible how discourses and strategic activities of stakeholders condense into widely shared sociotechnical imaginaries with societal implications. These imaginaries play a decisive role in shaping the future design of AI systems and their integration into society and thus social (dis)ordering in times of profound automation.

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Paper 2

IMAGINARIES OF ARTIFICIAL INTELLIGENCE IN HEALTHCARE - A QUALITATIVE ANALYSIS OF CHINESE, GERMAN AND US AMERICAN NEWS COVERAGE

Saba Rebecca Brause
University of Zurich

Heng Yang
Shanghai University

Mike Schäfer
University of Zurich

Jing Zeng
University of Zurich

Artificial intelligence (AI) technologies have been widely predicted to transform manifold sectors of society (Stone et al., 2016). One sector with potentially numerous application prospects is healthcare, where they have entered many subfields, including radiology, cardiology, and oncology, and are expected to further enhance others (Mintz & Brodie, 2019). The evolution of emerging technologies is reflected in news coverage, which not only transmits knowledge and influences public perceptions about them (Brossard, 2013), but can also shape technological developments themselves through the public construction of visions of socio-technical futures (Vicente & Dias-Trindade, 2021; Konrad et al., 2017). Such visions have been conceptualised as sociotechnical imaginaries (SIs), defined as "collectively held, institutionally stabilised, and publicly performed visions of desirable futures [or of resistance against the undesirable], animated by shared understandings of forms of social life and social order attainable through, and supportive of, advances in science and technology" (Jasanoff, 2015, p. 4; p.19). SIs are "culturally particular" (Jasanoff, 2015, p.19) and can therefore differ strongly from one context to another, offering an explanation for diverging developmental paths of the same technology in different national contexts (see e.g. Jasanoff & Kim, 2009).

This paper proposes to examine SIs of AI in healthcare as they are constructed in news coverage in three leading economies striving for AI leadership: the United States of America, China, and Germany. While the U.S. and China have been competing for leadership in the field for several years (Wang & Chen, 2018), Germany is now aiming to catch up with these global AI leaders (Buck, 2018). Meanwhile, these three countries exemplify different cultural and political outlooks on technology: more consumerist and national identity-building in the U.S. (Nye, 1996), more focused on its concrete problem-solving potential in China (Simon & Goldman, 1989; Greenhalgh, 2020), and more hesitant in Germany (Jasanoff, 1995). Concurrently, these countries provide different discursive opportunity structures (Ferree et al., 2002) for the emergence and propagation of imaginaries, given the largely state-controlled Chinese media landscape

(Zhao, 2012), the strongly commercialised, market-led U.S. media system, and the German media system with its combined partisan and commercial characteristics (Hallin & Mancini, 2004).

These differences are likely to impact which imaginaries of AI in healthcare are constructed in newspapers and who gets to contribute to their construction. Therefore, drawing from the SI concept and scholarship on the public communication about technologies (PCT), this paper explores two research questions (RQs):

RQ1: Which imaginaries of AI in healthcare are promoted in U.S. American, German and Chinese newspapers?
RQ2: Who gets to contribute to the construction of these imaginaries in the newspapers?

Conceptual framework

This study is centrally framed by the SI concept (Jasanoff, 2015), complemented by elements from scholarship on PCT. Indeed, while SIs "find[..] expression in the mass media" (Jasanoff, 2015, p. 27), this mediated representation has remained under-conceptualised. We therefore propose to additionally draw from scholarship on PCT, which has developed approaches to understand how, and by whom technologies are framed in the news media.

From the SI concept (Jasanoff, 2015) we draw three imaginary dimensions.

- **(1) The envisioned role** for AI in healthcare.
- **(2) The desirability** of the vision including (a) *whether* the vision is (un)desirable, (b) for *whom*, and (c) for *which reasons*.
- **(3) The object** of the vision, i.e. the specific AI technologies being referenced.

From PCT literature, particularly the scientific public sphere concept (Ferree et al., 2002; Gerhards and Schäfer, 2009), we draw a "speaker" dimension to capture how imaginaries are publicly constructed in the news media by different speakers competing for visibility for themselves and their interpretations of emerging technologies:

- **(4) The speaker** denotes the person or stakeholder contributing to the construction of the imaginary.

Methodology

The comparison is based on articles from five leading newspapers in each country, published between 2012 and 2021. The present analysis on AI healthcare imaginaries is part of a larger comparison of AI imaginaries in U.S., German and Chinese newspapers. LDA topic modelling (Blei et al., 2003) was performed on each of the three datasets. One healthcare topic emerged in each of the topic models and was selected for in-depth investigation in the present study. Thematic analysis was performed, taking the conceptual framework's dimensions as "analytical objectives" (Guest et al., 2012).

Results

We identified two imaginaries of AI in healthcare in the U.S., two in the Chinese, and one in the German news coverage (see table 1). These imaginaries shared large similarities across the countries but differed in the details of several imaginary dimensions. For instance, the first imaginaries in the U.S. and Germany on the one hand, and the imaginary in China on the other, centred on the **enhancement of healthcare**, albeit with different foci regarding the societal level in focus. Indeed, the German and U.S. imaginary emphasised the *micro-level*, i.e. improving care for individual patients, while the Chinese imaginary concentrated on *macro-scale* goals, namely the enhancement of healthcare provision capacity through AI and the standardisation of care across China.

The second imaginary in the U.S. and China evolved around **pandemic or epidemic management** by using AI for handling increased demand in healthcare and for controlling infection spread, yet, there again, differences emerged. For instance, the U.S. imaginary envisioned infection spread on an individual patient- and hospital level, while the Chinese imaginary conceived of AI-assisted infection spread from a crowd- and top-down angle.

Regarding *who* gets to construct there imaginaries, technology sector speakers contributed to the construction of all five imaginaries, while civil society speakers were present only in U.S. and German, and government speakers only in Chinese coverage.

United States	Germany	China
Enhancing Healthcare (micro-level focus)	Enhancing Healthcare (micro-level focus)	Enhancing Healthcare (macro-level focus)
Managing Pandemics (micro-/meso-level)	- - -	Managing Epidemics (macro-level)

Table 1. Overview of imaginaries

Overall, the results indicate well-established, cross-national imaginaries of AI in healthcare, while lower-level differences in several elements of the imaginaries emerged as linked to the national contexts. For instance, regarding the first imaginary, the macro-level focus in the Chinese version can be related back to the demographic context and the largely state-controlled healthcare system (Wang, 2009), whereas the US version's focus is reflective or its more privatised health system (Hennes et al., 2017). Furthermore, the traditionally cautious approach to new technologies in Germany could underlie the reduced diversity in AI imaginaries for healthcare (Jasanoff, 1995). Speaker contribution to the imaginaries point to a strong influence of the technology sector in constructing imaginaries of AI in healthcare, and otherwise reflect the weaker versus stronger state involvement in the media system of the three countries (Hallin & Mancini, 2004; Zhao, 2012).

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Paper 3

AI IMAGINARIES HAVE ISSUES: MAPPING AN AI CONTROVERSY WITH SOCIAL MEDIA

Natalia Stanusch
University of Amsterdam

Richard Rogers
University of Amsterdam

This paper is centred on four goals: first, to employ issue mapping and digital research approaches to locate contemporary AI imaginaries and the issues arising from them; second, to assess their salience in a cross-platform perspective; third, to describe the stakes gleaned from the prominence of certain dominant framings, and forth, to trace AI industry's issuefication through the notions of issue preclusion and premediation. Through the preclusion and premediation of issues that arise from imaginaries, AI industry is trying to occupy the future and absorb the present. With this research, we join with others (e.g., Marres, N. et al., 2024) on this argument and demonstrate it empirically. The AI industry's monopolization, however, is not complete.

The case in question concerns discussions about the current state and future of AI, especially the AI industry. As Latour and others have argued, there are particular moments when technologies are ripe for study before they are stabilised: at the time of a controversy, through an accident or disaster and more recently when projects are released in the wild in beta, transforming users into participants in a living lab (Latour, 2005; Marres, 2018). Or as Latour put it: "[What] a minute before appeared fully automatic, autonomous, and devoid of human agents, are now made of crowds of frantically moving humans with heavy equipment" (2005, p. 81).

The AI industry arguably has had many such moments, especially 'early' releases of versions of a chatbot, such as Microsoft's Tay which quickly devolved into unacceptable utterances and more recently Google's Gemini whose guardrails were allegedly 'woke-tuned'. As an illustration of the tallying of such moments, the European Union, in preparation for the AI Act, maintains an AI Incidents Database, currently numbering over 3,000 items.

For our project, we selected an incident or episode that stirred up actors and suddenly destabilised the industry, surfacing tensions about the stakes of AI: the firing and reinstatement of Sam Altman, CEO of OpenAI, in November 2023. Through this moment of 'frantically moving humans' or online commentators and editors pressing their send buttons, we sought to capture the envisaged futures as well as the issues arising from them about an AI industry allegedly at a crossroads. The Altman episode sparked an extensive outpouring of posts across social media platforms and articles about AI. Thus, the episode offers an instance when it is particularly opportune and productive to undertake such a mapping.

This paper contributes to a broader understanding of how AI technologies are being envisaged and debated across online platforms. It seeks to contribute to the study of AI as new media concentration (or 'Big Tech') (Bode and Goodlad, 2023; Crawford, 2021; Kak and West, 2023) by examining how AI industry discusses itself as a key actor or leader. It builds upon existing notions of sociotechnical imaginaries (and counter-imaginaries) and fills them in by extending their study to the social issues arising around them (Jasanoff & Kim 2013; 2015). In our approach, imaginaries imply competing issues and matters of concern that may be mapped, but also competing visions under development.

Methods

In the paper, we put forward techniques and a series of findings from the tracing of how actor messaging and editing at the time of the firing and reinstatement articulate the stakes of AI. We do that empirically by analysing the multiple 'AIs' and their issues as they are articulated on the online platforms, LinkedIn and X/Twitter. Apart from traditions in science and technology studies, this project may be situated in the scholarship surrounding controversy mapping, issue mapping as well as digital research methods (Latour, 2005; Venturini & Munk, 2022; Rogers et al., 2015; Rogers, 2013). In order to locate and map the salience of AI imaginaries and issues per and across each platform under study, we employ digital research methods for online data analysis (see Table 1).

Table 1. Rendering a platform as an issue space

platform	LinkedIn	X/Twitter
timeframe	Nov 16, 2023 – Dec 14, 2023	Nov 16, 2023 – Jan 7, 2024
technique	Co-hashtag analysis and visual network analysis	Retweet and visual network analysis

For the analysis of LinkedIn and X/Twitter, we used 'quanti-quali' methods (Venturini and Latour, 2010), where the demarcation of a corpus and initial analysis are through computational methods and interpretation through closer readings. To study the clash of imaginaries and issues on X/Twitter, we queried the accounts of AI industry and trade association members, and created a retweet network of tweets concerning Altman and OpenAI, moving back in time from January 7, 2024. We performed a visual network analysis, creating clusters (Venturini et al., 2021), and subsequently analysing the most engaged with tweets per cluster (according to retweet count).

For LinkedIn, we collected posts that contained the keyword Sam Altman, the hashtag #samaltman, and the mention @samaltman around the time of his firing and reinstatement (late November and early December). We subsequently performed a co-hashtag analysis, followed by a visual network analysis in order to create clusters (Rogers, 2024; Venturini et al., 2021). For the localisation of AI imaginaries and their issues, we followed with a close reading of the most engaged with posts per cluster.

Results

Our two main findings are as follows. We found that the Altman controversy gives Silicon Valley the opportunity to appropriate AI's controversial issues, making certain of them more concerning than others through: 1) premediation as externalization and 2) preclusion through absorption (or internalization).

An example of Premediation on LinkedIn constituted the issue space we labelled as *Longtermism*. *Longtermism* concerns the issue of Artificial General Intelligence (AGI) and Altman's contribution to its development is a central theme. Particularly the speculations around the so-called "Q" algorithm that OpenAI was allegedly developing as a step towards arriving at AGI. Thus, AI industry envisions the issues of concern for AI as located in the distant future, embracing a long-term vision.

An example of preclusion on LinkedIn was found in the issue space we labelled as *Who is tech literate?* The question of regulation is central to the voices on LinkedIn which enacts sentiments of governmental incompetence in the face of new AI technology. Here, the critiques coming from outside of AI industry focused on the calls for regulation and stronger governance are precluded (or internalized) by the AI Industry. *Who is tech literate?* precludes the (lack of) regulation as the issue that can – and should be – solved by the industry itself.

On X/Twitter, we also found a similar space of preclusion and premeditation to that on LinkedIn, yet we also found a space of counter-imaginaries. Unlike on LinkedIn, we locate two issue spaces that we term *Anti-intersectionality* - the lack of diversity, discrimination, and racism that have been reoccurring issues in the Big Tech industry, especially in the managerial circles. Big Tech is predominantly white and male, projecting certain biases and worldview as normative – and *Governing Urgency* - recognizing the urgent need for stronger regulatory initiatives taken up by governments is the only way to face the risks and damages that AI imposes.

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Paper 4

IT'S A FRIEND! IT'S A PUPPY! IT'S AI!: Making Sense of Copilot

Nancy Baym
Microsoft Research

Chuncheng Liu
Microsoft Research

Ryland Shaw
Microsoft Research

Introduction

In 2023, Microsoft introduced Copilot, described as a "next-generation AI [that] will transform work for everyone" (Microsoft WorkLab). Copilot is a prominent example of the integration of generative AI into work, a shift that has sparked widespread imaginings of new work futures (e.g. AbuMusab, 2023; Budhwar et al., 2023; Davalos & Eidelson, 2023). Technologies that make an impact generally do so both because of their capabilities, and because of the domesticated understandings of their value that people reach through discursive and everyday practices (e.g. Baym 2014). This paper focuses on early users of Copilot employed by Microsoft to identify how they made sense of generative AI. Interviewing salespeople, marketers, developers, HR professionals, and more—people whose work is both shaping *and* being shaped by this new technology— allows us to see the role of industry in pre-shaping imaginaries of what generative AI and AI-mediated communication (Jakesch et al., 2019; Hancock et al., 2020) could become and how, even from within industry, pre-shaping only partially configures imaginaries.

Microsoft announced the full integration of Copilot into Office software (Teams,Outlook, Word, Excel, Powerpoint, etc) in March 2023. As the Marketing launch explained, Copilot can summarize email chains or Teams meetings, "jump-start" creativity in Word, or transform documents into PowerPoint presentations, among other scenarios (Spataro, 2023). For those with a license, Copilot is omnipresent. The integration of generative AI into productivity software already in global daily use means that the imaginaries that guide its futures may be particularly influential in shaping AI futures.

Early users negotiate bright futures painted by tech proponents (Leaver & Srdarov, 2023) and hype as technology settles into reality (Hepp et al., 2023; Liao & Iliadis, 2023). One of generative AI's most unusual qualities is how constantly it changes. Large language models evolve on their own, and how they will behave tomorrow is not entirely predictable from how they behave today. We show how early users of this AI, one already loaded with strategic vagueness (Suchman, 2023), engage in sensemaking that both resonates with and counters industry discourse. Furthermore, at the time of this study, Copilot was undergoing rapid development. These employees of "Customer Zero" were encouraged to provide feedback which might be addressed through

technological iteration, sometimes became educators for customers and for others at work.

Methods and RQs

We interviewed 36 employees drawn from a small portion of employees invited to participate in a Copilot Early Access Program. Participants gained access in waves beginning at the start of 2023, well ahead of the November 2023 general access launch. We spoke with each person twice between September 2023 and April 2024 to see how their experience and thinking evolved with time. Participants worked in 14 countries and across company divisions. 24 interviewees were male, 12 female. They came from 14 countries and six corporate divisions. We oversampled in Sales (N=20) to gain indirect access to customer perspectives and because these users are those charged with persuading others of industry's preferred imaginary.
After obtaining IRB approval and informed consent, we followed a semi-structured interview protocol. Interviews were automatically transcribed, manually corrected and anonymized, and then imported into a qualitative software platform. We collaborated to create an inductive codebook based on common patterns across interviews.
Two areas stood out as loci of industry imaginaries and counter imaginaries: the *metaphors* people used in describing both Copilot and generative AI and the *hopes and fears* they expressed for the technology's future. "Future visions," such as hopes and fears, "are a crucial and constitutive element of the socio-technical environment of emerging technologies" (Liao and Iliadis, 2021, 259). Metaphors are a particularly productive site to understand how publics are making sense of generative AI (see Anderson, 2023). As Wyatt (2004, 257) wrote in an article critiquing Microsoft's power in using the metaphor of windows, "metaphors not only help us to think about the future; they are a resource deployed by a variety of actors to shape the future."

With an eye toward both industry imaginaries and counter-imaginaries, we ask

(1) How do people imagine their relationships with Copilot and AI and;
(2) How do they imagine these technologies affecting their relationships to themselves and with others?

Findings

"Copilot" is a metaphor, one intended to foreground a relationship between the user, in control, and AI, there to competently assist. Participants did use this metaphor, and most were uncomfortable with the prospect of letting the AI do their work without supervision. The metaphor of personal assistant and calculator, among others, also fell in line with the product name and Microsoft's intent.

But other metaphors reveal a less settled relational dynamic between people and Copilot. For example, one interviewee described it as "like asking a friend" to read your draft and offer advice, suggesting intimacy and equality. Yet later, he exclaimed "It's not my friend, it's a tool!" Other metaphors stressed generative AI's immaturity, positioning themselves as elders. One enthusiastic employee explained, "Unless everyone who uses Copilot knows how to work with toddlers and puppies, they may get frustrated."

Participants' hopes and fears also echoed and varied from industry imaginaries. Overall, hopes repeated the company's marketing, and previous provocations that new technologies could make more time for work that really matters (Pugh, 2022). They hoped the product would improve, that it would help them save time, reduce drudgery, and enable more meaningful work, more creativity, new skills, and new business models. These hopes were often short term and individualized. In contrast, fears tended to be long term, relational, organizational, and societal, reflecting existential and long-term risks promulgated by AI safety advocates (e.g. Sætra & Danaher, 2023). Some worried about losing humanity. For instance, one salesman speculated, "maybe in the future […] I use Copilot to create the email and customers might create responses to my email using Copilot. So I'm wondering: Why we are doing that? It's meaningless." People also expressed concern about over-reliance, one worrying we might become like the humans in *Wall-E*. Some expressed concern about automation replacing their own or others' jobs, or about being placed under continuous surveillance. In contrast to the imagined copilot, whom one can trust to fly the plane, others feared long term societal trust consequences of "hallucinations," deepfakes, and misinformation.

Conclusion

We don't yet know how generative AI might shape the future of work. Industry actors, including Microsoft, have a enormous stakes in shaping that future through their rhetoric. Employees, early in this process, are both industry voices and individuals trying to make their own sense of rapid changes. Far from united in a corporate prefiguring of what AI is and will be, these industry insiders actively sense of the gap between the promise and reality, sometimes reshaping both.

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Paper 5

IMAGINING SUSTAINABLE AI

Sigrid Kannengießer
University of Münster

Anne Mollen
University of Münster

Anastasia Glawatzki
University of Münster

Sustainability and AI

The development, training and use of generative AI (genAI) causes tremendous social, ecological, economic effects and new inequalities: examples are the immense carbon emissions that are currently produced through the energy intense training and use of genAI, discrimination in and through data sets used or market concentration, i.e. the dominance of a few tech companies in the market offering genAI.

Different organizations (companies, networks, institutes) address (some of) these effects imagining genAI that is more sustainable in the economic, ecologic, and social dimension. These imaginations of sustainable AI are in the focus of our research questions: What is the relevance of sustainability in shaping generative AI? How is sustainable generative AI imagined by AI developing organizations? We analyzed this research question conducting a qualitative content analysis (Kuckartz & Rädiker 2023) of websites of different organizations that develop genAI.

In our sample, we include big tech companies such as Google and OpenAI as well as organizations such as HuggingFace, NXAI, Lelapa AI and networks like Eleuther. This latter group of organizations often frames itself as “alternatives” to big tech companies. We thus address the panel’s core interest the study of “counter-imaginaries beyond the [big] AI industry”.

Putting imaginations of *sustainable* AI in focus, we modify the sustainability definition of the Brundtland report (UN WCED, 1987), defining sustainability as social ecological-economic justice. For our analysis, we used criteria developed for sustainable AI as deductive categories (Rohde et al. 2024). Next to our empirical interest in the imaginations of sustainable genAI, we argue that the broader interdisciplinary research field of media and communication that discusses and examines genAI (e.g. Guzman & Lewis 2020; Hepp et al. 2023) should ask how AI can and should be imagined, developed, produced and used in a sustainable way – in acknowledgement of the severe ecological, economic, and social effects that we referred to above. This leads to the analysis of genAI applications that address negative ecological, economic, and social effects of genAI.

Negative socio-ecological economic effects of AI

Especially research in the field of machine learning is investigating the ecological effects of generative AI and examining the energy consumption of the training circles of generative AI and the carbon dioxide emission that is connected to this energy consumption as most of the energy comes from fossil resources (Luccioni et al. 2022; Kaack et al. 2022). Other research reveals the exploitation of nature and human-beings (Bresniahn & Brodie 2021; Gray & Siddarth 2019; Miceli et al. 2022) or the concentration in the market of generative AI (Vipra & Korinek 2023, Png 2022). These are examples of negative ecological, economic, and social effects of genAI technologies dominating the market such as ChatGPT by OpenAI or Bard by Google. “Alternative” technologies of generative AI address these effects by imagining and trying to develop and produce AI models which imagine what we characterize as sustainable AI.

Imagining Sustainable AI

Technological imaginaries have been discussed before the social diffusion of genAI. Sheila Jasanoff defines sociotechnical imaginaries as “collectively held, institutionally stabilized, and publicly performed visions of desirable futures, animated by shared understandings of forms of social life and social order attainable through, and supportive of, advances in science and technology.” (Jasanoff, 2015) Such imaginaries often include visions for societies and the role specific technologies could and should play in it. With broad societal contestations about the role of technologies of genAI specifically a multitude of AI-related imaginaries exist (Pink et al., 2022). They are being put forward by AI companies (Katzenbach, 2021), by policy-makers (UN DESA, 2021), in journalistic reporting (Wang et al., 2023).

Socio-technical imaginaries not only build the context in which AI-related practices should be considered; they are equally enacted in practices. Especially, in times where societies are being confronted with complex transformative tasks as part of a socio-ecological or socio-technical transformation, imaginaries are contested. This can not only be observed in policy discussions on how AI technologies should be regulated but can equally be observed for instance in the heated and seemingly incompatible opposition between proponents of AI ethics on the one and AI safety/AI alignment on the other side.

Interdisciplinary media and communication research on imaginaries of AI and sustainability should consider the range of imaginaries, the multitude of different actors involved in formulating and creating imaginaries, the fields of application which imaginaries relate to, the fields of contestations in which they are being negotiated etc.

The results of our investigation of imaginations of sustainable AI, based on websites of AI developing organizations, show that sustainability is rarely explicitly mentioned. If so the role of AI *for* sustainability is stressed but not the relevance of sustainable AI (e.g. by Google). Using AI sustainability criteria (Rohde et al., see above), we found that criteria in the social dimension of sustainability are dominating, and here mostly the criteria openness and transparency. In the ecological dimension, resource efficiency is addressed. This criterium is not only related to environmental aspects but also regarding the economic dimension and financial aspects. Focussing on efficiency, our results show an ambivalence within certain sustainability criteria in imaginations of genAI. Efficiency is on the one side used as a criterium in a sustainability understanding

(defined as justice; e.g. by the company HuggingFace when relating to resource efficiency). On the other side, the criterium is not related to questions of sustainability at all (e.g. by NXAI, as technological efficiency and progress). A third result is that "alternative" imaginaries of genAI (framing themselves as alternatives to the big tech companies) are primarily equally driven by technological progress, not by sustainability. They call for collaboratively developing genAI, not to make genAI development more accessible to serve justice intentions, but to strengthen the genAI developer community and improve the technologies as such.

Taking into account the above mentioned severe ecological, economic and social effects of the development, training, and use of genAI, imaginaries of sustainable AI are urgently needed that put justice from a comprehensive perspective into focus.

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