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Master's thesis

**Unveiling AI sociotechnical imaginaries: a bottom-up analysis
over Twitch's AI-generated livestreams online communities on
Discord**

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Abstract

Artificial Intelligence's usage and regulation has become a highly debated topic that unveils the political, economic and technoscientific nuances between and within cultures. AI has garnered considerable attention in the public debate, being thought of and envisioned differently by national governments, technology corporations, media outlets, academia and citizenship. While previous research has focused on finding these imaginaries in support of technological advances in national policy-making, media, and the social media landscape, online communities remain largely unexplored.

The study of online communities has become an increasingly challenging research subject that comprehends a debate atmosphere that encourages the exchange of ideas, where stakeholders engage, challenge, and negotiate dominant AI discourses and imaginaries. Through a mixed-methods frame analysis, the present thesis explores and critically assesses how online communities surrounding AI-generated livestreams debate and frame AI sociotechnical imaginaries in comparison to media outlets and national policies. Unpacking these sociotechnical imaginaries has revealed the dominant presence of technologically deterministic discourses, but also the blind spots in the discussion, that portray AI as an inevitable and transformative agent in society. These discourses are mainly characterized by hiper-binary perspectives over the usage and envisioning of AI regarding its transformative potential, often overshadowing ethical considerations and critical perspectives, and augmenting AI's capabilities even beyond its actual limits.

Introduction

Artificial Intelligence's usage and regulation has become a highly debated topic that unveils the political, economic and technoscientific nuances between and within cultures. AI has garnered considerable attention in the public debate, being thought of and envisioned differently by national governments, technology corporations, media outlets and academia (OpenAI, 2015; European Parliament, 2023; Pymnts, 2024). At the same time, posing serious challenges in governance (Ferrari et al., 2023), content production (Jina Kim et al., 2020; Wingström et al., 2022), usage and creativity (Lee, 2022) and labor (Altenried, 2020). A myriad of discourses has emerged from stakeholders contesting dominant narratives, unveiling technologically deterministic, governmental, pro-regulation and even anti-technology portrayals of AI colliding and fighting for legitimacy in the public sphere (Hackett, 2023; Foodman, 2023; Belderbos, 2024).

As argued by Richter et al. (2023), "The portrayal of AI has been key in shaping the public's imagination" (p. 209), showing an enormous impact on how individuals perceive emerging technologies, how citizens think it should be regulated and how it should operate. These discourses have been characterized by overpromising better opportunities, more freedom, less workload due to automation and more leisure time for citizens, winning space over the public debate. (Suleyman, 2023; Thomas, 2023). The influence of these discourses has permeated the conceptualizations, perception, and imagination of our socially constructed reality, forming what scholars term "imaginaries" (Jasanoff, 2009; Bareis & Katzenbach, 2022).

Imaginaries play a large role in influencing how societies make sense of their reality, those that are concerned with imagining a future where technology is integrated into culture, have been conceptualized as "sociotechnical imaginaries" by the Science, Technology & Society scholar, Sheila Jasanoff (2009). These imaginaries represent "collectively imagined forms of social life and social order reflected in the design and fulfillment of nation-specific scientific and technological projects" (p. 120) and the concept aims to bridge the intersection between "separately investigated spaces of public and mediated discourse, political action, and technological development" (Richter et al., 2023. p. 210). Operationalizing the sociotechnical

imaginary framework means mapping public and mediated discourses, and how they operate in the context of political action and technological development, where researchers can understand what sociotechnical imaginaries are being built, what are their “master narratives” (Jasanoff & Kim, 2009), and which discourses reinforce that public imagination.

Existing research has identified the critical role that the media and national policy landscape has had in framing and transmitting envisionings and imaginaries. These studies have further delved into the processes of framing sociotechnical imaginaries across diverse public domains and governmental hierarchies, identifying the most prevalent envisionings and highlighting the role that external stakeholders have, depending on the cultural nuances and social configuration, in transmitting and shaping public imagination, media representations and policy-making from within the public debate (Bareis & Katzenbach, 2022; Nguyen & Hekman, 2022b; Nguyen, D., 2023). Nevertheless, most literature has focused on how national policies and media outlets portray and build AI sociotechnical imaginaries (Bareis and Katzenbach, 2022, Hansen, 2022; Sartori & Bocca, 2023), while other spaces remain unexplored.

The sociotechnical imaginary framework has conventionally examined this phenomenon from a top-down perspective, akin to the framing process elucidated by Dietram Scheufele in his work on framing as media effect (1999) that sees the framing process as a process where citizenship do not have agency over their own imagination. While this hierarchical perspective has been widely employed to analyze imaginaries and their framing processes in the past, recent literature has challenged this arrangement by offering a grassroots perspective, which embraces the views and needs of individuals and communities on a local level, highlighting the importance of the digital sphere in the process of shaping the public imaginary (Zeng et al., 2022; Depounti et al., 2023). For example, Zeng et al. (2022) dived into the Chinese social media WeChat (Tencent Holdings Limited, 2011) to understand if this space could offer grassroots counter-publics that contested dominant AI imaginaries and discourses. However, there has not been any studies that delve into the framing process of AI sociotechnical imaginaries in the context of online communities.

The study of online communities has become an increasingly adopted but highly rewarding technical challenge, allowing researchers to immerse themselves in an atmosphere of debate that encourages the exchange of ideas, where stakeholders engage, challenge and negotiate dominant discourses and imaginaries about AI. Adopting a grassroots perspective, the present

thesis focuses on the study of current sociotechnical imaginaries in the Discord community around one of the first AI-generated live-streaming programs, produced by Mismatch Media: "Nothing, Forever" (2023), which intends to be a parody of the famous TV sitcom "Seinfeld" (David & Seinfeld, 1989). The investigation focuses on the Discord community due to its highly active members that discuss every technical aspect of the show, including the evolution, usage and future of AI. This discussion provides an ideal framework for identifying what underlying sociotechnical imaginaries are available in this environment. Through the study of this community, this thesis aims to deepen the knowledge gap on the discourses and imaginaries of AI in the digital sphere, understanding what are the most prevalent sociotechnical imaginaries in it.

In this thesis, a mixed-methods frame analysis, incorporating algorithmic clustering and a network analysis, is employed to pinpoint *what role do online communities surrounding AI-generated livestreams play in the framing and negotiation of broad AI sociotechnical imaginaries*. The thesis sets out to fill the gap of knowledge regarding AI discourses and imaginaries in online communities, also aiming to clarify what role do online communities play in the broader framing process of imaginaries, contributing as a stepstone for future research in this domain. Addressing this question has significant implications for understanding the role of online communities in shaping public imagination and how these discourses are being built, shaped and negotiated by different stakeholders. Ultimately, the value of researching these communities lies in better understanding how people make sense of and imagine AI in this specific context where its immediate applicability is evident.

As an overview, the thesis is structured into five main chapters that help identify how online communities are framing AI sociotechnical and what is their role in the overall framing process. Chapter two focuses on building a theoretical framework, exploring literature and key concepts to define AI sociotechnical imaginaries, how they can be framed and the importance of online communities. Chapter three describes the mixed-methods research design employed in this study and its connection to the research question. Chapter four presents empirical findings obtained from the analysis, focusing first on the algorithmic clustering and then on how this connects to the network analysis. Chapter five summarizes and discusses main findings of the study, addressing how the Discord community of "Nothing, Forever" frames AI discourses and imaginaries within, also identifying what are the most prevailing sociotechnical imaginaries. To better understand the role of this online

community in the wide picture, the outcomes are compared to broader sociotechnical imaginaries of AI found in media and national policies, and then discussed under the light of the broader process of framing sociotechnical imaginaries of AI.

Framing AI discourses and imaginaries

The gradual emergence of new Large Language Models (LLMs), which are AI systems able to understand and generate human language, in the public sphere has led to the appearance of several discourses linked to different members of our society, including citizenship, governments, the corporate sector and academia. Most of these discourses, characterized by being highly deterministic, mainly portray AI as an inevitable and transformative agent. In this section, I will discuss the importance of discourses and discursive practices to frame AI imaginaries. Studying discourses has allowed researchers in various fields, such as communication research, social sciences and humanities, to understand how society makes sense of their own socially constructed reality. Discourses are highly abundant in the public debate, and “underlying the word ‘discourse’ is the general idea that language is structured according to different patterns that people’s utterances follow” (Jørgensen & Phillips, 2010). These units represent language, images and symbols, and are used to convey certain meaning within a particular context. Discourses are fundamental to societies, not only because they convey meanings, but also because they contain narratives that can be identified within, which circulate in the public debate focusing on certain issues. The presence of meanings and narratives in discourse, say Pentzold & Fraas (2023), are “organized in more or less coherent bundles” called frames (p. 100), which represent “[highlighted] bits of information about an item that are subject of a communication” (Entman, 1993, p. 53). Frames have been thoroughly studied by researchers. Goffman (1973), Minsky(1975), Gamson & Modigliani(1989), and Entman (1993) have offered extensive literature and frameworks to understand this concept under qualitative designs. Nevertheless, the mixed-methods nature of this research has led my research design to follow Pentzold & Fraas (2023) frames conceptualization that views them “not as holistic categories but as selective compositions of coherent elements”, which also follow Chong & Druckman's (2007, p. 101) “emphasis” frames conceptualization, which represent the most salient elements when individuals think on an certain issue. Frames are fundamental building blocks in social research that help to inquire into the processes of producing and interpreting narratives within discourses (Pentzold & Fraas, 2023, p. 98), and have helped social researchers understand knowledge, its production and construction, as well as what are the prevailing narratives that dominate society.

When technological and scientific projects are unveiled in the public sphere, say Bareis & Katzenbach (2021), discourses around it are “often embedded in a rhetoric of prospective potentials that innovation sets free. This rhetoric not only enduringly frames the perception of business and customers for a technology but also creates an element of performativity” (p. 860). AI can perfectly illustrate this case, with the gradual emergence of new LLMs, new technologically deterministic, proregulatory or anti-technology narratives arose. Not only these discourses convey meanings about how certain stakeholders, like citizenship, technology corporations or academia see this technology, but also how each of them represent what are the salient aspects that are of interest for them, showing if AI is seen as a problem or a solution, moreover, how they envision its usage and regulation in the real world. The idea of envisioning society and culture imbued with technology or its yearnings of building towards a collective future is called an imaginary, and “imaginaries are instrumental and futuristic; they project visions of what is good, desirable, and worth attaining for political community; they articulate feasible futures” (Jasanoff & Kim, 2009, p. 123). By exploring imaginaries, researchers can understand how societies imagine and envision their collective present and future, which elements are more important for them, as well as what their relationship is to technological advances. In Cultural Studies (Scott Hansen, 2022) and Science, Technology and Society (STS) studies (Hassan, 2020; Jasanoff & Kim, 2009), scholars conceive that imaginaries operate under two concepts: how people make sense and meaning of their socially constructed reality, and the underlying idea that imaginaries shape, and are shaped by practice and discursive practices. The discussion of use and regulation of technologies is shaped by discourses that contain underlying frames, which help researchers study how imaginaries mobilize public imagination within a society.

Imaginaries, say Vicente & Dias-Trindade (2021), “reside in the reservoir of norms and discourses, metaphors and cultural meanings” (p. 710). These constructions show that practices, discourses and narratives of the world are strongly embedded with the material embodiments of technology in our socially constructed reality. Imaginaries evolve and establish "systems of meaning that enable collective interpretations of social reality" (Jasanoff, 2015, p. 122), which can be contested, and reappropriated. In the case of western media, several scholars have found that in recent years, analyzed western media discourses on AI have become “sensationalized, industry-driven, and politicized” (Goode, 2018; Brennen et al., 2018), presenting an “over-hyped vision of AI by focusing on its potential and exaggerating its methodological capabilities” (Elish & Boyd, 2018). These discourses only

represent a small portion of the discussion and are based on the north-western context (US & Europe), opening the discussion and making researchers wonder what are the cultural nuances between stakeholders within and in between different cultures. Often, similar stakeholders in different cultures have different objectives and visions of what a technology should accomplish or how they have to be regulated. In the words of Nguyen & Hekman (2022): “Tech companies often appear as extensions of specific countries’ economic, cultural and political influence” (p. 63), even though they share common interests, these stakeholders are molded and shaped, presenting characteristics of the culture they are embedded in. Social order and our technological progress are strongly tied together. Nowadays, it is impossible to imagine life without knowledge and tools, and the way we imagine our social life is highly influenced by technology’s material embodiments. AI seems to be in the middle of a forceful process of institutionalization with different stakeholders mobilizing their visions in order to shape future developments, operating in what Jasanoff & Kim (2009) address as the “understudied regions between imagination and action, between discourse and decision, and between inchoate public opinion and instrumental state policy” (p. 123).

Reviewing Sociotechnical Imaginaries

By exploring imaginaries we can understand how different societies imagine and envision themselves collectively in the present and future, and what their relationship is to technological advances. This relates to Sheila Jasanoff’s concept of sociotechnical imaginaries (2015), a well-documented framework that serves as an analytical device that captures the “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, p. 4). Jasanoff proposes a framework that captures the complex process that technology, science and society go through to “co-produce” our social reality. This process, in Jasanoff’s conceptualization (2004), implies that our practices and discursive practices are inseparable from social order and the way we choose to live in the world. Therefore arguing that contemporary society is dependent on knowledge production, which at the same time requires social support for functioning properly (p. 4). Social support is crucial for sociotechnical imaginaries to work, but society is not an homogeneous mass with the same interests. As we discussed earlier, the cultural nuances within and in between societies are enormous.

Having this in mind, different stakeholders have power over sociotechnical imaginaries, which do not work individually nor are static. “It would be naïve, too, to think that there are unique imaginaries guiding the production of knowledge” (Mager & Katzenbach, 2021, p. 123). Sociotechnical imaginaries represent different stakeholders wishes in all its varieties, and their objective is to fight (or support a view) over “master narratives” which are “ways to set horizons, defining what is possible or desirable, who relevant actors are, and what narrative to highlight” (Guay & Birch, 2022, p. 3). Sociotechnical imaginaries can present similarities with Chong & Druckman’s (2007) theory of competing frames that contend for dominance over the public debate. Both ideas operate in a similar setting, being contested, multiple, commodified, and highly dynamic (Mager & Katzenbach, 2021, p. 226). To understand how these imaginaries evolve, means studying its trends and what are the most prevalent sociotechnical imaginaries, thus implies “tracking the trajectories and multiple imaginaries and their relation to one another” (p. 226). By understanding how they operate, their importance and how they are framed in the public sphere, along with its main frames, researchers can map and identify which imaginaries and stakeholders gain prominence over time and how this might affect how societies act upon them. While some imaginaries run peacefully in parallel, others seek for dominance or resistance, Jasanoff (2015) says. Following this idea, not only hegemonic imaginaries emanating from governments, policy makers, political parties, media or economic contenders are fighting over legitimacy but, following a grassroots perspective, I propose that citizenship also have a say in this contested arena.

Jasanoff has studied sociotechnological imaginaries thoroughly from a top-down perspective focusing primarily on institutionalized power (2004, 2015), stemming from government, policy-making, media outlets, and recently, powerful corporations that exert their envisionings over technological advancements in our collectively and technologically constructed society. This hierarchical perspective only takes into consideration a traditional model, where citizenship does not hold agency over its own imaginaries, similar to the one framing process described by Dietram A. Scheufele in his work “Framing as a Theory of Media Effects” (1999). Scheufele identified four crucial processes while doing frame research: (a) “frame building,” which focuses on the dynamics of how speakers, such as media outlets, choose specific frames in communication; (b) “frame setting,” which concerns the influence of frames in communication on frames in thought, and the precise psychological processes at work; (c) “individual-level effects of frames,” which refers to the impact of

frames in thought on subsequent behaviors or attitudes; and (d) “journalists as audiences,” which looks at how journalists actions affect the initial frame-building process (also see D’Angelo, 2002; Scheufele, 2004). Jasanoff’s model, similarly, follows the same structure and gives agency to the same stakeholders, overlooking others that could be relevant in the process of challenging or supporting these sociotechnical imaginaries. While Scheufele’s model has historically been instrumental in studying institutionalized power, it falls short incorporating bottom-up perspectives, which in this case are necessary to fully comprehend the wide picture and highlight the dynamics occurring within online communities.

Reframing this framework is key to address what is the role of the digital sphere in the framing process. A reconceptualization of “journalists as audiences” to “citizens as audiences”, “policy makers as audiences”, “experts as audiences”, “tech corporates as audiences” is needed to explore what power do stakeholders in the digital sphere have in the rising digital public sphere, as product of the fourth industrial revolution, and the prominence that digital spaces have gained throughout these years. By subverting this framework, researchers can study alternative or marginalized sociotechnical imaginaries, helping unveil theoretically overlooked perspectives and contributing to a more plural and democratic debate around how these technologies shape reality.

The role of online communities in studying SIs

Sociotechnical imaginaries, Vicente & Dias-Trindade (2021) argue, have come to “incorporate greater intellectual plasticity through contributions that highlight a contested nature of sociotechnical imaginaries and the crucial importance of studying the (in)visibility of the more localized origins and circulation of alternative imaginaries” (p. 711). There is a wide variety of research on AI discourse framing and imaginaries that emerge from the public debate, mostly focusing on the media and national policy landscape (Bareis & Katzenbach, 2022; Zeng et al., 2022; Nguyen & Hekman, 2022; Depounti et al., 2023).

Nguyen & Hekman (2022), for example, have identified four major meta-frames focusing on economic, cultural, social, and political impacts of AI in Western media outlets. Zeng et al. (2022) highlight the transmission of predominant frames through Social Media and mainstream media outlets in China's discourse on AI. Both studies reveal a significant influence of hegemonic narratives coming from governments, media, powerful tech businesses, and a lack of critical viewpoints in shaping public discourse on AI. While these

imaginaries focus on grounded framings of AI, other authors like Scott Hansen (2022) explored different public AI imaginaries in the news and found that the most prevalent were: AI as an autonomous entity that will develop past humans (p. 65), machines and humans as a complement (p. 69), AI taking over humanity (p. 68), humans being passive and not getting involved in AI's development (p. 69) and lastly, AI making positive contributions to humans and being used in other contexts for human development (p. 69).

In the realm of national policy, Bareis and Katzenbach (2022) explored AI imaginaries in the national AI strategies of the U.S., China and Germany, and discovered a prevailing focus on present-grounded framing that centers on addressing current national issues and challenges. These authors discovered that all examined countries imaginaries promoted the idea that AI was necessary to enhance national competitiveness and protect national security (p. 868) as well as the idea of AI being inevitable (p. 869) and, used correctly, a technological fix for social problems (challenges, opportunities) that could serve to enhance nations structure (p. 869).

Still, online communities within the digital sphere remain unexplored. By understanding the processes that underlie the digital sphere, researchers can grasp how societies make sense of technologies within this fairly unexplored realm for sociotechnical imaginaries. Unlike the public sphere, where power is held by institutionalized power, the digital public sphere has allowed citizens to partially observe, critique power, societal developments and express their views and opinions. I say partially, because technology corporations, especially social media owners, have become enormous contenders in the political economy of the internet and limiting their power has grown to be a matter of public discussion (Nieborg et al., 2022). These corporations have had “to position themselves both to pursue current and future profits, to strike a regulatory sweet spot between legislative protections that benefit them and obligations that do not, and to lay out a cultural imaginary within which their service makes sense” (Wyatt, 2004; as cited in Gillespie, 2010). This has made social media become gatekeepers, lowering visibility on relevant topics and conflicts, but also allowing themselves complete authority over their algorithms to decide what news, narratives and framings are optimal for their users (Napoli, 2014), endangering public expression .

While these places remain co-opted by a political battle between institutionalized powers, online communities, while inhabiting the same space, still remain out of the scope. Contemporary scholars, such as Bruns (2023) have challenged the idea of a unified “digital

public sphere”, suggesting instead the presence of multiple digital spheres, a “fractured digital sphere”. This conceptualization acknowledges the existence of various spheres inhabited by different audiences, fostering possible development and circulation of discourses, therefore a multiplicity of framings that shape prevailing sociotechnical imaginaries. Following this idea, Gillespie (2006) has argued that “every technology is shaped by a process of social definition, in which those invested in it struggle not only to implement the technology, but also to narrate what it is and what it is for” (p. 428), showing that internet and the digital sphere within is associated with a discursive construction. This fragmented landscape reflects the diverse nature of multiple imaginaries and online cultures, accommodating national and cultural differences, in between and within institutionalized power, encompassing dissenting voices from civil society, as well as dominant discourse’s supporters.

Online communities host, as early adopters of Internet would have wanted for the digital sphere (Barlow, 1996), a debate atmosphere that encourages the exchange of ideas, where stakeholders engage, challenge, and negotiate dominant AI discourses and imaginaries. These communities create narratives that hold “imaginaries”, following Patrice Flichy’s ideas (2007, as cited in Asmolov & Kolozaridi, 2017), imagining is “at the center of design and use of the internet”, explaining the importance that envisionings, myths and utopian visions have for the digital sphere. Online spaces, such as the one that will be analyzed in this research, could unveil relevant sociotechnical imaginaries underlying niche, professional, alternative and vanguardist communities that discuss how AI is shaping their practices, but it could also reveal how dominant imaginaries are permeating these spaces.

Using this theoretical toolbox, this thesis analyzes what role do online communities fulfill in the wide framing process of sociotechnical imaginaries about AI, by addressing three questions: *How online communities surrounding AI-generated livestreams frame AI discourses and sociotechnical imaginaries? How do these sociotechnical imaginaries compare with broader societal imaginaries? And finally, what is their role challenging or supporting dominant AI sociotechnical imaginaries?*

Methodology

The present study uses a mixed methods research design in order to deploy a framework analysis inspired by the work of van Es et al. (2020), which consists of several steps. Initially, AI frames are identified through an unsupervised algorithmic clustering of words. This process allows for the identification of prominent themes and topics within the dataset. Following this, a network of bigrams (significant clustering of two adjacent words) is created to visually illustrate the extracted information and outline prominent discussions and their components in the network creation software Gephi (Bastian et al., 2009). This step enables a comprehensive understanding of the discourse landscape by allowing the researcher to manually identify nuances not captured by the clustering process alone. In the context of this research's objectives, this method is especially useful because it allows researchers to work with large amounts of data and, at the same time, use qualitative designs to perform close readings in order to approach the data and draw conclusions.

It is relevant to highlight that this methodological approach views frames not as static, all-encompassing categories, but rather as selective compositions of coherent elements, as described by Pentzold & Fraas (2023). These compositions are grounded in word clusters that may activate multiple frames and can be identified across texts, often sharing elements with other clusters. To find what are the most relevant sociotechnical imaginaries, these clusters of words that represent frames are grouped with related clusters and are interpreted along with the network analysis to identify their overall importance, what is their place in the discussion and to discover nuances or discussions not noticed by the algorithm.

By connecting these two techniques with a close reading, the research obtains a mixed method design that quantitatively maps the most relevant topics within the discussion and then by manually visualizing the networks, allows the researcher to qualitatively grasp what are the main frames, associations and what is their overall weight in the discussion. Once the results are extracted, these findings undergo a comparative analysis that examines them in light of previous scholars' contributions on AI imaginaries found in the media (Hansen, 2022; Nguyen & Hekman, 2022) and national AI strategies (Bareis & Katzenbach, 2022). By employing both analyses, the research aims to elucidate how online communities frame AI sociotechnical imaginaries while also situating these imaginaries within a broader paradigm,

also providing insights regarding the role of online communities in building or shaping public imagination.

Collecting and processing data

This research analyzes the Discord community of "Nothing, Forever" (Mismatch Media, 2023), focusing on only one text-based channel. The primary inclusion criteria for the corpus was that this channel encompasses a wide variety of technical discussions specifically dedicated to artificial intelligence (AI), including its development, evolution, and potential applications. The other channels, while relevant for a future analysis, would mostly host images, prompts, and discussions that were not centered around this technology.

Corpus	Data (unique messages)	Unique Authors
AI-discussion	11.245	920

Table 1. Data gathered for the analysis

The data collection process involved extracting all chat messages from this channel, along with their meta-information, using the open-source tool "Discord Chat Exporter" developed by Tyrrrz (2023). The extracted database underwent a preprocess that includes the removal of HTML tags, URLs, lowercasing messages, expanding contracted verbs and abbreviations, removing emojis, digits, punctuation, extra spaces, and special characters to minimize noise in the analysis. After the preprocessing, the database went through a lexical tokenization, a technique that converts the data into readable units for Python's Natural Language Toolkit, followed by part-of-speech tagging to identify elements of the messages. Finally, the text was lemmatized, which consists in a technique that reduces inflected forms of words to their base form, ensuring consistency in the analysis. For example, words like "Changing," "Changed," or "Changes" are reduced to their root: "Change."

TF-IDF Clusters, K-means & Network Analysis

Following the preprocessing, A term frequency-inverse document frequency (TF-IDF from now on) vectorization algorithm is utilized along with the clustering algorithm to create the word clusters. This method utilizes a numerical statistical algorithm to group and assess the significance of words within a document relative to a corpus of documents. The TF-IDF algorithm calculates the frequency of a term (word) in a document, normalized by the

frequency of the term across all documents in the collection. To determine the optimal number of clusters, Silhouette Scores were employed, a commonly used metric for evaluating the quality of clustering outcomes in clustering processes. Subsequently, this score was utilized to construct each TF-IDF cluster using the k-means++ clustering algorithm (Ostrovsky et al., 2012).

Following the clustering procedure, a TF-IDF adjacency matrix was created to visualize word co-occurrences in Gephi. This matrix contained all nouns in the conversation in a bi-gram disposition. Each bigram represents contiguous sequences of a number of words from a given sample of text, for example: “AI Generate”, or “AI creativity”. Results were loaded into the visualization software and then spatialized via the Fruchterman Reingold layout algorithm, that is a “force-directed layout algorithm which treats edges like springs that move vertices closer or further from each other in an attempt to find an equilibrium that minimizes the energy of the system” (Matei, 2011). This layout was mainly employed because of its clear visualizations. By calculating modularity (Blondel et al., 2008), Gephi assigned colors to each node and these results were compared to the TF-IDF clusters previously created. Through this process it was possible to identify and compare what were the main topics of discussion and central arguments.

Validation and limitations

One of the main issues with the computational turn (Berry, 2012) that has shaped humanities and social sciences is that often, the use of advanced tools becomes subject of blunt instrumentalism (Tenen, 2016) without theory-informed reasoning (van Es, 2021). Validation has become a pressing issue regarding reporting findings when using computational methods in the humanities or the social sciences. Some scholars have criticized the bias that can emerge when academics take digital tools for granted (van Es, 2021). There are scholars (Chen, 2023) that note the “lack of reporting methodological details -which- makes it difficult to validate the reported findings and replicate the same findings” (p. 2). As Chen et al. (2023) notes, proper conceptualization of a research topic, along with properly configuring and disclosing the tools used for a research is fundamental. The author also suggests that researchers can integrate unsupervised techniques with other data analysis methods to validate results. Following these recommendations, the outputs of this project were manually inspected several times in order to obtain coherent and cohesive results, as well as

triangulated with a third tool, namely to ensure that results produce similar results. The TF-IDF matrix was compared with the network analysis and the third-party open-source tool named Topic Wizard (Kardos, 2023), which conducts comprehensive topic modeling, generates word clouds, and performs a shallower network analysis.

Results

Findings suggest that three main sociotechnical imaginaries emerge in the data. As depicted by Table II, “Human-AI synergy” reveals a sociotechnical imaginary that portrays AI as an collaborative autonomous entity that works jointly with humans to achieve goals. In this imaginary, aspects like content generation, scripting, and writing, along with keywords that represent collaborative aspects of this synergy between AI and humans, are grouped under this label. The second sociotechnical imaginary is “AI as a tool” and represents Artificial Intelligence as a means to a goal. It portrays AI not as an autonomous entity but a tool that must be trained, fed with data, updated to do tasks and so on. Finally, “AI as an inevitable and society-changing force” portrays AI’s impact on human practices that are now being replaced, changed or improved by AI as an autonomous entity. This sociotechnical imaginary portrays how the members of this community think AI is shaping everyday practices and becoming relevant for crucial tasks within our society, displacing human activity.

Sociotechnical Imaginary	Description	Clusters	Keywords
(1) Human-AI synergy	There is a synergy between Artificial Intelligence and Humans. AI is seen and portrayed as an autonomous entity that enriches human work.	5, 6, 7, 9, 17, 19, 21.	help, ai, generate, create, script, write, content, artist, human, idea, style, art, artistic, scene, human.
(2) AI as a tool	Artificial Intelligence is not portrayed as an autonomous entity, but as a tool to achieve a goal, devoid of anthropomorphic qualities.	2, 3, 11, 15, 16, 20.	prompt, train, data, output, technology, update, unity, game engine, code, exact, tool, language.
(3) AI as an inevitable and society-changing force	Artificial Intelligence’s impact on societal practices, including ethical, work-related and authorship aspects, and its presence on daily routines.	1, 3, 10, 12, 13, 14, 21.	Capitalism, replacement, work, change, improve, generate, specialize, purpose, future.

Table II. Table of identified sociotechnical imaginaries based on identified clusters/networks. For more information about the clusters, see Table III

As the analysis will further deepen, this investigation obtained valuable insights by integrating the algorithmic clustering with a close reading that the network analysis offers. By looking at these clusters in detail, which will be displayed in the following section, the network analysis helped the researcher find nuances not perceived by the clustering alone. Together, these methods offer a comprehensive perspective on the most relevant frames and frame elements surrounding the Artificial Intelligence discussion on this community.

Algorithmic clustering

Given the issue-specific data available within this channel, the main objective was to extract and thoroughly analyze each cluster extracted. In total, the algorithm outputted twenty-one clusters of twenty words, each cluster representing a topic within the conversation and based on its most common terms was labeled with a tag that overall summarizes the topic these words represent (see Table III). By analyzing how AI was framed and what were the most relevant keywords in these discussions, this procedure aimed to comprehensively outline key insights regarding most prevailing sociotechnical imaginaries within.

(1) AI-industry	(2) AI-training	(3) AITech-stream	(4) Scene-commentary	(5) Script-design	(6) Prompt-output	(7) Script-Characters
impossible	model	day	time	character	chatgpt	seinfeld
define	unity	couple	pretty	scene	api	script
translate	train	post	larry	ai	prompt	jerry
simply	language	talk	funny	generate	ai	episode
ai	data	ai	prompt	set	write	ai
translator	generate	improve	joke	random	gpt	generate
bing	diffusion	hour	feel	apartment	unity	gpt
medical	ai	gpt	human	script	bad	character
english	stable	restaurant	idea	start	conversation	trained
openai	generative	chatgpt	link	prompt	output	train
people	gpt	stream	happen	continuity	openai	write
job	machine	watch	real	background	update	scene
google	learn	release	episode	camera	joke	base
image	tensorflow	honest	write	dialogue	model	favorite
hard	neural	love	bad	time	data	set
belief	davinci	technology	sense	movement	bot	feel
change	filter	explode	guess	microwave	learn	perfect
prerecord	azure	week	post	add	dialogue	model
nope	size	sense	love	larry	people	funny
guess	service	blow	sound	episode	create	actual
(8) Scene-commentary	(9) Script-AI	(10) AI-entertainment	(11) Script-generation	(12) Scene-commentary	(13) Tech-prompt	(14) Stream
slowly	talk	watch	gpt	loud	learn	chat
realise	ai	time	model	real	question	twitich
rise	people	people	api	weird	ai	influence
wrong	character	fun	chatgpt	happen	frequently	bing
sell	chatgpt	stream	prompt	close	answer	bot
sofa	devs	ai	generate	model	start	read
ai	topic	twitich	script	imagine	honestly	ai
drip	restaurant	feel	train	guess	love	spam
gain	prompt	video	season	user	code	feedback
advanced	script	seinfeld	expensive	garfield	sense	stream
gather	read	hour	output	ai	python	funny
snap	person	love	base	garbage	reading	reaction
sit	larry	improve	action	watch	bot	repeat
lay	random	yesterday	image	island	change	message
repo	hour	entertain	ai	segment	read	search
position	time	steam	sense	bad	pretty	learn
animation	chat	talk	tech	nice	machine	wrong
strip	aware	youtub	scene	pay	count	happen
change	grandroids	rerun	parse	honestly	prompt	content
funny	guy	live	specialize	monkey	agree	input
(15) AI-industry	(16) Script-software	(17) HAI-art	(18) Scene-commentary	(19) HAI-relation	(20) HAI-work	(21) HAI-Gen
stuff	generate	art	true	understand	people	ai
ai	voice	ai	meaning	ai	ai	generate
chatgpt	game	artist	leave	human	care	human
people	stream	people	fault	code	artist	dungeon
fun	script	style	fun	concept	guy	create
write	video	piece	conversation	feel	real	bing
question	engine	define	anthropic	people	technology	love
guess	ai	director	living	learn	feel	bad
time	time	create	weirdly	model	tool	train
corporation	audio	artists	prime	comment	pay	write
model	api	tool	node	life	change	create
reason	episode	debate	dialect	programmer	time	joke
weird	real	real	mirror	purpose	replace	stream
unity	play	generate	seinfeld	artistic	job	funny
real	music	produce	reveal	time	start	voice
replace	content	human	spanish	real	money	image
pretty	unity	stuff	nonsense	openai	argument	purpose
generate	create	hand	moore	happen	play	time
gpt	read	difference	gpt	nice	guess	content
learn	hour	set	infinity	exact	rich	feel

Table III. Algorithmic clustering of “AI-discussion” based on nouns.

As shown in Table III, the AI-discussion channel offers rich and meaningful conversations that significantly contribute to understanding how this online community is framing AI sociotechnical imaginaries. The clustering algorithm revealed a more nuanced and concentrated focus on technical matters involving the development, use and evolution of AI. Each cluster represents relevant technical discussions and illuminates the multifaceted applicabilities of this technology in several realms around the AI-generated livestream, such as scriptwriting, LLMs training, prompting, streaming or setting up the game engine to run these livestreams. What really stands out from the cluster analysis is that several clusters provide insights into how the Human-AI (HAI) realm is being perceived by community members; some aspects related to the HAI synergy in productive tasks, replacing humans or debates about authorship and agency over art, emerge continuously.

Further examination of the top vocabulary used in the discussion (See Figure I), reveal a high frequency of keywords that are directly related with the three sociotechnical imaginaries previously identified. In the case of “Human-AI synergy”, it is possible to see keywords like “ai” and “people”, “human” and “art”. This also occurs with “AI as a tool”, showing keywords like “gpt”, “chatgpt”, “model” and “prompt”, and with “AI as an inevitable and society-changing force”, which appear in the form of words like “script”, “voice” or “generate” (see Table II, ‘Keywords’ column).

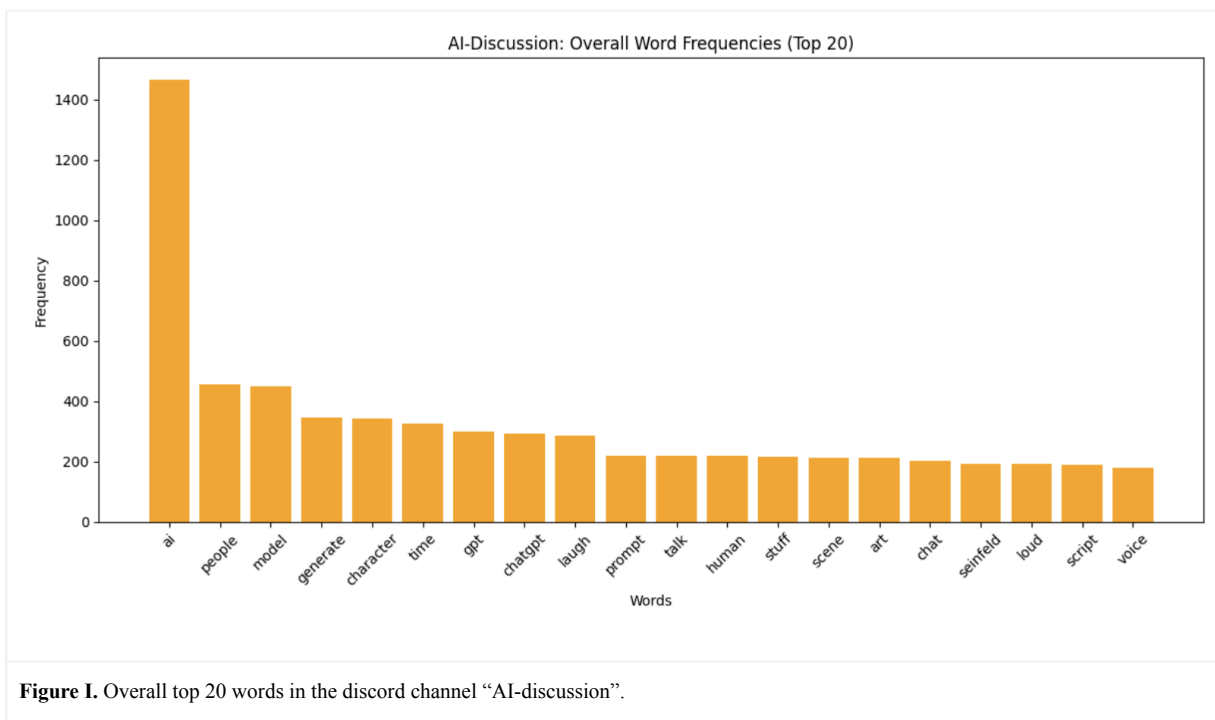
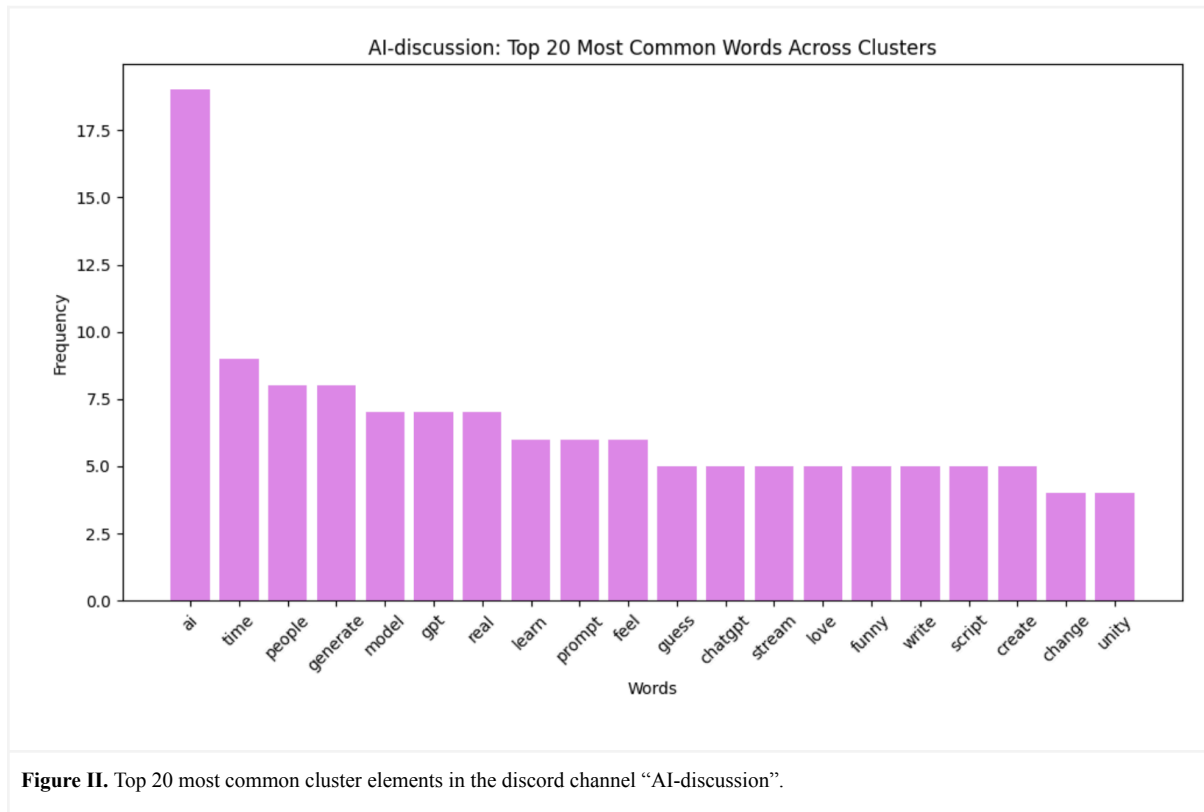


Figure I. Overall top 20 words in the discord channel “AI-discussion”.

These findings, when compared with the word frequency across clusters (See Figure II), also reveal a wealth of domain-specific knowledge and insights into the most relevant themes that are highlighted in the algorithmic clustering. Some issue specific concepts like “unity”, “gpt”, “stream”, “script”, or “model” show what were the most discussed technical aspects within the channel analyzed.



Once each cluster and its keywords was identified, the following procedure would be to zoom in, in search of relevant findings within the networks previously created. It was crucial to locate these conversations within the discussion, as this step allowed for a deeper understanding of how some words were emphasized, as well as identifying word associations, and the frames these clusters encompassed.

Connecting clusters and networks

Delving into the online community discussion network revealed how intertwined conversations were, providing a clearer understanding of the overarching AI discourse, with this technology consistently taking center stage within user’s practices. These results ground even more the identified sociotechnical imaginaries. This second analysis grasped the

discussions that were being taken within the discussion channel, showing how AI discourses were built and discussed within the community.

The topics discussed in the channel tend to be more interlaced and nuanced than when looking at the algorithmic clustering alone (see Figure III). These networks are created using bigrams, which represent contiguous sequences of a number of words from a given sample of text, for example: “AI Generate”, or “AI creativity”. These bigrams provide relevant information regarding what are the most common associations made by users within the discussions. While some may be obvious like “stable diffusion” which is the name of a generative AI video model based on the image model *Stable Diffusion*, other aspects like “chatgpt write”, “procedurally generate” or “write dialogue” reveal how these communities are thinking about AI, or in related aspects like scriptwriting, content generation, AI, LLMs, and even data training.

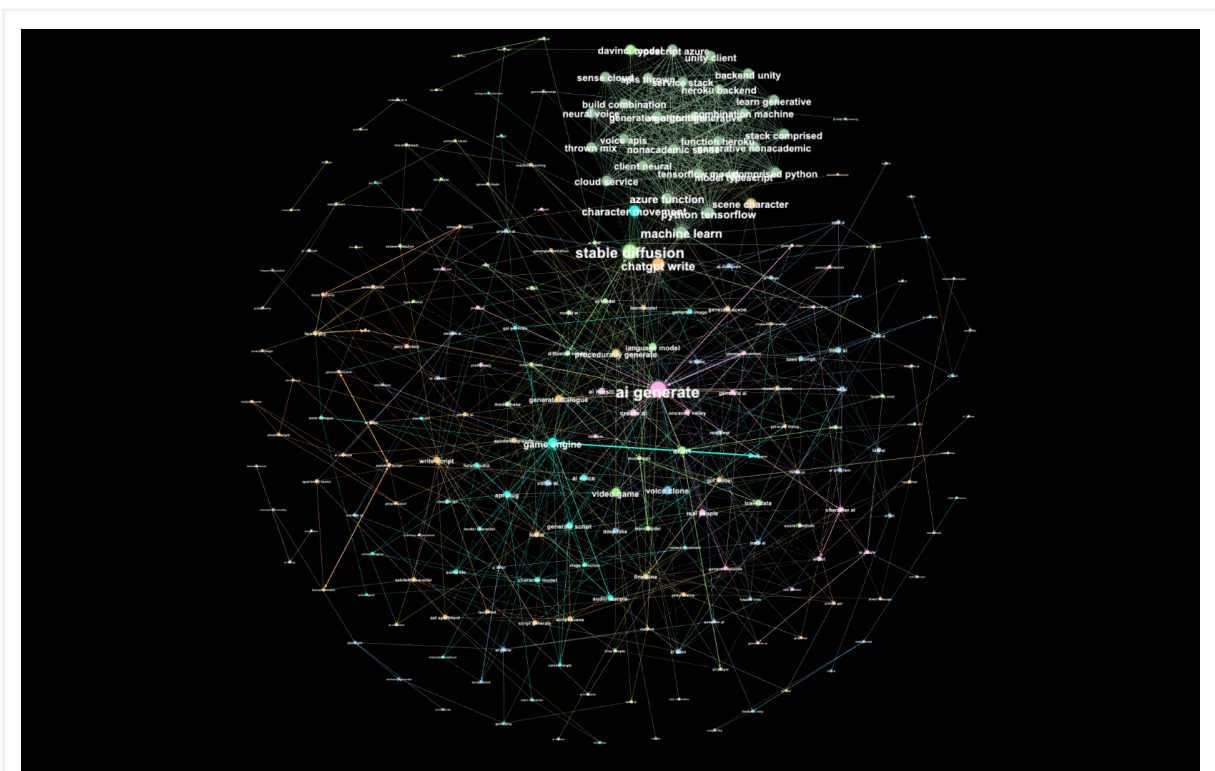


Figure III. AI discussion network visualized in Gephi. Every node in the network represents word associations (bigrams and trigrams). Each cluster of words represents relevant discussions for the channel.

When looked in detail, the overall network visualization (Figure III) makes it evident that some clusters centered on specific discussions are well extracted by the algorithm. For

example, in cases like AI industry (Figure 1, cluster 8), scriptwriting (Figure 1, cluster 11), AI-scripting (Figure 1, cluster 15), show discussion (Figure 1, cluster 13) and opinions about AI (Figure 1, cluster 16). These conversations in the network show critical perspectives around authorship, creativity, but there is a lack of nodes raising ethical aspects regarding AI, such as environmental issues, misuse and the downsides of using this technology.

It is possible to see how different sociotechnical imaginaries overlap when looking at these webs of meaning (Figure IVa). Crucial nodes in the discussion like “chatgpt write”, can be analyzed in detail to see what the most relevant associations are. This node is connected to two sociotechnical imaginaries: “AI as a tool” and “Human-AI synergy”, showing the bigram connected to word associations like “ai generate” and “ai create”, and at the same time to several technical discussions about machine learning, tensorflow (a machine learning platform) or artificial neural networks. Similarly, when looking at the node “game engine” (Figure IVb) it is possible to identify multiple conversations taking place that point directly to “AI as a tool” and “AI as an inevitable and society-changing force”, highlighting how some softwares are being used to set up the livestream, create scripts, scenery and even write characters. This second web of meanings helps understanding how users see AI connected to automatization, which could indicate how users perceive the displacement of human activity by the introduction of AI. This idea would then be confirmed by looking at conversations around these keywords.



Figure IV. AI discussion topics selected in Gephi. The left figure (a) shows the importance of AI and technical aspects for this discussion. The right figure (b) shows important nodes connected to the node labeled “Game Engine”.

Discussion

As discussed in the theoretical framework, sociotechnical imaginaries provide conceptual frameworks for studying society's perception of the intersection between culture and technology and how they envision their (techno)social order shaped by these interactions. These imaginaries offer insights into how they comprehend, negotiate, and reappropriate certain visions of the social order based on the utilization, regulation, and imagination of technology. This section is subdivided into three key subsections, each aligned with previously defined research sub questions. These research inquiries are: (1) What are the prevailing sociotechnical imaginaries shaping the discourse on AI within these communities, and how are they articulated? (2) How do these imaginaries intersect with broader sociotechnical imaginaries of AI? And lastly, (3) what influence do these online communities wield in either challenging or reinforcing broader sociotechnical imaginaries concerning AI?

(1) Sociotechnical imaginaries in online communities

This research reveals three predominant AI sociotechnical imaginaries prevalent in online communities. As discussed earlier, the first one envisions "AI as a tool" and portrays this evolving technology as a pragmatic instrument, acknowledging its potential risks in the wrong hands but ultimately valuing it as a catalyst for innovation, contingent upon human ingenuity. Most opinions regarding this sociotechnical imaginary support a less deterministic perspective, reinforcing the idea that with better technology, knowledge, more data, less regulation or sufficient budget this technology can be perfected. For example, some community members argue:

"I think one of the key things that people new to this tech need to understand is that it needs hella human supervision and design. chiefly, you need to understand procedural generation. and if you want to make something that really makes an impact, an understanding of how people [...] interpret narratives" (Chat Data, 2024)

"(...) As it is right now, what it produces is understandable but not very ranged in its inflections, sort of robotic. I'm curious if Mismatch Media is aware of speech synthesis projects out there" (Chat Data, 2024).

"It crunches things faster than humans, I guess, but I do not believe we have strong AI at our hands" (Chat Data, 2024).

In this sociotechnical imaginary, most conversations do not account for the possibility of AI being an autonomous entity that can evolve without humanity's support. AI is being seen as a means to fulfill specific goals. Within this portrayal, users acknowledge AI as a technology devoid of anthropomorphic qualities.

On the contrary, the second sociotechnical imaginary identified portrays a "Human-AI synergy", showing a vision of AI that is often perceived as an autonomous entity, akin to a companion for humans. This collaborative and sometimes fearful view, emphasizes Human-AI synergy in creation and generation processes, where AI is seen as a partner in scriptwriting, show direction, prompting, scripting, design processes, generation of scenarios, and utilization of game engines, LLMs, art, design, and various software. Some users see AI as an anthropomorphized, independent companion while others see them as human dependent entities that provide assistance. We can see the nuances of this sociotechnical imaginaries by looking at these illustrative quotes:

"[I] have to say that the art direction is spot-on, really makes it look like the characters live inside a computer's mind" (Chat Data, 2024).

"AI can be, and will be, a powerful tool for a lot of things in the future. it's going to be misused a lot before things are really figured out, unfortunately" (Chat Data, 2024).

"So how does Nothing Forever A.I learn exactly? How can it improve without us exactly directly encouraging good behavior?" (Chat Data, 2024).

Users establish a bidirectional bond with this technology, acknowledging its potential, while being critical of the misuse and the bias they could encompass. For example:

"I mean I was over simplifying it to make a general point, but I mean there are questions, if you feed in data that is racist, do you get racist outputs and if so is it ethical to do so, etc" (Chat Data, 2024).

Still, an underlying collaboration bond is being framed, elevating AI as humanity's friend or companion, that provides entertainment, assistance or is simply a constant presence in these user's lives. The other way around, humans are portrayed as "caring" figures that "fix" the machine, provide data for the AI to keep learning and encourage good behavior.

The third sociotechnical imaginary identified sees "AI as an inevitable and society-changing force", showing AI as a transformative agent in society. This imaginary portrays the transformative potential of AI, often overshadowing ethical considerations and critical

perspectives, and augmenting AI's potential even beyond its actual limits. The most important aspects regarding this portrayal have relation with AI replacing jobs, AI dominance over humans and tomorrow's jobs for humans. These ideas are highly nuanced and cautious, some members depict this by arguing:

"I love it and can see it being very useful in the future but think there should be a balance and we should also work together with it instead of using it to replace human writers artists etc" (Chat Data, 2024).

"[...] there will be demand for human jobs but they will be different and require higher education" (Chat Data, 2024).

Most of these discussions focus on technical aspects of AI, such as data training, model development, and sparsely, issues regarding developer ethics, critical perspectives on AI adoption and misuse acknowledged. For example:

"Developers have an ethical responsibility to prevent their AI for doing harmful things whether through actions, speech, etc. The devs made an honest mistake here, but everytime an AI is left intentionally on its own, it becomes unethical to keep up" (Chat Data, 2024)

"The last mistake humans will make is humanizing AI" (Chat Data, 2024).

Several other aspects like copyrights, environmental impact, monetization, and platform economies, remain sparse, being not mentioned at all or getting dismissed by the community. This insight could indicate this community's commitment to open-sourcing, which one of its main principles is "peer production", mainly meaning that users support the idea that source codes, blueprints, and documentation should be freely attainable (and monetized if wanted) for the public. These users' perspective, at times, is close to that of the precursors of the Internet in their "Declaration of the Independence of Cyberspace" (Barlow, 1996). For example:

"Yeah, I mean, if someone is going to have access to cutting edge deepfake technology and stuff, it's probably better that everyone has it" (Chat Data, 2024).

"If things are open to everyone, then we'll see more innovation in the space, more understanding of how things work, and also more push for people to be held accountable for what their AI creates" (Chat Data, 2024).

While these findings align partially with existing literature on AI sociotechnical imaginaries in national policies and media discourse, a worth-mentioning observation is the increasing immersion of AI in our cultural landscape. This integration manifests the role and the

presence that this technology has obtained in our daily routines but also in AI's expanding applications across various domains, such as content creation, production, automation, entertainment, and scriptwriting:

“Yep. It's not like I want this to be a perfect show, that defeats the point. I think the flaws and rough edges of generative AI are part of the appeal in this format”. (Chat Data, 2024).

“What I think is concerning is that in the future we may have situations in which we may not even be talking to people and we don't realize it” (Chat Data, 2024).

“Part of me really likes the idea that this artifice of a sitcom has no other humans in it at all” (Chat Data, 2024).

The widespread acceptance of AI usage in multiple aspects of users' lives could also be due to the significant influence of external stakeholders' discourses, such as the hyper-positive narratives promoted by tech companies in this domain. Still, mapping these conversations offers insights into how techno-deterministic discourses are being negotiated by these communities.

(2) Comparing broader AI sociotechnical imaginaries

As highlighted in the theoretical framework, significant research has delved into AI discourse framing and the emergence of sociotechnical imaginaries, particularly within media and national policy domains. While this thesis offers valuable insights, contrasting findings with prevalent sociotechnical imaginaries in news media and national policies can enhance the analysis and stimulate a deeper discussion. Comparing my findings to those identified by other scholars, helps to situate online communities in the AI public debate and identify what nuances emerge in this interplay.

In the media framing landscape, Nguyen & Hekman's (2022b) analysis reveals a multifaceted portrayal of AI, encompassing politics, economics, research/science, and society & culture. They emphasize the media's role in connecting AI economic implications and politicization with questions of governance. On the contrary, online communities tend to focus less on the political dimensions, for example, regarding regulations or with discussions on the AI arms race led by China and the United States, being sparsely discussed. Keywords representing both nations, such as “America”, “China”, “Chinese”, or “USA” are rarely found on the corpus and mainly focus on cultural nuances, jokes and metaphors. (Chat Data, 2024) Furthermore, Nguyen & Hekman highlight the social and political challenges accompanying

AI adoption, often linked to value creation. While the authors acknowledge tensions between the promises of AI and potential negative effects in media discourse, particularly focusing on the understanding of AI's societal impact (p. 12), it is possible to observe a hyper-binary setting prevailing in online communities, overlooking critical perspectives, accentuating highly deterministic aspects of AI.

Another comparative reading of major news media outlets done by Nguyen & Hekman (2022a) provides further insight into the portrayal of AI as a subject of governance. Meanwhile both U.S. and Chinese media outlets address regulatory issues, their focuses differ, with “the Chinese outlet seems to focus more on supportive regulation for innovation and tech adoption, whereas its U.S. counterpart also addresses needs for legal interventions to minimize (individual) harm”. (p. 23). In online communities, although they rarely talk about how AI will be regulated, most share the thesis that AI will be regulated in a preventive, rather than reactive manner. This exchange between members illustrates their stance on this issue:

“All the laws and regulations will be preventative, addressing terrible things that have already happened well after they did” (Chat Data, 2024).

“I certainly don't expect it to be easy. Just concerned about the effects of complex tools for which we have practically 0 roadmap for how to handle in law” (Chat Data, 2024).

Lastly on the media landscape, Scott Hansen's (2022) work on Danish newspapers identified several public AI imaginaries that can also be found in the sociotechnical imaginaries previously analyzed. The author describes a series of narratives that are partially present in this thesis' findings. Some of the most evident are “machines and humans as a complement” (p. 69) and “AI making positive contributions to humans and being used in other contexts for human development” (p. 69), which can be categorized under the “Human-AI synergy” sociotechnical imaginary; While other findings, like “AI taking over humanity” (p. 68) and “AI as an autonomous entity that will develop past humans” (p. 65), can be comprised by the "AI as an inevitable and society-changing force" sociotechnical imaginary.

Regarding the national policy realm, Bareis & Katzenbach (2022) analysis of national AI strategies highlights common narrative constructions across countries, emphasizing common elements, such as “AI as a given and massively disrupting technical development that will change society” and the “necessity to adopt AI across all key sectors of society”, portraying

AI as a taken for granted and inevitable technology for most societies nowadays (pp. 868-869). These ideas can also be seen within my findings, under "AI as an inevitable and society-changing force" sociotechnical imaginary, where AI is often depicted as a transformative agent with broad societal implications for work, education, social dynamics and how we imagine the future.

(3) Identifying the role of online communities

First of all, understanding the role of online communities in shaping AI sociotechnical imaginaries is a challenging task, especially with just one case study. Building upon Zeng et al. (2022), my findings echoes these author's findings, that online communities may not wield significant influence as a counter-public where unique sociotechnical imaginaries emerge. Their research findings indicate that, in the context of Chinese media, where governmental authority is centralized, social media plays a limited role as a counter-public sphere in discussions about AI. These findings stand in contrast to the decentralized nature of discourse found in the context of this online community, showing that AI discourses frequently adopt a techno-deterministic narrative in the particular context of north-western digital spaces, aligning with discourses propagated by western tech corporations. Given that most public debates in the digital sphere occur within social media or digital platforms, the absence of state-controlled media, a hallmark of western culture's emphasis on "freedom," poses challenges for regulation and the spread of technologically deterministic discourses promoted by external stakeholders.

Secondly, as we discussed in the literary review, sociotechnical imaginaries do not work individually nor are static. The imaginaries found in this investigation could be running peacefully "in parallel", as Jasanoff (2015) would conceptualize, not contesting dominance nor "guiding the production knowledge" (Mager & Katzenbach, 2021, p. 123), but co-existing and reinforcing dominant sociotechnical imaginaries. This could also indicate that what communities think is important, does not necessarily align or shape official narratives. Still, how these online communities negotiate these sociotechnical imaginaries is worth looking at. These findings open a new arena where it is relevant to discuss how online communities are reappropriating technologically deterministic discourses and practices around these technologies. For example, the sociotechnical imaginary "AI as an inevitable and society-changing force", shows interesting nuances in comparison with how AI is being

portrayed in media and national policies. For example, regarding ethical topics and AI usage in this imaginary, it is possible to see how some precursor ideas of the internet and online communities emerge, by promoting sparsely, the open-sourcing of these technologies for everyone to use. The open-source collaborative discourse promoted by this community could contradict the weight that media and national policies sometimes put on releasing “tested” technology to the public sphere that is highly polished with no flaws. “Nothing, Forever” community seems to portray a developer-minded perspective, playing a pivotal role in shaping how these issues are being seen. That can be seen too as a grassroots effort to challenge prevailing narratives and cultivate alternative discourses like AI being viewed as a public good that while more open its code, it is conducive to more safety for all.

Finally, online communities have potential as grassroots spaces, they still share many sociotechnical imaginaries with national agendas, media, and tech innovators, they demonstrate less concern about AI material risks, environmental issues, inequalities, copyright, platform economies and large-scale misuse. All these sociotechnical imaginaries may need to be analyzed in detail, beyond the presence of official discourses, to fully understand the multiple dimensions through which societies and cultures engage, think and imagine AI. These findings suggest an urgent need for increasing AI literacy, highlighting how online communities may be swayed by narratives propagated by external stakeholders, including tech corporations, media outlets, and governments. Despite the presence of marginalized and alternative narratives advocating for AI regulation, open-sourcing and responsible use of these technologies, the prevailing discourse predominantly reflects a widespread acceptance of AI's expanding societal role, often prioritizing its broad impact over critical scrutiny. While still may be too early to give definitive answers to this complex process, this research steps closer to fully understanding the importance of these spaces, and what is their role in shaping public perception on AI and its sociotechnical imaginaries.

Conclusion

Online communities have become key spaces in the digital sphere where users debate and make sense of its socially constructed reality. AI, as an emerging technology in evolution, has become highly enmeshed in our social fabric, shaping practices and the way we envision our society. While a comprehensive analysis is imperative to draw definitive conclusions regarding the role of online communities in framing AI, this study has unveiled three

prevalent sociotechnical imaginaries that resemble those found in media and national-policies. Firstly, a pragmatic view of AI as a tool for innovation, acknowledging potential risks but ultimately valuing its potential with human oversight; secondly, a Human-AI synergy, that portrays AI as an collaborative figure that contributes in daily routine; and finally, a depiction of AI as a transformative force in society, that often overlooks critical examinations of its potential misuse or long-term sustainability.

By juxtaposing these results to those found in media and national policies, a comprehensive understanding of the ongoing framing processes across societal domains can be attained. This research's results show that AI discourses frequently adopt techno-deterministic narratives in this particular context, aligning with those discourses identified in media and national policies. While online communities have potential as grassroots spaces where users can reappropriate and negotiate sociotechnical imaginaries, this environment is still highly dominated by discourses that often overlook AI material risks, environmental issues, inequalities, copyright, platform economies and large-scale misuse. While the emergence of framings that highlight open-sourcing and individual awareness of risks regarding AI are present, these discourses remain sparse and barely mentioned among members. This underscores the urgency for enhanced AI literacy to foster informed and critical discussions regarding AI's societal impact. AI literacy entails not merely understanding AI but also critically evaluating its implications beyond individuals.

Regarding the methodology, certain limitations exist when employing the analysis, particularly in its ability to zoom in on the data. This research only encompasses a small database, which can be manually analyzed, but in the case of bigger corpuses, a complementary approach may be necessary to delve deeper into the intricacies of the discourse. In regards to the used corpus, two limitations were identified. First, this Discord community has exhibited increasingly lower activity levels throughout the year, leading to a lack of significant discussions that could have been highly relevant for the analysis. Second, this Discord community is a highly specialized environment that could be overrepresented when referring to critical stances regarding AI in the digital sphere.

Looking ahead, a comprehensive study encompassing multiple online communities simultaneously could offer deeper insights into their role in framing AI discourse and present broader results regarding this landscape. A comparative analysis across diverse communities may unveil nuances obscured by this investigation only focusing on one particular case.

Conflicts

ChatGPT was employed for coding assistance and text review purposes. All interpretations, analyses and final conclusions presented in this thesis are the sole responsibility of the author.

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