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Research Paper

Is AI Still a Villain? A Diachronic Corpus-Based Analysis of News Coverage of ChatGPT Between 2022 and 2024

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Abstract

Much empirical evidence suggests that media coverage of ChatGPT has primarily focused on its potential risks and threats, but as AI adoption continues to grow, the trajectory of AI discourse is expected to evolve with increasing public familiarity. To trace this evolution, this study adopts a diachronic corpus-based approach to examine how media framing of ChatGPT has shifted over a two-year period (2022-2024). Data collected from UK newspapers were treated as two sets of corpora, each representing a different time frame ('2022-2023' and '2023-2024'). First, keyword analyses showed key differences between the two corpora, indicating a shift in media framing from concerns over disruptive impacts to broader peripheral issues related to AI. Second, a descriptive application of Biber's (1988) Multidimensional Analysis, showed that while the overall communicative register remained formal across both periods, features associated with persuasive framing were less prominent in the later corpus. Overall, although media discourse on ChatGPT has become less persuasive and evaluative, and perhaps hypothetical, the persistent concerns suggest that AI discourse is dynamic yet is still influenced by entrenched societal anxieties.

***Keywords*:** AI; ChatGPT; Newspapers; Keyword Analysis; Multidimensional Analysis.

1. Introduction

Language has the potential to shape people's beliefs, philosophy, and perceptions (Altun, 2023; Nofal, 2023), and thus the way information is presented and emphasized in media discourse can influence societal perceptions of events, issues, and ideas (Iyengar & Kinder, 2010). Given the power to frame which issues the public considers important (Djerf-Pierre et al., 2024), news media can shape public perceptions, understanding, and acceptance of topics with the potential to spark societal controversy (Chuan et al., 2019). Few recent topics have been as controversial or as widely discussed in the media as artificial intelligence (AI), particularly given the rapid improvement of AI technology such as ChatGPT which has been purported to double its capabilities every six months (Roe & Perkins, 2023). This AI technology has fueled discussions about the future of automation, creativity, and human labor, and one underlying reason fueling the controversy and extensive media coverage surrounding ChatGPT is the perceived potential of this technology to cause disruptive changes and transformations across various aspects of society (Van Le & Tran, 2024).

In much of the literature, benefit/opportunity and risk/threat frames have been among the most widely analyzed in news coverage, as they play a critical role in shaping public opinion on technological breakthroughs (Vicsek, 2011). Media coverage presents mixed perspectives, but discussions have predominantly centered on concerns such as unethical actions (e.g. Freeman & Aoki, 2023) and other potential risks associated with AI, including misinformation, privacy violations, and bias in algorithmic decision-making (e.g. Cohen et al., 2024). These concerns can contribute to heightened fears and reinforce negative perceptions of AI (Roe & Perkins, 2023). Given the formidable speed at which ChatGPT is

evolving and its growing share of the limelight, understanding how these technologies are represented in the media becomes essential.

To date, researchers have examined how AI is portrayed in the media, with a growing body of work exploring how news coverage frames AI and its societal implications. Much of this earlier research, however, was conducted shortly after AI first gained widespread public attention. As a result, initial portrayals may not fully reflect how public perceptions have evolved over time. Selwyn and Gallo Cordoba (2022) argue that while people often report limited knowledge of AI, they are open to shifting their opinions when provided with more information or exposure. This suggests that public discourse around AI has evolved in parallel with growing familiarity and everyday interaction with AI technologies (Van Le & Tran, 2024). As these tools become more embedded in daily life, media framing may adapt to reflect changing societal attitudes. To interrogate this assumption, the present study investigates diachronic shifts in UK news coverage of AI, specifically ChatGPT, between 2022 and 2024. Adopting a discourse-analytic perspective, it treats news texts not merely as informational outputs but as communicative acts situated within broader ideological frameworks. Using corpus-based analyses, this study investigates how changes in media discursive practices shape evolving representations of AI, highlighting how media framing constructs the narratives the public is exposed to.

2. Literature Review

2.1. Framing Theory and the Media

Media coverage plays a crucial role in shaping how readers judge, prioritize, and perceive societal issues (e.g. Iyengar & Kinder, 2010; Khramchenko, 2025; Scheufele & Tewksbury, 2007). This influence is grounded in framing theory, a seminal concept related to media that was developed by Erving Goffman in his 1974 work, *Frame Analysis*. From a social science perspective, framing involves mental frameworks or schemas through which individuals process and make sense of information (Van Dijk, 2023). From a research perspective, framing theory examines how information is presented, or "framed," by the media to influence how audiences perceive and interpret events, issues, or topics in society.

Building on these conceptual foundations, the theory assumes that every media narrative is intentionally constructed to shape audiences' perceptions and interpretations of events or issues (Civila & Lugo-Ocando, 2026). This means that through the act of framing, media producers selectively highlight and emphasize specific elements of a narrative, such as language choices, visual imagery, metaphors, or statistical evidence, while downplaying or omitting others (Entman, 1993). Within the news production context, these framing decisions are shaped by editorial practices and journalistic norms that, while structuring narratives and highlighting particular cues, can also introduce biases into the discourse (Marciano, 2019; Morstatter et al., 2018; Yadlin & Oppenheim, 2021). As such, framing is not just a matter of how stories are told but also determines which issues are disseminated and intensified in public discourse and how they are positioned within wider ideological and political discussions in society.

The news media is generally expected to raise awareness of issues and distribute knowledge to the public (Ophir, 2019; Yadlin & Oppenheim, 2021). However, when addressing controversial phenomena, such as technological breakthroughs (Rogers, 2003), much of the literature argues that the media often frames these issues in ways that incite moral panics (Rogers, 2003) rather than fostering informed understanding (Yadlin & Marchiano, 2024). Most recently, for example, Heritage and Humphreys (2024) found that, rather than engaging in balanced reporting or fostering critical discussion, the British press often portrayed and framed video games as promoting violence and contributing to real-world aggression among young players. More broadly, research suggests that media framing influences not only individual attitudes but also collective perceptions, political discourse, and even policy decisions, as certain frames legitimize specific courses of action while marginalizing alternative viewpoints (Chong & Druckman, 2007; Gamson & Modigliani, 1989).

2.2. The Risks of AI in News Media

With its remarkable pace of evolution, generative AI has sparked controversies over its impacts on several industries. Among the most affected are creative industries, which are experiencing disruptions and challenges due to the growing accessibility of AI technologies (Fui-Hoon Nah et al., 2023). This widespread availability, on the one hand, is widely seen as democratizing artistic creation (Haque & Li, 2024); on the other hand, concerns have been raised about

the authenticity of AI-generated content, copyright issues, and the potential displacement of human artists, writers, and content creators. Similarly, in education, concerns regarding generative AI are intensifying. ChatGPT and similar tools have been scrutinized for their potential misuse, particularly by students, which could eventually lead to academic dishonesty (Lambert & Stevens, 2024), a decline in deep understanding of subjects (Haque & Li, 2024), and reduced classroom engagement (Matthew et al., 2023).

Given its far-reaching societal impacts, the controversies surrounding generative AI have been a subject of much discussion in media coverage. This intensive coverage does not merely reflect public concerns but also contributes to shaping societal perceptions of AI (Ryazanov et al., 2025), which in turn has implications for the direction and scope of AI-related research (Matthew et al., 2023; Sudajit-apa, 2025). Within the field of media studies, a fertile area of research into AI discourse has been investigation of the themes that most outlets chose to emphasize. Earlier studies, such as that of Brennen et al. (2018), found clear political polarization in AI reporting: While right-leaning newspapers tended to frame AI as an economic and political risk, left-leaning outlets often emphasized ethics, privacy, and bias. More recent studies, however, challenge this perspective. Some argue that AI-related issues are not strictly polarized, as many AI themes are shared across outlets (Roe & Perkins, 2023). For instance, AI-related topics concerning business and the economy have remained prominent across various news sources (Chuan et al., 2019). Beyond these framing differences linked to political orientations, another noteworthy trend in AI coverage is the increasing anthropomorphization of AI. This occurs when human-like qualities are attributed to AI, such as "understanding," a pattern that has become prevalent in AI discourse in news reporting (Placani, 2024). The widespread use of anthropomorphic language in AI discussions not only influences public perceptions but also raises concerns about the overestimation of AI's capabilities, the potential for misplaced trust, and the creation of unrealistic expectations regarding AI systems (Ryazanov et al., 2025).

As AI technologies continue to evolve, their portrayal in news media remains dynamic. Much of the literature suggests that news coverage frequently frames AI in ways that emphasize its potential dangers rather than its benefits. For instance, Ryazanov et al. (2025) found that AI was often portrayed as a looming threat, with news articles frequently using words such as 'theft,' 'killing,' and 'warning.' Similarly, Mahmutović (2024) examined AI narratives in Bosnia and Herzegovina's regional newspapers and discovered a predominant focus on risk and uncertainty, particularly in discussions related to ChatGPT. The most widely addressed risks in the newspapers included information disorder, automation and job loss, and unpredictable technological threats.

Paradoxically, media portrayals of AI often oscillate between extremes, presenting the technology as both a promising technology capable of shaping the future and a potential source of existential risks and dangers that could devastate future societies. Roe and Perkins (2023), for example, conducted a thematic analysis of UK media headlines about ChatGPT and identified a paradox in AI portrayals. While the technology was depicted as a promising tool for addressing societal challenges, it was simultaneously framed as an unpredictable force capable of causing systemic disruptions. According to the authors, the key takeaway from their article is, "media representations often swing between extremes of promising potential and serious impending dangers" (p. 8).

While previous studies within this rapidly expanding field have provided valuable insights into media coverage of AI, there are certain limitations that warrant further attention. First, many studies were conducted either immediately, or at least shortly, after the launch of ChatGPT or before its mainstream adoption, meaning they captured only early-stage perspectives of AI media narratives. As AI technologies become more integrated into daily life, public openness to AI technologies has constantly increased (e.g. Van Le & Tran, 2024). As public familiarity with AI evolves, we might expect to see changes in how the media discusses generative AI, especially tools like ChatGPT. Second, while research into AI representation in the media has gained traction, most existing studies rely on dictionary-based sentiment analysis, which tends to oversimplify AI narratives into a binary of either 'treat' or 'threat.' This method, while useful for large-scale studies, fails to capture the nuances of media discourse, leading to repetitive findings and an incomplete understanding of how AI is framed within different contexts (Ryazanov et al., 2025). These shortcomings, therefore, warrant research into the media representation of AI from a diachronic perspective, ideally research that not only traces how narratives evolve over time but also involves more rigorous linguistic analysis to uncover the deeper discursive patterns and framing strategies that shape AI discourse.

3. Methodology

This study sought to identify diachronic changes in the media framing of AI, particularly ChatGPT, over two years. Using a corpus approach was relevant for dealing with large collections of text data while also ensuring that the findings were drawn from empirical evidence rather than subjective interpretation (Rangsarittikun, 2025). By examining the discourse about ChatGPT in news coverage, this study aimed to answer two research questions:

1. How do keyword analyses provide lexical evidence that indicates the shifts in the framing between the two diachronic periods?
2. How do the grammatical features that suggest the dominant text dimensions highlight the changes in how ChatGPT was framed?

The following sections outline how the methodological principles guided the data collection and analysis procedures, and how these principles contributed to a systematic and rigorous approach to answering the research questions.

3.1. Data Collection

To indicate how ChatGPT was represented in the news media, the data must include coverage that is widely accessible to, and encountered by, the general public. Quality sources are dominated by expert discourse and as such cater to a more specialized or educated readership (Nguyen & Hekman, 2024), so they often have a relatively smaller audience or circulation (Fast & Horvitz, 2017). To this end, this paper used Google News search to conduct searches across all available UK news outlets in the online database. Given the focus of this study, only 'ChatGPT' was determined as the search term to ensure the relevance and specificity of the collected data. For a reasonable and manageable amount of data to be collected, and to remain within the scope of the study, additional filtering criteria were applied. First, using the 'Advanced Search' function, only English-language sources were included to maintain consistency in the analysis, and the region was limited to the 'United Kingdom'. Second, the date range was customized for each year in order to construct the two separate corpora.

To construct the corpora, each covering a distinct diachronic period ('2022-2023' and '2023-2024'), the search results were filtered to include only content published within the specified time frames:

- '2022-2023' corpus: Articles published from 1 December 2022 – 30 November 2023.
- '2023-2024' corpus: Articles published from 1 December 2023 – 30 November 2024.

This cutoff date was determined based on the fact that ChatGPT was launched in late November 2022. This means that the analysis captured media coverage from the earliest stages of its public release. The initial lists of articles, which contained metadata such as headlines and other items, were subjected to a cleaning process to ensure data accuracy and relevance. Additionally, duplicate content (i.e. articles that appeared more than once within the corpora) was removed to avoid redundancy. Upon completing the cleaning procedures, roughly 7,500 articles remained in each corpus, with an approximate total of 310,000 words in the '2022-2023' corpus and 294,000 words in the '2023-2024' corpus.

3.2. Keyword Analysis

The collected data were treated as two separate corpora, and were then analyzed through keyword analysis using Antconc (Anthony, 2014). In corpus linguistics, keyword analysis is a technique that statistically compares the relative frequencies of words between two corpora (Scott & Tribble, 2006). The primary goal of keyword analysis is to identify words that exhibit statistically significant frequency differences between the two corpora and to assess the degree of this difference, a measure technically known as keyness. Keyness is a statistical measure that quantifies how much more, or less, frequently a word appears in one corpus compared to a reference corpus, beyond what would be expected by chance (Pojanapunya & Watson Todd, 2018). It is, therefore, a test statistic that helps determine which words are most characteristic of aboutness, or the extent to which a keyword is topically relevant or indicative of the subject matter or content of the target corpus (Bondi & Scott, 2010).

In this study, to identify how the narratives of ChatGPT differed across the two periods, the two corpora were compared against each other to produce two lists of keywords. To measure keyness, a decision regarding an appropriate

statistical method needs to be made. Given that the goal of the present study was to examine the aboutness, or what the text in each corpus is about (Scott & Tribble, 2006), a probability statistic, namely the log-likelihood ratio (LL), was used as the keyness statistic. The LL statistic is a null-hypothesis significance test with an associated probability (p) value (Rayson & Garside, 2000; Scott & Tribble, 2006). LL is a probability-based test that compares the observed frequencies of words in two different corpora against the expected frequencies if the words were distributed evenly across both corpora. It is a statistical measure of how much a word's distribution in one corpus deviates from what would be expected by chance (Pojanapunya & Watson Todd, 2018). Given that LL relies on expected rather than raw frequencies, it is robust to differences in corpus size, and this suggests that the unequal size of the two corpora does not affect the validity of the results. The larger the LL value, the greater the difference between the observed and expected frequencies, indicating that the word is more "key" or characteristic of one corpus compared to the other.

By observing differences in word frequencies between the corpora, statistical significance is already embedded in the LL values. According to Rayson and Garside (2000), conventional significance thresholds correspond to critical LL values; for example, at the 0.01% significance level ($p < 0.0001$), the critical LL value is 15.13). However, in conducting keyword analysis, the p-value is typically "loosely interpreted as whether the difference in relative frequencies of a word in the two corpora is due to chance or not" (Watson Todd & Pojanapunya, 2018, p. 145). This is because, in large corpora, even very small frequency differences can become statistically significant, so the p-value alone is not a reliable indicator of the salience of a word identified as key.

Therefore, as with common practice in corpus linguistics, the present study reports LL values as indicators of both statistical strength and relative distinctiveness, which enables keywords to be ranked by their degree of over- or underuse across the two corpora. P-values are noted in the results only to substantiate statistical significance. In this way, the LL statistic helps identify discursive trends, or more specifically, key themes or concerns that represent how ChatGPT was portrayed in each period by highlighting words that are significantly over-represented, and potentially under-represented, in the target corpus compared to the reference corpus (Pojanapunya & Watson Todd, 2018). Words with higher LL values are considered more statistically salient (Watson Todd, 2020), and to elicit as many relevant key issues as possible in each diachronic period, the top 10 keywords ranked by their LL values were considered key in this study.

3.3. Multidimensional Analysis

From a comparative perspective, Biber's (1988) Multidimensional Analysis (MDA) was employed as a descriptive grammatical complement to the keyword analysis. While Biber's (1988) MDA was originally developed to distinguish variation across broad registers (e.g. between spoken and written discourse), its dimensions can also identify functional linguistic variation within more closely related texts. Later applications have therefore extended MDA beyond broad register comparison to include "diachronic studies describing the evolution of registers" (Xiao, 2009, p. 422), highlighting its applicability to comparisons between sub-registers, varieties, or time periods within a single register. Following this tradition, the present study uses MDA to characterize the communicative register of each corpus, with keyword analysis serving as the principal analytical basis for conclusions about shifts in media framing. Each textual dimension identified through MDA represents linguistic patterns which are indicative of specific communicative functions, styles, or registers (Ali & Abdulhaleem, 2024). The six key dimensions include:

D1 Informational density (*involved vs. informational discourse*)

D2 Narrative style (*narrative vs. non-narrative concern)*

D3 Context-independence (*context-independent vs. dependent discourse*)

D4 Persuasion (*overt expression of persuasion*)

D5 Conceptual abstraction (*abstract vs. non-abstract information*)

D6 Elaboration (*on-line informational elaboration*)

Using Nini's (2015) Multidimensional Analysis Tagger (MAT), a software tool that performs multidimensional functional analysis of English texts, the two corpora were processed to extract and quantify grammatical features associated with each textual dimension. The software automates the identification of co-occurring linguistic patterns. Dimension scores are then calculated using z-scores, which are a way to standardize and normalize the raw frequency counts of linguistic features across texts in a corpus, to determine text dimensions. Following the analytical procedure,

the initial stage of data interpretation involved comparing the dimension scores across the two corpora to identify broad patterns and trends in text dimensions that suggest shifts in how ChatGPT was framed. This provided an overview of linguistic variation which offered initial insights into the framing differences in media coverage of ChatGPT. Given that the linguistic features are first normalized (i.e. calculated per 100 tokens) and then converted into standardized z-scores relative to Biber's reference corpus, differences in the absolute size of the two corpora (310k vs. 294k tokens) do not affect the comparability of the results.

The second stage focused on a more detailed examination of the grammatical features that contributed to each text dimension, focusing on both similarities (i.e. continuities in media framing of the AI) and differences (i.e. linguistic shifts that reflect evolving discursive strategies). In this stage, inferential statistical tests (i.e. chi-square) were also conducted to assess whether the observed differences in grammatical features between the two corpora were statistically significant.

4. Results

In this section, the results will be organized into two major parts according to the analyses. Excerpts included to illustrate the interpretations of the analyses will be presented exactly as they appear in their original form, without modifications and corrections.

4.1. Keyword Analyses of the News Coverage

To highlight key differences in the coverage of ChatGPT between the two diachronic periods, the two corpora were compared against each other to generate two lists of keywords. Even the smallest LL values among the top 10 keywords (55.15 and 45.15, respectively) exceed the conventional critical value of 15.13 ($p < 0.0001$; Rayson & Garside, 2000), indicating that all top keywords in both corpora are statistically significant well beyond the 0.01% level. This suggests that the keywords identified strongly reflect the distinct aboutness of each corpus. The top 10 keywords for the '2022-2023' corpus are presented in Table 1.

Table 1. *Top 10 Keywords from the '2022-2023' Corpus*

Ranking	Keywords	LL
1	chatgpt	296.99
2	altman	187.27
3	human	94.88
4	schools	67.72
5	travellers	63.91
6	books	62.63
7	write	57.83
8	authors	57.32
9	education	55.84
10	fears	55.15

From Table 1, two clear patterns emerge. First, ranked highest in the keyword list, the debut of ChatGPT (keyword: *chatgpt*), perhaps due to its phenomenal success, appears to be a focus of media coverage during this period. Many concordances of the keyword, as might be expected, focus on the capabilities of ChatGPT and its prominence as a major technological breakthrough which exceeded societal expectations of what had been considered possible, for example, "he was 'shocked' by the capabilities of *ChatGPT* after he tested it by having the AI write numerous exam answers." Furthermore, several excerpts highlight a tendency to frame ChatGPT as an emerging AI technology that served as both a prototypical model and a catalyst for further generative AI developments: "*ChatGPT* is an example of generative AI, or technology trained on vast amounts of text and images that can create content from a simple text prompt," and, "The technology has been riding a wave of fresh momentum, triggered by the emergence of *ChatGPT* and other generative AI (GenAI)." Concerns about its ethical and legal implications, however, were also widely recognized in the coverage, as shown below:

For example, if *ChatGPT* generates text that is largely similar to a copyrighted source, it could be in breach of copyright law. There are already examples of *ChatGPT* defaming individuals, which could result in legal action for libel.

Second, given that ChatGPT was seen as an AI technology with much potential to cause disruptive changes, the newspapers appeared to address the societal uncertainties regarding its long-term implications. As seen in Table 1, the only keyword clearly linked to this framing is 'fears' (e.g. "AI chatbot *ChatGPT* has sparked *fears* that artificial intelligence could automate millions of jobs out of existence"). The remaining keywords, including *schools* and *education* for the education industry: ("*schools* are unprepared for the impact that ChatGPT could have on learning"), *travellers* for the tourism industry: ("half of *travellers* are interested in using generative AI to plan their next trip"), and *books*, *write*, and *authors* for the creative industry: ("it's a great tool to help *authors* get their *books* written and if AI can *write* a good *book*, why not read it?") indicate the industries which would be disrupted by the widespread adoption of ChatGPT.

Table 2. *Top 10 Keywords from the '2023-2024' Corpus*

Ranking	Keywords	LL
1	apple	284.20
2	pm	115.02
3	published	74.01
4	iphone	65.79
5	features	58.74
6	nvidia	56.83
7	ios	49.58
8	updated	47.36
9	elections	45.58
10	meta	45.15

According to Table 2, while most keywords for the '2022-2023' corpus do not appear to reflect direct media framing of ChatGPT as a disruptive force during this period, the keywords which are content words suggest a shift in thematic focus. Unlike the previous period, the aboutness of this corpus does not exclusively involve concerns about industry-wide disruptions but instead touches on broader implications of generative AI. First, coupled with their concordances, keywords such as '*apple,*' '*features,*' '*nvidia*,' and '*updated,*' indicate that news coverage positioned ChatGPT within the broader tech landscape. For example:

> Along with new *features*, *Apple* also announced the new 'Apple Intelligence' powered by OpenAI's ChatGPT.
>
> Researchers identified a number of key *features* of the ChatGPT writing style, which included the use of Latinate vocabulary, repetition of words or phrases and ideas, and pleonasms.
>
> The entire AI industry has also relied heavily on *Nvidia*'s specialized semiconductors to power AI applications.
>
> Amazon, Google and Meta, the parent company of Facebook - have announced new or *updated* AI-based assistants over the past year, alongside the rise of generative-AI chatbots such as OpenAI's ChatGPT.

These concordances suggest that, in contrast to the earlier focus on disruption, the framing in the latter period increasingly emphasized AI's integration into existing technological infrastructures rather than its revolutionary potential alone. The keyword 'published', however, provides evidence of the rapid evolution of AI technology, particularly ChatGPT, often with references to studies assessing its capabilities that surpass human abilities. For instance:

> The University of Reading also *published* a study this year, setting up 33 fake student profiles. The 'students' submitted unedited answers written by OpenAI's artificial intelligence chatbot GPT-4 on a range of online tests and exams, with 94% of these AI admissions slipping through unnoticed – and on top of that, most got slightly better grades than real students.

Given the impressive capabilities demonstrated by AI systems like ChatGPT, there has been an increase in the publication and dissemination of documents and guidelines from organizations and experts, including, for example, "A group of influential computer scientists *published* an open letter warning that weakening the AI Act this way would be 'a historic failure'," and, "It has been *published* by the British Standards Institution (BSI) and offers direction on how businesses can responsibly develop and deploy AI tools both internally and externally."

Lastly, the keyword 'elections' clearly highlights the broader role of generative AI in shaping the electoral landscape. As with previous concerns about AI disrupting industries, generative AI was framed as a key disruptor in political discourse. First, given the rise of AI, issues related to cybersecurity were worrisome: ("The large number of *elections* in 2024 are likely to be a key topic for the tech sector beyond cybersecurity issues.") Second, with the potential to influence public discourse, spread misinformation, and perhaps alter voter perceptions, AI is drawing comparisons to the seismic shift brought about by social media a decade ago: ("It is likely that each of these *elections* will be influenced by new generative AI technologies in the same way the elections of the 2010s were shaped by social media.")

Overall, the keyword analysis demonstrates that the media's portrayal of ChatGPT has evolved from initial fear of disruption to a more complex discussion of AI's long-term societal integration. While ethical concerns and risks remain, the coverage suggests that generative AI is now framed less as a destabilizing force and more as a factor shaping multiple disciplines, including technology, politics, and research.

4.2. Text Dimensions Based on Biber's (1988) Multidimensional Analysis

Given that discourse generally encompasses a wide range of linguistic features, to complement keyword analyses, a multidimensional analysis was subsequently conducted to provide deeper insights into these framing differences and compare dimension score patterns across the corpora.

Table 3. *Text Dimension Scores*

Dimension	Dimension scores	
	'2022-2023' corpus	'2023-2024' corpus
D1 Involved vs. informational discourse	-9.50	-13.53
D2 Narrative vs. non-narrative concern	0.18	0.25
D3 Context-independent vs. dependent discourse	3.99	3.70
D4 Overt expression of persuasion	1.21	0.36
D5 Abstract vs. non-abstract information	1.01	1.04
D6 On-line informational elaboration	-0.69	-0.81

As shown in Table 3, the highest dimension scores in both corpora are found in D3. A high score on Biber's (1988) Dimension 3 indicates less dependence on situational context and is typically associated with certain linguistic features such as nominalizations and complex noun phrases. This linguistic pattern, then, reflects a formal, expository register, which is generally consistent with the conventions of technical or analytical discourse.

Table 3 offers a glimpse into the evolving patterns of text dimensions, and it appears that the notable differences in Dimensions 1 and 4 provide evidence of major shifts in how the media framed ChatGPT across the two periods. The relatively low scores in D1 in both corpora might highlight the highly informational nature of coverage across both periods. But, the noticeable differences in D1 (-9.50 vs. -13.53) and D4 (1.21 vs. 0.36), with the '2022-2023' corpus showing notably higher scores than the '2023-2024' corpus, reflect a clear shift toward more informational discourse and factual approach of reporting, and that, in the later period, media coverage became more neutral, relying much less on persuasive rhetoric and more on expository, fact-based framing.

Table 4. *Top 10 Grammatical Feature Tags Normalized Frequency Differences*

Tokens	Normalized frequencies (per 100 tokens)			MAT definitions	Inferential test ($\chi^2(1), p$)
	Differences	'2022-2023'	'2023-2024'		
TTR Type-token ration	(-)39	217	256	Lexical diversity in a text	-
NN Total other nouns	3.65	23.38	27.03	Any noun that is not identified as a nominalization or a gerund	$\chi^2(1) = 229.40$, $p < .001$
FPP1 First-person pronouns	0.26	1.28	1.02	Any item that is used as a first-person pronoun	$\chi^2(1) = 15.70$, $p < .001$
TPP3 Third-person pronouns	0.24	1.59	1.35	Any item that is used as a third-person pronoun	$\chi^2(1) = 12.20$, $p < .001$
PIN Total prepositional phrases	(-)0.23	10.25	10.48	Any occurrence of a preposition	$\chi^2(1) = 20.6$, $p < .001$
JJ Attributive adjectives	0.30	7.77	7.47	An adjective will be identified as an attributive adjective when it is followed by another adjective or a noun.	$\chi^2(1) = 3.9$, $p < .05$
POMD Possibility modals	0.19	0.84	0.65	Can, may, might, etc.	$\chi^2(1) = 6.0$, $p < .05$
VBD Past tense	0.15	2.07	2.22	The use of verbs that indicate past tense	$\chi^2(1) = 0.66$, $p = .42$
COND Conditional adverbial subordinators	0.11	0.7	0.59	If, unless	$\chi^2(1) = 3.9$, $p < .05$
PUBV Public verbs	0.10	1.38	1.28	A subset of verbs that describe acts of communication (e.g. acknowledge, affirm, admit, assert, confirm)	$\chi^2(1) = 0.73$, $p = .39$

To complement the analysis of the shifts in the framing of AI over time, it is essential to investigate key grammatical differences between the two corpora that contributed to the overall communicative styles. Table 4 ranks the top 10 grammatical features with the greatest differences based on normalized frequencies. These features help explain how stylistic variation across the corpora corresponds to Biber's six textual dimensions. Moreover, inferential statistics, specifically chi-square tests (χ^2), are also reported to assess whether the observed frequency differences between the corpora are statistically significant. TTR is a ratio measure reported at the corpus level, and since it does not consist of multiple independent observations, inferential testing cannot be meaningfully applied. Therefore, this paper reports TTR descriptively, while other categorical features were tested using chi-square. Given that the chi-square test is sensitive to raw token counts, some features show relatively small differences in normalized frequency but yield highly significant χ^2 values (e.g. NN), while others with comparable differences do not reach significance (e.g. VBD).

Overall, the analysis showed that most grammatical features differed significantly between the 2022-2023 and 2023-2024 corpora. In particular, NN, FPP1, TPP3, and PIN exhibited highly robust changes (χ^2, $p < .001$), while JJ, POMD, and COND demonstrated smaller but still significant differences (χ^2, $p < .05$). These findings suggest consistent shifts in lexical choice and sentence construction patterns across the two diachronic periods. In contrast, the use of VBD and PUBV did not differ significantly ($p = .42$ and $p = .39$, respectively), indicating relative stability in these features across corpora or possible random variation.

The following section examines each dimension in turn, drawing on the grammatical features underlying the dimension scores to illustrate how media framing of ChatGPT evolved over time.

4.2.1. Dimension 1

Both corpora show strongly negative D1 scores (-9.50 vs. -13.53). This clearly indicates a highly informational and expository writing style across both time periods. Generally, D1 is the dimension that captures the contrast between involved, interactive discourse and dense, referential language typically found in academic or formal expository genres. The lower score in the '2023-2024' corpus, therefore, reflects an increase in information density, which in turn suggests a more compact and fact-focused presentation of AI-related content.

From Table 4, it appears that this shift is linguistically evidenced by the increased frequency of noun phrases (NN) and prepositional phrases (PIN), both of which are associated with more complex syntactic structures. Furthermore, a slight decrease in first- and third-person pronouns (FPP1, TPP3) suggests that the discourse became more depersonalized, adopting a noticeably more objective tone. Overall, these patterns support the conclusion that media coverage of ChatGPT in the second period shifted toward a more factual style.

4.2.2. Dimension 2

The low D2 scores across both corpora (0.18 vs. 0.25) indicate a consistent non-narrative focus in the discourse. According to Biber (1988), this dimension distinguishes between narrative discourse, which relies on past tense and third-person references (as commonly found in novels or personal stories), and non-narrative exposition, which is more common in news or academic discourse. As such, D2 complements D1 in justifying the non-storytelling nature of the discourse, a feature that is likewise typical of informational and expository genres such as news reporting.

The slightly higher D2 score in the '2023-2024' corpus, while suggesting a minor shift toward more narrative elements in the texts, appears too subtle to indicate a meaningful change in framing style in the later period. However, the more frequent use of past tense verbs (VBD) in the second diachronic period (2.07 vs. 2.22) may hint a shift away from speculative framing, with less emphasis on ChatGPT's potential impacts and disruptive futures.

4.2.3. Dimension 3

Both corpora show high and relatively stable D3 scores (3.99 vs. 3.70) which can be indicative of a tendency toward context-independent discourse. This dimension contrasts language that is grounded in specific, shared knowledge (e.g. conversations) with language that is designed to stand alone, as in academic writing or formal discourse. Given that D3 is linguistically associated with nominalizations, complex noun phrases, and technical vocabulary, it reflects a style of discourse that enables the presentation of generalized concepts without reference to specific settings or contexts. In turn, this suggests that ChatGPT, in both diachronic periods, was discursively described in the newspapers as a broad technological phenomenon, detached from situated use or individual experience.

4.2.4. Dimension 4

D4 exhibits the most noticeable decline across the dimensions (1.21 vs. 0.36), and this suggests a substantial absence in persuasive or evaluative discourse in the second period. This dimension captures the degree to which texts express the author's judgment and certainty, and several key grammatical features substantiate this discursive shift in news media coverage. One notable of linguistic change is the decreased frequency of public verbs (PUBV), such as *admit*, *warn*, and *claim*. In the '2022-2023' corpus, these verbs were commonly used to attribute viewpoints, reinforce evaluative claims, and at times anthropomorphize ChatGPT by assigning it human-like agency (e.g. "ChatGPT can '*admit* its mistakes'"). Such constructions were absent in the '2023-2024' corpus. This suggests not only a decline in persuasive language, but also an absence of discursive strategies that personify AI systems.

In addition to the linguistic features, syntactic patterns in the '2023-2024' corpus indicate a reduced emphasis on persuasive and speculative discourse compared to the previous period. A noticeable decrease in possibility modals (POMD) (0.84 vs. 0.65) and conditional subordinators (COND) (0.70 vs. 0.59) suggests a shift away from hypothetical framing in the '2023-2024' corpus compared to the earlier period. The earlier coverage appears to have relied more heavily on speculative statements that conjectured about AI's potential risks or transformative impacts (e.g. "*Unless* we are careful, future researchers might one day write papers on 'death by GPT syndrome.'"). The decline in attributive

adjectives (JJ) likewise reflects a reduction in emotionally charged or opinionated language. Early coverage often employed highly evaluative adjectives to frame AI in morally charged or sensational terms, such as "warning of the discovery of a potentially *dangerous*, *powerful* new algorithm." As such, this reduction of JJ clearly implies that the media's framing became less evaluative over time.

4.2.5. Dimension 5

D5 scores remained relatively stable (1.01 vs. 1.04), implying that both corpora maintained a consistently abstract style of communication. This dimension reflects the extent to which discourse expresses theoretical, technical, or conceptual content, which is typical of scientific, policy-oriented, and analytical genres.

4.2.6. Dimension 6

For both the '2022-2023' and '2023-2024' corpora, D6 had low negative scores (-0.69 vs. -0.81). These negative D6 scores suggest that the texts in both corpora were highly planned, edited, and carefully structured, rather than being produced spontaneously or conversationally in real-time. Overall, the media coverage of ChatGPT retained a coherent, curated, and non-interactive style across both time periods, aligning with the conventions typically seen in mainstream journalism.

5. Discussion and Conclusion

In recent times, few topics in research have dominated media discussions as much as generative AI, and such extensive coverage has the potential to influence public perception of the technology. Much of the earlier work indicated that AI, especially ChatGPT, was framed in news media through a focus on its potential risks (e.g. Mahmutović, 2024; Roe & Perkins, 2023), but since these studies were conducted shortly after the emergence of the phenomenon, it can be assumed that the trajectory of AI discourse has evolved alongside the increasing public familiarity with AI technologies (Van Le & Tran, 2024). To address this assumption, this study conducted a diachronic analysis of how media representations of ChatGPT changed over time. To this end, this study compared news coverage from UK outlets between '2022-2023' and '2023-2024', treated as two sets of corpora, to identify shifts in media narratives about AI across the two distinct periods. The findings suggest that while the formal register of media discourse remained relatively stable, there were significant diachronic shifts in the thematic focus and discursive strategies used to represent generative AI.

The keyword analyses suggest that the differences in the aboutness of the two corpora reflect notable shifts in media framing of AI over time. In the '2022-2023' corpus, keywords such as *fears*, *schools*, and *authors* reflected a discourse shaped by uncertainty and a phenomenal force with the potential to upend industries, which as such unsurprisingly substantiates the findings in a fair amount of previous studies (e.g. Freeman & Aoki, 2023). Given the uncertain implications of emerging technologies, in the early days of AI, media coverage generally leaned toward the dystopian and fear-inducing narratives (Guinibert & Nairn, 2022; Mohammadi, 2024). These narratives often draw upon profound and deep-seated cultural fears and biases, paralleling those found in racism and sexism (Hutson et al., 2024).

The 2023-2024 corpus highlights a thematic shift in the discourse about ChatGPT, with the AI technology more prominently associated with major technology corporations (keywords: *apple*, *nvidia*, *iphone*) and political discussions (keyword: *elections*). The absence of keywords denoting direct concerns over AI-induced disruptions clearly suggests that media coverage moved away from reiterating risks associated with ChatGPT and instead focused on broader, peripheral issues. This could be because, as technologies begin to integrate into various disciplines, the media starts to explore their practical applications and benefits (Liu & Lyu, 2025). Moreover, the presence of 'elections' as a keyword in the 2023-2024 corpus may be unsurprising given the U.S. presidential election in 2024, but the connection being made between elections and ChatGPT shows that concerns over the ethical implications of this AI technology did not completely disappear from the public discourse, even if they were overshadowed by other topics.

Despite these differences, there are continuities in how AI was framed across both diachronic periods, most notably in its register or communication style, which remained formal, structured, and technical over time. This consistency in register can be attributed to two main factors. First, journalistic norms in mainstream news outlets, particularly in the UK, emphasize formal and structured reporting (Karlsson et al., 2023), especially on complex or technical subjects such as AI. Even as media narratives evolved, newspapers maintained an informational tone, aligning with conventional reporting practices. Second, AI itself is a highly technical topic that necessitates precise and structured

language to communicate its complexities. So, regardless of whether the focus was on risks or opportunities, the discourse maintained an informational tone across the two periods.

While MDA is often used to examine stylistic variation, its application in discourse studies enables a more critical examination of how linguistic form relates to broader communicative functions and ideological positions. Diachronically, MDA helped reveal a shift away from rhetorical and speculative framing toward more explanatory and neutral reporting. This was evidenced by the reduced presence of attributive adjectives (JJ) and possibility modals (POMD), indicating a decline in overt persuasion and hypothetical language. These stylistic changes reflect deeper discursive adjustments: as ChatGPT transitioned from a novel, uncertain technology to an integrated tool, the journalistic language used to represent it evolved accordingly.

While most grammatical features exhibited statistically significant differences, the use of past tense verbs (VBD) and public verbs (PUBV) did not vary significantly according to χ^2 tests. Past tense verbs are a core resource in news reporting, as they anchor events in time (e.g. said, reported, claimed). Since news narratives almost invariably describe past actions, their frequency remains relatively stable across diachronic corpora, and the small observed differences are unlikely to reflect systematic stylistic change. Similarly, public verbs such as “say” or “argue” are functionally entrenched in journalism as a means of attributing statements and signaling evidentiality. This reliance on PUBV is a genre convention that persists regardless of topical focus. The lack of significant change in these categories therefore underscores the stability of core journalistic practices, even as other features shifted in ways that align with evolving media framings of generative AI.

Overall, the findings suggest that while the overall communicative register of AI coverage remained formal, some dimensions of grammatical style underwent marked change whereas others persisted, pointing to both continuity and transformation in the media’s discursive treatment of ChatGPT. The diachronic analysis thus highlights the dynamic nature of media discourse around emerging technologies: certain stylistic resources shift as public debates evolve, but other core linguistic features remain entrenched because of their communicative necessity in journalistic practice.

6. Implications and Limitations

The findings from this study carry important implications for media discourse, particularly in how emerging technologies like AI are framed, backgrounded, and communicated over time. The coverage of global social phenomena such as AI can shift rapidly within a relatively short period (in this case, over just four years, from concerns about its potential to disrupt to more neutral reporting of its applications). As public familiarity with AI evolves, corresponding changes in how the media discusses generative AI can be expected (Van Le & Tran, 2024). This suggests that discursive strategies in news reporting are inherently dynamic and co-constructed with broader public discourse, particularly when addressing controversial topics (Chong & Druckman, 2007).

That said, it is worth noting that it remains uncertain whether the decline in concern-related framing reflects a genuine reduction in public and journalistic concern, or whether such concerns became normalized and thus backgrounded in media discourse. Backgrounding occurs when information is taken as common knowledge and therefore left implicit rather than explicitly reported (Kamps, 2005). If concern-related frames disappear because issues are backgrounded, both the media and the public should remain cautious about underestimating possible ongoing risks (e.g. bias, misuse, ethical issues) simply because such concerns appear less visible in news coverage. This has clear implications for how emerging technologies are communicated, monitored, and governed over time.

Despite these potential implications, some limitations should be addressed. First, for the sake of practicality, the corpora in this study were limited to UK news outlets. Expanding the dataset to include wider news media would not be practical due to issues of data access, size, and comparability across different news systems. However, this UK focus inevitably limits the generalizability of the findings. Media discourses in other contexts may frame AI in substantially different ways. Second, at the time of writing, AI remains a relatively recent and rapidly emerging technology. To capture its early reception in news discourse, this study focused on two short time windows (2022-2023 vs. 2023-2024). While this provides a useful diachronic comparison, these are relatively brief snapshots, which may constrain the ability to capture longer-term discursive trajectories.

Conflict of Interest

The author declares that there is no conflict of interest relevant to the content of this article.

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