

AI Discourse Dynamics in Arabic Media: Analyzing Rhetorical Strategies and Cultural Influences

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Received: 31/12/2023; Revised: 07/04/2024; Accepted: 24/04/2024

المخلص

تستكشف هذه الدراسة كيفية تقديم العناوين الصحفية المتعلقة بالذكاء الاصطناعي بشكل عملي للجمهور، والأساليب والأدوات البلاغية اللغوية المستخدمة، ولماذا يتم استخدامها في الخطاب الإعلامي العربي. في هذه الدراسة تم دراسة مجموعة من 163 عنواناً من أربع صحف إلكترونية سعودية شهيرة من خلال استعمال أدوات التحليل النوعي والكمي، بما في ذلك تحليل وصفي لتصنيفات الأساليب والتعبيرات البلاغية (الصور البلاغية والأدوات اللغوية). أظهرت البيانات أساليب بلاغية تحتوي على استخدام المنطق والعاطفة والمبادئ، في حين تضمنت التعبيرات البلاغية الاستعارات وأسلوب السخرية والموازنة والمبالغة والأسئلة البلاغية. من بين الأساليب البلاغية الثلاثة، كان الأكثر شيوعاً هو الاستخدام البلاغي للمنطق. أثبت الأسلوب البراغمتي البلاغي إلى جانب التحليل الكمي العديد من الأدوات اللغوية المستخدمة لتوضيح الأفكار وإنتاج تأثيرات مقنعة، مثل مخاطبة مشاعر القراء وإثارة مشاعر قوية من قبلهم. كما تتناول النتائج الخيارات اللغوية والاستراتيجيات الخطابية والأساليب المقنعة المستخدمة في الخطاب الإعلامي المتعلق بالذكاء الاصطناعي، وتحديدًا في الصحف العربية. بعد تحليل هذه الأدوات والأساليب اللغوية من منظور براغماتي بلاغي، فإن هذه الدراسة تساهم في فهم كيفية استخدام هذه الأدوات والأساليب في وسائل الإعلام الإخبارية التي تتناول التقدم السريع في تطبيقات تكنولوجيا الذكاء الاصطناعي.

Abstract

The study explores how artificial intelligence (AI)-related headlines are presented pragmatically to the public audience, the rhetorical appeals and devices used, and why they are used in Arabic media discourse. A corpus of 163 headlines from four popular Saudi Arabian online newspapers provided the data for qualitative and quantitative analysis, including a descriptive analysis of the distributions of rhetorical appeals and tropes (figures of speech and linguistic devices). The data showed rhetorical appeals encompassing logos, pathos, and ethos, whereas the tropes included metaphors, irony, parallelism, overstatements, and rhetorical questions. Among the three rhetorical appeals, the most common was logos. The pragma-rhetorical technique, coupled with quantitative analysis, evidenced various linguistic devices used to clarify ideas and produce persuasive effects, such as appealing to readers' emotions and evoking strong feelings. The findings address the language choices, rhetorical strategies, and persuasive appeals used in media discourse related to AI, specifically in Arabic newspapers. Analyzed from a pragma-rhetorical perspective, they contribute to understanding how such elements are used in news media addressing the rapid advances in the application of AI technology.

Keywords: *AI discourse, media discourse, news headlines, rhetorical appeals, rhetorical tropes*

Introduction

The term “artificial intelligence” (AI) has been described as the automation of cognitive tasks similar to those performed by humans, for instance, decision-making or problem-solving and learning (Bellman, 1978). However, some suggest that there is as yet no specific definition of AI (Brennen, 2018). Significant investment in AI in international arenas reflects the world’s interest in including AI in future plans (Elias, 2023; Pichai, 2023), with caution regarding its potential impacts on society, academic integrity, and human lives.

The role of artificial intelligence in discourse is deemed very important, especially given the complexities involved, whether beneficial or harmful. Chitham et al. (2019) noted that threats accompanying artificial intelligence include privacy invasions, ethical dilemmas, potential inaccuracies, and disastrous failures. This study focuses on the representation of AI in mass media from a discourse analysis perspective to provide a better understanding of the linguistic features used in presenting this technology. Newspaper headlines involving AI are rich in linguistic constructs, metaphors, and other forms of figurative language that strongly influence collective attitudes, concerns, and expectations towards the technology. A thorough examination of these elements will yield greater insight into some of the broader discourses, all of which concern the role of AI technology within Arabic societies and its cultural implications.

Public perceptions are noticeably influenced by media headlines (Wu, 2017; Zhai et al., 2021). Therefore, it is necessary to conduct a careful examination of the cultural dynamics and perceptions of AI in the Arab region. This study positions itself within the existing literature on AI-related discourse, addressing a gap by analyzing how AI discourse is manifested in mass media with an explicit focus on newspaper headlines.

AI in Media Discourse

AI has been presented to have the ability to deal with real-world problems and assist with different tasks. This has generated considerable interest among governments and businesses in integrating AI within a diverse range of products and applications, from driverless cars, TVs, and social media management to healthcare services and weapons technology (Elliott, 2019). Advancements in machine learning, computer vision, robotics, and related fields have significantly contributed to the growth of this sector in recent years. The growing popularity of AI is evident in the widespread adoption of emerging AI-powered solutions in areas such as healthcare and education (Zhai et al., 2020). However, this exponential growth comes with complex ethical, legal, and social challenges (Cath, 2018). However, Garvey and Maskal (2020) asserted a scarcity of research on media framing of AI and its impact on public perceptions. Cacciatore et al. (2012) argued that initial understanding stems from media reports that largely influence the perceptions of the general public and public opinion.

Several studies have examined public perceptions of AI through media analysis. For example, Fast and Horvitz (2017) studied AI coverage over three decades in The New York Times to explore public understanding, attitudes, and perceptions of AI through a logic-intuition framework. They found an increase in discussions of AI-related topics from 2009 onward, with optimism dominating the tone. Other studies have focused on specific aspects of

AI and media portrayal in different geographical areas. For instance, Zhang and Dafoe (2020) investigated public attitudes toward AI governance in the U.S., and Ding and Kong (2019) conducted a comparative analysis of AI approaches in China and the U.S. Additionally, Zhai et al. (2020) conducted a study on the evolution of AI coverage in five major news outlets over 30 years. They found a fragmented conceptualization of AI due to competing perspectives, with ethical concerns emphasized in negative reports.

Moreover, the discussion of the impact of media on public understanding has been noted in the literature. Starting with Neuman et al. (2014), who addressed the strong influence of the media agenda on public understanding concerning new technologies. They found that the interactive relationship between media reports and public attention leads to a greater focus on topics with wider media coverage. In the same vein, Korneeva et al. (2023) analyzed the media coverage of AI in major international news outlets from 2013 to 2022. The findings revealed a shift in the overall sentiment toward AI in media coverage, initially characterized by cautiousness and later by optimism about the potential benefits of AI. In a recent study, Roe and Perkins (2023) analyzed UK news media headlines concerning AI and ChatGPT and found complexity in the presentation as some AI headlines asserted benefits while others emphasized potential risks. Additionally, Ismail (2016) argued that readers use clues from language to decipher messages in newspaper headlines within their socio-cultural contexts. With this view in mind, this study examines the discourse of newspaper headlines to demystify how AI is presented in Arabic to the public.

A Pragma-Rhetorical Approach to the Analysis of Public Discourse

Rhetoric and pragmatics share numerous similarities and differences at different levels, including aspects of language usage and orientation. Leech (1983) discussed the principles of pragmatics, showing that speakers' use of linguistic strategies in conversational exchanges is usually driven by motives and objectives within the scope of pragmatics. Rhetoric, on the other hand, relates more closely to the underlying motives that initially prompt the use of those strategies. Thus, it can be said that pragmatics focuses on communicative intentions, while rhetoric primarily concerns the persuasive intentions inherent in language use (Moezzi et al., 2017). This is evident in the work of Larrazabal and Koorta (2002), who maintained that both pragmatics and rhetoric complementarily provide a comprehensive understanding of how language is used for numerous purposes. Therefore, this study follows the steps of Larrazabal and Koorta (2002) in adopting a pragma-rhetorical approach to allow the separate identification and analysis of the two devices. The pragma-rhetorical approach bridges the gap between these two aspects, providing a rich framework for analyzing persuasive discourse and understanding the intentions behind language use (Larrazabal & Koorta, 2002).

Several fields, including law, politics, and news analysis, have employed pragma-rhetorical approaches. Aziz (2022) unveiled rhetorical tropes and pragmatic strategies in headlines related to COVID-19. The study identified rational appeals in such headlines, employed with factual information and supporting evidence to persuade readers. In another study, data collected from press conferences organized by the Chinese Ministry of Foreign Affairs, Wu (2017) demonstrated how strategic maneuvering effectively served the

spokespersons' objectives through personal attacks. In a similar vein of research, Ramsay (2012), adopting a pragma-dialectic argumentation perspective, investigated debates between supporters and critics of Al-Qaeda. The study highlighted that due to the use of pseudonyms and the textual nature of such media, the worth of a credible messenger might be diminished in mass media campaigns.

These studies have shown the significant role of media headlines in shaping public perceptions concerning various topics by investigating linguistic devices. However, headlines related to AI are frequently sensationalized in the media, either by highlighting risks and concerns or by discussing potential benefits. The aforementioned studies have identified areas where there is a dearth of research and offer a conceptual framework for further investigation. Thus, this study aims to fill this gap by examining the presentation of AI-related headlines in Arabic media discourse and analyzing the rhetorical appeals and devices employed. By studying linguistic choices, rhetorical appeals, and persuasive techniques used in media discourse regarding AI through a pragmatic-rhetorical approach, more can be revealed about how these devices influence public perceptions of AI in the Arab region.

The pragma-rhetorical approach can potentially shed light on aspects that other approaches may not fully capture, offering a lens that affords a comprehensive and rich analysis of discourse, bridging the gap between pragmatics and rhetoric, and yielding insights that allow valuable conclusions to be drawn. According to Larrazabal and Koorta (2002), placing pragmatics and rhetoric on the same level of analysis enables comprehensive consideration of a range of psychological, philosophical, and logical aspects in the study of any given discourse.

The purpose of this study is to determine how AI-related headlines in Arabic newspapers are presented to the public audience pragmatically and to identify which rhetorical appeals and devices are used and why.

Research Questions

This study seeks to address the following questions:

1. How is AI-related discourse presented in Arabic newspaper headlines?
2. How are rhetorical appeals (ethos, pathos, logos) manifested in Arabic newspaper headlines about AI?
3. What pragmatic strategies and rhetorical tropes are employed in AI-related headlines in Arabic newspapers?

Method

This is a qualitative and quantitative analytic study of AI-related headlines from four popular Saudi Arabian online newspapers. This study employed descriptive analysis of the distributions of rhetorical appeals, rhetorical tropes, and pragma-rhetorical techniques used in Arabic news headlines. This approach showed how the headlines appealed to readers' emotions and evoked strong feelings.

Data Collection

A sample of AI-related headlines was collected from four popular online newspapers in Saudi Arabia: *Alwatan*, *Okaz*, *Alsharq Alawsat*, and *Aleqtsadia*. These are four of the country's most prominent online newspapers and they were chosen for their popularity and reputation for covering a range of different topics, including technology. The headlines were published in 2023 and were obtained through searches of the respective newspaper websites. The search was narrowed to 2023 to ensure relevance given that AI is an evolving field. The search encompassed all available news media outlets within these newspapers, focusing on terms such as ChatGPT, OpenAI, and AI. The data comprised 163 headlines, as shown in Table 1.

Table 1

Frequency and Percentage of AI Headlines According to Newspaper Title

Newspaper Title	Frequency	Percentage (%)
Alwatan	32	19.6
Okaz	56	34.4
Alsharq Alawasad	33	20.2
Aleqtsadia	42	25.8
Total	163	100

Data Analysis

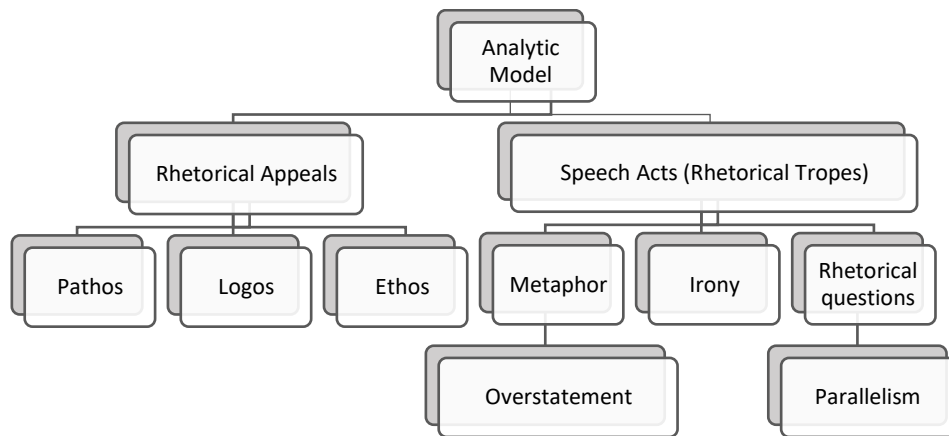
The analysis employed a pragma-rhetoric approach, constituting two primary components. The component involved examining the rhetorical appeals used in the data, namely ethos, pathos, and logos. The second focused on identifying the rhetorical tropes employed in the headlines, deriving them inductively from the data. The study adopted an eclectic model (see Figure 1) to meet the study objectives, incorporating elements from Searle's (1969) speech acts, Grice's (1975) conversational maxims, Grundy's (2019) rhetorical analysis, and other rhetorical resources.

The first component in the model recognizes that the headlines are performed through speech acts (Searle, 1969) and goes beyond the literal meaning of words to analyze how these speech acts achieve their goals in communication. The second component—Grice's (1975) conversational maxims—focuses on the principles of cooperation that trigger successful conversation through conversational maxims, such as quantity, quality, relation, and manner. Speakers generally follow these maxims, whereas intentionally violating them can create specific effects, such as sarcasm and humor. The final component is Grundy's (2019) rhetorical analysis, which considers how language is used to influence audiences and achieve persuasive goals. Rhetorical analysis identifies the strategies employed in communication, such as appeals, logic, and credibility.

These models and resources were considered collectively to enhance understanding of language use, intentionality, and persuasion in communication. By integrating these as components in the study model, it was possible to attain a nuanced understanding of how linguistic devices are used in AI-related headlines to communicate meaning, achieve goals, and influence audiences. The pragma-rhetoric analysis was complemented by quantitative analysis.

Figure 1

The Analytical Model



The model provides a comprehensive overview of the relationship between rhetorical appeals and rhetorical tropes by analyzing texts based on different frameworks. Aristotle considered rhetoric to be “the power to observe the persuasiveness of which any particular matter admits” (1991, p. 74). He defined three rhetorical appeals: (i) pathos, which refers to the reliance on emotions to deliver meaning (Demirdöğen, 2010); (ii) ethos, which refers to the use of credibility to increase trustworthiness (O’Quinn, 2009); (iii) logos, which refers to the use of logic in the discourse (Higgins & Walker, 2012).

The second part of the analytical model consists of five rhetorical tropes. The first is metaphor, a rhetorical device that uses figurative language to draw attention to a common attribute or resemblance between two entities creatively, not intending a literal interpretation. Second, overstatement is a rhetorical device that includes exaggeration, positive or negative, to emphasize a point (Cruse, 2006). Third is irony, which is the use of words or phrases in a way that suggests the opposite of the literal or expected meaning (Hutcheon, 2000). Fourth, parallelism is a literary device that uses repetition or similar grammatical structures in multiple sentences that are alike (Aziz, 2012). Fifth is the rhetorical question tactic, which is a query employed in a persuasive or directive manner (Koshik, 2005).

Finally, the study employed qualitative coding and analytic techniques. Initially, a comprehensive codebook was used to ensure meticulous coding and categorization of the dataset (Wicks, 2015). Subsequently, inter-coder reliability was established with the assistance of a second researcher, an expert in linguistics and media studies, who reviewed the codes and the corresponding headlines to confirm the reliability of the coding (Creswell & Poth, 2016). This procedure entailed a thorough examination of the coding, with any discrepancies resolved through discussion, thereby ensuring a high level of inter-coder agreement, as indicated by Cohen's kappa coefficient (Cohen, 1960). This twofold process significantly bolstered the credibility and validity of the analysis of the representation of AI-related headlines in Saudi Arabian newspapers.

Results

The study drew on qualitative and quantitative data from 163 AI-related headlines. The results of the quantitative statistical analysis are presented in two tables, illustrating the rhetorical appeals, comprising logos, pathos, and ethos (see Table 2), and the rhetorical tropes and devices, including metaphors, irony, parallelism, overstatements, and rhetorical questions (see Table 3). These are presented in the following sub-sections with illustrations from the data.

Rhetorical Appeals

Rhetorical appeals were used in the Arabic newspaper headlines on AI to engage the readers and attract their attention. For the most part, the statistics showed that the headline writers used logos (54%) and pathos (34.4%) more than ethos (11.6%) when addressing the readers. The greater prevalence of logos could be attributed to a focus on presenting a point or sending a convincing message based on logical arguments rather than emotional tactics.

Table 2

Frequency and Percentage of Rhetorical Appeals

Rhetorical Appeals	Frequency	Percentage (%)
Logos	88	54
Pathos	56	34.4
Ethos	19	11.6
Total	163	100

The analysis of logos showed that the headline writers used statistics to make claims about the potential impact of AI on the labor market as in the following example, which appeals to the readers' logic by providing evidence to support the claim:

الذكاء الاصطناعي يطيح بـ 80 % من الوظائف

English: Artificial intelligence will eliminate 80% of jobs

Phonetic: /ad.di.'ka:.'ʔal.'ʔas.ti.'na:.'ʕi: ja.ti:ħ bi 'θama:.ni:n fil.mi:'ah min al.wu.dʕa:.'ʔif/

In the following headline, logos is again applied but using a question to open a discussion concerning the impact of omnipresent AI in the future:

بيل غيتس: كيف سيبدو العالم عندما يمتلك كل فرد ذكاءً اصطناعياً؟

English: Bill Gates: What will the world look like when everyone has artificial intelligence?

Phonetic: /bi:l ge:ts: ke:f sa.ja.bdu: al.ʕa:lam ʕan.da.ma: jam.li.ku kul.lu far.din di.ka:.'ʔan ʔas.ti.'na:.'ʕi:.jan/

In terms of pathos, the analysis showed some instances in which the headline writers employed rhetorical appeals to create a sense of uncertainty and anxiety in the reader, as in the following headline:

مفاجآت «أوين إيه آي» الإدارية تتوالى... 500 موظف يهددون بالاستقالة

English: OpenAI's administrative surprises continue... 500 employees threaten to resign.

Phonetic: /mu.fa.ḍʒaː.ʔa:t ʔuː.bin ʔeː aɪ.ʔiː l.ʔidaː.riː.jah tat.ta.wa.laː... ḥam.sa.miː.ʔah maw.ḍʒuːf ja.had.duːna bi.l.ʔis.tiqaː.laː/

In this headline, the word “surprises” is linked to the threat of 500 employees potentially resigning and is an example of pathos in evoking a sense of uncertainty and anxiety in the reader. In another example, a well-known figure (Elon Musk) was invoked to create interest and curiosity in the reader by setting up a challenge between two technologies:

بـ«تروث جي بي تي»ماسك يعزم على تحدي

English: Elon Musk is determined to challenge ChatGPT with TruthGPT

Phonetic: /māsk yaˈzim ˈalā tataddiy šāt jī pī tī bi-«trūth jī pī tī/

In this latter example, pathos is used to appeal to the readers’ emotions by making them want to learn more about the challenge. The headline positions Musk as a “determined” challenger, implying a sense of admiration for Musk’s boldness, which can in turn evoke excitement and anticipation, potentially triggering curiosity and a wish to see the results.

In this study, logos refers to the use of reason and logic, while ethos represents the appeal to reliability and expertise, and pathos signifies the appeal to feelings and emotions. The appeals were identified by examining the rhetorical strategies and linguistic decisions employed in headlines concerning AI-related topics. Illustrative instances of logos comprised titles that employed statistical approximations or speculative inquiries aimed at stimulating logical reasoning. As for ethos, headlines that featured in this category referenced authoritative sources or specialists, serving to establish credibility and expertise. Headlines employing emotionally charged language or allusions to provoke emotional responses from readers and create an atmosphere of disquiet or apprehension were identified as employing pathos. By operationalizing the analysis of these appeals in line with established rhetorical principles, this study establishes a framework for examining the persuasive strategies used in headlines concerning AI.

Overall, the analysis of Arabic newspaper headlines on AI-related topics revealed that the writers primarily used logos and pathos to engage with the readers. The findings showed that the type of appeal most made was logos (54%) through the use of statistics or raising questions. Pathos was also used to generate emotions, such as evoking curiosity or anxiety. Thus, headline writers variously applied emotional and logical appeals to gain their readers’ attention and highlight potentially urgent and complex topics related to AI.

Rhetorical Tropes and Schemes

The study examined the frequency and proportion of five rhetorical tropes and schemes employed in AI-related headlines in Arab newspapers (see Table 3). The most common rhetorical device observed was metaphor, recorded 68 times, accounting for 41.7% of all instances. This dominance underscores the strong preference for using comparisons to enhance understanding and engagement. Although less frequent, irony was also notable, with 45 occurrences, representing 27.6% of the total. This indicates a nuanced use of contrast to highlight discrepancies between expectations and reality. Then, parallelism and overstatement were identified 24 and 17 times, respectively, signifying an emphasis on reinforcing key

messages through repetition. These figures translate to 14.7% and 10.4% of the total instances, indicating their strategic use in making the headlines more impactful. In contrast, rhetorical questions were the least utilized, with only 9 instances, making up 5.5% of the total. This suggests a lesser preference for direct engagement with the audience through this technique, which occurred 83 times. This high frequency suggests a strong emphasis on figurative language and the use of comparisons to convey meaning. In addition, the use of irony is apparent, although less prominent than metaphor, with only five instances identified. Both parallelism and overstatement are relatively frequent, appearing 35 and 30 times, respectively. This indicates a deliberate focus on emphasizing key points through repetitive language and exaggerated expressions.

Table 3

Frequency and Percentage of Rhetorical Tropes and Schemes

Rhetoric	Frequency of Rhetorical Tropes/Schemes	Percentage (%)
Metaphor	68	41.7
Irony	45	27.6
Parallelism	24	14.7
Overstatement	17	10.4
Rhetorical Questions	9	5.5
Total	163	100

In summary, the table illustrates the frequency and prominence of these five rhetorical devices, shedding light on the persuasive and stylistic elements employed within the AI-related headlines analyzed. It serves as a starting point for further qualitative analysis of these aspects.

Metaphor

Table 4

Examples of Headlines Coded as “Metaphor”

No.	Examples
1	<p>الذكاء الاصطناعي مصنع الشائعات</p> <p>English: (Artificial intelligence is a factory of rumors)</p> <p>Phonetic: /ad.di.'ka:.'ʔal.ʔas.ti.'na:.'ʃi: mas.naʃ.af.ʃu.ʃa:.'ʔat/</p> <p>ChatGPT الصعود الصاروخي</p>
2	<p>English: (ChatGPT's meteoric ascent)</p> <p>Phonetic: /tʃæt.ɡep.ti ʔas.su.ʃu:d ʔas.sa:ru:.'hi:/</p> <p>مختصون يسعون لابتكار طريقة لتعليم الذكاء الاصطناعي محو الأخطاء</p>
3	<p>English: Experts seek to develop a way to teach artificial intelligence to erase mistakes</p> <p>Phonetic: /mux.ta.sʰsu:n ja.sa.ʃu:n li.ʔib.ti.ka:r ʔa.ri:qa li.ta.ʃ.li:m</p> <p>ʔad.di.'ka:.'ʔal.ʔas.ti.'na:.'ʃi: mah.w al.ʔax.</p> <p>تحذيرات من استغلال 'تشات جي بي تي' في عمليات احتيال أو جرائم سيبرانية</p>
4	<p>English: (Warnings of the exploitation of “ChatGPT” in fraudulent or cybercrime operations)</p> <p>Phonetic: /taħ.ði:ra:t min is.tig.la:l tʃæt.dʒi:pi:ti: fi: ʃa.ma.li:ja:t ʔih.ti:ja:l ʔaw dʒa.ra:.'ʔim sar.bi.ra:.'ni:.'jah/</p>

The four headlines in Table 4 illustrate the use of metaphors in the data, i.e. the use of words in a metaphorical sense to express a particular concept or analogy. The first headline likens the production of AI to that of a factory of rumors (مصنع الشائعات) to suggest it is the origin of unreliable information and spreads gossip or hearsay. Furthermore, certain headlines make use of comparisons, such as item 2, in which the term الصعود الصاروخي (meteoric rise) is used to describe the rapid and highly successful development of ChatGPT. This signifies that ChatGPT's advancement has been swift and remarkable, akin to the breathtaking ascent of a rocket.

Metaphors were also employed to issue warnings, as exemplified in item 3. In this headline, a metaphor is used to suggest that AI will be trained to fix errors, likening it to training in error correction in human education. The same can be seen in item 4 which warns of the use of ChatGPT for unlawful purposes, akin to the misuse of a tool, leading to potential injury or peril. This can be seen in the use of the word استغلال (exploit). Hence, metaphors are used to express a range of concepts and analogies in AI-related headlines.

Overstatement

Table 5

Examples of Headlines Coded as "Overstatement"

No.	Examples
	!الذكاء الاصطناعي سيزيد البطالة بشكل كبير جداً
1	English: Artificial intelligence will increase unemployment very significantly! Phonetic: /al-ḍikā' al-ṣiṭna' īyyu sa-yazīdu al-baṭāla šaklān kabīrān/ الذكاء الاصطناعي سيستبدل جميع الوظائف في المستقبل القريب"
2	English: Artificial intelligence will replace all jobs in the near future. Phonetic: /al-ḍikā' al-ṣiṭna' īyyu sa-yustabdil ḡamī' al-wuzā'if fī l-mustaqbal al-qarīb/ زيادة مبيعات مايكروسوفت بسبب الذكاء الاصطناعي بنسبة هائلة.
3	English: Microsoft sales increased significantly due to artificial intelligence. Phonetic: /ziyādah mubay'āt māykrusuft bi-sabab al-ḍikā' al-ṣiṭna' īyyi binisbah hā' ilah/ "تشأت جي بي تي يفشل في الإجابة عن 75 % من الاستفسارات المتعلقة بالأدوية
4	English: ChatGPT fails to answer 75% of inquiries related to medicines. Phonetic: /šāt jī pī tī yafšalu fī l-'ijāba 'an 75% min al-'isti'fārāt al-muta'al-liqah bi-l-'adwiya/ تشأت جي بي تي يعادل الأطباء في تشخيص المرضى الطارئین بدقة متناهية
5	English: ChatGPT is equivalent to doctors in diagnosing emergency patients with great accuracy. Phonetic: /šāt jī pī tī yu'ādilu al-'aṭibbā' fī tašhīṣ al-marḍā al-ṭā'irīn bi-daqqā mutamayyizah/

The analysis showed that writers of Arabic news headlines employ overstatement as a deliberate tactic. The examples in Table 5 show instances of exaggeration either to deliver a message, such as the potential danger of AI tools, or to grab the attention of the readers. Item 1 magnifies the impact of AI on unemployment, implying that AI technology will lead to a huge decrease in the employment rate using the term بشكل كبير (very significantly). Item 2

similarly directs readers' attention to how AI will increase unemployment in the near future. This headline is hyperbolic in its portrayal of AI's capacity to replace "all jobs." The same device can be seen in item 3. Here, the headline announces a substantial increase in Microsoft's sales amounting to a surge due to the implementation of AI capabilities.

In addition, overstatement was employed to signal the limited capability of AI tools, as exemplified in item 4, which warns in exaggerated terms of ChatGPT's failure to respond to medication-related inquiries (75%). In contrast, item 5 contends that ChatGPT can diagnose emergency patients with great precision, equivalent to a medical professional. These instances employ exaggeration to emphasize a certain point, positive or negative, or capture the readers' attention.

Irony

Table 6

Examples of Headlines Coded as "Irony"

No.	Examples
	!رئيس «تشات جي بي تي»: الذكاء الاصطناعي سيزيد البطالة
1	<p>English: ChatGPT CEO: Artificial intelligence will increase unemployment</p> <p>Phonetic: /ra'īs šāt jī pī tī: al-ḏikā' al-ṣiṭna 'īyyu sa-yazīdu al-baṭāla/</p> <p>«ماسك يعزم على تحدي «تشات جي بي تي» بـ«تروث جي بي تي»</p>
2	<p>English: Musk plans to challenge "ChatGPT" with "TruthGPT"</p> <p>Phonetic: /māsk ya'zim 'alā tataddiy šāt jī pī tī bi-«trūth jī pī tī/</p> <p>عراب الذكاء الاصطناعي «يستقيل بسبب المخاطر»</p>
3	<p>English: AI godfather resigns due to risks</p> <p>Phonetic: /'arrāb al-ḏikā' al-ṣiṭna 'īyyi/ yastaqīlu bi-sabab al-mukhatir/</p>

The examples in Table 6 were coded as irony as they represent a contrast between literal and intended meanings. Irony is evident in some of the words and phrases used and the contradictory meanings. For example, in item 1, the headline suggests a warning from the CEO of ChatGPT that the increasing use of AI will lead to a rise in unemployment, which contrasts with readers' expectations that AI will be a solution to unemployment. In item 2, the phrase "challenge 'ChatGPT' with 'TruthGPT'" (تروث جي بي تي) is Musk's satirical response to ChatGPT's privacy being breached. Finally, in item 3, the term "AI godfather" (عراب الذكاء الاصطناعي) is used ironically to indicate that contrary to the expectation that this person will have an interest in promoting AI, he is leaving his post due to the risks associated with it. Irony in these headlines signals contradictions and contrasts to expectations, giving the text a sardonic tone.

Parallelism

Table 7

Examples of Headlines Using Parallelism

No.	Examples
	“ChatGPT” VS “غيجا تشات”
1	<p>English: ChatGPT vs. Giga Chat</p> <p>Phonetic: /'tʃæt dʒiː piː 'tiː/ VS ['giːgə 'tʃæt/</p> <p>“عراب الذكاء الاصطناعي” يستغيث: “سيتفوق علينا ويسيطر”</p>
2	<p>English: The godfather of artificial intelligence pleads: “It will surpass us and dominate”</p> <p>Phonetic: /'ʃɑːb ældɪ'kæːʔ ælʔis'tnɑːʃi jɪs'tʃiːθː siːtʃf'waq ʃɑ'leːnə wɪs'tʃiːʃ/</p> <p>تشات جي بي تي “متهم بالكسل... و”أوبن إيه أي” تحقق</p>
3	<p>English: ChatGPT accused of laziness... and OpenAI investigates</p> <p>Phonetic: /'tʃæt dʒiː piː 'tiː mut'həm bɪl'kasl... wə'ʔuːbən 'eː 'aːi tɑ'hɑqqɑq/</p> <p>البيت الأبيض يبحث مخاطر الذكاء الاصطناعي مع رؤساء “جوجل” و”مايكروسوفت” و”أوبن إيه أي” و”أنثروبك</p>
4	<p>English: The White House discusses the risks of artificial intelligence with the heads of Google, Microsoft, OpenAI, and Anthropic</p> <p>Phonetic: /ælbajt ælʔab'jaðsː jab'hɑθ mʊ'xɑtʃr ældɪ'kæːʔ ælʔis'tnɑːʃi mɑsː 'ruːʔʊsɑːʔ 'guːgl wamajkrʊ'sɒft wə'ʔuːbən 'eː 'aːi wənθ'rubɪk/</p> <p>“عراب الذكاء الاصطناعي” يترك جوجل .. انتبهوا إنه مخيف</p>
5	<p>English: The godfather of artificial intelligence leaves Google... Beware, it's scary</p> <p>Phonetic: /'ʃɑːb ældɪ'kæːʔ ælʔis'tnɑːʃi jɪtrʊk 'guːgl ʔɪn'tʃɛhɔwə 'ʔɪnnɑ mʊ'xiːf/</p> <p>مفاجآت «أوبن إيه أي» الإدارية تتوالى... 500 موظف يهددون بالاستقالة</p>
6	<p>English: OpenAI's administrative surprises continue... 500 employees threaten to resign</p> <p>Phonetic: /mʊfɑ'dʒɑːʔat 'ʔuːbən 'eː 'aːi ælʔɪ'dɑːrɪjə tɪtawælːɑ... 'xɑmsmiːʔat 'muːðʃɪf ʃʊhɪdduːn bɪlɪstrɪ'qɑːlɑ/</p>

Parallelism was employed in newspaper headlines to fulfill different functions, as can be seen in the examples given in Table 7. In item 1, the headline contains the names of only two AI applications, “ChatGPT” and “Giga Chat,” setting them up in competition with each other as a way of inducing readers to find out more about the two AI tools. In item 2, the use of parallelism can be seen at different levels: (i) at the word level, placing the terms سيتفوق and يسيطر in the same clause, and (ii) at the structural level, linking the two independent clauses (سيتفوق علينا ويسيطر and عراب الذكاء الاصطناعي يستغيث) with a colon. Although the structure is similar in each clause, there is a contrasting message, signaling the potential danger of AI.

In item 3, parallelism is achieved through contrasting actions at the semantic level, with ChatGPT accused of laziness (الكسل), whereas OpenAI is taking action by investigating (تحقق). Moreover, at the grammatical level, both sentences use the present tense and passive voice: متهم بالكسل (muhtaram bil-kasal) and تحقق (taḥqiq). Thus, the focus is on the action being done to the subjects (ChatGPT and OpenAI) rather than who is performing the action. Also, both

parts follow the same subject-verb order: تشأت جي بي تي (ChatGPT) and OpenAI, followed by the verbs متهم (muhtaram) and تحقق (tahqiq). Here, employing parallelism creates a balanced and easy-to-follow structure, demonstrating consistency. In item 4, there is also parallelism in the repeated structure (مع رؤساء, with the presidents) used to list the different companies ("جوجل" و"مايكروسوفت" و"أوبن إيه آي" و"أنثروبيك"). This creates a clear and organized presentation of the entities involved, making it easy for the reader to understand who is involved and why they are gathering. The use of parallelism also helps to emphasize the importance of the companies and the urgency of the topic, namely the “risks of AI.”

In addition, parallelism can be used to establish a contrast or opposition, as demonstrated in item 5, “AI godfather resigns due to the potential risks it poses” (عراب الذكاء الاصطناعي يترك جوجل .. انتبهوا إنه مخيف). The phrases “due to” and “the potential risks it poses” give a parallel structure to the sentence and draw attention to the contrast between the two parts—the proponent of AI on the one hand and his resignation due to the dangers on the other. The same structure is evident in item 6: “OpenAI's administrative surprises continue... 500 employees threaten to resign” (مفاجآت «أوبن إيه آي» الإدارية تتوالى... 500 موظف يهددون بالاستقالة). Here, there is a connection between the structure of the sentence and the use of the terms “continue” and “threaten.”

The use of parallelism in these headlines generates a sense of focus and urgency. According to Murdick (2003, p. 205), parallelism is a technique that is used to emphasize a certain point or idea. The recurrence of the grammatical structure serves to highlight the main points or ideas that the author is trying to convey.

Rhetorical Questions

Table 8

Examples of Headlines Using Rhetorical Questions

No.	Examples
	وكيل الذكاء الاصطناعي الخصوصي: هل نحن جاهزون له؟
1	<p>English: The special agent of artificial intelligence: Are we ready for it?</p> <p>Phonetic: /wa'ki:l ældɪ'kæ:ʔ ælʔis'tnɑ:ʕi ælxu's'u:si: hæl naħnu 'dʒa:ħizu:n lahu?/</p> <p>بعد الاستعانة بالذكاء الاصطناعي. هل مهنتك في خطر؟</p>
2	<p>English: After the use of artificial intelligence, is your job in danger?</p> <p>Phonetic: /baʕd ælistɪ'ʕɑ:næ bældɪ'kæ:ʔ ælʔis'tnɑ:ʕi. hæl mɪh'nætɪk fɪ 'xɑtʔar?/</p> <p>متخصصون بمعرض جدة للكتاب يتساءلون: هل يصنع الذكاء الاصطناعي كتاباً للطفل؟</p>
3	<p>English: Experts at the Jeddah Book Fair wonder: Can artificial intelligence make a children's book?</p> <p>Phonetic: /mɔtxas'su:n bɪ'maʕrad 'dʒɪddæ lɪl'kɪtɑ:b ʒɪt'sɑ:ʔalu:n: hæl ʒɪs'naʕ ældɪ'kæ:ʔ ælʔis'tnɑ:ʕi kɪ'tɑ:bæn lɪl'tɪfl?/</p>

A rhetorical question is a query employed as a persuasive or directive device. It can be used to indicate uncertainty or inquiry (Koshik, 2005), and there is no expectation of a response from the audience or the reader. Rhetorical questions were employed less frequently than other devices in the AI-related headlines, numbering only nine instances. In Table 8, the rhetorical

question in item 1 is employed to convey uncertainty regarding the readiness of individuals or societies to confront or grapple with the level of technical advancements in the field of AI. This question seeks to bring attention to the potential concerns associated with the implementation of new technology and AI in particular. A similar concern is raised in terms of jobs in item 2, essentially alerting the readers to the potential danger to their careers. Rhetorical questions can be used in multiple ways, as in item 3, which is related to authorship. All these examples show rhetorical questions being used to make a point and raise concerns about the use of AI in various aspects of life.

Discussion

The descriptive analysis, presenting the frequencies and percentage distributions of rhetorical appeals and tropes and schemes, shows the techniques mass media employ in shaping public perceptions, especially when it comes to emerging technologies such as AI. Mass media, a primary source of information for the public, is important for the portrayal of AI-related issues in the news media undeniable impact (Fast & Horvitz, 2017; Garvey & Maskal, 2020). Ouchchy et al. (2020) contend that the agenda of the discourse surrounding new technologies is shaped by media reports. The discourse regarding AI as representation in Arabic newspaper headlines is the thrust of this study. It highlights the importance of inspecting how AI is presented to the public across languages and cultures. The study contributes to the body of relevant literature showing the omnipresence of the phenomenon across disciplines—and healthcare (Zhai et al., 2021) and politics (Wu, 2017) are illustrative examples of addressing the emergence of AI-related issues.

Rhetorical Appeals (Ethos, Pathos, Logos)

In Arabic newspaper headlines on AI, the most common device identified in this study was the appeal to logos, compared to the other two rhetorical appeals—ethos and pathos. In an attempt to persuade readers, the headline writers presented factual information regarding AI technologies using proof, data, and logical reasoning, highlighting the potential advantages of AI. This strategy is helpful in maximizing confidence and showing AI as a disruptive technology that can be relied upon. This, in part, aligns with Korneeva et al. (2023) as to the apparent change in general attitude towards AI in media coverage. Likewise, Roe and Perkins (2023) reported on headlines in UK news media that used AI in a nuanced manner, underscoring its advantages and disadvantages. The focus on logos as a rhetorical device in headlines is consistent with the tactics evidenced in prior research findings, such as those by Aziz (2022), which suggest a tendency in journalistic discourse to persuade readers through reasoned arguments supported by proof. This underscores the importance of media in shaping the public's view of AI.

This study, employing the pragma-rhetorical approach, also demonstrated how pathos were used in the headlines for creating strong feelings among readers, which is echoed in Aziz's (2022) study of rhetorical devices and pragmatics in COVID-19 headlines. The author capitalized on emotional appeals to convince readers. The emotive language, vivid descriptions, and references to social issues in AI-related headlines draw readers' attention as

they signal urgency and concern about salient issues. This is in line with Cheatham et al.'s (2019) concerns about the possible hazards and moral issues related to AI.

The analysis of rhetorical appeals showed that ethos was less frequently employed than logos or pathos. However, the use of ethos as a tool to reflect the credibility of AI-related issues is consistent with the significant role of media in agenda-setting. Neuman et al. (2014) noted that the reliability of news outlets influences the public's comprehension of new technologies. Trustworthy news outlets wield significant power in shaping public understanding and opinions.

Pragmatic Strategies and Rhetorical Tropes Employed in AI-related Headlines in Arabic Newspapers

Rhetorical tropes and schemes (also known as figures of speech or linguistic devices) have been employed to elucidate ideas and produce persuasive effects. An eclectic model of analysis combines components from Grice's (1975) conversational maxims, Searle's (1969) speech acts, and Grundy's (2019) rhetorical analysis. This combination of frameworks aids in identifying rhetorical devices, such as rhetorical questions and metaphors, in persuasive language. Previous research has employed similar pragmatic tactics (Aziz, 2022).

The most used strategy is metaphor, which occurs 68 times in the data. This high frequency denotes the prevalent use of figurative language and comparisons to convey meaning. In addition, there is the use of irony, but this is less prominent than metaphor, with 45 instances identified. Both parallelism and overstatement are relatively frequent, appearing 24 and 17 times, respectively. This could suggest a deliberate focus on key points through repetitive language and exaggerated expressions. In contrast, the use of rhetorical questions is sparing, with only nine instances observed, suggesting a preference for alternative strategies over direct audience engagement.

The use of rhetorical tropes, such as metaphors, irony, and overstatements, in Arabic newspapers highlights the rich linguistic heritage of Arabic, known for its poetic and metaphorical style. For instance, AI is metaphorically termed a “source of unfounded speculation” and credited with a “meteoric ascent,” not only vividly conveying the message but also mirroring the cultural inclination toward expressive language (Aziz, 2022). The cultural choices of rhetorical strategies in Arabic AI discourse are grounded in cultural values and linguistic traditions. These prioritize pragmatic strategies, such as metaphor and parallelism, focusing on how something is said rather than what is said. This contrasts with Western media, which may present AI in a more direct and fact-based manner, reflecting the different cultural backgrounds and linguistic practices (Ismail, 2016; Lee et al., 2005).

Societal Ideologies and Rhetoric in AI Discourse:

Examining AI-related discourse in Arabic newspapers, particularly in terms of the significant emphasis on logos and the strategic use of rhetorical tropes such as metaphors and overstatements, there is a complex interplay between pragma-rhetorical strategies, societal ideologies, and media stylistics. The findings illustrate the rhetorical appeal of logos being used to demystify AI by presenting its capabilities and potential benefits for organizations (Fast &

Horvitz, 2017; Garvey & Maskal, 2020). Employing this strategic focus not only educates the public but also nurtures trust in AI technologies, enabling their seamless integration in the societal fabric. In contrast, pathos brings to light ethical considerations and societal implications that naturally accompany the adoption of AI, hence generating a balanced discussion in the public between the duality of the promise and risks resulting from AI. This discussion reflects the predominant ideologies in society that inform attitudes toward technology, progress, and society's envisioned role for AI.

Finally, Arabic media has its own set of unique stylistic conventions that are very important in shaping AI discourse. There appears to be a preference for the use of metaphors and overstatements, which can quite often make the text more appealing to the reader when dealing with complex subjects such as AI. This stylistic preference not only helps address the complexities related to technological concepts but also naturally makes the discourse lively (Cheatham et al., 2019). It illustrates the interplay between rhetorical strategies, media stylistics, and social ideologies, offering insights into public discourse concerning AI within the Arabic-speaking world, with a special focus on the role that media plays in molding public understanding and attitudes toward AI.

Media Portrayal and Public Perceptions of AI in Arabic Newspaper Headlines

The findings of this study are consistent with those of earlier studies that examined public perceptions of AI and its governance. For instance, Gao et al. (2019) undertook a comparative analysis of China's national AI policy based on keywords aligned with international research trends in AI from 2009 to 2018. O'Shaughnessy et al. (2023) investigated public perceptions of AI governance in the U.S. and reported on societal and cultural viewpoints, as well as concerns about AI.

This study also links to previous studies examining how media coverage of AI has changed over time. Korneeva et al. (2023) examined media coverage of AI on prominent international news channels over a considerable period (2013–2022) and found that coverage has generally become more positive over time, moving from early skepticism to growing hope for its possible advantages. Zhai et al. (2020) investigated how major media outlets covered AI over three decades and identified diverging viewpoints and dissemination regarding AI in popular culture.

The findings also align with research on how language and rhetoric shape the public perception of emerging technologies. For example, Lee et al. (2005) highlighted the importance of language structure in explaining the concept of AI and its role in communication. Ismail (2016) reported how language provides readers with hints to interpret messages concerning AI within their cultural and societal context. Furthermore, Roe and Perkins (2023) reported a nuanced representation of AI in the media, with some focusing on advantages and others on hazards. News outlets frequently exaggerate stories concerning AI, emphasizing caution regarding its applications, thus shaping public opinion of AI as a cause for concern rather than a potential benefit.

With these findings in mind, this study enhances understanding of how media coverage of AI-related subjects is presented in the Arabic-speaking setting by concentrating on the pragmatic presentation of different themes in Arabic newspaper headlines. The study provides

points to how language choices, rhetorical strategies, and persuasive appeals are used in media discourse related to AI. By focusing on the pragmatic techniques used in Arabic newspaper headlines, the study adds to the existing research and advances knowledge of how AI discourse changes and is presented in various linguistic and cultural contexts.

Conclusion

This study touched on AI-related headlines and how their pragmatic presentation with an emphasis on rhetorical appeals, tropes, and schemes that are purposefully used to influence readers. The findings thus strengthen prior research by informing on how language and rhetoric form views concerning emerging technologies among the general public. The study findings also point to the significance of cultural and linguistic nuances in media discourse. Employing the rich linguistic traditions of Arabic, including metaphors and expressive language, in discussions concerning AI helps place the discourse not only in the public realm but also within the bounds of the cultural domain. This cultural framing could affect how AI policies are designed and debated within the region. It underpins the need for culturally attuned policies that reflect, respect, and adhere to the values and norms of society. The study illustrates the role that media plays in agenda-setting and the presentation of public discourse on emerging technologies like AI (Ouchchy et al., 2020). This reinforces the call for transparent and responsible communication from all stakeholders involved in AI development as media plays a critical role in shaping the ecosystem for debate and policy formulation around emerging technologies. Notably, the study underscores the need for policymakers, educators, and technology developers to have a grasp of rhetorical strategies and their implications in framing public attitudes toward issues related to the development of AI technologies and ethical considerations.

The study, in its current form and content, has some limitations that provide ground for more research. For one thing, the study recruited a relatively small number of media outlets and headlines owing to scope and time constraints. Further research may employ larger datasets to explore a wider range of linguistic devices useable for delivering messages about AI in the media discourse. This study only focused on the presentation of AI headlines in four popular Arabic newspapers, representing a hitherto unexplored area. It would be of value to conduct in-depth studies across different media channels to enhance understanding of pragmatic language use related to AI more broadly. Finally, studies could explore the consumers' perceptions of media messaging to gauge the response of the public to language use and representations in media discourse.

Bio

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References

- Aristotle. (1991). *The art of rhetoric*. Penguin.
- Aziz, R. N. (2022). Pragma-rhetorical analysis to Covid-19 headlines. *Social Sciences & Humanities Open*, 6(1), 100340.
- Bellman, R. (1978). *An introduction to artificial intelligence: Can computers think?* Boyd & Fraser.
- Brennen, J. (2018). An industry-led debate: How UK media cover artificial intelligence. In *Reuters institute for the study of journalism. Reuters Institute for the Study of Journalism*.
- Cacciatore, M. A., Anderson, A. A., Choi, D. H., Brossard, D., Scheufele, D. A., Liang, X., & Dudo, A. (2012). Coverage of emerging technologies: A comparison between print and online media. *New Media & Society*, 14(6), 1039-1059.
- Cath, C. (2018). Governing artificial intelligence: ethical, legal and technical opportunities and challenges. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, 376(2133).
- Cheatham, B., Javanmardian, K., & Samandari, H. (2019). Confronting the risks of artificial intelligence. *McKinsey Quarterly*, 2, 1-9.
<https://www.mckinsey.com/capabilities/quantumblack/our-insights/confronting-the-risks-of-artificial-intelligence>
- Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurement*, 20(1), 37-46.
<https://doi.org/10.1177/001316446002000104>
- Creswell, J. W., & Poth, C. N. (2016). *Qualitative inquiry and research design: Choosing among five approaches*. Sage Publications.
- Demirdöğen, Ü. D. (2010). The roots of research in (political) persuasion: Ethos, pathos, logos and the Yale studies of persuasive communications. *International Journal of Social Inquiry*, 3(1), 189-201.
- Ding, H., & Kong, Y. (2019). Constructing artificial intelligence in the US and China: A cross-cultural, corpus-assisted study. *China Media Research*, 15(1).
- Elias J (2023) Google CEO Sundar Pichai warns society to brace for impact of A.I. acceleration, says “it’s not for a company to decide.” In *CNBC*. <https://www.cnbc.com/2023/04/17/google-ceo-sundar-pichai-warns-society-to-brace-for-impact-of-ai-acceleration.html>
- Elliott, A. (2019). *The culture of AI: Everyday life and the digital revolution*. Routledge.
- Fast, E., & Horvitz, E. (2017, February). Long-term trends in the public perception of artificial intelligence. In *Proceedings of the AAAI conference on artificial intelligence*, 31(1).
- Gao, J., Huang, X., & Zhang, L. (2019). Comparative analysis between international research hotspots and national-level policy keywords on artificial intelligence in China from 2009 to 2018. *Sustainability*, 11(23), 6574.

- Garvey, C., & Maskal, C. (2020). Sentiment analysis of the news media on artificial intelligence does not support claims of negative bias against artificial intelligence. *Omics: A Journal of Integrative Biology*, 24(5), 286-299.
- Grice, H. P. (1975). Logic and conversation. In P. Cole & J. Morgan (Eds.), *Syntax and semantics*, 3, (pp. 41-58). Academic Press.
- Grice, H. P. (1975). Logic and conversation. In *Speech acts* (pp. 41-58). Brill.
- Grundy, P. (2019). *Doing pragmatics*. Routledge.
- Grundy, S. M. (2008). Metabolic syndrome pandemic. *Arteriosclerosis, Thrombosis, and Vascular Biology*, 28(4), 629-636.
- Higgins, C. & Walker, R. (2012). Ethos, logos, pathos: Strategies of persuasion in social/environmental reports. *Accounting Forum*, 36(3), 194-208.
<https://doi.org/10.1016/j.accfor.2012.02.003>
- Hutcheon, L. (2000). Irony, nostalgia, and the postmodern. In *Methods for the study of literature as cultural memory* (pp. 189-207). Brill.
- Ismail, H. M. (2016). Pragmatic and semantic potential of newspaper headlines. *US-China Foreign Language*, 14(11), 753-762.
- Korneeva, E., Salge, T. O., Teubner, T., & Antons, D. (2023). Tracing the legitimacy of artificial intelligence: A longitudinal analysis of media discourse. *Technological Forecasting and Social Change*, 192, 122467.
- Larrazabal, J. M., & Koorta, K. (2002). Pragmatics and rhetoric for discourse analysis: Some conceptual remarks. *Manuscrito: Revista Internacional de Filosofia*, 25(2), 233-248.
- Lee, C. J., Scheufele, D. A., & Lewenstein, B. V. (2005). Public attitudes toward emerging technologies: Examining the interactive effects of cognitions and affect on public attitudes toward nanotechnology. *Science Communication*, 27(2), 240-267.
- Leech, G. N. (2016). *Principles of pragmatics*. Routledge.
- Moezzi, M., Janda, K. B., & Rotmann, S. (2017). Using stories, narratives, and storytelling in energy and climate change research. *Energy Research & Social Science*, 31, 1-10.
- Neuman, W. R., Guggenheim, L., Mo Jang, S. A., & Bae, S. Y. (2014). The dynamics of public attention: Agenda-setting theory meets big data. *Journal of communication*, 64(2), 193-214.
- O'Quinn, K. (2009). The elements of persuasion: Three principles that will strengthen any appeal. *Public Relation Tactics*, 16(2), 20.
- O'Shaughnessy, M. R., Schiff, D. S., Varshney, L. R., Rozell, C. J., & Davenport, M. A. (2023). What governs attitudes toward artificial intelligence adoption and governance? *Science and Public Policy*, 50(2), 161-176.
- Ouchchy, L., Coin, A., & Dubljević, V. (2020). AI in the headlines: The portrayal of the ethical issues of artificial intelligence in the media. *AI & Society*, 35, 927-936.
- Pichai, S. (2023, October 11). Google AI updates: Bard and new AI features in Search. [Google Blog]. Retrieved from <https://blog.google/technology/ai/bard-google-ai-search-updates/>
- Ramsay, G. (2012). Online arguments against Al-Qaeda: An exploratory analysis. *Perspect Terror*, 6(1), 54-69.

- Roe, J., & Perkins, M. (2023). What they're not telling you about ChatGPT: Exploring the discourse of AI in UK news media headlines. *Humanities and Social Sciences Communications*, 10(1), 1–9.
- Searle, J. (1969). *Speech Acts: An essay in the philosophy of language*. Cambridge University Press.
- Searle, J. R., & Vanderveken, D. (1985). Speech acts and illocutionary logic. In *Logic, thought and action* (pp. 109-132). Springer.
- Sun, S., Zhai, Y., Shen, B., & Chen, Y. (2020). Newspaper coverage of artificial intelligence: A perspective of emerging technologies. *Telematics and Informatics*, 53, 101433.
- Van Eemeren FH, Wu, P. (Eds.) (2017). *Contextualizing pragma-dialectics*. John Benjamins Publishing Company.
- Wicks, D. (2017). The coding manual for qualitative researchers. *Qualitative Research in Organizations and Management: An International Journal*, 12(2), 169–170.
- Zhai, Y., Yan, J., Zhang, H., & Lu, W. (2020). Tracing the evolution of AI: conceptualization of artificial intelligence in mass media discourse. *Information Discovery and Delivery*, 48(3), 137–149.
- Zhang, B., & Dafoe, A. (2020). US public opinion on the governance of artificial intelligence. In *Proceedings of the AAAI/ACM conference on AI, ethics, and society* (pp. 187–193).