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A COMPARATIVE APPRAISAL ANALYSIS OF ENGAGEMENT IN JOE BIDEN'S AND DONALD TRUMP'S SPEECHES

Fahad Dighaishim Alshammari and Hesham Suleiman Alyousef

Abstract

The present study analyzed Engagement strategies used in political discourse, examining how politicians construe certain stances relative to other voices and how they align or dis-align with their audience. To this end, the study employed Martin and White's (2005) appraisal theory to examine the Engagement resources utilized in speeches delivered by the 46th US President Joe Biden and the 45th and 47th President Donald Trump during their campaigns for the 2024 US presidential election during their campaigns for the 2024 US presidential election. Instances of Engagement were identified, tallied, and classified into their respective sub-categories. The findings showed a consistent pattern in terms of the frequencies of the sub-categories of Engagement in the two speeches, with Heteroglossia being more frequent than Monoglossia. Results of the normalized frequencies indicated that contracted and expanded resources were more often employed by Trump than by Biden. However, a fine-grained analysis underscored distinct stylistic differences in the utilization of these resources by the two speakers. The study sheds light on the nuanced nature of political discourse and provides insights into how politicians use Engagement resources to construe certain stances and to communicate with their audience.

Keywords

engagement, political discourse, systemic functional linguistics, political speech

1 Introduction

Politicians' success or failure depends, at least partially, on their skills to persuasively and effectively use language. By and large, this claim seems to be correct especially in the context of elections where politicians seek to convince the voters of their views. Chilton (2004) notes that there is an inextricable bond between language and politics. In accordance with this view, Fairclough and Fairclough (2012) state that an intentional use of linguistic resources to achieve certain political agendas is common in political discourse.

There are several definitions of political discourse proposed in the literature. For instance, van Dijk (1997) views political discourse as the politically contextualized text and talk produced by "all participants in the political process" (p. 13). Those participants, van Dijk (1997) goes on, may be professional politicians, such as, presidents, ministers, or members of governments; political institutions, such as, parliaments and political parties; or the public. It is worth noting that van Dijk's definition excludes talk and text that is not politically

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contextualized. In this view, context is a divisive factor for the categorization of discourse as political. Fairclough and Fairclough (2012) note that political discourse encompasses many sub-genres, including presidential debates, political speeches, parliamentary sessions, media discussions, social media interactions, and written publications. All these sub-genres aim to achieve certain political purposes, such as, informing the public about policies, convincing the audience of certain views, forming public opinions, obtaining and/or motivating the audience's emotion, encouraging people to be party loyalists, gaining people's votes, to name but a few (Fairclough & Fairclough, 2012; van Dijk, 1997; Wodak, 2009).

While political discourse may share several features with other types of discourse (e.g., intentionality, conventionality, emotiveness, modality), Kenzhekanova (2015) identifies four features that are particularly peculiar to political discourse, including agonistic ability, aggressiveness, ideological character, and theatricality. The first three features revolve around competitiveness, domination, and power, whereas theatricality relates to the role taken on by the public as an observer, or in Kenzhekanova's terms, "a spectator audience". Within this view, politicians performing in a political event act before the public, seeking to convince people of their views. In the same vein, Chilton (2004) points out that political actors employ linguistic strategies to portray their views positively while casting those of their opponents in a negative light. Aljuraywi and Alyousef (2022) explain that this strategic use of language highlights the connection between political discourse and appraisal theory. In other words, political actors use appraisal strategies to shape public perception and align the audience with certain perspectives.

Political discourse is commonly analyzed through the approach of Critical Discourse Analysis (CDA) (Dunmire, 2012). Although CDA has been proved to be useful in highlighting, among other things, the relationship between language, power, and politics, many researchers (e.g., Blommaert, 2005; Schegloff, 1997; Slembrouck, 2001; Widdowson, 1995) have noted weaknesses in terms of its methodology. Blommaert (2005), for instance, observes that one of the shortcomings of CDA is its biased and restrictive interpretations of data. In this paper, we argue that Martin and White's (2005) appraisal theory (outlined below) provides a more systematic approach to analyzing political discourse, reducing the level of subjectivity imposed by the researcher.

The present study aimed to examine two political speeches delivered by the American president, Joe Biden, and the former American president, Donald Trump, in their campaigns during the 2024 American presidential election. The study adopts Martin and White's (2005) appraisal theory as an analytical

framework. The appraisal theory provides a comprehensive map that could be utilized in political discourse analysis, providing an analytical tool that not only examines the effect of evaluative expressions, but also gives a better understanding of "the interplay of interpersonal meaning and social relations in the model of language" (Martin, 2000, p. 148). The appraisal theory has three sub-systems: Attitude, Graduation, and Engagement. Attitude covers emotions, ethics, and aesthetics. Graduation concerns gradeability, or intensity, of attitudes. Finally, Engagement deals with the interplay of voices and how they are related in the discourse.

The appraisal theory is a powerful tool that sheds a critical light on the interpersonal meanings expressed by speakers and writers (Oteíza, 2017). In the same line of reasoning, Thompson and Hunston (2000) emphasize the flexibility of the appraisal framework as a valuable tool that can be applied in different disciplines. Indeed, the appraisal framework has been proved to be flexible in application across a range of various fields, including, but certainly not limited to, politics (e.g., Aljuraywi & Alyousef, 2022; Coffin & O'Halloran, 2006; Li & Zhu, 2019; Ross & Caldwell, 2020), casual conversation (e.g., Eggins & Slade, 2004), literacy (e.g., Hood, 2004; Martin, 1996), narratives and gender (e.g., Page, 2003), pedagogy (e.g., Macken-Horarik & Isaac, 2014), and stylistic variation (e.g., Martin, 2000).

Due to space constraints, the focus of the study was on the sub-system of Engagement as a framework because it provides a window on how politicians position themselves in relation to other voices, and how they establish a relationship with their audience. To the best of our knowledge, no research has investigated the system of Engagement in the political speeches delivered by Biden and Trump in their presidential campaigns during the 2024 American presidential election. The present study has the potential to enhance our understanding of how politicians use Engagement resources to achieve certain political purposes.

2 Theoretical framework

The appraisal framework is grounded in Halliday's (1975; 2014) Systemic Functional Linguistics (SFL). The central tenet of SFL is that language is used to serve three metafunctions or meanings, namely, ideational, interpersonal, and textual. The ideational meaning concerns the content of the discourse and how experiences, events, and realities, are represented in the language. The interpersonal meaning concerns the relationships between interactants and their judgments and attitudes regarding the event being talked about. The textual

meaning deals with how the other two meanings (i.e., ideational and interpersonal) are coherently and cohesively organized into a unified meaningful unit.

Drawing upon Halliday's (1975; 2014) SFL, Martin and White (2005) and their colleagues (e.g., Martin & Rose, 2008) developed appraisal theory. The term 'appraisal', as defined by Martin (2000), refers to the "semantic resources used to negotiate emotions, judgments, and valuations, alongside resources for amplifying and engaging with these evaluations" (p. 145). Martin and White (2005) position the appraisal theory within interpersonal meaning, complementing the systems of negotiation and involvement.

Martin and White's (2005) appraisal theory has three interrelated systems, namely, Attitude, Graduation, and Engagement. The Attitude system pertains to the construal of "emotional reactions, judgements of behavior and evaluation of things" (Martin & White, 2005, p. 35). The Graduation system concerns gradeability; that is, scaling up or down the degree of the attitudinal meanings. Engagement deals with the dialogic nature of texts; that is, the source of attitudes, and the interplay of voices in discourse (Martin & White, 2005). Each of these systems has its own sub-categories. The present study focuses on the system of Engagement because it reveals how politicians construe certain stances relative to other voices and how they align or dis-align with their audience. This paper argues that an analysis of Engagement resources may uncover the various strategies used by politicians, shedding a critical light on the persuasive functions of political speeches. What follows is a description of the system of Engagement. A detailed account of the sub-systems of the appraisal theory is found in Martin and White (2005).

As mentioned above, Engagement concerns the position of the voice of speakers/writers in relation to the other voices in the event (Martin & White, 2005). In other words, it deals with how speakers and writers take a certain stance towards a particular evaluation, positioning their listeners/readers to align or dis-align with that stance. Within the system of Engagement, the main distinction is between Monoglossia and Heteroglossia. The development of this distinction can be traced back to Bakhtin (2010), who has pointed to the dialogic nature of verbal communication in the sense that an utterance does not exist on an island. Bakhtin's metaphorical use of island indicates that utterances are always connected to previous or subsequent discourse. In this view, speakers and writers always have a certain stance that may, or may not, influence the stance of their listeners and readers. Drawing on the work of Bakhtin (2010), Martin and White (2005) point out that Monoglossia, as shown in Example (1), concerns the exclusion of alternative positions. In contrast, Heteroglossia refers to the recognition of alternative positions, as exemplified in (2).

(1) Speaker: *The president has been confident.* (monoglossic)

(2) Speaker: *It appears to me that the president has been confident.* (heteroglossic)

The monoglossic engagement in (1) indicates that the speaker is very certain about what s/he is saying with no references to any other voices. This certainty is expressed by the absence of linguistic expressions, such as, 'hedges', 'tag questions', 'modality', and 'evidentiality', etc. (Martin & White, 2005). In contrast, Heteroglossia, as Example (2) shows, is used to acknowledge that there might be other possibilities, of which the speaker's stance is just one. This is evident in the use of *it appears to me*, in which other possibilities are not excluded, signaling that other people may have views that are different from the speaker's.

Martin and White (2005) suggest two broad sub-categories of Heteroglossia, namely, Contract and Expand (Figure 1). Contracted expressions are used when the speaker/writer narrows down other alternative positions. Conversely, expanded expressions allow alternative positions. White (2003) suggests that expansion and contraction are placed at opposite ends of a continuum. At one end there are contracted expressions, such as, *everyone knows*, which leaves no or less space for other possibilities, such as a legitimate disagreement. At the opposite end of the continuum are expanded expressions, such as, *some people believe*, which acknowledges that there are other possibilities or alternative positions.

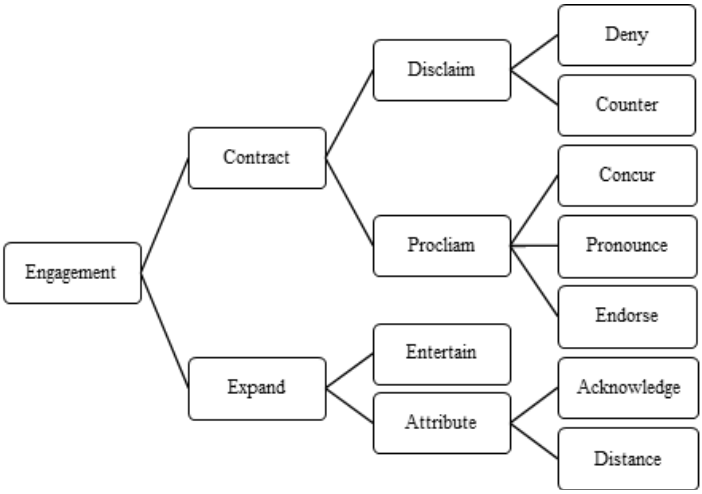

Figure 1: The system of Engagement, adapted from Martin and White (2005)

Martin and White (2005) suggest that contracted expressions can be further classified into Disclaim and Proclaim (Figure 1). Disclaim occurs when the textual voice (i.e., speaker or writer) rejects other alternative positions. This can be realized by denying or negating (e.g., *You don't have to be rich in order to be happy.*), or by countering expectations, which typically involves the use of adverbials and/or conjunctions (e.g., *Although he is poor, he is happy.*). It is worth stressing that both disclaimers (i.e., Deny and Counter) are used to steer the listeners/readers away from a certain point of view. In contrast, Proclaim occurs when a proposition is represented as highly warrantable in the sense that the textual voice rules out other possibilities. In other words, Proclaim utterances, unlike disclaimers, do not explicitly deny or replace a proposition; rather, they restrict possible dialogistic alternatives in order to provide support for a particular stance. As Li et al. (2019) notice, speakers/writers may sway listeners/readers into adopting a specific stance. This can be realized by expressions of Concurrence which establish a stance by which speakers/writers align themselves with or have the same knowledge as their listeners/readers, suggesting that the proposition be accepted or taken for granted (e.g., *naturally*, *of course*, *obviously*, etc.). Proclaim can also be realized by Pronouncement in which speakers/writers make a clear evaluative stance (e.g., *I confirm, there is no doubt that*, etc.). Lastly, the realization of Proclaim may also appear through Endorsement which appeals to an external voice (e.g., *X has pointed out that, as X has shown*, etc.).

Expand, on the other hand, involves the recognition of other possibilities. According to Martin and White (2005), expanded expressions can be classified into Entertain and Attribute (Figure 1). Entertain occurs when the textual voice presents itself as just one possibility among other possibilities (e.g., *it appears, perhaps, maybe, it is possible, in my opinion*, etc.). These expressions allow for, or at least do not exclude, other alternative possibilities. The second sub-category of Expand is Attribute, which occurs when the textual voice represents a proposition as grounded in the subjectivity of an external voice. That is to say, the textual voice dissociates itself from the proposition by attributing it to an external voice. This can be realized by Acknowledgement (e.g., *he said, he believes, according to him*, etc.) where the textual voice adapts a neutral position in relation to the external voice. Attribute may also be realized through Distance, whereby speakers/writers distance themselves from the proposition (e.g., *he claims, he alleged*, etc.).

3 Review of related literature

The Engagement system has been applied in a range of various areas of research, including political discourse (e.g., Becker, 2009; Li et al., 2019), pedagogy

(e.g., Hyland, 2005; Mei, 2007; Mori, 2017), media discourse (e.g., Alwohaibi & Alyousef, 2023), stylistic variation (e.g., White & Sano, 2006). Engagement is particularly important when it comes to understanding how politicians position themselves in relation to the other voices in the discourse. What follows is a review of the previous research using the system of Engagement as an analytical tool to examine political speeches.

Li et al. (2019) compared the frequency and function of Engagement resources used by Chief Secretary for Administration Mrs. Carrie Lam, in two political events (i.e., the same politician delivered two speeches in a meeting and in a debate). Li et al. (2019) found that monoglossic utterances were rarely used in both of the speeches (13% in the meeting and 12.3% in the debate). In regard to the sub-categories of Heteroglossia, the findings showed that expanded expressions were used in both events more often than contracted expressions. Li et al. (2019) explained that the speaker's choices depended on the topic under discussion. For instance, when talking about law and order, the speaker tended to use contracted expressions to prevent anyone from challenging law and authorial standards. Conversely, when talking about public opinions, the speaker tended to use expanded expressions to establish an open-minded and welcoming position. Surprisingly, when comparing the speaker's uses of Expand in the two events (i.e., the meeting and the debate), the authors found that the occurrences of expanded expressions in the debate were more than those in the meeting. This seems to go against the expectations that speakers may tend to be more open-minded in a meeting than in a debate. However, the authors failed to provide a clear explanation for such patterns.

Zhang and Pei (2018) carried out a contrastive analysis of appraisal resources used by Xi Jinping and Donald Trump in their speeches that were delivered at World Economic Forum. The researchers found that both leaders used heteroglossic expressions more often than monoglossic ones. The findings showed that heteroglossic utterances may indicate the leaders' preferences not to express their personal views; rather, they tend to express views from the perspective of their nations. Additionally, in contrast to the findings of Li et al. (2019), Zhang and Pei (2018) found that both leaders used contracted utterances more often than expanded ones. These conflicting findings may be accounted for by the distinct contexts in which the political speeches were delivered. In the first study, the speakers' main purposes were to alleviate the anger of some protestors. However, this is not the case in Zhang and Pei's (2018) study, where the speakers were not concerned about appeasing their own people; rather, their main purposes were to express the view of their countries at a global forum. The main point here is that, based on the findings of these studies, context seems to be

a decisive factor, explaining the different patterns of uses of expanded/contracted propositions.

Ademilokun (2016) applied the appraisal framework to a number of post-elections speeches delivered by candidates who had lost the elections. In contrast to the general tendency in the literature where heteroglossic uses seem to be dominant in political speeches, the findings of Ademilokun's (2016) study showed that the use of monoglossic propositions was predominant. Ademilokun (2016) argued that this may be accounted for by the candidates' tendency to present their views as factual. The researcher also identified instances of Entertain whereby the defeated candidates sought to raise the possibility that the result of the election was not fair. However, it must be acknowledged that Ademilokun (2016) did not provide statistical data supporting his findings.

It is clear from the previous studies discussed above that the Engagement system offers a window that sheds a critical light on political speeches. As Alwohaibi and Alyousef (2023) emphasize, through the lens of Engagement system, one can explore how speakers/writers position themselves in relation to other voices, on the one hand, and how they align or dis-align their listeners/readers with these voices, on the other. The present study aimed to contribute to the field by investigating how Joe Biden and Donald Trump use Engagement strategies to address the voters during their campaigns for the 2024 American presidential elections.

4 Methodology

4.1 Research design

The present study aimed at examining Engagement strategies employed by the 46th US President Joe Biden and the 45th and 47th US President Donald Trump. It also examined the dialogistic functionality of these strategies to shed a critical light on how Biden and Trump position themselves in regard to other voices. Quantitative and qualitative approaches were adopted to examine the data. The quantitative approach was meant to count and compare the frequency of occurrences of Engagement strategies employed in the two speeches. The qualitative approach aimed to critically analyze the dialogistic functionality of the Engagement resources in light of the larger context. Illustrative excerpts selected from both speeches are provided in the results and discussion section.

4.2 Data collection

The data consisted of two speeches delivered by 46th US President Joe Biden and 45th and 47th US President Donald Trump during their campaigns for the

2024 presidential election. The selection of those speeches may be accounted for by the resounding success that those politicians have achieved as they were widely regarded as the front-runners in the US 2024 presidential election. The selected speeches covered a broad range of issues relevant to American citizens in particular and the whole world in general. These included various topics covering the key themes of the 2024 election, such as, the economy, democracy, education, military, foreign and domestic policy, and the nation's future.

President Biden delivered his speech on 25 April 2023 at North America's Building Trades Unions in Washington. President Donald Trump delivered his speech on 25 September 2023 in Summerville, South Caroline. The word count for the first and second speeches are 4,835 and 7,480, respectively (Table 1).

Speeches	Number of words
Joe Biden	4,835
Donald Trump	7,480
Total	12,315

Table 1: The datasets of the study

The transcription of Biden's speech was retrieved from the official website of the White House (Biden, 2003). Trump's speech was retrieved from https://www.c-span.org, a non-profit website created by the American Cable Television Industry to provide coverage regarding the US politics. The transcriptions were revised on a word-by-word basis in order to ensure accuracy.

4.3 Data analysis

After cleaning the transcriptions, the data were transferred to the UAM Corpus Tool (O'Donnell, 2008), an analysis software for language coding. The Engagement system was used as an analytical framework to code the data. The coding process involved two steps. First, instances of the main two sub-categories (i.e., Monoglossia and Heteroglossia) of the Engagement system were manually identified and counted. Second, the heteroglossic propositions were further subtyped into the sub-categories of Contract and Expand (Table 2).

Engagement categories		Examples
Monoglossia		*A vote for Trump is a vote for more jobs*
Heteroglossia	Expand	*you'd* ***probably think*** [Entertain] *I'm making it up*
	Contract	***I make no apologies*** [Proclaim: Pronounce] *for being labeled the most pro-union President in American history*

Table 2: Categorization of occurrences of Engagement resources
(Note: Engagement realizations are in bold)

To ensure that the coding of the data was reliable, it was carried out twice by the researchers at a one-month interval. The correlation coefficient obtained from Pearson's Product-moment indicated that the two codings showed a positive agreement ($r = .94$). Most of the instances that were classified differently in the two coding processes were related to the use of *but* at the beginning of utterances. The instances of *but* were considered as examples of Counter in the first coding, whereas they were not classified in the second coding, as *but* was considered as a continuity adjunct. The discrepancy between the two coding processes was resolved and scrutinized through a thorough reexamination to achieve consistent coding.

Finally, given that the two speeches are not of equal length, the frequency of occurrences of Engagement resources was normalized (i.e., calculated per 100 words) to allow for a valid comparison between the two speeches.

5 Results and discussion

5.1 Monoglossia and Heteroglossia

The analysis of the data revealed similar patterns in terms of the overall uses of Engagement resources in the two speeches. The normalized total frequencies per 100 words demonstrate a relatively similar frequency of Engagement resources in the two speeches (Table 3). In addition, heteroglossic strategies were used more often than monoglossic ones in both speeches. The latter finding is congruent with the general tendency revealed by many studies of political speeches (e.g., Li et al., 2019; Zhang & Pei, 2018).

Engagement	Biden's speech		Trump's speech	
	Freq. (%)	Freq. per 100 words	Freq. (%)	Freq. per 100 words
Monoglossia	94 (26%)	1.94	99 (17.2%)	1.32
Heteroglossia	268 (74%)	5.54	476 (82.8%)	6.36
Total	362 (100%)	7.48	575 (100%)	7.68

Table 3: The frequency of monoglossia and heteroglossia

However, while the two speakers showed a similar preference for Heteroglossia over Monoglossia, they differed in terms of the frequencies in their uses of these two categories. As shown in Figure 2, monoglossic uses were more frequent in Biden's speech than in Trump's. The opposite was found for Heteroglossia; that is, heteroglossic propositions are more frequent in Trump's speech as compared to Biden's speech.

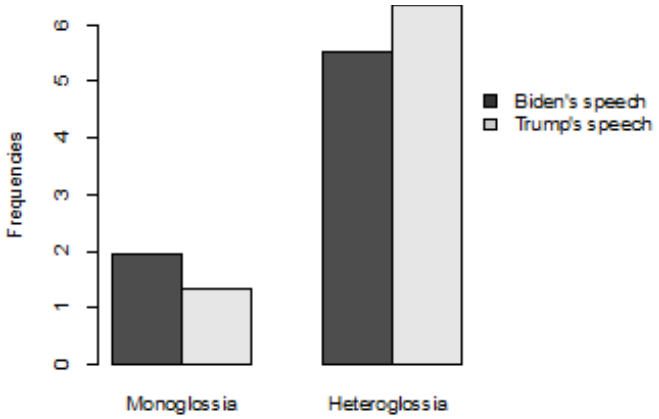

Figure 2: The frequency of monoglossic and heteroglossic instances

The observed differences in the use of Monoglossia and Heteroglossia between Biden and Trump can be attributed to their contrasting rhetorical goals and the strategies tailored to their audiences. Biden's relatively higher use of monoglossic propositions tends to reflect his effort to establish authority by emphasizing his previous accomplishments as indisputable facts. On the other hand, Trump's greater reliance on heteroglossic resources, especially dialogistically contractive ones, underscores his combative rhetorical style, which seeks to delegitimize opposing views while rallying his supporters around a unified stance. These patterns highlight how each speaker employs engagement strategies to advance their political objectives and connect with their voter bases.

Both speakers employed monoglossic propositions for a various range of purposes, including, promoting their economic plans, recognizing the concerns of Americans, criticizing their political opponents, and praising their addressees. Monoglossic propositions used by the two speakers are exemplified in Excerpts (3) and (4):

(3) Biden: *Putin's war in Ukraine disrupted energy supplies and food supply.*

(4) Trump: *A vote for crooked Joe Biden is a vote for inflation, taxation, submission and failure. A vote for Trump is a vote for more jobs, higher wages and more boats, cars, trucks and airplanes stamped made in America and made in South Carolina.*

In (3), Biden asserts that it is Putin who is responsible for the war. This view is presented as a fact in the sense that it should not be at issue. Similarly, in (4)

Trump employed a series of monoglossic propositions to criticize his opponent, Biden in this case, and to give himself credit. Trump's monoglossic uses in (4) present the propositions as if they were agreed upon or established facts, hence, not up for discussion.

According to White (2003), Monoglossia is typically used to construe either solidarity or power. In the former, speakers present a proposition as indisputable, whereas in the latter the speakers take on a role of moral authority in the sense that they can exclude alternative possibilities. This distinction between solidarity and power was identified in many instances of monoglossic propositions in the data of the present study; however, in some cases, the two functions (i.e., solidarity and power) seem to be conflated. This conflation is exemplified in (5) and (6) below:

(5) Biden: *The middle class built America and unions built the middle class.*

(6) Trump: *The USA is a mess. Our economy is crashing.*

In (5) Biden assumes authority, or power, and excludes other possibilities, stating that it is the unions that built the middle class which, in turn, built America. This view is presented as a common and indisputable knowledge. At the same time, Biden's monoglossic use also invokes solidarity with his audience, who happened to be members of the Labor Union. Similarly, in (6) Trump criticizes Biden's administration because it is responsible, in Trump's view, for the USA being "*a mess*". He exercises power in the sense that he presents his view of the current state of the country as factual or uncontroversial. He also seeks solidarity with those addressees who share with him this view and/or are not satisfied with the status quo. This conflation of solidarity and power is in line with Miller's (2004) view that "the [power/solidarity] distinction proves unreliable" (p. 9). That is, the distinction between power and solidarity might not be as sharp as it has been assumed. This point is further illustrated in (7) and (8) below:

(7) Biden: *He* [Marty Walsh] *is a man of his word … he knows more than you do and more than I do.*

(8) Trump: *It's great to be back in this state with the hard-working, God-fearing patriots who make our country run. You love our country, you make it run.*

In (7), Biden's monoglossic statement appraises Marty Walsh, the former US Secretary of Labor and a supporter of his administration, as a man of integrity. The claim that Marty knows more than anyone else is presented as unquestionable fact, thereby asserting authority. At the same time, Biden builds solidarity by including himself with the audience (i.e., *more than you do and more than I do*),

creating a sense of close connection with his addressees. Similarly, in (8), Trump employs a monoglossic proposition to praise his audience as "*hard-working, God-fearing patriots*" who "*make our country run*." By doing so, Trump establishes himself as an authority whose evaluation is not open to debate. At the same time, his use of inclusive language, *our*, and his emphasis on shared values like patriotism and faith, strengthens solidarity with his audience. The use of *we*, *our*, and other corresponding pronouns is a well-documented rhetorical strategy for emphasizing national identity, unity, and solidarity, implying "distancing from and marginalization of others" (De Cillia et al., 1999, p. 160). These examples demonstrate that power and solidarity often overlap in monoglossic discourse.

5.2 Heteroglossia

This section is devoted to presenting the overall view of heteroglossic uses in the two speeches. Overall, the analysis shows that the most frequent sub-categories of Heteroglossia used by both speakers are Deny, Entertain, and Counter, respectively. The least frequent sub-categories are Distance and Endorse. Pronounce, Acknowledge and Concur fell in between. Figure 3 illustrates the frequency of all the sub-categories of Heteroglossia in the two speeches.

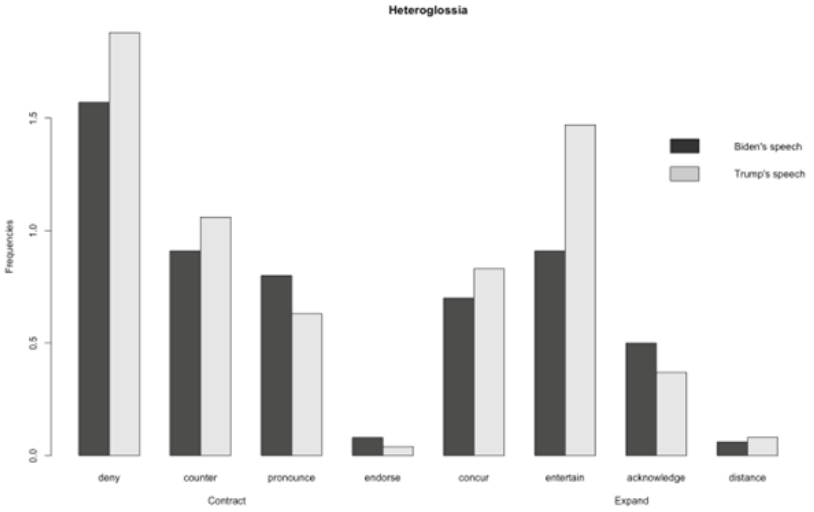

Figure 3: An overview of the frequency of all the sub-categories of Heteroglossia

Although the overall patterns employed by the two speakers seem to be similar, a fine-grained comparative analysis of the sub-categories of Heteroglossia reveals additional insights on the distinct utilizations (or the dialogistic functionality) deployed in the two speeches.

Within Heteroglossia, both speakers used contracted resources more often than expanded ones. As shown in Table 4, 73.50 per cent of the heteroglossic propositions used by Biden were dialogistically contractive. Similarly, over two-thirds of Trump's heteroglossic uses (69.75%) were contractive. This is in contrast to the findings of Li et al. (2019), who examined two political speeches and found that the speaker used expanded resources more often than contracted ones. These contradictory findings might be accounted for by the distinct contexts in which the speeches were delivered. While the context of the speeches examined by Li et al. (2019) was to address, and possibly appease, some protestors, in this study Biden's and Trump's main purpose was to persuade the people to vote for their political parties. As a result, they tended to employ contracted resources in order to emphasize their own views and to disapprove the views of their opponents. This finding aligns with Zhang and Pie (2018), who observed a higher frequency of contracted utterances in political speeches, reinforcing the idea that political speakers tend to limit alternative viewpoints when asserting their positions.

Comparatively, the normalized frequencies in Table 4 show that both contracted and expanded resources were used by Trump (i.e., 4.44 and 1.92, respectively) more often than by Biden (i.e., 4.07 and 1.47, respectively).

	Biden's speech			**Trump's speech**		
Engagement formulation	**No.**	**%**	Freq. per 100 words	**No.**	**%**	Freq. per 100 words
Contract	**197**	**73.5**	**4.07**	**332**	**69.75**	**4.44**
Disclaim	120	44.7	2.48	220	46.2	2.95
Deny	76	28.3	1.57	141	29.6	1.89
Counter	44	16.4	.91	79	16.6	1.06
Proclaim	77	28.8	1.59	112	23.53	1.50
Concur	34	12.7	.70	62	13	.83
Pronounce	39	14.6	.81	47	9.9	.63
Endorse	4	1.5	.08	3	0.63	.04
Expand	**71**	**26.5**	**1.47**	**144**	**30.25**	**1.92**
Entertain	44	16.4	.91	110	23.1	1.47
Attribute	27	10.1	.56	34	7.2	.45
Acknowledge	24	9	.50	28	5.9	.37
Distance	3	1.1	.06	6	1.3	.08
Subtotal	268	100	5.54	476	100	6.36

Table 4: Descriptive analysis of heteroglossia formulations in Biden's and Trump's speeches
(Note: The percentages of the sub-categories of Contract are calculated as proportions of the total number of occurrences of Heteroglossia.)

A detailed comparative description of the sub-categories of Contract and Expand is provided in the following subsections.

5.2.1 Contract: Disclaim vs. Proclaim

Within the category of Contract, both speakers used Disclaim resources more often than Proclaim resources. Table 4 shows that Deny and Counter were used more frequently in the two speeches than the sub-categories of Proclaims (i.e., Concur, Pronounce, and Endorse). This aligns with the finding of Ziliwu (2020), who examined Les Brown's speech, and found that Disclaim resources were twice as frequent as Proclaim resources.

Comparatively, the normalized frequencies per 100 words of the categories of Disclaim (i.e., Deny and Counter) in Trump's speech are higher than those in Biden's (i.e., 1.89 and 1.06 by Trump as compared to 1.57 and 0.91 by Biden, respectively). For Proclaim, there is a variation in the uses of its sub-categories (i.e., Concur, Pronounce, and Endorse). While the frequencies of Pronounce and Endorse are higher in Biden's speech (0.81 and 0.08, respectively) than in Trump's (0.63, 0.04, respectively), Concur was used more often in Trump's speech than in Biden's (i.e., 0.83 by Trump and 0.73 by Biden). This indicates that Biden tended to emphasize certain views by either explicitly expressing his stance (i.e., Pronouncement) or by relying on other authorial voices (i.e., Endorse). In contrast, Trump was more inclined to engage with his audience through Concur resources, reducing the scope of alternative positions by presenting his views as common knowledge shared by the audience (e.g., *as many of you know, we have never seen*). Figure 4 displays a comparison of all the categories of Contract.

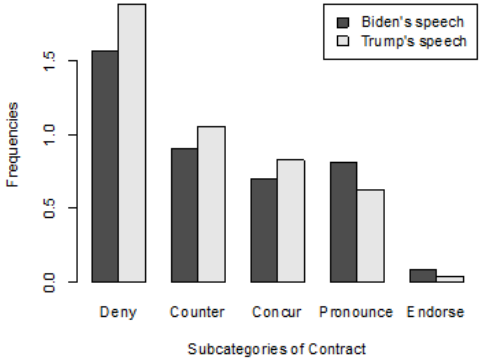

Figure 4: The frequency of sub-categories of Contract

Both speakers used Contract to restrict the scope of alternative positions to promote their own views and/or criticize the views of their opponents. However, one of the salient features that distinguish Biden's uses of Contract resources from Trump's is that Biden tended to frequently combine a monoglossic proposition with Deny and/or Counter. This tendency is exemplified in Excerpts (9–11):

(9) Biden: *We've already announced over 25,000 infrastructure projects in 4,500 towns across America* **[Monoglossia]**. *And we're just* **[Counter]** *getting started, we're not* **[Deny]** *even close.*

(10) Biden: *Through our policies, the pace of inflation has been coming down now for nine months in a row [monoglossia] but* **[Counter]** *there's more to go. It's slowed by 45 percent* **[Monoglossia]** *but* **[Counter]** *we have more to do.*

(11) Biden: *We brought down inflation* **[Monoglossia]** *but* **[Counter]** *there's other prices to bring down that aren't* **[Deny]** *categorized that way.*

Biden begins his statements by presenting his accomplishments as undeniable facts, while also acknowledging the ongoing need for more actions. Such usage seems to simultaneously serve two purposes. First, he highlights his previous achievements in monoglossic propositions that should be viewed as a given knowledge that everyone should recognize. Second, by employing Deny and Counter, he seeks solidarity with those addressees who might feel that further actions are necessary. In other words, he recognizes the concerns of his audience in the sense that, despite all what have been done before, he is still willing to do more. Indeed, this pattern is a salient feature in Biden's speech. This could enhance Biden's credibility as a transparent leader who is willing to address criticism, acknowledging his audience's concerns while reinforcing confidence in his ability to deliver results. These rhetorical choices reflect his approach to engaging directly with opposing views while maintaining focus on his past accomplishments.

Trump, on the other hand, tended to use Proclaim (i.e., Deny and Counter) to criticize the views of his opponents as in (12) or promote his views as in (13) below:

(12) Trump: *They* [democrats] *put illegal aliens first and everyone first, but* **[Counter]** *he* [Biden] *puts America last.*

(13) Trump: *Shortly after I win the presidency, I will have the horrible war between Russia and Ukraine settled. I'm the only* **[Counter]** *candidate who can make this promise to you.*

In (12), Trump criticizes Biden's policy regarding immigrants. In doing so, he restricts the scope of other possibilities in the sense that not only do Biden and the democratic party put *illegal aliens first and everyone first*, but they also put *America last*. In (13), Trump uses Counter as persuasive device, reducing the alternative possibilities and convincing his audience that he is the only candidate that can put an end to the Russo-Ukrainian War.

Another key feature distinguishing Trump's speech from Biden's is the use of rhetorical, or leading, questions. Indeed, Trump tended to rely on rhetorical questions that require no answer on the part of addressees. This tendency is exemplified in Excerpts (14–16):

(14) Trump: *Do you ever see the illegal aliens?* **[Concur: leading question]**

(15) Trump: *Do you ever notice they're all coming in with cell phones?* **[Concur: leading questions]**

(16) Trump: *They want to stop your boats one in 50 years. Can you imagine that?* **[Concur: leading questions]**

In Excerpts (14) and (15), Trump discusses the immigration issue. He talks about illegal immigrants who, according to Trump, have cell phones, implying they are living in comfortable conditions. However, instead of explicitly expressing his view, he employs Concur, rhetorical questions in this case, to engage with his audience. He relies on his audience to share with him that immigration is unacceptable. Similarly, in (16) he uses a rhetorical question (i.e., *can you imagine that?*) showing that democrats' policy imposing restrictions on boat sailing is unbelievable. Martin and White (2005) consider rhetorical questions that require no answer on the part of the addressee as a Concur strategy by which speakers engage with the audience and reduce the scope of alternative positions. Trump's reliance on this strategy is intended to shape the audience perception by subtly guiding them toward affirming his views without the need for explicit argumentation. In fact, Trump employed an extensive use of this strategy in order to lead his audience to adapt certain views and avoid direct assertions that could be more easily challenged.

On the other hand, a notable figure in Table 4 is the rare occurrence of Endorse (0.08 in Biden's speech and 0.04 in Trump's speech). This suggests that both speakers tend to restrict alternative possibilities from a personal rather than external perspective. It is remarkable that most examples of Endorse in the two speeches involve references to politicians who were physically present at the two events, as exemplified in (17) and (18) below:

(17) Biden: *I asked them* [CEOs]—*Marty remembers* **[Endorse]**. *I asked them: when the United States invests considerable resources in a new enterprise, in a new business, are they much more likely or much less likely to get in the game? And the answer is overwhelmingly: Yes, it matters.*

(18) Trump: *Marjorie is nodding her head* **[Endorse]** *and Henry is nodding his head* **[Endorse]**.

In (17), Biden makes a reference to Marty (i.e., *Marty remembers*) to emphasize the credibility of his claim that he consulted the CEOs. Notably, Marty had been established earlier in the speech as a *man of his word*, who *knows more than you do and more than I do*, among other things (see Exerpt 7 above). Similarly, in (18), Trump appeals to prominent figures, Henry McMaster, the governor of North Carolina, and Marjorie Taylor Green, a US Representative in Congress, by highlighting their visible agreement. While Endorse typically requires explicit verbal attribution, physical gestures like their head nods serve as implicit endorsements of Trump's views. This likely reflects the speakers' rhetorical strategy, anchoring their arguments in the current socio-political context and leveraging the immediate presence of these figures to make their claims appear more persuasive. The speakers' main purpose of Endorse seems to eliminate, or at least restricts, alternative possibilities in the sense that they challenge potential dissenters to disagree. As Martin and White (2005) argue, through endorsement, speakers construe a proposition "as correct, valid, undeniable or otherwise maximally warrantable" (p. 126).

5.2.2 Expand: Entertain vs. Attribute

Within the category of Expand, both speakers have a significantly greater preference for Entertain over Attribute. In Biden's speech, Entertain was used approximately twice as frequent as Attribute, while in Trump's speech, it was employed approximately three times higher compared to Attribute. This finding aligns with many studies (e.g., Ziliwu, 2020) which revealed that Entertain is more frequent than Attribute in political speeches.

Although both speakers showed a similar inclination towards Entertain, their usage varied when considering the frequencies thereof. As shown in Table 4 above, the normalized frequency of Entertain is higher in Trump's speech (1.47) than in Biden's (0.91). In contrast, within the categories of Attribute, Acknowledge is more frequent in Biden's speech (i.e., 0.50) as compared to Trump's (i.e., 0.37). This indicates that Biden used external voices more often than Trump did. For Distance, approximately a similar frequency is present in the two speeches (0.06 and 0.08 in Biden's speech and Trump's speech, respectively). Figure 5 displays a comparison of the uses of Expand categories in the two speeches.

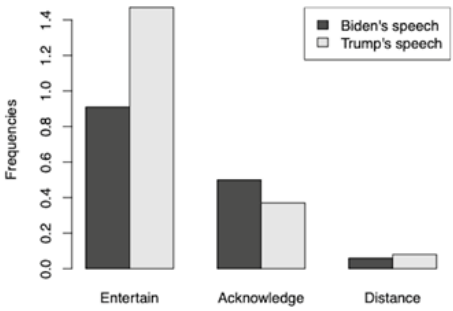

Figure 5: The frequencies of sub-categories of Expand

The infrequent use of Attribute in the political speeches under investigation may suggest that this category is less common in political discourse. According to Martin and White (2005), Attribute is more prevalent in academic discourse where speakers/writers often engage with multiple viewpoints.

The predominance of Entertain may be accounted for by the speakers' tendency to appear open-minded, enhancing the persuasive impact of their speeches. By way of example, Biden in Excerpt (19) below refrains from taking a rigid stance and presents his view as one possibility among others. As Martin and White (2005) noted, the use of modals and related probability expressions reduces the assertive nature of propositions. A possible explanation is that politicians avoid committing themselves to the truth of their claims in order not to be accused later "of having lied or of having been mistaken" (Simon-Vandenbergen, 2000, p. 44). Similarly, Trump in Excerpt (20) individuates his view among other possibilities. His use of *I think*, however, seems to soften the tone of the proposition which might otherwise be dismissed as extremely unreasonable.

(19) Biden: *it's probably* **[Entertain]** *$12*

(20) Trump: *I think* **[Entertain]** *this country will be finished*

However, Entertain resources do not necessarily signal a lack of commitment or uncertainty of knowledge on the part of the speaker. According to Martin and White (2005), "the dialogistic perspective shifts our focus so that such a concern with epistemic status and reliability of knowledge is seen to be not always and not necessarily the primary, determining communicative motive" (p. 105). In Excerpt (21), for instance, Trump criticizes the US withdrawal from Afghanistan, labelling it as *the greatest embarrassment in history*. However, his use of *I think*

does not seem to express uncertainty of or non-commitment to the proposition; rather, he seems to claim authority to evaluate the situation, or possibly leaves room for alternative positions, such as the claim that Biden administration committed actions that are even more embarrassing.

(21) Trump: *I think Afghanistan was the greatest embarrassment in history.*

The functions of *I think* have been extensively discussed in the literature (e.g., Aijmer, 1997; Fetzer, 2014; Simon-Vandenbergen, 2000). Simon-Vandenbergen (2000), for instance, noted that *I think* is context-dependent, conveying uncertainty when followed by a factual statement (e.g., *I think he is at home*), while asserting authority when introducing an opinion-based statement. This latter view holds in the present study, as exemplified in (22) and (23) below:

(22) Biden: *I think there should be a minimum tax for billionaires. No billionaire should be paying a low tax rate than a construction worker, school teacher, firefighter …*

(23) Trump: *I think very evil people in the White House.*

In both excerpts, *I think* is followed by opinion-based statements and used by the speakers to claim authority rather than to express doubt. These excerpts underscore the importance of context in interpreting Entertain resources.

On the other hand, the speakers' purposes of using Attribute resources seem to acknowledge the views of their opponents, only to refute or counter them in the following utterances. Excerpts (24–25) illustrate this tendency:

(24) Trump: *They say* **[Acknowledge]** *we lost the election. I don't* **[Deny]** *think so.*

(25) Biden: *They believe* **[Acknowledge]** *the best way to grow the economy is from the top down and then to watch the benefits trickle down to the rest of us. Like many of you* **[Concur]**, *not* **[Deny]** *much trickled down to my dad's kitchen table. For decades, trickle-down economics hollowed out the middle class* **[Monoglossia]**. *Folks, trickle-down economics doesn't* **[Deny]** *work.*

Trump's statement in Excerpt (24) is self-explanatory; he acknowledges the view of his opponents only to deny it in the next utterance. In (25) Biden begins by recognizing the view of the republican party, and before he opposes it, he relies on Concur resources to establish a close relationship with his audience (i.e., *like many of you*) in the sense that he is a decent person coming from a low-income family and struggling for a better life. Finally, just to make sure he leaves a profound impact, he asserts his point through a monoglossic proposition (i.e., *trickle-down economics hollowed out the middle class*).

6 Conclusion

The present study aimed to examine Engagement resources employed in political discourse. To accomplish this goal, two speeches delivered by 46th US President Joe Biden and 45th and 47th President Donald Trump during their campaigns for the 2024 presidential election were analyzed using the system of Engagement as an analytical framework. The findings revealed that both speakers favored Heteroglossia over Monoglossia, with contracted resources being used more often than expanded ones. A fine-grained analysis revealed that Deny, Entertain, and Counter were the most frequently used sub-categories in the two political speeches, while Endorse and Distance were the least frequent. This suggests that politicians prefer to focus on their own views, and tend to avoid using external voices, which may be a distinguishing characteristic of political discourse, setting it apart from other types of discourse such as academic discourse. The findings also revealed that the system of Engagement provides a window shedding a critical light on political discourse, uncovering the various strategies and persuasive tools used by politicians to position themselves in relation to other voices and how they align and dis-align with their audience.

Results of the normalized frequencies per 100 words of the categories Contract and Expand were more often employed by Trump than by Biden. This indicates that Trump is more inclined to present his views as common knowledge shared by the audience through the use of Concur resources (e.g., *as many of you know*, *we have never seen*). In addition, the normalized frequencies of the Contract sub-system of Disclaim (i.e., Deny and Counter) were higher in Trump's speech than those in Biden's. Similarly, the frequency of the Entertain resources was higher in Trump's speech (1.47) than in Biden's (0.91).

In addressing the limitations of the present study, three points must be mentioned. Firstly, the analysis was based on a limited dataset within a particular sub-genre of political discourse, namely political speech, thus limiting the generalizability of the findings. Secondly, the data analysis relied on normalized frequency; however, this approach could be misleading as it implies that the linguistic features under investigation occur uniformly every 100 words. In practice, their occurrence may vary throughout the speech, influenced by factors, such as, purpose, context, and rhetorical strategy. Finally, the study did not delve into whether or not certain Engagement resources are associated with specific topics. Future research may examine how Engagement resources relate to the topics under discussion, potentially uncovering consistent patterns within a contextualized analysis.

References

Ademilokun, M. (2016). Appraisal of resources in post-election defeat-concession speeches of some gubernatorial candidates in southwestern Nigeria, 2014–2015. *Africology: The Journal of Pan African Studies*, *9*(1), 167–187.

Aijmer, K. (1997). I think – an English modal particle. In T. Swan & O. Westvik (Eds.), *Modality in Germanic languages: Historical and comparative perspectives* (pp. 1–48). Mouton. https://doi.org/10.1515/9783110889932.1

Aljuraywi, J. A., & Alyousef, H. S. (2022). Attitude in political discourse: An Appraisal analysis of Attitude in Donald Trump and Joe Biden's interviews on 60 Minutes. *Journal of Language and Linguistic Studies*, *18*(3), 176–193. http://www.jlls.org/index.php/jlls/article/view/4678

Alwohaibi, H. A., & Alyousef, H. S. (2023). An investigation of engagement resources in the World Cup 2022 newspaper articles in the Arab World Media. *Journal of Contemporary Language Research*, *2*(2), 118–128. https://doi.org/10.58803/jclr.v2i2.27

Bakhtin, M. M. (2010). *The dialogic imagination: Four essays by M. M. Bakhtin* (Vol. 1). University of Texas Press.

Becker, A. (2009). Modality and engagement in British and German political interviews. *Languages in Contrast*, *9*(1), 5–22. https://doi.org/10.1075/lic.9.1.02bec

Blommaert, J. (2005). *Discourse: A critical introduction.* Cambridge University Press.

Chilton, P. (2004). *Analysing political discourse: Theory and practice.* Routledge.

Coffin, C., & O'Halloran, K. (2006). The role of appraisal and corpora in detecting covert evaluation. *Functions of language*, *13*(1), 77–110. https://doi.org/10.1075/fol.13.1.04cof

De Cillia, R., Reisigl, M., & Wodak, R. (1999). The discursive construction of national identities. *Discourse and Society*, *10*(2), 149–173. https://doi.org/10.1177/0957926599010002002

Dunmire, P. L. (2012). Political discourse analysis: Exploring the language of politics and the politics of language. *Language and Linguistics Compass*, *6*(11), 735–751. https://doi.org/10.1002/lnc3.365

Eggins, S., & Slade, D. (2004). *Analysing casual conversation.* Equinox.

Fairclough, I., & Fairclough, N. (2012). *Political discourse analysis: A method for advanced students.* Routledge. https://doi.org/10.4324/9780203137888

Fetzer, A. (2014). I think, I mean and I believe in political discourse: Collocates, functions and distribution. *Functions of Language*, *21*(1), 67–94. https://doi.org/10.1075/fol.21.1.05fet

Halliday, M. A. (1975). *Learning how to mean: Explorations in the development of language.* Arnold.

Halliday, M. A. K. (2014). *Introduction to functional grammar.* Revised by Christian M. I. M. Matthiessen (4th ed.). Taylor & Francis.

Hood, S. (2004). Managing attitude in undergraduate academic writing: A focus on the introductions to research reports. In L. Ravelli & R. Ellis (Eds.), *Analysing academic writing: Contextualized frameworks* (pp. 24–44). Continuum.

Hyland, K. (2005). Stance and engagement: A model of interaction in academic discourse. *Discourse studies*, *7*(2), 173–192. https://doi.org/10.1177/1461445605050365

Kenzhekanova, K. K. (2015). Linguistic features of political discourse. Mediterranean *Journal of Social Sciences*, *6*(6 S2), 192–199. https://doi.org/10.5901/mjss.2015.v6n6s2p192

Li, E. S.-h., Lui, P. L.-t., & Fung, A. K.-c. (2019). *Systemic functional political discourse analysis: A text-based study.* Routledge. https://doi.org/10.4324/9780429433542

Li, T., & Zhu, Y. (2019). How does China appraise self and others? A corpus-based analysis of Chinese political discourse. *Discourse & Society*, *31*(2), 153–171. https://doi.org/10.1177/0957926519880036

Macken-Horarik, M., & Isaac, A. (2014). Appraising appraisal. In G. Thompson & L. Alba-Juez (Eds.), *Evaluation in context* (Vol. 242, pp. 67–92). John Benjamins. https://doi.org/10.1075/pbns.242.04mac

Martin, J. R. (1996). Evaluating disruption: Symbolising theme in junior secondary narrative. In R. Hasan & G. Williams (Eds.), *Literacy in society* (pp. 124–171). Longman.

Martin, J. R. (2000). Beyond exchange: Appraisal systems in English. In S. Hunston & G. Thompson (Eds.), *Evaluation in text: Authorial stance and the construction of discourse* (pp. 142–175). Oxford University Press.

Martin, J. R., & Rose, D. (2008). *Working with discourse: Meaning beyond the clause.* Continuum.

Martin, J. R., & White, P. (2005). *The language of evaluation: Appraisal in English.* Palgrave Macmillan.

Mei, W. S. (2007). The use of engagement resources in high- and low-rated undergraduate geography essays. *Journal of English for Academic Purposes*, *6*(3), 254–271. https://doi.org/10.1016/j.jeap.2007.09.006

Miller, D. (2004). "To meet our common challenge": ENGAGEMENT strategies of alignment and alienation in current US international discourse. *Textus*, *18*(1), 39–62.

Mori, M. (2017). Using the Appraisal framework to analyze source use in essays: A case study of engagement and dialogism in two undergraduate students' writing. *Functional Linguistics*, *4*(11), 1–22. https://doi.org/10.1186/s40554-017-0046-4

O'Donnell, M. (2008). The UAM CorpusTool: Software for corpus annotation and exploration. In C. M. Bretones Callejas, et al. (Eds.), *Applied Linguistics Now: Understanding Language and Mind / La Lingüística Aplicada Hoy: Comprendiendo el Lenguaje y la Mente* (pp. 1433–1447). http://www.corpustool.com/

Oteíza, T. (2017). The appraisal framework and discourse analysis. In T. Bartlett & G. O'Grady (Eds.), *The Routledge handbook of systemic functional linguistics* (pp. 457–472). Routledge.

Page, R. E. (2003). An analysis of APPRAISAL in childbirth narratives with special consideration of gender and storytelling style. *Text & Talk*, *23*(2), 211–237. https://doi.org/10.1515/text.2003.009

Ross, A. S., & Caldwell, D. (2020). 'Going negative': An APPRAISAL analysis of the rhetoric of Donald Trump on Twitter. *Language & Communication*, *70*, 13–27. https://doi.org/10.1016/j.langcom.2019.09.003

Schegloff, E. (1997). Whose text? Whose context? *Discourse & Society*, *8*(2), 165–187. https://doi.org/10.1177/0957926597008002002

Simon-Vandenbergen, A. (2000). The functions of I think in political discourse. *International Journal of Applied Linguistics*, *10*(1), 41–63. https://doi.org/10.1111/j.1473-4192.2000.tb00139.x

Slembrouck, S. (2001). Explanation, interpretation and critique in the analysis of discourse. *Critique of Anthropology*, *21*(1), 33–57. https://doi.org/10.1177/0308275X0102100103

Thompson, G., & Hunston, S. (2000). Evaluation: An introduction. In S. Hunston & G. Thompson (Eds.), *Evaluation in text: Authorial stance and the construction of discourse* (pp. 1–27). Oxford University Press.

van Dijk, T. A. (1997). What is political discourse analysis. *Belgian Journal of Linguistics*, *11*(1), 11–52.
White, P. R. (2003). Beyond modality and hedging: A dialogic view of the language of intersubjective stance. *Text & Talk*, *23*(2), 259–284. https://doi.org/10.1515/text.2003.011
White, P. R. R., & Sano, M. (2006). Dialogistic positions and anticipated audiences – a framework for stylistic comparisons. In K. Aijmer & A. Simon-Vandenbergen (Eds.), *Pragmatic markers in contrast* (pp. 189–214). Elsevier.
Widdowson, H. (1995). Discourse analysis: A critical view. Language & Literature, 4(3), 157–172. https://doi.org/10.1177/096394709500400301
Wodak, R. (2009). *The discourse of politics in action.* Palgrave Macmillan.
Zhang, S., & Pei, Z. (2018). Analysis of political language based on appraisal theory: The mutual construction of language and power – Taking Xi Jinping and Donald Trump's speeches at world economic forum as examples. 2018 International Conference on Social Science and Education Reform (ICSSER 2018).
Ziliwu, E. (2020). Appraisal of Engagement in Les Brown Speech's Enough is Enough. *LingPoet: Journal of Linguistics and Literary Research*, *1*(1), 6–13. https://doi.org/10.32734/lingpoet.v1i1.4691

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METADISCOURSE IN L2 MASTER'S THESES: THE IMPACT OF ACADEMIC CULTURE AND EXPERTISE

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Abstract

This study explores metadiscourse in English-medium Master's theses by L2 (Czech) graduates, aiming to explain how Czech students organise their texts, express their stance towards the content and engage with their readers. It seeks to contrast L2 learner academic discourse with L1 learner and expert academic discourse in order to identify differences along the culture and level of expertise dimensions. The corpus-based analysis employs Hyland's (2005) interpersonal framework of metadiscourse to identify the frequency, functions and realisations of interactive and interactional metadiscourse devices. The findings reveal that interactional metadiscourse is more prominent than interactive metadiscourse in all three corpora and there are significant differences in the realisation patterns and functions of specific metadiscourse markers. The results of the analysis suggest that self-mention, hedges and engagement markers vary along the expertise dimension as they are more heavily used in published research articles than in learner discourse. Cultural differences (i.e., those stemming primarily from different academic writing conventions) seem to affect the preferred degree of writer visibility, as well as preferences for specific metadiscourse markers. Variation in interactive metadiscourse seems to be influenced by text size, genre and communicative purpose. The findings allow for the drawing of several implications for L2 writing pedagogy.

Keywords

metadiscourse, Master's thesis, academic writing, genre, intercultural analysis

1 Introduction

Academic discourse involves a complex representation of socially contextualised knowledge and writer identity via language (cf. Duff, 2010, p. 175). When engaging in interaction with readers, academic writers attend to the interpersonal dimension of discourse signalled by "linguistic resources used to organize a discourse or the writer's stance towards either its content or the reader" (Hyland & Tse, 2004, p. 157). These interpersonal resources which allow the writer to guide readers through the discourse while seeking to persuade them to accept the writer's views and claims are subsumed under the concept of metadiscourse (Hyland, 2005). Views on what exactly falls into the scope of metadiscourse vary. Authors who consider reflexivity to be the defining feature of metadiscourse tend to restrict its scope to devices with text-organising functions and hold that metadiscourse does not contribute to the propositional content of the text; this approach is labelled 'non-integrative' or 'narrow' (e.g., Ädel,

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2006; Mauranen, 1993). A different, 'broad' or 'integrative', approach is adopted by researchers who believe that metadiscourse is essentially interactional and distinct but inherently connected to the propositional aspects of discourse (Hyland & Tse, 2004; Hyland, 2004). This study adopts the integrative interpersonal metadiscourse model proposed by Hyland (2005), which comprises interactive devices centred on text organisation and interactional devices casting an authorial voice and engaging with the 'reader-in-the-text' (Thompson & Thetela, 1995).

Effective academic writing presupposes the skilful use of metadiscourse resources resonating with the shared beliefs, expectations and conventions of a specific academic community (Hyland & Jiang, 2018; Sancho-Guinda & Hyland, 2012). Learning to use metadiscourse effectively is not an easy task. This is particularly true for L2 university students, who have to cope with various language, rhetorical and psychological challenges stemming from their L2 writer status, cultural differences between academic writing norms and the pressure to perform well in high-stake examinations (Lee & Casal, 2014). The Master's thesis (MT), "the longest and most challenging piece of assessed writing" (Thompson, 2013, p. 284) that students compose at the end of their university studies, may be seen as indicative of the extent to which they have mastered the use of metadiscourse. Yet in comparison with the research article (RA) or the argumentative essay (AE), the MT has still received relatively little attention in research on academic writing (Lee & Casal, 2014; Thompson, 2013). This study seeks to fill in this research gap by exploring metadiscourse in L2 (Czech) students' MTs in the social sciences and humanities. By so doing, it aims at drawing pedagogical implications for academic writing courses to assist students in using the rhetorical potential of metadiscourse and thus enhance their academic writing competence.

Previous investigations into metadiscourse in English-medium RAs by L2 scholars (Lorés Sanz, 2011; Shaw, 2003) have found that the use of these rhetorical features is marked by intercultural variation concerning primarily the frequency of occurrence of individual devices, but also by the preference towards specific lexico-grammatical patterns. This could be interpreted as an indication of hybridisation in the English-medium discourse of L2 scholars, who seem to blend the discursive and rhetorical conventions of their original academic literacy with those of Anglophone academic discourse (Pérez-Llantada, 2013).

Resolving the tension between L1 and L2 academic norms is even more challenging for L2 students; however, intercultural variation in the use of metadiscourse in L2 learner academic writing has received considerably less attention and the existing studies focus mainly on the Asian context (e.g., Ho & Li, 2018; Hyland, 2004; Lee & Deakin, 2016). Therefore, this study endeavours to provide an insight into intercultural differences between the Anglophone and

L2 (Czech) academic writing conventions to raise the students' awareness of the existing differences and assist them in making informed rhetorical choices in their academic texts.

Several investigations exploring undergraduate AEs have found that the differences they exhibit in comparison to academic writing norms tend to be induced by L1 transfer, coping strategies, overgeneralisation, input bias and disagreement between instructions provided by style manuals and common practice in expert academic discourse (Crosthwaite et al., 2017; Hong & Cao, 2014; Qin & Ucelli, 2019). Studies comparing high-graded and lower-graded essays have revealed that successful essays mostly show metadiscourse patterns somewhat similar to expert discourse (Ho & Li, 2018; Lee & Deakin, 2016). The few studies exploring metadiscourse in MTs tend to adopt quantitative methods and focus primarily on interactional metadiscourse (Hyland, 2004; Lee & Cassal, 2014; Liu & Zhang, 2022; Qiu & Ma, 2019; Wu & Paltridge, 2021). Typically comparing MTs to doctoral theses or RAs, they show that L2 graduates underuse or overuse specific metadiscourse categories, and they report a developmental trend across levels of expertise. This points to the need to explore differences in the way writers of different levels of expertise use metadiscourse and tailor academic writing instructions to the needs of university students to provide scaffolding for the development of their writing skills.

Research into Czech English-medium learner discourse is restricted to a few studies focusing on specific metadiscourse markers, namely, sentence linkers (Povolná, 2012; Vogel, 2008), code glosses (Guziurová, 2022), attitude markers (Jančaříková, 2023), self-mentions (Dontcheva-Navratilova, 2023a) and endophoric markers (Lahodová Vališová, 2024). Obviously, the insights gathered from these studies are not sufficient to provide a comprehensive picture of the use of metadiscourse by Czech university students in comparison to L1 learner and expert academic discourse. Therefore, the aim of this study is to carry out a contrastive analysis between the use of the devices in L2 Czech learner discourse and L1 learner and expert discourse to see whether and to what extent they differ along the cultural and expertise dimensions.

The present study adopts a mixed-method approach to answer the following research questions:

1) Are there significant differences in the frequency of occurrence of metadiscourse devices in English-medium L2 (Czech) MTs, L1 AEs and L1 published RAs?
2) What are the differences and similarities in the realisations and functions of metadiscourse markers in L2 (Czech) learner discourse and L1 learner and expert discourse?

2 Data and method

2.1 Corpus

The study is based on a specialised learner corpus of English-medium MTs written by Czech university students (the MT corpus). The authors are L1-Czech postgraduate students majoring in English Language and Literature at Masaryk University in Brno, Czech Republic. The MT corpus consists of 48 theses in the domains in which students pursuing a Master's degree in English Language and Literature typically write their theses – linguistics, literature studies, and education (16 texts per discipline). All the theses were defended between 2010-2018 and graded 'A' ('Excellent'/'Merit') to match the quality of works in the reference L1 learner corpus. Prior to the analysis, the texts were processed to exclude citations, examples, tables, charts, and reference lists to ensure a focus on the students' own discourse. As a result, the corpus used for analysis contains a total of 947,492 words. However, the analysis of citations within the evidentials category was carried out on the full length of the texts.

In order to explore the typical metadiscourse features used by Czech university students, two reference corpora were compiled following the principles of 'tertium comparationis', that is, creating corpora on the basis of relevant similarity constraints (Connor & Moreno, 2005). The two corpora include an L1 English learner corpus to investigate potential variation across linguacultural backgrounds, and a corpus of published RAs intended for comparison along the expertise dimension.

Due to the unavailability of an MT corpus in L1 English that would represent the target disciplines, and since it proved impossible to compile such a corpus because of access limitations, we decided to use a portion of the *British Academic Written English Corpus* (BAWE) for analysing variations between the English-medium learner discourse of L1 English writers and Czech graduates. In order to guarantee maximum comparability between the MT corpus and the learner reference corpus, a BAWE sub-corpus was created, consisting of 197 AEs authored by L1 English students, which, similarly to the theses, received grades of 'Distinction' or 'Merit'. The essays belong to the disciplinary group of Arts and Humanities and encompass similar fields to those in the MT corpus, namely linguistics, English literature, and comparative American studies (as a substitute for education, which is not represented in BAWE). Although AEs and MTs differ in length, with essays averaging 2,500 words and theses 19,700 words, and partly in their communicative purposes, both genres share the common context of an examination setting. Therefore, we believe that this makes the BAWE "an 'analogue' corpus, that is, a corpus which is as near as possible in terms of genre

and discipline" (Flowerdew, 2015) to the MT corpus, and can thus be considered an acceptable reference corpus. Following the same data cleaning procedure, the BAWE corpus consists of 490,874 words.

The second reference corpus (RA) comprises 36 RAs written by L1 English authors (17 British, 17 American and 2 Australian) and is fully comparable with the MT corpus in terms of disciplines, being represented by linguistics, literature, and education (12 RAs per discipline). The articles were selected from well-established academic journals indexed in the Web of Science database (3 journals per discipline). All the texts were published between 2010 and 2018 and are single-authored. While RAs and MTs obviously differ in their communicative purposes, audiences and requirements to be met (Paltridge, 2002), they are both research-process genres with "significant areas of overlap in lexico-grammar and rhetorical functions" (Flowerdew, 2015, p. 60). As Swales (1990, p. 178) remarks, some chapters of theses or dissertations may later appear as RAs. Having been cleaned, the RA corpus contains a total of 242,439 words. Table 1 shows the composition and size of the corpora.

Corpora	Texts	Wordcount	Disciplines
MT	48	947,492	Linguistics, Literature, Education
BAWE	197	490,874	Linguistics, Literature, Comp. American Studies
RA	36	242,439	Linguistics, Literature, Education

Table 1: Composition of the MT, BAWE and RA corpora

2.2 Analytical framework and procedure

This investigation adopts Hyland's (2005) interactional metadiscourse framework, which comprises two types of metadiscourse categories – interactive and interactional – differentiated according to the functions they fulfil. Interactive metadiscourse is associated with the Hallidayan textual metafunction; it helps the writer build the argumentation chain and navigate the reader through the text, thus enhancing discourse coherence and facilitating text comprehension. As an instantiation of the Hallidayan interpersonal metafunction, interactional metadiscourse projects the writer's views and evaluative opinions into the text and engages in a dialogue with readers with a view to persuading them to accept the writer's claims.

Interactive metadiscourse involves the following categories:

- transitions – indicate logical relations between main clauses and sentences (*then*, *however*, *thus*)
- frame markers – signal discourse organisation and argument development (*firstly*, *to summarise*)

- endophoric markers – indicate intratextual relations (*see Table 2*, *as noted in section 2*)
- evidentials – refer to sources of information outside the text (*X argues*, *according to Z*)
- code glosses – provide reformulations and examples to assist the reader in comprehending the text (*i.e.*, *e.g.*, *namely*).
- Interactional metadiscourse also comprises five categories:
- self-mentions – indicate authorial presence by exclusive personal pronouns (*I/we*) and possessives (*my/our*)
- attitude markers – express the writer's feelings and evaluative assessment (*valuable*, *significant*, *important*)
- hedges – express caution and reduce commitment to views and claims and invite alternative views (*typically*, *possibly*, *may*)
- boosters – enhance certainty and close the dialogic space for negotiation of views (*in fact*, *certainly*, *no doubt*)
- engagement markers – appeal to readers, who are presented as peers following the unfolding argument (*you/your*, *of course*, *consider*).

The first four interactional metadiscourse categories are associated with expressing authorial stance, which is conceived as an attitudinal dimension projecting the author's voice and positions into the text to create a credible authorial persona. In contrast, engagement is perceived as an alignment dimension enabling the writer to construct the 'reader-in-the-text' (Thompson & Thetela, 1995), suggest intended interpretations and signpost the argument chain.

The contrastive analysis of the corpora was carried out with *SketchEngine* software (Kilgarriff et al., 2004). The list of metadiscourse markers was based on items identified by previous research (e.g., Hyland, 2005; Lee & Casal, 2014; Ho & Li, 2018) and extended as a result of close reading of sample texts. All concordances were checked in context to ensure that they function as metadiscourse markers. We have decided to prioritise rhetorical functions over lexical realisations. Since the boundaries of metadiscourse categories are fuzzy (cf. McGrath & Kuteeva, 2012), the items were assigned to the predominant metadiscourse category they express, and some items have been assigned to more than one metadiscourse category. For example, *I* functions as self-mention, although it may also be part of phrases functioning as frame markers or personal asides; however, in the case of frame markers it is the verbal or nominal item that defines the rhetorical function of the phrase, and in the case of personal asides their function of parenthetical comment. Therefore, duplicity, if any, is assumed to be minimal and does not substantially impact the results. Careful

contextual analysis was used to explore functional variation within individual metadiscourse categories. The results of the frequency analysis were normalised per 10,000 words (pttw) to allow comparison across all three corpora. The statistical significance of differences was calculated using the non-parametric log-likelihood statistical test (Rayson et al., 2004) with a significance level set at <0.05 (<0.001 is used in tables to indicate very low p-values).

3 Results and discussion

The results of the frequency analysis (Table 2) show that all groups of writers represented in the corpora use more interactional metadiscourse than interactive metadiscourse. This aligns with the findings of several recent studies reporting stronger preference for interactional metadiscourse in university students' academic discourse (e.g., Aull & Lancaster, 2014; Ho & Li, 2018; Qin & Uccelli, 2019). However, Hyland's (2004) study in L2 postgraduate writing found that interactive markers were more frequent than interactional markers, and expert academic discourse seems to show a prevalence of interactive metadiscourse (e.g., Hyland, 1998; Hyland & Jiang, 2018). These differences may stem from corpora composition, discipline, and analytical approach adopted by the researchers.

In the interactional type, hedges are the most prominent category, followed by boosters and engagement markers, while in the interactive type, the markers with highest incidence are evidentials, followed by transitions. Interestingly, Czech authors use more interactive markers than L1 writers, which may reflect differences in academic writing conventions as well as a focus on transitions and citations typical in academic writing courses. Our findings differ from Hyland (2004), as in Hyland's MTs corpus transitions are more prominent than evidentials and engagement markers exceed the frequency of boosters. The difference in transitions may be explained by the inclusion of intersentential connectors in Hyland's study, while the occurrence of fewer boosters may stem from a lower degree of engagement with the reader on the part of Czech students resulting from the merging of L1 and L2 academic conventions.

Metadiscourse	MT		BAWE		RA	
	n	pttw	n	pttw	n	pttw
Interactional	**28,681**	**295.8**	**13,993**	**295.8**	**7,985**	**328.8**
Self-mention	1,043	11.0	434	8.8	461	18.9
Hedges	13,729	140.1	6,430	138.5	3,788	156.1
Boosters	5,033	51.3	2,864	61.72	1,222	50.39
Attitude markers	4,325	45.6	1,806	36.7	1,049	43.3
Engagement	4,551	47.8	2,459	50.1	1,465	60.1
Interactive	**20,713**	**218.5**	**7,601**	**154.7**	**4,565**	**187.9**
Transition markers	5,089	53.7	1,726	35.1	1,067	43.9
Frame markers	1,615	17.0	350	7.1	252	10.4
Endophoric markers	3,943	41.6	482	9.8	697	28.7
Evidentials	6,553	69.1	3,805	77.49	1,746	71.8
Code glosses	3,513	37.1	1,238	25.2	803	33.1

Table 2: Metadiscourse across the corpora (pttw)

As Table 3 shows, differences in the overall occurrence of interactional and interactive metadiscourse across the three corpora are significant. The majority of specific metadiscourse categories also yield significant variation. No significant variation has been found in boosters, attitude markers and evidentials across the MT and RA corpora and in engagement across the MT and BAWE corpora. Apart from reflecting genre differences, this may indicate that differences along the expertise dimension are more prominent than those along the culture dimension.

Corpora	MT vs BAWE		MT vs RA		BAWE vs RA	
	LL-G^2	p-value	*LL-G*^{2}	p-value	*LL-G*^{2}	p-value
Interactional	**31.9630**	**<0.001**	**147.7864**	**<0.001**	**101.2315**	**<0.001**
Self-mention	12.5444	<0.001	88.7657	<0.001	129.3498	<0.001
Hedges	45.4972	<0.001	16.1074	<0.001	72.2415	<0.001
Boosters	16.1128	<0.001	1.1264	0.288	19.3205	<0.001
Attitude markers	61.1989	<0.001	3.2522	0.071	243.1394	<0.001
Engagement	2.8607	0.09	55.5445	<0.001	31.2252	<0.001
Interactive	**707.2298**	**<0.001**	**655.4316**	**<0.001**	**106.77**	**<0.001**
Transition markers	247.5619	<0.001	40.2442	<0.001	32.1230	<0.001
Frame markers	259.7294	<0.001	60.571	<0.001	20.0836	<0.001
Endophoric markers	1285.507	<0.001	89.6620	<0.001	334.1503	<0.001
Evidentials	961.8957	<0.001	2.0636	0.1508	7.9733	0.004
Code glosses	144.1828	<0.001	8.8182	0.0029	35.9615	<0.001

Table 3: Significance of difference in metadiscourse across the corpora (significance level <0.05)

In the following sections we discuss in detail the use of metadiscourse categories across the three corpora.

3.1 Interactional metadiscourse

In terms of frequency, the distribution of interactional metadiscourse categories across the corpora shows a similar tendency: the most prominent category is hedges, followed by boosters in the learner corpora and engagement in the RA, the third position is occupied by engagement in the learner corpora and boosters in the RA, the fourth by attitude markers, while the least frequent category is self-mention. The prominence of hedges and boosters as markers of epistemicity is hardly surprising as they allow writers to modulate the degree of certainty and commitment to their claims, which is essential to academic persuasion, while the importance of engagement resides in its potential to involve readers in the argument and thus persuade them to accept the writer's views and interpretations.

3.1.1 Self-mention

Despite being the least frequent interactional metadiscourse category, self-mention is a highly important marker as it allows writers to indicate their personal stance and gain visibility for themselves and their work.

The frequency of realisation types of pronominal self-mention (Table 4) confirms the prominence of this stance marker in expert discourse. Its occurrence in the RA corpus is significantly higher than in the learner corpora.

Corpora	**Self-mention**											
	I		***we***		***my***		***our***		***me***		***us***	
	n	pttw	n	pttw	n	pttw	n	pttw	n	pttw	n	pttw
MT	644	6.79	56	0.6	281	2.96	4	0.4	57	0.6	0	0
BAWE	375	7.64	0	0	45	0.92	0	0	14	0.2	0	0
RA	317	13.0	21	0.8	97	3.99	6	0.2	17	0.7	0	0

Table 4: Frequency of realisation types of self-mention across the corpora

As evidenced by the lesser incidence of self-mention in the MT and BAWE corpora, backgrounding authorial presence seems to be a distinctive feature of learner discourse motivated by a reluctance to show full commitment to views and claims (cf. Hyland, 2004; Lee & Deakin, 2016; Liu & Zhang, 2022). L2 scholars' English-medium discourse has also been shown to display lesser use of self-mention (e.g., Dontcheva-Navratilova, 2013; Liu & Zhang, 2022; Loréz Sanz, 2011), which may have an impact on Czech graduates' texts.

The less frequent use of pronominal self-mention in Czech students' theses is compensated by a high frequency of occurrence of nominal forms such as abstract rhetors (e.g., *the thesis*, *this chapter*) or the phrase *the author* (*of this thesis*) (Dontcheva-Navratilova, 2013, 2023a). Self-mention by exclusive *we/our* occurs in five of the 48 theses in the MT corpus; this may be interpreted as interference of the L1 academic writing conventions as such use of exclusive first-person plural pronouns is typical of Czech academic discourse (Čmejrková & Daneš, 1997). No incidence of exclusive we has been found in the L1 corpora. While most self-mention markers occur in the agentive subject position, granting a high degree of visibility to the writer (1), in the MT and RA corpora there is also a substantial presence of possessive forms (2), which allow writers to create a strong association between the researcher and their data, findings or interpretations (*my corpus*, *my analysis*, *my view*); since AEs are not research-oriented, they show a low incidence of these patterns.

(1) *In presenting these findings **I argue** that the description, or reference to, collectives is not the same as enacting those collectives.* (RA_LIT_05)

An analysis of the rhetorical functions of self-mention reveals further differences. The most prominent in all corpora is the researcher role (Dontcheva-Navratilova, 2023a) related to the description of data collection and presentation and interpretation of results (2) (10.9 pttw in RA, 6.7 pttw in MT and 5.6 pttw in BAWE). The importance of the discourse organiser role is greater in the longer texts or RAs (3.5 pttw) and MTs (2.0 pttw), where assisting readers through the text is of primary importance (2).

(2) *In part four **I present** and discuss **my** findings, drawing a classification of the observed metaphors and comparing them to the aforementioned previous study.* (MT_LIN_04)

The most powerful, authorial roles of arguer (1) and evaluator are particularly prominent in the RA corpus (3.1 and 0.7 pttw respectively), where the researcher steps into the text to put forward claims, comment on findings and evaluate previous research, thus assuming a position of authority and enhancing their visibility.

The reflexive-self role locating the writer in a specific socio-cultural context and casting their autobiographical self into the text (cf. Starfield & Ravelli, 2006) is most frequently used in introductions to MTs, where Czech graduates explain their motivation for choosing a topic or narrate personal stories connected to their studies (3). This may be seen as a self-disclosure strategy for personalising their work and stressing their involvement with the research topic or methodology.

(3) ***My*** *interest in developing learner autonomy was sparked by* ***my*** *first encounter with ALL which happened during a JAPO course […].* (MT_EDU_10)

These findings indicate that the realisations and functions of self-mention vary along the genre, cultural and expertise dimensions across the corpora. In addition, the reluctance of Czech graduates to employ self-mention more frequently may be induced by the examination context in which the MT is set, as well as by the influence of academic writing style guides and Czech academic writing conventions, where the use of self-mention is generally avoided.

3.1.2 Hedges

Despite being the dominant stance category in all corpora, hedges show significant variation in frequency of occurrence between the RA and the learner corpora, revealing variation along the expertise dimension (Table 3).

A comparison of the realisations of hedges (Table 5) shows that in agreement with previous research (e.g., Hyland, 1998; Mur-Dueñas, 2021; Wu & Paltridge, 2021), adverbs (e.g., *often*, *probably*, *usually*), modal verbs (e.g., *may*, *might*, *would*) and epistemic lexical verbs (e.g., *claim*, *suggest*, *indicate*) are the most frequent realisations of hedges in all corpora.

Hedges realisations	**MT**		**BAWE**		**RA**	
	n	pttw	n	pttw	n	pttw
Adjectives	1,152	11.6	449	9.7	302	12.5
Adverbs	4,452	45.5	1,775	38.3	855	35.3
Modal verbs	4,030	41.1	1,640	35.3	1,158	47.6
Semi-modal verbs	776	8.1	584	11.8	260	10.7
Epist. lexical verbs	2,395	25.2	1,489	30.3	871	35.8
Epist. nouns	314	3.2	334	7.1	207	8.5
Phrases	610	6.2	159	3.4	135	5.5

Table 5: Realisations of hedges across the corpora

However, adverbs (4) are considerably more frequent and epistemic lexical verbs are significantly less frequent in the MT corpus than in the L1 corpora, which indicates cross-cultural variation. Modal verbs (e.g., *may*, *might*, *could*) are more prominent in the research-oriented genres than in AEs (35.3 pttw). The use of semi-modal verbs (the verbs *seem* and *appear* characterised by a low semantic load) across the corpora shows the same tendency as displayed by epistemic lexical verbs. The reasons for Czech graduates' preferences may stem from academic writing instruction, which dedicates ample time to the use and

practice of stance adverbials but pays attention only occasionally to the rhetorical potential of epistemic lexical verbs and semi-modals.

(4) ***Generally**, the students, who expressed positive feelings about the project, **usually** stated something along the lines that they did find it useful even though they did not use its full potential.* (MT_EDU_10)

The less frequent use of epistemic lexical verbs (5) for making claims may also be explained by their typical co-occurrence with first person pronouns (e.g., *I argue*, *I propose*), which contradicts the advice of instructors and style guides to avoid personality. However, distancing from claims may also be regarded as a strategic choice aimed at preventing criticism on the part of the students.

(5) *What the recording conveys instead, **I propose**, is the sensation of headlines announcing a feature story or breaking news – a sound effect closer to a newsboy's cry than to a headlined placard.* (RA_LIT_08)

The other realisations of hedges (adjectives, epistemic nouns and phrases) are less frequent. The higher rate of phrasal hedges used by Czech students seems to indicate a reliance on set phrases, such as *in general*, *in my view*, *from this perspective*.

An analysis of the functions of hedges reveals further differences. In all corpora, content-oriented hedges conveying the precision and reliability of provided information (e.g., *probable*, *may*, *likely*) prevail over participant-oriented hedges (Dontcheva-Navratilova, 2023b), which modulate writer-reader interaction (e.g., *claim*, *appear*, *in my view*). However, the ratios of content and participant-oriented hedges differ. The MT corpus displays the most substantial difference between the ratios of the two types of hedges (70.2% vs 29.8%), while in the L1 corpora this difference is smaller (58.8% vs 41.2% in BAWE and 62.2% vs 37.8% in RA) (cf. Lee & Deakin (2016) reporting a similar tendency in L1 vs L2 university student writing). The lower proportion of participant-oriented hedges in the MT corpus might be attributed to power relations in the context of a high-stakes examination. It is likely that Czech graduates use fewer participant-oriented hedges to restrict the dialogic space and protect themselves from possible criticism, but at the same time employ content-oriented hedges to present their claims and positions as uncertain and comment cautiously on the views and claims of others (cf. Aull & Lancaster, 2014; Qiu & Ma, 2019).

3.1.3 Boosters

Overall, boosters show no significant variation across the MT and the RA corpora, but their rate is significantly higher in the BAWE corpus (Tables 2 and 3), probably because without the support of research data writers of AEs feel the need to express their views with a higher degree of commitment and certainty.

The most frequent realisations of boosters across the corpora are adverbs (e.g., *always*, *clearly*), followed by lexical verbs (e.g., *show*, *demonstrate*), adjectives (e.g., *clear*, *obvious*) and phrases (e.g., *in fact*, *no doubt*) (Table 6); the occurrence of modal verbs is insignificant, as it is represented by a single item (*must*).

Boosters realisations	**MT**		**BAWE**		**RA**	
	n	pttw	n	pttw	n	pttw
Adjectives	692	7.1	435	9.4	139	5.7
Adverbs	2,419	24.7	1,320	28.4	572	23.6
Modal verbs	14	0.1	10	0.2	4	0.2
Lexical verbs	1,141	11.6	758	16.3	386	15.9
Phrases	767	7.8	341	7.3	121	4.9

Table 6: Realisations of boosters across the corpora

The BAWE corpus displays the highest rate of adverbs as boosters, while the difference across the RA and MT corpora is not significant, the most frequently used items being *always*, *actually*, *clearly*, *highly*, *indeed* and *particularly*. Similarly to hedges, boosting by epistemic lexical verbs (*demonstrate*, *show*) is more prominent in the L1 corpora, which confirms the existence of cross-cultural variation. The higher frequency of adjectives (6) in the learner corpora confirm that learner writers tend to convey their stance with adjectives and adverbs, while experienced writers are likely to opt for epistemic lexical verbs (Wu & Paltridge, 2021).

(6) *Therefore it is **clear** that the differences in the way poems and novels organize their stories lies mainly in the narrative structures.* (BAWE_ENG_114)

Out of the two functions performed by boosters, that is, emphatics (*clear*, *in fact*, *show*, *demonstrate*, *by no means*) and amplifiers (*always*, *clearly*, *certainly*), the former show a higher ratio across all corpora (61.5% in MT, 65.6% in BAWE and 64.3% in RA). The marked presence of emphatics in the L1 corpora may reflect an effort to express commitment to views and certainty in results interpretation intended to balance the caution and tentativeness expressed

by hedges. The slightly higher ratio of amplifiers (*always*, *clearly*, *definitely*) in the MT corpus may be interpreted as the projection of an overgeneralised and assertive stance reported as characteristic of less advanced writers (Aull & Lancaster, 2014).

Regarding the interplay of hedges and boosters, seen as opposite sides on a certainty scale, our results show that learner writers use considerably fewer hedges and slightly more boosters than expert writers, thus confirming the findings of previous research reporting a tendency on the part of learners to express stronger commitment to views and open a restricted dialogic space for the negotiation of their claims (Qiu & Ma, 2019; Wu & Paltridge, 2021). Yet Czech students' use of hedges and boosters is closer to that of expert writers than L1 learner writers, probably due to their more advanced socialisation in academia, the gradual shift towards English academic writing conventions, and because of their efforts to be cautious and deferent in the context of a high-stake examination.

3.1.4 Attitude markers

Attitude markers, which convey the writers' evaluative assessment of the propositional content, do not show significant variation across the MT and the RA corpora (Table 3), while L1 learners use them significantly less frequently. These findings seem to be attributable mainly to the similarity of the research genres of MTs and RAs. Master's students and expert writers are assumed to be more aware than L1 learners of the necessity of involving their readers in the discussion of the research, acknowledging its limitations and indicating the importance and relevance of their findings.

In all three corpora research-oriented attitude markers (Thetela, 1997) predominate over topic-oriented attitude markers (27.7 vs 17.9 pttw in MT corpus, 29.6 vs 13.7 pttw in RA and 22.3 vs. 14.4 pttw in BAWE). All types of writers choose to use attitude markers primarily to evaluate their own research and its findings (7), while evaluation of previous research by other scholars and future research is relatively rare.

(7) ***A surprising outcome*** *of this analysis, however, was the number of non-equivalent idioms.* (MT_LIN_14)

Attitude is most straightforwardly expressed using attitudinal nouns, adjectives, verbs and adverbs. Given their evaluative potential, adjectives were identified as the most frequent in all three corpora, vastly outnumbering the other three realisation types (Table 7). They constitute approximately 62 per cent of realisations of attitude markers in the MTs (29.7 pttw), 65 per cent in the BAWE

(22.8 pttw), and 63 per cent in the RAs (27.6 pttw). The other three realisations display the same order and a similar frequency of occurrence across the three corpora, nouns ranking second, adverbs third and verbs fourth.

	MT		BAWE		RA	
	n	pttw	n	pttw	n	pttw
Adjectives	2,818	29.7	1,119	22.8	669	27.6
Nouns	748	7.9	316	6.4	192	7.9
Adverbs	417	4.4	191	3.9	97	4.0
Verbs	342	3.6	180	3.6	91	3.7

Table 7: Realisation types of attitude markers across the corpora

The range and variety of evaluative expressions identified as attitude markers was also very similar across the three corpora. In all four categories, the lists of most frequent expressions largely overlap: adjectives – *important*, *key*, *interesting*, *surprising*, *crucial*; nouns: *importance*, *difficulty*, *value*, *insight*; adverbs – *interestingly*, *importantly*, *essentially*; and verbs – *support*, *contribute*, etc. Overall, the evaluation with attitude markers mainly highlights the importance of the research, notable results, and key methodological justifications.

3.1.5 Engagement

The alignment dimension of engagement is more prominent in the RA corpus than in the learner corpora (Table 8). The engagement resources comprise reader reference, personal asides, questions, directives and appeals to shared knowledge. Due to their rare occurrence and frequent overlap with other categories, such as self-mention and attitude markers, personal asides are not analysed here.

Engagement	MT		BAWE		RA	
	n	pttw	n	pttw	n	pttw
Reader reference	1,489	15.7	1,087	22.1	650	26.7
Shared knowledge	1,770	18.6	842	17.0	418	17.1
Directives	1,205	12.6	393	8.0	271	11.2
Questions	87	0.9	137	2.8	126	5.1

Table 8: Frequency of engagement sub-categories across the corpora

As shown in Table 8, the most frequent engagement markers in all corpora are reader reference and appeals to shared knowledge. However, while difference in shared knowledge markers is not significant, reader reference is considerably

more prominent in the L1 corpora, indicating cross-cultural variation. The main function of reader reference, typically realised by the inclusive *we*, is to build proximity with readers by presenting them as belonging to the same 'in-group' as the writer and thus as sharing the same values and views. In the RA corpus, the use of an inclusive *we* typically represents the reader as a co-researcher who shares disciplinary common ground with the writer and follows the argument chain to reach suggested conclusions (8). In the learner corpora, however, the group with which the reader is invited to identify is fuzzier and may often be interpreted as people in general.

(8) *When **we** choose to engage with how accounts are constructed as well as what interviewees seem to be saying, **we** come to understand more clearly how interviewers and interviewees assemble particular discursive resources in co-constructing clarity and seeming reliability too.* (RA_LIN_09)

Appeals to shared knowledge are instrumental in enticing the reader to accept the interpretations, positions and views of the writer, which most likely explains the lack of significant variation across the corpora. The most frequent realisations of appeals to shared knowledge in all corpora are *obvious, of course, evidently* and *apparently*. There is, however, a slight difference in the placement of these markers, with Czech graduates tending to locate them in sentence initial position (9). Apart from indicating the possible influence of instruction in academic writing, this might stem from the greater visibility of shared knowledge markers in initial position, which helps learners notice and subsequently use them (Dontcheva-Navratilova, 2023b).

(9) ***Of course**, facing the reader with seemingly meaningless passages as well as with their authoritative-sounding counterparts is not the only language-related technique Burroughs employs in the text.* (MT_LIT_10)

The use of directives seems to be impacted by genre variation, as their frequency is similar in the research genres represented in the MT and RA corpora but substantially lower in BAWE. Out of the three possible realisations of directives (i.e., imperatives, obligation modals and predicative adjectives) obligation modals are the preferred choice in all corpora (10). Imperatives (e.g., *consider*, *see*) and predicative adjectives (e.g., *it is necessary to*, *it is important to*) are more prominent in the MT and RA corpora, as writers seem to be more prone to assuming a position of authority (Hyland & Jiang, 2019), probably based on their knowledge and research results and despite the imposition and face-threat that these forms imply.

(10) *Students and teachers **should** be trained in how to master pronunciation more effectively, and tools such as the phonemic chart and on-line courses **ought to** be readily available to the teaching staff.* (BAWE_LIN_152)

The functions of directives (textual, cognitive and physical acts) also differ across the corpora. While, as is typical of most soft disciplines, physical acts are practically absent, textual acts (realised mostly by *see*) have a noticeable presence in the MT (23%) and the RA (32.5%) corpora, albeit only a minor one in the BAWE (5%). This results from the length of the text and the frequent use of tables, paragraphs, examples and appendices in RAs and MTs, which require writers to make cross-references to these text components. The predominant function of directives in all corpora is to perform cognitive acts which strive to direct the readers' attention to important points and guide them towards intended interpretations (e.g., *it is important to note*, *consider key characteristics of the data*, *contextual factors must be acknowledged*).

The rhetorical potential of questions to focus the attention of the reader on key points in the argument is exploited primarily by expert writers. In the learner corpora, especially in the MT corpus, they occur relatively rarely. This suggests that the mastering of this explicitly dialogic feature is associated with rhetorical maturity and expertise.

3.2 Interactive metadiscourse

The significantly higher frequency of interactive markers in the MT corpus in comparison with the L1 corpora results primarily from the high rate of transitions, endophoric markers, frame markers and code glosses (Tables 2 and 3). The most frequent interactive marker across all corpora are evidentials, which confirms the key role of reference to previous research in academic discourse. However, they are the only interactive marker that does not show significant variation across the RA and the learner corpora. Transition markers are second in frequency "as they represent writers' attempts to ensure readers are able to correctly recover their intentions" (Hyland, 2004, p. 140).

3.2.1 Transition markers

Transition markers show significant differences in frequency across the three corpora: they are the most frequent in the MT corpus and the least frequent in RAs. This seems to reflect the ability of expert writers to indicate logical relations in various ways, as well as the strong emphasis on transitions in academic writing instruction, which often leads to overuse of surface cohesive means (cf. Dontcheva-Navratilova et al., 2020). The three sub-categories of transitions

reflecting the basic types of relations between the ideas or arguments proposed, namely 'addition' (e.g., *moreover*, *in addition*), 'comparison' pointing either to similarity (e.g., *similarly*, *likewise*) or difference between arguments (e.g., *but*, *in contrast*, *however*), and 'consequence' (e.g., *thus*, *therefore*), also show variation across the corpora (Table 9).

Transitions	**MT**		**BAWE**		**RA**	
	n	pttw	n	pttw	n	pttw
Addition	1,513	15.9	481	9.8	180	7.4
Comparison	2,251	23.7	1,496	30.4	491	20.9
Consequence	1,525	16.1	511	10.4	205	8.4

Table 9: Frequency of transitions sub-categories across the corpora

While in the L1 corpora addition and consequence are not very frequent as these relations can be implied, they are prominent in the MT corpus showing a tendency toward overexplicitness (11). The most prominent sub-category of transitions in the L1 corpora is comparison (12), which is particularly high in the BAWE corpus probably because of the comparative American studies essays.

(11) ***In addition**, as simulation games promote creative and imaginative thinking, they have positive effects on the development of these capacities* (Kusnierek, 2015). ***Furthermore**, as it has been suggested, participation in simulations requires a great deal of autonomy on the part of the student […].* (MT_EDU_14)

(12) ***Likewise**, Eliot uses Colonel Townley's status as an outsider, as a vehicle to introduce the reader to the novel.* (BAWE_ENG_075)

The lists of the five most frequent transition markers in the three corpora display a certain degree of similarity. While the markers of contrast *however* and consequence *therefore* are highly prominent in all corpora, the top five also include *thus* and the markers of addition *moreover* and *furthermore* (11) in MTs; *thus* and the conjunctions *but* and *and* in RAs; and *yet, on the other hand* and *furthermore* in the BAWE corpus. While expert writers tend to use conjunctions performing a metadiscoursal function rather frequently, learner writers rely more heavily on adverbs to express transitions.

3.2.2 Frame markers

Frame markers exhibited the highest frequency in the MTs (17.0 pttw), compared to RAs (10.4 pttw) and AEs (7.1 pttw). This result confirms that "longer papers, of course, require more explicit structuring to ensure readers are able to follow the direction of the argument" (Hyland & Jiang, 2018, p. 16).

However, fewer frame markers in expert writing may indicate a higher level of sophistication in text organisation (Noble, 2010, p. 160).

A comparison of the four frame marker subcategories (Hyland, 2005, p. 51) shows varying frequencies across the corpora (Table 10).

Frame markers	**MT**		**BAWE**		**RA**	
	n	pttw	n	pttw	n	pttw
Sequencing	749	7.9	64.0	1.3	54	2.2
Label stages	130	1.4	85.0	1.7	29	1.2
Announcing goal	658	6.9	114.0	2.3	121	5.0
Topic shift	78	0.8	87.0	1.8	48	2.0
TOTAL:	1,615	17.0	350.0	7.1	252	10.4

Table 10: Distribution of subcategories of frame markers across corpora

The occurrence of sequencers in the MT corpus was significantly higher than in the L1 corpora (13), yet common devices such as *first*, *then*, and *finally* were identified across all corpora. Stage labellers were rare in all three corpora, though summarising labellers (e.g., *in conclusion*, *to sum up*, *to summarise*) were most prevalent in the learner corpora, indicating that novice writers tend to use fixed phrases and an impersonal tone in summarising their points.

(13) ***To start with**, compliments are used to ease the process of communication, so by their very nature they are exchanged by the participants of a conversation.* (MT_LIN_12)

Goal announcers (e.g., *aim*, *focus*, *intend to*, *objective*, *seek to*) were more common in the MT corpus than in the shorter L1 texts. Self-mention co-occurring with verbal phrases to announce goals, such as *I/we want to*, *I argue*, *I intend*, were primarily used by expert writers, while Czech graduates preferred an impersonal tone. Finally, topic shifters (e.g., *in regard to*, *move on*, *now*, *shift to*, *so*) occurred more frequently in the L1 corpora. The most common topic shifter in RAs was *so* (0.9 pttw), compared to BAWE (0.2 pttw) and MT (0.04 pttw). The absence of *so* in Master's theses is unsurprising, given that it is not regarded as a conventional topic shifter in academic writing.

3.2.3 Endophoric markers

The frequency of endophoric markers (e.g., *see Figure 2*, *as noted above*) varies significantly across the three corpora (Tables 2 and 3). Their occurrence is very high in the MT corpus due to text length, where guiding readers to specific

text sections and spotlighting (e.g., examples, visual aids, and research findings) is highly important (Hyland, 2005), and low in the BAWE corpus comprising shorter texts with less need for cross-referencing.

Table 11 summarizes the occurrence of the three sub-categories of endophoric markers (anaphoric, cataphoric, and non-directional) across the corpora.

Endophoric markers	**MT**		**BAWE**		**RA**	
	n	pttw	n	pttw	n	pttw
Anaphoric	1,548	16.3	281	5.7	246	10.7
Cataphoric	1,273	13.4	130	2.6	131	5.4
Non-directional	1,122	11.8	71	1.4	320	13.2
TOTAL:	3,943	41.6	482	9.8	697	28.7

Table 11: Frequency of endophoric markers across the corpora

In each corpus, anaphoric reference predominates over cataphoric, as authors often return to previously mentioned points. Anaphoric reference is most frequent in learner writing (14), while experts favour non-directional (15) and anaphoric reference. The low frequency of non-directional reference in BAWE is due to the shorter length and less formal structure of argumentative essays, resulting in no reference to chapters or sections, and less frequent reference to items incorporated into the text, for example, figures, or tables.

(14) *As it has been suggested **above**, the main advantage of the model as it is understood today is its relative simplicity and universality of usage.* (MT_EDU_14)

(15) ***Table 6** summarizes how the different referent types were introduced by the three native-language groups.* (RA_EDU_10)

3.2.4 Evidentials

Evidentials are the most frequent interactive metadiscourse marker across the three corpora. The highest rate of evidentials is present in the BAWE corpus (77.49 pttw), which seems to result from the limited size of the text in which authors need to ground their argument in previous research. The MT and RA corpora do not show significant difference in the frequency of evidentials (69.1 vs 71.9 pttw; p=0.1508). This frequency is higher than the rate of 64.1 in post-graduate theses across several soft and hard sciences disciplines as reported by Hyland (2004), which might reflect the choice of disciplines represented in the corpora but also shows that Czech graduates seem to be aware of the importance of citations in academic discourse.

A comparison of the ratio of integral vs non-integral citations (cf. Swales, 1990) shows that the realisation types of citations in the MT corpus differ from those in the L1 corpora (Table 12). While 60.7 per cent of all citations used by Czech graduates are integral, L1 writers show a preference for non-integral forms. A predominance of integral citations in student writing in the social sciences and humanities has been reported by previous research (e.g., Ädel & Garretson, 2006). Professional academic discourse, however, is marked by a prevalence of non-integral forms (cf. Hyland & Jiang, 2017). Thus, the higher prominence of non-integral citations in the RA corpus (64.2%) in comparison to the BAWE corpus (53.6%) and the MT corpus (39.3%) suggests that variation across the corpora is affected by degree of expertise rather than by culture.

Interactive metadiscourse	**MT**		**BAWE**		**RA**	
	n	%	n	%	n	%
Integral citations	3,976	60.7	1,765	46.4	626	35.8
Non-integral citations	2,577	39.3	2,040	53.6	1,120	64.2
Evidentials	6,553	100.0	3,805	100.0	1,746	100.0

Table 12: Integral vs non-integral citations across the corpora (in per cent)

Non-integral citations emphasise the content of the message, as reference to the cited researcher is typically confined to the name of the cited author in parenthesis (16). This allows the writer to summarise large amounts of information and display familiarity with numerous sources without interrupting the flow of the argument.

(16) *Disagreement tends to revolve around topics or ideas (Grimshaw, 1990b), while disaffiliation or disalignment occurs regarding participants (Kjaerbeck, 2008).* (RA_LIN_02)

By including the cited author's name as a clause element, integral citations give high prominence to the cited researcher, who is often positioned as an authority supporting the author's view (17), and they help the writer highlight selected source content and evaluate reported material. Integral citations may take the form of paraphrase, which according to Shi (2010) students perceive as enhancing the academic quality of their MT, or a direct quote, which gives prominence to the original wording of quoted previous research.

(17) *For instance, Scrivener (2011) pointed out that simulations are in fact only "large scale role-plays" (p. 224).* (MT_EDU_14)

Set phrases including the name of the cited author functioning as an adjunct are significantly more frequent in the MT corpus than in the L1 corpora (e.g., *according to NAME* and *as* NAME+VERB/VERB+NAME). This suggests that Czech graduates tend to rely on academic phrases acquired in academic writing courses to enhance the accuracy and the academic style of their texts but lack sufficient expertise in the use of evidentials. To improve intertextual referencing, students need to invest more time in developing their writing proficiency and familiarising themselves with disciplinary and genre conventions (e.g., Thompson, 2005).

3.2.5 Code glosses

The frequency of code glosses (e.g., *i.e.*, *that is*, *in other words*) shows significant variation across the corpora (Table 2). Czech writers reformulated and clarified their statements most frequently (37.1 pttw); in comparison, L1 student writers used code glosses considerably less frequently (25.2 pttw), with L1 expert writers being in the middle (33.1 pttw). A closer look at the two functions of code glosses, reformulation and exemplification (Hyland, 2007), reveals that in all three corpora, exemplification predominates over reformulation, which shows that both learner and expert writers recognize its importance in academic argumentation. Since the distribution of exemplification markers is very similar across the three corpora (Table 13), the greatest difference can be found in the use of reformulation.

Functions of code glosses	**MT**		**BAWE**		**RA**	
	pttw	%	pttw	%	pttw	%
Reformulation	16.3	44.0	5.8	23.0	13.5	40.8
Exemplification	20.8	56.0	19.4	77.0	19.6	59.2
Total	37.1	100	25.2	100	33.1	100

Table 13: Subfunctions of code glosses across the three corpora

The highest incidence of reformulation markers is found in the MTs. This may be attributable to the character of the genre, which requires that authors are able to demonstrate knowledge and understanding of the theories, methods and terminology of a given discipline, and more specifically of the research problem studied (18). On the other hand, AEs in the BAWE corpus are considerably shorter and do not provide so many opportunities for rephrasing or explanations. MTs and RAs proved similar since they are both research-process genres and their authors often use code glosses to explain, define or clarify their statements.

(18) *'Synonymy' is a type of paradigmatic relations,* ***i.e.*** *relations that "reflect the semantic choices available at a particular structure point in a sentence" (Cruse 2000: 148), and is generally* ***defined*** *as sameness or identity of meaning.* (MT_LIN_12)

Specific code glosses the writers opt for seem to reflect cultural differences reflecting different academic writing conventions. When reformulating, Czech students overwhelmingly prefer the abbreviation *i.e.*, which accounts for 31 per cent of all reformulation markers in the MT corpus. Both expert and learner L1 writers employ more varied devices, such as *that is*, *in other words*, *mean*, *specifically*. Interestingly, Murillo (2018) discovered that *i.e.* was the most commonly used reformulation marker in English-medium RAs by Czech authors. This suggests that Czech novice and expert writers both rely heavily on this simple, grammaticalised form which does not pose any problems in text production and comprehension.

4 Conclusion

This article has studied metadiscourse in MTs by L2 (Czech) graduates to explore how L2 learners organise their discourse, express an evaluative stance and engage in a dialogue with readers. Seeking to contribute to intercultural rhetoric studies, it has also carried out a contrastive analysis between the use of metadiscourse in three corpora representing Czech students' MTs and L1 university students and expert writers' academic discourse. The findings indicate that the use of metadiscourse in Czech graduates' MTs is influenced by several interrelated factors, the most important of which seems to be the level of expertise; academic writing culture (L1) and genre appear to affect realisation choices and functional specialisations of specific categories of metadiscourse markers.

While in all corpora interactional metadiscourse is more prominent than interactive metadiscourse, the realisation patterns and preferences for specific functions of metadiscourse markers of the three groups of authors vary significantly. Czech graduates use fewer interactional metadiscourse markers than do expert writers, which may stem from a reluctance to display a high degree of authorial visibility and to engage overtly with the reader. This may be explained by cultural differences (i.e., differences in academic writing conventions) as well as by the examination context in which the MT is set, as students are likely to opt for deference, humility and impersonality, so seeking to avoid criticism and meet the expectations of the examiners, who are the primary readers of the theses. Czech students' frequent use of interactive metadiscourse reflects their effort to structure and enhance their academic style using set phrases to achieve text coherence.

Within interactional metadiscourse categories, the more prominent occurrence of self-mention, hedges and engagement markers in the published RAs in comparison to the learner corpora indicate variation along the expertise dimension. Expert writers seek recognition within their discourse community by striving to enhance their visibility, creating a rapport with readers and opening a dialogic space for negotiating suggested interpretations. This is also reflected in the more frequent occurrence of the most powerful self-mention roles of arguer and evaluator in expert writers' texts. In contrast, learner writers are less likely to step into the text by using self-mention and to create an in-group relationship with their readers (i.e., examiners), by employing engagement markers. Thus, in consonance with findings of previous research into L2 learner discourse (Hyland, 2004; Qiu & Ma, 2019; Wu & Paltridge, 2021), Czech graduates use fewer hedges and slightly more boosters than L1 expert writers, which makes their texts look more assertive than is typical of academic discourse. The lesser occurrence of self-mention can also be impacted by cultural differences, particularly the impact of Czech academic writing norms that discourage the use of personality.

Variation in interactive metadiscourse is clearly influenced by text length and genre. The most prominent interactive markers across all corpora are evidentials and transition markers. The very high frequency of evidentials in AEs is somewhat surprising, but it seems to result from the need to anchor the argument in previous research within a very short text, which results in a high relative frequency of citations. Czech graduates use more integral citations than non-integral citations, while in the L1 corpora the situation is reversed. This may be explained by a lower degree of rhetorical maturity on the part of the students, but also by the belief that the use of integral citations by paraphrase enhances the academic quality of an MT (Shi, 2010). Transition markers and code glosses are most prominent in MTs, followed by RAs indicating the need to make explicit the development of the argumentation chain in research genres. The need to mark discourse organisation and guide the reader through the extensive texts of MTs and RAs explains the more frequent occurrence of endophoric and frame markers in these genres. In the learner corpora these are realised primarily by a restricted range of fixed phrases, while expert writers use a wider repertoire of metadiscourse resources.

In conclusion, the findings allow us to draw a few pedagogical implications. In agreement with Hyland (2004, p. 148), we argue that "conscience raising is crucial in L2 academic writing instruction and for teachers this means helping students to move beyond the conservative prescriptions of the style guides"; this may be achieved by encouraging students to analyse their own writing and by providing them with expert models for comparison. Special attention should

be paid to making students aware of intercultural differences and familiarising themselves with disciplinary and genre conventions (Thompson, 2005). Explicit instruction on metadiscourse features in academic writing courses tailored to the needs of graduates (Lee & Deakin, 2016; Wingate, 2012) could assist them in using these rhetorical features strategically. Such courses would ideally combine peer and teacher feedback allowing students to reflect on how they use metadiscourse devices to express their stance, engage with readers and organise their texts. As Lee and Deakin (2016, p. 32) argue, "making these pervasive yet "hidden" dimensions of persuasive writing explicitly visible" could enable students to make conscious rhetorical choices in their efforts to enhance the persuasiveness of their discourse.

Finally, this study has its limitations, as it has focused on only one L2 context and a limited set of disciplines in the soft sciences. Therefore, our results should not be overgeneralised; they should be verified by future research exploring metadiscourse in a wider range of cultural contexts and disciplines and combining the 'marker' and 'move' approaches to the study of metadiscourse (Ädel, 2023). Further research should also consider the effect of AI tools on MA thesis writing since it may be predicted that they will influence the patterns of use of metadiscourse devices in the final texts.

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References

Ädel, A. (2006). *Metadiscourse in L1 and L2 English.* John Benjamins.

Ädel, A. (2023). Adopting a 'move' rather than a 'marker' approach to metadiscourse: A taxonomy for spoken student presentations. *English for Specific Purposes*, *69*, 4–18. https://doi.org/10.1016/j.esp.2022.09.001

Ädel, A., & Garretson, G. (2006). Citation practices across disciplines: The case of proficient student writing. In M. C. Pérez-Llantada, R. Pló Alastrué, & C. P. Neumann (Eds.), *Academic and professional communication in the 21st century: Genres and rhetoric in the construction of disciplinary knowledge* (pp. 271–280). Prensas Universitarias.

Aull, L. L., & Lancaster, Z. (2014). Linguistic markers of stance in early and advanced academic writing: A corpus-based comparison. *Written Communication*, *31*(2), 151–183. https://doi.org/10.1177/0741088314527055

Connor, U., & Moreno, A. (2005). Tertium comparationis: A vital component in contrastive rhetoric research. In P. Bruthiaux, D. Atkinson, W. Eggington, W. Grabe, & V. Ramanathan (Eds.), *Directions in applied linguistics: Essays in honor of Robert B. Kaplan* (pp. 153–164). Multilingual Matters.

Crosthwaite, P., Cheung, L., & Jiang, F. (2017). Writing with attitude: Stance expression in learner and professional dentistry research reports. *English for Specific Purposes*, *46*, 107–123. https://doi.org/10.1016/j.esp.2017.02.001

Čmejrková, S., & Daneš, F. (1997). Academic writing and cultural identity. The case of Czech academic writing. In A. Duszak (Ed.), *Culture and styles of academic discourse* (pp. 40–62). Mouton de Gruyter.

Dontcheva-Navratilova, O. (2013). Authorial presence in academic discourse: Functions of author-reference pronouns. *Linguistica Pragensia*, *23*(1), 9–30.

Dontcheva-Navratilova, O. (2023a). Self-mention in L2 (Czech) learner academic discourse: Realisations, functions and distribution across master's theses. *Journal of English for Academic Purposes*, *64*, 101272. https://doi.org/10.1016/j.jeap.2023.101272

Dontcheva-Navratilova, O. (2023b). Writer-reader interaction in L2 learner academic discourse: Reader engagement in Czech students' Master's theses. *Linguistica Pragensia*, *33*(2), 117–135.

Dontcheva-Navratilova, O., Jančaříková, R., Hůlková, I., & Schmied, J. (2020). Theme choices in Czech university students' English-medium Master's theses. *Lingua, 243*, 102892. https://doi.org/10.1016/j.lingua.2020.102892

Duff, P. A. (2010). Language socialization into academic discourse communities. *Annual Review of Applied Linguistics*, *30*, 169–192. https://doi.org/10.1017/S0267190510000048

Flowerdew, L. (2015). Using corpus-based research and online academic corpora to inform writing of the discussion section of a thesis. *Journal of English for Academic Purposes*, *20*, 58–68. https://doi.org/10.1016/j.jeap.2015.06.001

Guziurová, T. (2022). Glossing an argument: Reformulation and exemplification in L2 Master's theses. *Topics in Linguistics*, *23*(2), 18–35. https://doi.org/10.2478/topling-2022-0009

Ho, V., & Li, C. (2018). The use of metadiscourse and persuasion: An analysis of first year university students timed argumentative essays. *Journal of English for Academic Purposes*, *33*, 53–68. https://doi.org/10.1016/j.jeap.2018.02.001

Hong, H., & Cao, F. (2014). Interactional metadiscourse in young EFL learner writing: A corpus-based study. *International Journal of Corpus Linguistics*, *19*(2), 201–224.

Hyland, K. (1998). Boosting, hedging and the negotiation of academic knowledge. *Text*, *18*(3), 349–82. https://doi.org/10.1515/text.1.1998.18.3.349.

Hyland, K. (2004). Disciplinary interactions: Metadiscourse in L2 postgraduate writing. *Journal of Second Language Writing*, *13*(2), 133–151. https://doi.org/10.1016/j.jslw.2004.02.001

Hyland, K. (2005). *Metadiscourse: Exploring interaction in writing.* Continuum.

Hyland, K. (2007). Applying a gloss: Exemplifying and reformulating in academic discourse. *Applied Linguistics*, *28*(2), 266–285.

Hyland, K., & Tse, P. (2004). Metadiscourse in academic writing: A reappraisal. *Applied Linguistics*, *25*(2), 156–177. https://doi.org/10.1093/applin/25.2.156

Hyland, K., & Jiang, K. (2017). Points of reference: Changing patterns of academic citation. *Applied Linguistics*, *40*(1), 64–85.

Hyland, K., & Jiang, F. (2018) "In this paper we suggest": Changing patterns of disciplinary metadiscourse. *English for Specific Purposes*, *51*, 18–30. https://doi.org/10.1016/j.esp. 2018. 02.001.

Hyland, K., & Jiang, K. (2019). *Academic discourse and global publishing: Disciplinary persuasion in changing times.* Routledge.

Jančaříková, R. (2023). Attitude markers in L2 learners' academic writing: A case study of Master's theses by Czech students compared to L1 students' writings. *Brno Studies in English*, *49*(1), 5–31. https://doi.org/10.5817/BSE2023-1-1

Kilgarriff, A., Rychlý, P., Smrz, P., & Tugwell, D. (2004). The Sketch Engine. In *Proceedings of the Eleventh EURALEX International Congress* (pp. 105–116), Lorient, France.

Lahodová Vališová, M. (2024). Endophoric signposting: A contrastive study of textual references in L2 Czech Master's theses and native English academic writing. *Miscelánea: A Journal of English and American Studies*, *70*, 15–40. https://doi.org/10.26754/ojs_misc/mj.20249976

Lee, J. J., & Casal, J. E. (2014). Metadiscourse in results and discussion chapters: A cross-linguistic analysis of English and Spanish thesis writers in engineering. *System*, *46*, 39–54. http://doi.org/10.1016/j.system.2014.07.009

Lee, J. J., & Deakin, L. (2016). Interactions in L1 and L2 undergraduate student writing: Interactional metadiscourse in successful and less-successful argumentative essays. *Journal of Second Language Writing*, *33*, 21–34. http://doi.org/10.1016/j.jslw.2016.06.004

Liu, G., & Zhang, J. (2022). Interactional metadiscourse and author identity construction in academic theses. *Journal of Language Teaching and Research*, *13*(6), 1313–1323. https://doi.org/10.17507/jltr.1306.20

Lorés Sanz, R. (2011). *The study of authorial voice: Using a Spanish–English corpus to explore linguistic transference. Corpora*, *6*(1), 1–24. https://doi.org/10.3366/cor.2011.0002

McGrath, L., & Kuteeva, M. (2012). Stance and engagement in pure mathematics research articles: Linking discourse features to disciplinary practices. *English for Specific Purposes*, *31*(3), 161–173. https://doi.org/10.1016/j.esp.2011.11.002

Mauranen, A. (1993). *Cultural differences in academic rhetoric: A textlinguistic study.* Peter Lang.

Mur-Dueñas, P. (2011). An intercultural analysis of metadiscourse features in research articles written in English and in Spanish. *Journal of Pragmatics*, *43*(12), 3068–3079. https://doi.org/10.1016/j.pragma.2011.05.002

Murillo, S. (2018). Not the same, but how different? Comparing the use of reformulation markers in ELF and in ENL research articles. In P. Mur-Dueñas & J. Šinkūnienė (Eds.), *Intercultural perspectives on research writing* (pp. 237–253). John Benjamins.

Noble, W. (2010). Understanding metadiscoursal use: Lessons from a 'local' corpus of learner academic writing. *Nordic Journal of Applied Linguistics*, *9*(2), 145–169.

Paltridge, B. (2002). Thesis and dissertation writing: An examination of published advice and actual practice. *English for Specific Purposes*, *21*(2), 125–143.

Pérez-Llantada, C. (2013). 'Glocal' rhetorical practices in academic writing. *European Journal of English Studies*, *17*(3), 251–268. https://doi.org/10.1080/13825577.2013.867180

Povolná, R. (2012). Causal and contrastive discourse markers in novice academic writing. *Brno Studies in English*, *38*(2), 131–148.

Qin, W., & Uccelli, P. (2019). Metadiscourse: Variation across communicative contexts. *Journal of Pragmatics*, *139*, 22–39. https://doi.org/10.1016/j.pragma.2018.10.004

Qiu, X., & Ma, X. (2019). Disciplinary enculturation and authorial stance: Comparison of stance features among master's dissertations, doctoral theses, and research articles. *Ibérica*, *38*, 327–348.

Rayson, P., Berridge, D., & Francis, B. (2004). Extending the Cochran rule for the comparison of word frequencies between corpora. In G. Purnelle, C. Fairon, & A. Dister (Eds.), *Le Poids des Mots: Proceedings of the 7th International Conference on Statistical analysis of Textual Data* (JADT 2004) (pp. 926–936). Presses universitaires de Louvain.

Sancho-Guinda, C., & Hyland, K. (2012). Introduction: A context-sensitive approach to stance and voice. In K. Hyland & C. Sancho-Guinda (Eds.), *Stance and voice in written academic genres* (pp. 1–14). Palgrave Macmillan.

Shaw, P. (2003). Evaluation and promotion across languages. *Journal of English for Academic Purposes*, *2*(4), 343–357. https://doi.org/10.1016/S1475-1585(03)00050-X

Shi, L. (2010). Textual appropriation and citing behaviors of university undergraduates. *Applied Linguistics*, *31*, 1–24.

Starfield, S., & Ravelli, J. (2006). The writing of this thesis was a process that I could not explore with the positivistic detachment of the classical sociologist": Self and structure in New Humanities research theses. *Journal of English for Academic Purposes*, *5*(3), 222–243. https://doi.org/10.1016/j.jeap.2006.07.004

Swales, J. (1990). *Genre analysis. English in academic and research settings.* Cambridge University Press.

Thetela, P. (1997). Evaluated entities and parameters of value in academic research articles. *English for Specific Purposes*, *16*(2), 101–118. https://doi.org/10.1016/S0889-4906(96)00022-1

Thompson, P. (2005). Points of focus and position: Intertextual reference in PhD theses. *Journal of English for Academic Purposes*, *4*(4), 307–323. https://doi.org/10.1016/j.jeap.2005.07.006

Thompson, P. (2013). Thesis and dissertation writing. In B. Paltridge & S. Starfield (Eds.), *The handbook of English for specific purposes* (pp. 283–299). Wiley-Blackwell. https://doi.org/10.1002/9781118339855.ch15

Thompson, G., & Thetela, P. (1995). The sound of one hand clapping: The management of interaction in written discourse. *Text*, *15*(1), 103–127. https://doi.org/10.1515/text.1.1995.15.1.103

Vogel, R. (2008). Sentence linkers in essays and papers by native vs. non-native writers. *Discourse and Interaction*, *1*(2), 119–126.

Wingate, U. (2012). 'Argument!' helping students understand what essay writing is about. *Journal of English for Academic Purposes*, *11*(2), 145–154. https://doi.org/10.1016/j.jeap.2011.11.001

Wu, B., & Paltridge, B. (2021). Stance expressions in academic writing: A corpus-based comparison of Chinese students' MA dissertations and PhD theses. *Lingua*, *253*, 103071. https://doi.org/10.1016/j.lingua.2021.103071

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EXPERT STATEMENTS: WHERE SCIENCE COMMUNICATION DISCOURSE MEETS PEER REVIEW DISCOURSE

Marina Ivanova

Abstract

With the influx of scientific publications, journalists are often challenged in putting new research into context. The Science Media Centre (SMC) addresses this issue by publishing expert statements that review and explain new studies. As such, these statements combine elements of science communication discourse, which typically seeks wide outreach, and peer review discourse, which typically seeks privacy and anonymity. To explore how these two discourses with conflicting aims work together, this study examines all publications on the SMC UK from April 2002 to January 2024. It compares them through a keyword analysis to a corpus of academic press releases and open peer reviews. A sample of 23 articles is then analysed qualitatively using the popularization framework by Sterk and van Goch (2023). The results show the important role of the expert persona and the use of strong statements employing boosters and credibility evaluations while still adapting information to the audience. Expert statements thus bridge academic and media practices and allow experts to provide suggestions for society.

Keywords

expert statement, science communication, peer review, keyword analysis, popularization

1 Introduction

Science communication has become an integral part of research as a way of bringing scientific knowledge closer to citizens and encouraging their participation. The traditional science dissemination outlets like academic journals are often inaccessible to non-experts due to the required previous knowledge, the high information density, and the specialized academic language in which publications are written. Researchers thus communicate their findings to the public through different outlets such as traditional media, social media, personal blogs, and podcasts (see e.g., Bondi et al., 2015; Mur-Dueñas & Lorés, 2022; Plo-Alastrué & Corona, 2023; Sterk & van Goch, 2023). Information can be disseminated directly by the researcher (e.g., via social media or blogs) or through an internal or external press office (e.g., university press releases and media companies building on these press releases). Researchers and journalists are often connected directly or indirectly through public information personnel who are employed in the researchers' organizations and contact science journalists through pitches or press releases (Dunwoody, 2019, p. 446). Still,

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there are many cases of spin in research abstracts, articles, and press releases, where some findings are emphasized over others (e.g., Boutron et al., 2019; Chiu et al., 2017; Demarquette et al., 2023; Jellison et al., 2019). Such spins do not represent fake news. Rather, some potentially relevant details of the study design or findings are intentionally or unintentionally omitted from prominent positions like the title of the press release (e.g., that the study is pre-clinical, see Boutron et al., 2019).

In academia, peer review is the gatekeeping and quality assurance mechanism that aims to ensure scientific integrity and avoid such misrepresentations, although spin in research abstracts and articles is still common (Jellison et al., 2019). In the media, quality assurance mechanisms such as review by editors and fact-checking bodies also exist, but it is more common to formulate attractive titles which provide a selective view of the news (e.g., Boutron et al., 2019). One of the central aims of science communication is to increase the researcher's visibility and even develop their brand (Pascual et al., 2023, p. 13). The growing need to stand out, attract readers, and deliver clear and straightforward findings may thus lead researchers and/or journalists to exaggerate the findings of studies (Sumner et al., 2014; Woloshin et al., 2009; Yavchitz et al., 2012). For instance, 40 per cent of the press releases and 36 per cent of the news pieces examined by Sumner et al. (2014) contained more explicit or direct advice than the journal article (Sumner et al., 2014, p. 3). Still, most of these spins were already present in the text of the press releases published by the academics' establishments (Sumner et al., 2014, p. 4). As science news needs to be engaging while remaining factual, it can be difficult for both researchers and journalists to judge which findings to emphasize and to what extent. In addition, experts often need to support journalists to put new studies into the context of the previous evidence. One organization that aims to provide a platform for experts to review and contextualize science news for journalists is the Science Media Centre (SMC).

The SMC is a "boundary organization" which functions independently from larger media or research institutions (Rödder, 2020, p. 174). SMC UK is part of a global network with SMCs in other countries such as Australia, New Zealand, Germany, Taiwan, and Spain. SMC UK has been publishing expert statements since 2002 and thereby supports journalists in covering various topics such as health, environment, and technology. The publications differ from science news portals, fact-checking portals, and institutional websites and blogs (Freddi, 2020; Juneström, 2021; Mur-Dueñas, 2024) in that they provide an expert critical evaluation of new studies against the state of the art. SMC UK publishes in three main genres: "roundups & rapid reactions", "briefings", and "before the headlines". It releases statements on new studies even before the embargo is

lifted (round-up) or soon after an important scientific event has occurred (rapid reaction) (Rödder, 2020, p. 178). It also organizes press briefings and reviews studies before they hit the headlines. SMCs have a database of researchers who are invited for statements on new studies or events. For journalists, the SMC offers mailing lists and assistance in finding experts to interview (SMC, n.d.). However, the SMC has received some criticism, for instance for promoting "corporate science" (Tatalović, 2014). This study will only focus on the genre of expert statements published on the SMC and not the workings of the organization. Phrasings such as "SMC's discourse" always refer to the discourse of the articles published on the platform and not the organization itself.

The expert statements published on the SMC have a review and explanation function. They combine elements of science communication, which usually seeks wide outreach due to its aim to popularize scientific findings, and peer review, which usually seeks privacy and anonymity due to the potential face threat of the evaluation. This raises the question how these conflicting aims are reflected in SMC's discourse. Given that a full discourse analysis would require a book-length treatment (as in Paltridge, 2017), the current study provides a first preliminary overview of the discourse on the SMC with a focus on exploring its similarities and differences with science communication and peer review discourse.

1.1 Science communication discourse

The field of science communication is very diverse, as it encompasses many different genres and modalities, each having their specific discourses. Some common examples include press releases, social media posts, personal blogs, podcasts, videos, and museum exhibitions. This study focuses on written science communication for the media such as press releases. Science journalism discourse is characterised by interdiscursivity (Sterk & van Goch, 2023, p. 16) as it combines academic, journalistic, and pedagogical discourse. Publications should be interesting and relevant, often communicating surprise while remaining factual and informative (Bednarek & Caple, 2012, 2017; Molek-Kozakowska, 2017, p. 74).

Researchers play a large role in science communication, as they are quoted, instrumentalized or scrutinized by others (Janich, 2019, p. 176). The discourse on researchers' findings can leave their control, as it can become subject to distorting popularization and simplification (Hilgartner, 1990). Meanwhile, when appropriate, popularization and simplification are central strategies in science communication. They take place through strategies like reformulation, exemplification, and metaphorization (Calsamiglia & van Dijk, 2004). The related strategy of recontextualization involves shifting information from

one context to another by restructuring arguments and rhetorical connections (Lorés, 2023). Lorés (2023, pp. 72–78) identifies three dimensions of recontextualization: comprehensibility (expressed through code glosses for explanation, exemplification and reformulation), credibility (expressed through evidentials) and engagement with the audience (expressed through shared experience, inclusive *we*, questions, and directives). Other verbal and non-verbal explanatory strategies include elaboration, explicitation, exemplification, enumeration, comparison/analogy, spatial organization (layout) and visual representations (Mur-Dueñas, 2024, pp. 101–104).

Overall, in science communication, researchers and journalists use different linguistic strategies to communicate scientific knowledge to the public in an understandable and attractive manner, focusing on the significance and implications of the findings.

1.2 Peer review discourse

Peer review, typically in the form of a report, aims to scrutinize academic publications like journal articles or conference papers, propose revisions and recommend the acceptance/rejection of the submission. As such, peer review incorporates evaluative language, which focuses on the expression of attitude and stance (Thompson & Hunston, 2000, p. 6). Due to the central role of praise and criticism in peer review, politeness strategies are crucial for mitigating face threat (Brown & Levinson, 1987). For instance, well-meaning reviewers structure their report starting with the "good news" followed by the "bad news", combine praise and criticism/suggestions, and employ hedging (Belcher, 2007; Diani, 2017; Hyland, 2004).

The use of these strategies depends on the status of the review. Paltridge (2017) showed that accept and minor revisions reviews express solidarity and approval, though minor revisions comments use more hedges, indirectness and metadiscoursal bracketing compared to accept reviews (p. 104). The major revisions reviews again express approval and use hedges (Paltridge, 2017, p. 106) but changes are required in a more direct manner (p. 107). In reject reviews, approval is less common and is often followed by criticism (p. 111).

In addition to the acceptance/rejection decision, another aspect which affects the politeness of reviewers' reports is whether they are open or single-/double-blind. While many of the anonymous reviews in Kourilova (1998) contain only criticism, have an authoritative attitude, and include blunt and ironic remarks, most of the open signed reviews in Nobarany and Booth (2015) mitigate criticism and tend to use more positive politeness strategies like compliments toward less experienced authors. This may be due to the higher face

threat to both the reviewers and the authors undergoing open peer review. Still, double-blind reviews are not always critical and often use politeness strategies as well (Paltridge, 2017).

One major difference between academic peer review and science communication is that reviewers avoid redundancy and do not elaborate on what is considered common ground (Paltridge, 2017, p. 77). Meanwhile, science communicators often explain concepts that are basic for the field (see Mur-Dueñas, 2024). In the SMC, experts review other scientists' studies, but for journalists rather than editors. Thus, they have to negotiate praise and criticism while adapting the information to journalists and the public on the basis of their presumed knowledge. This interesting intersection of review and popularization discourse elements will be explored in the following sections.

2 Methodology

The current study is based on all releases on the SMC UK from its first publication in April 2002 to January 2024. The 8,317 articles (6.7M words) were collected via a Python-based web scraper from the SMC website (https://www.sciencemediacentre.org/). Of these, most articles are from the category "roundups & rapid reactions" (80%), 19 per cent are "briefings", and 1 per cent are "before the headlines".

The structure of roundups and rapid reactions on the SMC usually follows a similar pattern: A title (e.g., "*expert reaction to chilli consumption and mortality*") followed by a short introduction to the issue, expert statements, a reference to the study or a report under discussion, and conflicts of interest. The "briefings" present a short summary of the topic and present the speakers who participated in the session, though without a detailed transcript of the press briefing. The "before the headlines" are similar to a peer review report: after an introduction of the study, the author presents its main claims and explains whether they are supported by the data, discusses its strengths and limitations, and provides a glossary and some background on the reviewer (such as relevant expertise).

2.1 Explorative analysis: Keyword lists

To explore the differences between the discourses of the SMC and related science communication and peer review genres, a keyword analysis was carried out in AntConc (Anthony, 2023) with SMC as the target corpus and a related media or review corpus as the reference corpus (and vice versa – the media/review corpus as the target corpus and SMC as the reference corpus). All texts were pre-processed for the analysis, that is, they were converted to lowercase and punctuation, and some metadata (dates and review ratings) were removed.

In terms of science communication, the SMC corpus was compared to 692 university press releases and news articles from Sumner et al. (2014) (500k words). The study by Sumner et al. (2014) compares exaggeration in health-related science news and academic press releases (data: https://figshare.com/articles/dataset/InSciOut/903704?file=1785357).

In terms of peer review, the SMC was compared to a corpus of 8,306 single- and double-blind open peer reviews (6.4M words) from the International Conference on Learning Representations (ICLR) (Ivanova, 2020). While this corpus is not openly available, the texts can easily be viewed and collected from the portal OpenReview (https://openreview.net/group?id=ICLR.cc).

2.2 Qualitative analysis

A sample of 23 articles, one for each year of publication, was randomly drawn from the SMC corpus in R using the *slice_sample* function. Table 1 presents the selected articles with their publication date, headline, and word count. The articles cover a wide range of topics and were published on a variety of occasions. Experts review not only new studies or reports but also statements on events such as the resignation of the UK science minister Lord Sainsbury. Nevertheless, the majority of the articles comment on new research.

Pub. Date	Article headline	Words
05.12.2002	scientists react to publication of the draft mouse genome	707
02.02.2003	Columbia shuttle disaster – rapid reaction	32
12.07.2004	scientists respond to Government spending review	857
24.11.2005	scientists react to Professor Hwang Woo-suk's resignation	753
10.11.2006	leading scientists pay tribute to Lord Sainsbury	666
14.02.2007	obesity risk from prenatal chemical exposure	821
12.08.2008	experts comment on research into a link between poor coordination in childhood and obesity in later life, as published in the British Medical Journal	379
02.02.2009	so if it's supposed to be getting warmer, how come it's snowing? – experts put the weather in the context of climate change	226
04.06.2010	expert reaction to Easyjet's ash radar	449
24.03.2011	ongoing rapid reaction – Fukushima nuclear incident	634
02.05.2012	expert reaction to Open Letter from GM wheat field researchers at Rothamsted Research	986
12.06.2013	expert reaction to MHRA announcement on regulation of electronic cigarettes	255
10.04.2014	expert reaction to Cochrane Review on Tamiflu and Relenza for treatment and prevention of influenza	2,486

Pub. Date	Article headline	Words
10.04.2015	expert reaction to dementia and body mass index	980
17.10.2016	expert reaction to study reporting production of functional mouse eggs in culture	2,304
29.06.2017	expert reaction to CEH study of the effects of neonics on honeybees and wild bees	4,244
12.09.2018	expert reaction to greenhouse gas removal report	583
14.01.2019	expert reaction to adolescent well-being and digital technology use	1,177
22.03.2020	expert comments about current UK COVID-19 case numbers	225
18.06.2021	expert reaction to latest figures for cases of variants of concern (VOCs) and under investigation (VUIs) and technical briefings on variants of concern published by PHE	412
11.12.2022	expert reaction to conference abstract about phase 1 study looking at using base edited cells to treat resistant T-cell leukaemia	492
20.06.2023	expert reaction to study suggesting an association between regular napping and larger brain volume	302
09.01.2024	expert reaction to Copernicus 2023 Global Climate Highlights	2,307

Table 1: Overview of the SMC releases sampled for qualitative analysis

The qualitative analysis is based on the analytical framework for popularization discourse by Sterk and van Goch (2023). The framework has five themes (Subject matter, Tailoring information to the reader, Credibility, Stance, and Engagement), which are described in Table 2 with an example from the SMC corpus. The themes often overlap – for example, the excerpt *have some major difficulties of interpretation* expresses a Credibility judgement and contains a hedge (*some*) and a booster (*major*). In Sterk and van Goch (2023), each of these themes is constituted by strategies. For example, "Applied implications", "Explanations" and "Imagery" are some of the strategies part of Tailoring Information. However, the individual strategies will not be explored in detail in the current study, as its aim is to provide an overview of the discourse of the SMC and not focus on popularization strategies. Only the theme Stance was further subdivided into Stance_hedge and Stance_booster for interpretation purposes. Hedges express uncertainty and tentativeness and allow the writer to acknowledge alternative viewpoints while boosters express certainty and confidence and limit the alternative voices (Hyland, 2005, pp. 52–53). The current study will thus lay the foundations for future research that will zoom in on the strategies and (meta)discourse markers used in the SMC.

Theme	Explanation	Example
Subject matter	Discussing the content of the original study	***The study*** *strengths include…*
TAILORING INFORMATION	Recontextualization strategies, used to represent academic findings to the general audience	*…the body's response to the* ***appetite-regulating*** *hormone leptin…*
CREDIBILITY	Authorial positioning in relation to other researchers and publications	*The report* ***nicely summarises current levels of scientific understanding*** *and technological-readiness.*
STANCE	Expressing stance and personal attitudes (e.g., through hedges and boosters)	HEDGE: *There* ***seems*** *to be* ***some*** *confusion in the media about radioactive contamination.* BOOSTER: *A warming world* ***will*** *continue to have cold days and* ***even*** *weeks, just fewer of them.*
ENGAGEMENT	Establishing connection to the readers	*Activity should be promoted as a normal, healthy, and enjoyable part of* ***our*** *everyday lives.*

Table 2: Examples of the popularization themes (Sterk & van Goch, 2023) part of the qualitative analysis

In addition, the type of evaluation (PRAISE, CRITICISM) was coded as a relation between the themes in cases where the authors expressed praise or criticism (see Figure 1). While the analysis of popularization themes aimed to shed light on the science communication features of the corpus, the analysis of praise and criticism aimed to explore its peer review features.

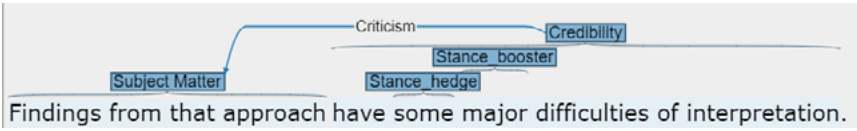

Figure 1: Screenshot of text annotation in INCEpTION

The popularization themes and evaluation relations were annotated using the software INCEpTION (Klie et al., 2018). In addition to the flexibility in the creation of annotation schemes, INCEpTION supports the manual annotation with active learning and tag suggestions. The files and annotations were exported in the UIMA CAS JSON 0.4.0 format and pre-processed with a custom Python script. Then, the data table was analysed and visualized in R with the *tidyverse* package collection (Wickham et al., 2019).

While this approach allowed the annotation of themes following an established framework, it was often difficult to determine the scope of a theme. In the example below, *will*, *prove* and *invaluable* are used as boosters, but it is up to the annotator to decide whether the phrase *will prove invaluable* should be coded as one booster or three.

(1) *Finally we have the genetic blueprint that will unveil the mysteries of the mouse and **will prove invaluable** for human medical research.*

I opted for the more detailed approach (three STANCE_BOOSTER themes) since boosters like *will* often occur on their own and it would be consistent to code them individually. Moreover, this allows INCEpTION to pick up the pattern and suggest annotations of other individual tokens of *will*. This approach resulted in many small themes on the level of hedges and boosters. A replication of the study with additional raters and a different scale of annotation would be useful to expand on the current findings on popularization themes and their use to express praise and criticism.

Overall, the detailed annotation of a sample of the corpus allowed a more in-depth analysis of different popularization and review strategies in the SMC. The following sections present and discuss the results of the exploratory and the qualitative analysis.

3 Exploratory keyword analysis

3.1 Science communication markers

Table 3 presents the keyword analysis comparing the SMC corpus and the media article corpus by Sumner et al. (2014). Table 3a displays the ten keywords with the highest keyness (likelihood) score for SMC as a target corpus and Table 3b displays the keywords for the media corpus as a target. By carrying out the same analysis with switched target and reference corpus, the keywords that are characteristic for each compared corpus can be determined.

Word	NormFreq. (Target)	NormFreq. (Reference)	Keyness (Likelihood)	Keyness (Effect)
covid	2,259	0	2,276.14	0.005
prof	2,969	374	1,816.36	0.006
this	10,887	5,603	1,546.15	0.022
is	16,491	10,541	1,221.79	0.032
not	5,855	2,682	1,065.53	0.012
i	2,262	518	974.23	0.005

Word	NormFreq. (Target)	NormFreq. (Reference)	Keyness (Likelihood)	Keyness (Effect)
climate	1,113	53	898.89	0.002
declared	882	0	888.21	0.002
expert	1,117	65	868.83	0.002
interests	974	25	861.35	0.002

Table 3a: Keyword analysis comparing the SMC and the media corpus with SMC as target, Media as reference. (Note: NormFreq. = Normalized frequency)

Word	NormFreq. Target	NormFreq. Reference	Keyness (Likelihood)	Keyness (Effect)
cent	1,314	25	2,756.48	0.003
found	2,755	533	2,081.13	0.005
researchers	2,676	570	1,846.89	0.005
heart	2,401	567	1,491.42	0.005
pain	984	66	1,435.24	0.002
scientists	2,105	485	1,341.25	0.004
blood	2,124	504	1,314.61	0.004
genes	1,175	142	1,266.36	0.002
brain	2,298	615	1,239.19	0.005
cancer	2,831	898	1,225.57	0.006

Table 3b: Keyword analysis comparing the media corpus and SMC with SMC as target, Media as reference. (Note: NormFreq. = Normalized frequency)

The word with the highest keyness score in the SMC corpus is *covid*, as the coronavirus pandemic started in 2019 and was heavily discussed on the SMC. *Covid* understandably does not feature in the 2014 media corpus. Titles like *Prof.* and designations like *expert* occur much more often in the SMC than in the university press releases. The releases from the media corpus assume the credibility of designations such as *researchers* and *scientists*. Moreover, the SMC publications usually discuss one study, which likely accounts for the high frequency of the demonstrative pronoun *this*. SMC authors also use more negation (*not*) and self-mentions through the personal pronoun *I*. This highlights the review nature and the focus on individual statements of the SMC. In contrast, in press releases, the author rarely appears with a self-mention and instead reports on the *researchers*. Other SMC keywords relate to specific topics such as *climate*. The keywords *declared* and *interests* come from *declared interests*, which is a phrase included at the end of each SMC publication to indicate potential conflict of interest of the interviewed experts.

Looking at the keywords in the media corpus, *cent* from *per cent* is the word with the highest keyness score, which indicates different reporting conventions (*per cent* instead of *%* or *percent*). The keyword *found* is interestingly much more common in the press releases. This shows a stronger focus on the findings as news in the press releases compared to the focus on reviewing and contextualising these findings in the SMC. Other keywords typical of the media corpus such as *pain*, *blood*, *genes*, *brain* and *cancer* reflect the health focus of the texts.

Overall, the SMC stands out with experts' titles and self-mentions. The press releases show a stronger emphasis on the findings of the research teams.

3.2 Peer review markers

Table 4 presents the keyword analysis comparing the SMC corpus and the open peer review corpus by Ivanova (2020). Similar to Table 3a, Table 4a displays the 10 keywords with the highest keyness (likelihood) score for SMC as a target corpus and Table 4b displays the keywords for the peer review corpus as a target.

Word	NormFreq. Target	NormFreq. Reference	Keyness (Likelihood)	Keyness (Effect)
said	3,802	161	1,150.88	0.008
prof	2,969	0	1,092.25	0.006
uk	2,730	0	1,004.27	0.005
university	2,551	0	938.25	0.005
research	3,299	215	917.22	0.007
health	2,426	16	856.30	0.005
people	2,996	182	845.54	0.006
covid	2,259	0	830.83	0.005
study	3,501	408	813.13	0.007
risk	2,489	64	804.30	0.005

Table 4a: Keyword analysis comparing the SMC and the Open Peer Review corpus with SMC as target, Review as reference. (Note: NormFreq. = Normalized frequency)

Word	NormFreq. Target	NormFreq. Reference	Keyness (Likelihood)	Keyness (Effect)
paper	10,578	897	5,634.33	0.02
iclr	3,413	0	4,539.07	0.007
learning	2,914	63	2,600.89	0.006
proposed	3,140	91	2,585.06	0.006
method	2,893	117	2,140.22	0.006
experiments	2,748	104	2,078.96	0.005

Word	NormFreq. Target	NormFreq. Reference	Keyness (Likelihood)	Keyness (Effect)
modified	2,077	44	1,871.75	0.004
model	3,188	227	1,855.70	0.006
training	2,147	70	1,704.59	0.004
neural	1,836	34	1,704.13	0.004

Table 4b: Keyword analysis comparing the Open Peer Review and the SMC corpus with Review as target, SMC as reference. (Note: NormFreq. = Normalized frequency)

The SMC corpus stands out with the word *said*, as this is a common formulation introducing the experts' statements. The peer review corpus rarely reports such quotes. Titles like *Prof.* are used consistently in the SMC but are uncommon in the peer review corpus. Many academic outlets avoid titles in order to promote equality and reduce the influence of rank. In the SMC, titles like *Prof.* increase the attributed credibility to the expert statements, which are expected to eventually reach the media and the public. Moreover, affiliations like *university* do not feature in the peer review corpus because most reviews are double-blind or do not contain the authors' affiliations. Another difference in the SMC is the use of locations like *uk*, as the discussed findings are often related to the local UK context. The scientific field also differs between the two corpora – while the ICLR is a deep learning conference, many articles on the SMC are from the life sciences. This is evident in the SMC keywords *people*, *health*, *covid* and *risk*. Another difference between the academic communities is the use of the terms *study* and *research* on the SMC in contrast to *paper* and *experiment* on the ICLR. This difference is partly due to the main subject of discussion on the two platforms, that is, research articles in the SMC and conference papers in the ICLR, although there are also some discussions of conference papers on the SMC.

In the peer review corpus, the subject of the review is often mentioned (*proposed*, *method*). As most studies discussed in the SMC are either published or accepted, words like *proposed* are rarely used to describe them. Thus, the SMC can be seen as a post-peer-review outlet. Other discipline-specific keywords in the review corpus like *learning*, *modified*, *model*, *training* and *neural* reflect the thematic focus of the ICLR conference.

Overall, the SMC differs from peer review in its use of quotes, titles, and affiliations, references to the local context (UK), and in the subject of analysis (*study* vs *paper*).

4 Qualitative analysis of popularization themes

4.1 Overview

Following the exploratory keyword analysis, which focused on the differences between SMC, science communication, and peer review discourse, this section looks at the similarities between these discourses. It presents the qualitative analysis of the five popularization themes and two evaluation relations (praise and criticism) in a sample of 23 texts from the SMC corpus. The frequency of the popularization themes in the sample is visualized in Figure 2. As expected, the most frequent theme is one of the small-scale themes as they often constitute single words. However, it is rather surprising that the most frequent theme is Stance_booster, as boosters are uncommon in academic reviews (Paltridge, 2017). Even though the results can be explained by the many single-word boosters, there is a striking difference in frequency compared to the other predominantly single-word theme Stance_hedge, which is the least frequent theme. This shows researchers' bold expression of stance when writing for the SMC. Another theme with a comparatively high frequency of occurrence is Credibility. Researchers often compare the discussed new study to the state of previous research by summarizing it (e.g., *From what we know already…*). In their role as experts, they need to provide evidence to support their assessment. Subject matter and Tailoring information have a similar intermediate frequency, which shows the need to both refer to the discussed study and to digest the information for the non-expert readers. Finally, Engagement and Stance_hedge have similarly low frequency, as researchers writing on the SMC rarely engage with the readers or tone down their statements. Rather, there seems to be a need to communicate evaluations clearly to science journalists.

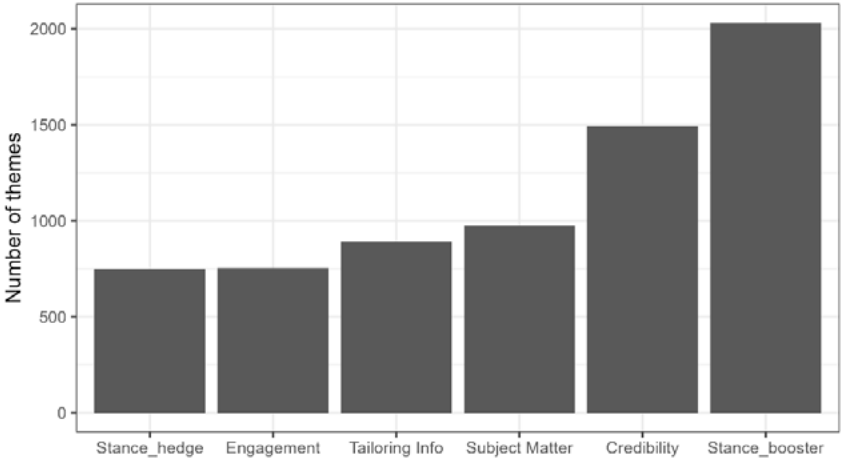

Figure 2: Frequency of the popularization themes in the analysed sample

Figure 3 presents the proportion of themes that form part of praise and criticism evaluations. Recall from Figure 1 that each evaluation relation (praise/criticism) starts from one theme and points to another.

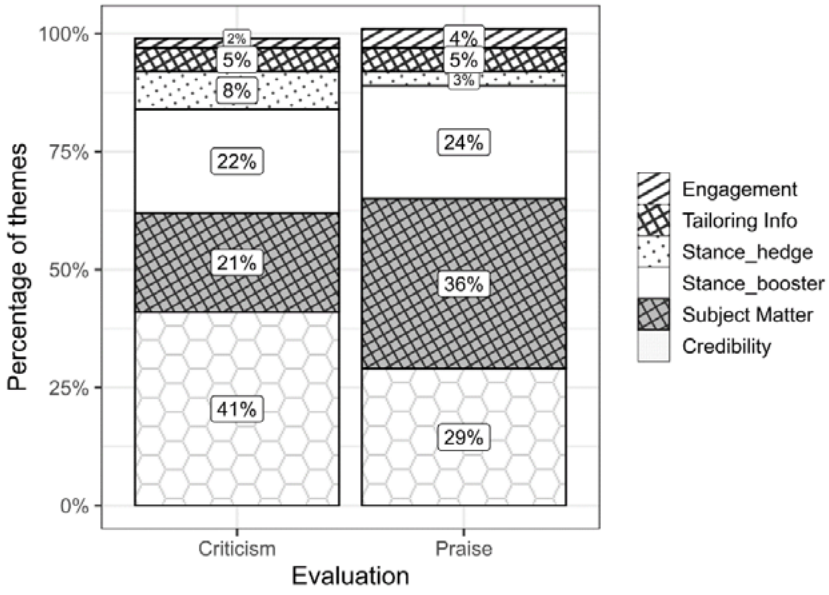

Figure 3: Distribution of popularization themes in evaluations expressing praise and criticism

The most frequent theme part of Criticism evaluations is Credibility (41%). Many of the criticisms relate to the credibility of the study design or results. In contrast, the most frequent theme part of Praise evaluations is Subject matter (36%). One explanation for this result may lie in the sample, as the article dedicated to Lord Sainsbury contains many praise elements referring to the Subject matter (i.e., his contributions as a minister). However, there are also many praise evaluations relating to the discussed studies. The rest of the themes are similarly distributed across praise and criticism.

Note that when comparing praise and criticism, Stance_booster is not the most frequent theme. This is probably because expressing a strong stance is less likely to occur in the context of praise and criticism due to issues of face threat. Thus, in the SMC sample, boosters were often used to emphasise the importance of an issue, but less often to evaluate studies. Further analysis of metadiscourse markers across the corpus will provide interesting insights into the expression of stance and evaluation in this hybrid genre.

4.2 Discussion of the qualitative findings

Researchers evaluating new studies on the SMC use a wide range of popularization and evaluation strategies in order to review and explain these studies appropriately for journalists and the public.

The theme SUBJECT MATTER contains many references to the discussed study, which are mostly marked by demonstrative pronouns such as *this* (*this study* or *this kind of data*). Reference is also often made to *the researchers* or *the authors* (2) and in a few special cases the subject is addressed by name.

(2) ***The authors*** *report an inverse correlation between BMI in middle age and dementia risk, contrary to previous suggestions.*

The theme TAILORING INFORMATION contains many strategies that are a form of recontextualization (Sterk & van Goch, 2023, p. 58). For example, the Covid variants were referred to by the regions which reported their first cases such as the *Indian variant*, *original Wuhan virus*, *South African variant*, and *Californian variant*. These terms were later abandoned to avoid stigmatising people who come from these regions. Other common strategies such as explicitation and explanation in brackets are also frequently used in the SMC (like in Mur-Dueñas, 2024), as evident from Example (3):

(3) *To derive functional* ***oocytes (eggs)*** *from* ***pluripotent stem cells (embryonic stem (ES) or induced pluripotent stem (iPS) cells***) *entirely in vitro required several steps.*

In addition, some non-literal or ironic usages are signalled through quotation marks. As such, the authors assist the readers in interpreting the intended message.

(4) *there is no evidence for any* ***'magic'*** *alteration of metabolism*

The theme CREDIBILITY often features comparisons with the state of the art (i.e., previous research or the *current evidence base*). The generalizability of the methods is also discussed:

(5) *To replicate this work in humans poses further challenges…*

This issue has been thematized in a study by Boutron et al. (2019) on the perception of spins in news stories where premedical studies (e.g., on mice) were not reported with caution for the extension of the findings to humans. Considering the interpretation of the findings, the SMC often discusses issues like the difference between correlation and causation:

(6) *The researchers also give reasons for doubting that the relationship between technology use and adolescent well-being is one of* ***cause and effect****.*

Overall, the Credibility theme clearly shows both aspects of popularization from science communication and aspects of critical review from peer review.

The theme Stance was sub-divided into hedges and boosters. These often overlap with larger themes like Credibility or Subject matter. Hedges are commonly used in academic discourse to tone down statements and figure similarly in the SMC's expert statements:

(7) *Instead, the studies show there are* ***potentially*** *large impacts* ***in some circumstances***

Despite the strong positive verb *show* (Pho, 2013), the authors use two hedges (*potentially* and *in some circumstances*) to stress that the findings only apply to these contexts and prevent their overgeneralization. In Paltridge (2017, pp. 125–129), hedges were relatively infrequent (second to last before boosters), and they are also infrequent in the current sample. This is likely because the experts who provide statements on the SMC are not discussing the interpretations of their own findings but aim to provide an evaluation that will put new studies in context for journalists. However, direct comparison of hedges and boosters with Paltridge (2017) is difficult, as there may be minor differences in our classifications and no list of markers is provided for comparison.

In terms of the boosters used, it is striking that they are the most frequently used theme in the SMC sample. Peer review would be expected to contain far fewer boosters – in Paltridge (2017, pp. 125–129), regardless of the acceptance status of the report, boosters were always the least frequent stance markers. The high number of boosters in the SMC is due to the twofold aim of the statements to not only review but also to explain and contextualise findings in light of the evidence base. In (8), obesity risks are emphasized by the *do* construction and by the adjective *many*:

(8) *We* ***do*** *know that obesity carries* ***many*** *other risks including high blood pressure...*

Some of the boosters also come from expressions of advocacy, such as Example (9). Some of the researchers thus emphasize their recommendations for policy and society.

(9) *Aiming to keep warming to 1.5 °C is* ***more important than ever****.*

Finally, the theme ENGAGEMENT showed that there are two different reader groups that are being addressed with the third person pronoun *we* – a general *we* can refer to society (Example 10) or to the research community (Example 11).

(10) *Pollinators are responsible for one in three mouthfuls of food **we** eat, so safeguarding their health is something we should all care deeply about.*

(11) *But **we** should be careful about the message that is now sent to doctors and to the public.*

While it is usually clear from the context who is being addressed, it is interesting to observe how the commenting researchers take on two different roles as the expert and the peer when addressing society and the research community. Another example of engagement are colloquial and over-exaggerated statements such as the following rhetorical question about a study on the relationship between body mass index and dementia:

(12) *Is it time to slump on the sofa, pile into the burgers and slurp the lager?*

Such statements draw attention to the problem by using an exaggerated everyday example to which the audience can relate. It will be interesting for future research to look at the use of pronouns and rhetorical questions for generating engagement in the whole corpus.

Regarding the expressed evaluation, the qualitative analysis considered praise and criticism. In terms of praise, the achievements of the discussed study (SUBJECT MATTER) were often highlighted, for example:

(13) *This is a well-designed study that contradicts previous smaller studies and demonstrates that the relationship between weight and dementia risk is not straightforward.*

In terms of criticism, again the discussed study (SUBJECT MATTER) is the main point of scrutiny, with many comments on the methodology and interpretation of the findings:

(14) *…this is not a very strong effect in humans and can only be unmasked with very careful studies of fairly large numbers.*

Moreover, criticism is sometimes mitigated through a combination with praise through concessive constructions like *while* and *although* (15), which is a common feature of peer review discourse (Ivanova, 2020; Johnson, 1992; Paltridge, 2017).

(15) ***Although*** *the multi-national cooperation was the most effective response to preliminary reports on bee losses, evidence is mounting that country-specific legislation may be more effective at protecting pollinators.*

After the qualitative analysis, it has become clear that the experts on the SMC successfully bridge academic and media discourse. One aspect which can be added next to the five themes and two evaluation relations is advocacy. Authors on the SMC often voice recommendations or appeals, which usually have a general target:

(16) *If people could be encouraged to use cleaner nicotine products rather than tobacco there would be substantial health benefits.*

In this way, expert statements on the SMC not only combine science communication and peer review, but also serve as a platform for expressing suggestions to the research community, policy makers, and society.

5 Conclusion

The publications on the SMC are clearly a hybrid genre (Mäntynen & Shore, 2014) with a hybrid discourse (Bizzell, 1999) as they combine the features of science communication genres such as the press release and academic review genres such as the peer review report. Respectively, the authors have a hybrid identity (Lorés, 2023, p. 80). On the one hand, they are domain experts who use their specialized knowledge to explain and review science news to journalists and laypeople. On the other hand, they often advocate for their views and provide recommendations for policy and society. The titles, affiliations and quotes that are common for the SMC can increase transparency and the attributed credibility to the expert statements (Hendriks & Kienhues, 2019, p. 63).

If peer review is the first stage of gatekeeping, review of published studies for the media as in the case of the SMC acts as a second filter. In academic peer review, both authors and reviewers interact through reviewer comments and authors' responses (Paltridge, 2017; Tardy, 2019). However, in the SMC, only the experts (who assume the role of reviewers) reacting to the studies are interviewed. This is due to the aim and purpose of the reactions to contextualize new scientific findings for journalists and not to fact-check them, which nevertheless takes place in the process of commenting on the studies. Moreover, peer review on the SMC is open and arguably more open than academic open peer review. Academic open peer review takes place on the platforms of journals and conferences and is likely to reach only academic audiences. However, the review on the SMC will reach science journalists and potentially the general public. As

such, it can be considered more face threatening and requires more caution in the balance between the straightforwardness required by media discourse and the tentativeness-politeness required by academic discourse.

The statements on the SMC also act as a mirror to research ethics and common research practices. Science communication should stimulate critical thinking and the understanding that uncertainty and ambiguity are an inevitable part of science and a necessary step towards consensus (Bertemes et al., 2024, pp. 20–21; Schmied, 2022). The SMC also promotes critical thinking by pointing out common drawbacks of methods and scientific controversies. At the same time, it employs many popularization and recontextualization strategies typical of science communication such as explicitation, the use of popular terms for scientific concepts, and the use of quotation marks to signal non-literal expressions.

Overall, the expert statements on the SMC have implications for researchers, journalists, and society. Researchers can act as advisors to the media on topics that match their expertise while explaining, popularizing, and critically reviewing the information. Meanwhile, journalists receive diverse expert opinions on complex scientific topics and transform them into news that ultimately reaches society. The fact that expert statements do not only explain new findings but also simplify and criticize them, poses potential threats to the relationship between science and society. In addition to potentially threatening the credibility of the researchers behind the reviewed studies, critical expert statements may lead to uncertainty and public mistrust in science. Therefore, future research should further explore the implications of the hybrid discourse for the reviewed studies in particular and for public trust in science in general.

The current study focused on one platform, and while the SMC is a popular outlet, it is difficult to classify its expert statements as a new genre. Still, the spread of SMCs to different countries shows that the genre of the expert statement is promising and a necessary response to issues of science communication such as sensationalism and spins. It should be noted that this paper does not directly endorse the SMC but the genre of the expert statement as it was popularized on the SMC. This form of outreach can be expected to maintain its useful synergy of media and academic writing, combining science communication and review discourses with elements of advocacy.

References

Anthony, L. (2023). *AntConc* (Version 4.2.4) [Computer software]. Waseda University. https://www.laurenceanthony.net/software

Bednarek, M., & Caple, H. (2012). *News discourse*. Bloomsbury; Continuum.

Bednarek, M., & Caple, H. (2017). *The discourse of news values*. Oxford University Press. https://doi.org/10.1093/acprof:oso/9780190653934.001.0001

Belcher, D. D. (2007). Seeking acceptance in an English-only research world. *Journal of Second Language Writing, 16*(1), 1–22. https://doi.org/10.1016/j.jslw.2006.12.001

Bertemes, J. P., Haan, S., & Hans, D. (2024). *50 essentials on science communication*. De Gruyter. https://doi.org/10.1515/9783110763577

Bizzell, P. (1999). Hybrid academic discourses: What, why, how. *Composition Studies, 27*(2), 7–21. https://www.jstor.org/stable/43501431

Bondi, M., Cacchiani, S., & Mazzi, D. (Eds.). (2015). *Discourse in and through the media: Recontextualizing and reconceptualizing expert discourse*. Cambridge Scholars Publishing.

Boutron, I., Haneef, R., Yavchitz, A., Baron, G., Novack, J., Oransky, I., Schwitzer, G., & Ravaud, P. (2019). Three randomized controlled trials evaluating the impact of "spin" in health news stories reporting studies of pharmacologic treatments on patients'/caregivers' interpretation of treatment benefit. *BMC Medicine, 17*(1), Article 105. https://doi.org/10.1186/s12916-019-1330-9

Brown, P., & Levinson, S. C. (1987). *Politeness: Some universals in language usage*. Cambridge University Press.

Calsamiglia, H., & van Dijk, T. A. (2004). Popularization discourse and knowledge about the genome. *Discourse & Society, 15*(4), 369–389. https://doi.org/10.1177/0957926504043705

Chiu, K., Grundy, Q., & Bero, L. (2017). 'Spin' in published biomedical literature: A methodological systematic review. *PLoS Biology, 15*(9), Article e2002173. https://doi.org/10.1371/journal.pbio.2002173

Demarquette, A., Perrault, T., Alapetite, T., Bouizegarene, M., Bronnert, R., Fouré, G., Masson, C., Nicolas, V., Lasocki, S., & Léger, M. (2023). Spin and fragility in randomised controlled trials in the anaesthesia literature: A systematic review. *British Journal of Anaesthesia, 130*(5), 528–535. https://doi.org/10.1016/j.bja.2023.01.001

Diani, G. (2017). Criticism and politeness strategies in academic review discourse: A contrastive (English-Italian) corpus-based analysis. *Kalbotyra, 70*, 60–78. https://doi.org/10.15388/Klbt.2017.11188

Dunwoody, S. (2019). Science journalism. In A. Leßmöllmann, M. Dascal, & T. Gloning (Eds.), *Science Communication* (pp. 417–438). De Gruyter.

Freddi, M. (2020). Blurring the lines between genres and audiences: Interaction in science blogs. *Discourse and Interaction, 13*(2), 9–35. https://doi.org/10.5817/DI2020-2-9

Hendriks, F., & Kienhues, D. (2019). Science understanding between scientific literacy and trust: Contributions from psychological and educational research. In A. Leßmöllmann, M. Dascal & T. Gloning (Eds.), *Science Communication* (pp. 29–50). De Gruyter.

Hilgartner, S. (1990). The dominant view of popularization: Conceptual problems, political uses. *Social Studies of Science, 20*, 519–539.

Hyland, K. (2004). *Disciplinary discourses: Social interactions in academic writing*. University of Michigan Press.

Hyland, K. (2005). *Metadiscourse: Exploring interaction in writing*. Continuum.

Ivanova, M. (2020). Semantic and pragmatic truth implications of concession in single- and double-blind open peer reviews. In J. Schmied & J. Dheskali (Eds.), *Conflicting truths in academic and journalistic writing* (pp. 141–156). Cuvillier.

Janich, N. (2019). The contribution of linguistics and semiotics to the understanding of science communication. In A. Leßmöllmann, M. Dascal, & T. Gloning (Eds.), *Science Communication* (pp. 143–166). De Gruyter.

Jellison, S., Roberts, W., Bowers, A., Combs, T., Beaman, J., Wayant, C., & Vassar, M. (2019). Evaluation of spin in abstracts of papers in psychiatry and psychology journals. *BMJ Evidence-Based Medicine, 25*, 178–181. https://doi.org/10.1136/bmjebm-2019-111176

Johnson, D. M. (1992). Compliments and politeness in peer-review texts. *Applied Linguistics, 13*(1), 51–71. https://doi.org/10.1093/applin/13.1.51

Juneström, A. (2021). An emerging genre of contemporary fact-checking. *Journal of Documentation, 77*(2), 501–517. https://doi.org/10.1108/JD-05-2020-0083

Klie, J.-C., Bugert, M., Boullosa, B., de Castilho, R. E., & Gurevych, I. (2018). The INCEpTION platform: Machine-assisted and knowledge-oriented interactive annotation. In *Proceedings of the 27th International Conference on Computational Linguistics: System Demonstrations* (pp. 5–9). Association for Computational Linguistics. http://tubiblio.ulb.tu-darmstadt.de/106270/

Kourilova, M. (1998). Communicative characteristics of reviews of scientific papers written by non-native users of English. *Endocrine Regulations, 32*, 107–114.

Lorés, R. (2023). Dual voices, hybrid identities: The recontextualization of research in digital dissemination scientific discourse. *Círculo De Lingüística Aplicada a La Comunicación, 93*, 69–84. https://doi.org/10.5209/clac.85566

Mäntynen, A., & Shore, S. (2014). What is meant by hybridity? An investigation of hybridity and related terms in genre studies. *Text & Talk, 34*(6), 737–758. https://doi.org/10.1515/text-2014-0022

Molek-Kozakowska, K. (2017). Communicating environmental science beyond academia: Stylistic patterns of newsworthiness in popular science journalism. *Discourse & Communication, 11*(1), 69-88. https://doi.org/10.1177/1750481316683294

Mur-Dueñas, P. (2024). Digital dissemination practices: An analysis of explanatory strategies in the process of recontextualising specialised knowledge. *Discourse and Interaction, 17*(1), 94–114. https://doi.org/10.5817/DI2024-1-94

Mur-Dueñas, P., & Lorés, R. (Eds.). (2022). *Scientific and parascientific communication*. MDPI. https://doi.org/81032

Nobarany, S., & Booth, K. S. (2015). Use of politeness strategies in signed open peer review. *Journal of the Association for Information Science and Technology, 66*(5), 1048–1064. https://doi.org/10.1002/asi.23229

Paltridge, B. (2017). *The discourse of peer review: Reviewing submissions to academic journals*. Palgrave Macmillan.

Pascual, D., Plo-Alastrué, R., & Corona, I. (2023). Digital scholarly practices in scientific communication: Paths and goals in research dissemination. In R. Plo-Alastrué & I. Corona (Eds.), *Digital scientific communication: Identity and visibility in research dissemination* (pp. 3–30). Palgrave Macmillan.

Pho, P. D. (2013). *Authorial stance in research articles*. Palgrave Macmillan. https://doi.org/10.1057/9781137032782

Plo-Alastrué, R., & Corona, I. (Eds.). (2023). *Digital scientific communication: Identity and visibility in research dissemination*. Palgrave Macmillan. https://doi.org/10.1007/978-3-031-38207-9

Rödder, S. (2020). Organisation matters: Towards an organisational sociology of science communication. *Journal of Communication Management, 24*(3), 169–188. https://doi.org/10.1108/JCOM-06-2019-0093

Schmied, J. (2022). Uncertainty in science vs. certainty in politics: Contrasting axioms in Corona texts. In J. Schmied, J. Dheskali, & M. Ivanova (Eds.), *From uncertainty to confidence and trust* (pp. 27–32). Cuvillier.

Science Media Centre. (n.d.). For journalists. https://www.sciencemediacentre.org/working-with-us/for-journalists/

Sterk, F. M., & van Goch, M. M. (2023). *Re-presenting research*. Springer International Publishing. https://doi.org/10.1007/978-3-031-28174-7

Sumner, P., Vivian-Griffiths, S., Boivin, J., Williams, A., Venetis, C. A., Davies, A., Ogden, J., Whelan, L., Hughes, B., Dalton, B., Boy, F., & Chambers, C. D. (2014). The association between exaggeration in health related science news and academic press releases: Retrospective observational study. *BMJ (Clinical Research Ed.), 349*, Article g7015. https://doi.org/10.1136/bmj.g7015

Tardy, C. M. (2019). We are all Reviewer #2: A window into the secret world of peer review. In P. Habibie & K. Hyland (Eds.), *Novice writers and scholarly publication* (pp. 271–289). Springer International Publishing. https://doi.org/10.1007/978-3-319-95333-5_15

Tatalović, M. (2014, May 10). UK's Science Media Centre lambasted for pushing corporate science. *SciDev.Net*. https://www.proquest.com/docview/2708609321

Thompson, G., & Hunston, S. (2000). Evaluation: An introduction. In S. Hunston & G. Thompson (Eds.), *Evaluation in text* (pp. 1–27). Oxford University Press.

Wickham, H., Averick, M., Bryan, J., Chang, W., McGowan, L. D., François, R., Grolemund, G., Hayes, A., Henry, L., Hester, J., Kuhn, M., Pedersen, T. L., Miller, E., Bache, S. M., Müller, K., Ooms, J., Robinson, D., Seidel, D. P., Spinu, V., … Yutani, H. (2019). Welcome to the tidyverse. *Journal of Open Source Software, 4*(43), Article 1686. https://doi.org/10.21105/joss.01686

Woloshin, S., Schwartz, L. M., Casella, S. L., Kennedy, A. T., & Larson, R. J. (2009). Press releases by academic medical centers: Not so academic? *Annals of Internal Medicine, 150*(9), 613–618. https://doi.org/10.7326/0003-4819-150-9-200905050-00007

Yavchitz, A., Boutron, I., Bafeta, A., Marroun, I., Charles, P., Mantz, J., & Ravaud, P. (2012). Misrepresentation of randomized controlled trials in press releases and news coverage: A cohort study. *PLoS Medicine, 9*(9), Article e1001308. https://doi.org/10.1371/journal.pmed.1001308

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METADISCURSIVE CLAUSES CONTROLLED BY NOUNS AND ADJECTIVES IN LINGUISTICS RESEARCH PAPERS

Zuzana Kozáčiková

Abstract

This study attempted to investigate the metadiscursive function of stance complement clauses in linguistics research papers, analysing the most common metadiscursive nouns and adjectives. To this aim, twenty research papers published in two indexed journals – the *Journal of English for Academic Purposes* (EAP) and *Discourse and Interaction* (DI) were analysed using Biber's (2006a) taxonomy of lexico-grammatical stance devices. The findings indicated that academics prefer epistemic nouns to attitude and communication nouns in the selected corpus, yet evaluation adjectives are preferred to epistemic adjectives in the corpus under study. Moreover, the study tries to analyse the distribution of stance complement clauses and the IMRD structure of a linguistics research paper with the highest incidence of stance complement clauses controlled by nouns and adjectives in the Results section.

Keywords

academic discourse, linguistics research paper, stance complement clauses controlled by nouns and adjectives, metadiscursive nouns and adjectives, IMRD structure

1 Introduction

In recent decades considerable attention has been paid to linguistic patterns in scientific research papers, and to how they express authors' attitudes to various topics investigated in their studies. The concept of metadiscourse has been examined by many scholars (see Biber 2006a, 2006b; Dontcheva-Navratilova, 2018, 2021; Flowerdew, 2003; Jiang, 2017; Jiang & Hyland, 2019; Walková, 2019; Warchał, 2015; Wu & Paltridge, 2021; Zou & Hyland, 2022), with attention given to various aspects of language devices that contribute to an overall understanding of propositional content such as disciplinary variations or grammatical vs pragmatic conceptions of metadiscourse in academic research writing. Despite the growing research into metadiscourse, very few studies have analysed the concept of stance nouns and adjectives controlled by complement clauses. This is due to the fact that stance nouns and adjectives are relatively rare in terms of their use and distribution in academic research writing, in comparison with stance complement clauses controlled by verbs. Yet their potential value lies in modulating discourse by both pre- and post-predicative functions (Examples 1 and 2) in contrast to stance complement clauses controlled by verbs and their post-predicative function (Example 3).

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(1) *The fact* ***that the differences between native and non-native expert writers were almost unnoticable also confirms that the challenges non-native novice writers face might stem largely from lack of disciplinary expertise and awareness****.* (EAP corpus, Marti et al.: 110)

(2) *As such, it seems possible* ***that the writers of the AL introductions with the IME or IM pattern might have sought to avoid this delay by presenting the study at the outset****.* (EAP corpus, Kawase: 24)

(3) *It has long been acknowledged* ***that certain words tend to co-occur in specific configurations****.* (EAP corpus, Omidian et al.: 3)

It is generally known that the choice of complement clause types depends on many different factors. In Biber et al. (2002, p. 350) approach, this choice is predominantly influenced by three main aspects: registers (with *that-clauses* prevalent in spoken registers and *to-clauses* in written registers), structural (with the clauses in the pre- and post-predicative functions mentioned above), and semantic factors (with relatively common use of extraposed clauses in written academic prose).

With these three factors in mind, stance nouns and adjectives reflect the compressed nature of academic writing with reference to the true nature of evaluated proposition. From a pragmatic analysis perspective, the study of stance adjectives and nouns combined with complement clauses is of interest because of their potential to express persuasive, evaluative, and argumentative meaning in various academic genres.

Thus, the aim of this paper is to analyse the distribution of stance complement clauses controlled by nouns and adjectives in linguistics research papers, to find the most frequent metadiscursive nouns and adjectives, and to explore the distribution of these metadiscursive nouns and adjectives across the rhetorical sections of linguistics research papers. The study seeks to answer the following questions:

1. What is the general frequency of stance complement clauses controlled by nouns and adjectives in the corpus of linguistics research papers?
2. Which metadiscursive nouns and adjectives become the most frequent in the above-mentioned corpus and what are their metadiscursive functions?
3. Following a standard structure of the research paper proposed by Swales (1990), what is their distribution in the IMRD structure of a research paper?

2 Metadiscursive nouns and adjectives

The concept of stance nouns as mainly abstract nouns which modulate discourse by assessing the credibility of a propositional concept has attracted increasing attention since the late 2000s. Considerable literature has focused on analysing *that-clauses* in two different corpora, for example, Charles' (2007) work on the construction of stance via *noun that patterns* investigates disciplinary variations in two contrasting disciplines (two corpora of theses from social and natural science) in the construction of stance nouns followed by a complement clause with a considerable preference for *noun that patterns* in social science corpus. For Charles (2007), nouns with *that* complementation are viewed as a sub-group of shell nouns (a term introduced by Schmid (2000), a unique group of nouns the meaning of which is activated by their use). Interestingly, in her view inspired by Francis et al. (1998), *the noun that pattern* was subdivided into five semantically oriented groups: idea, argument, evidence, possibility, and other, with the most frequent idea group (thought process nouns, e.g., "This is based on the assumption that…") in the politics corpus and the other group (e.g., factual nouns, such as "It does not refer to the fact that…") in the material corpus. In both corpora, possibility nouns appeared only to a limited extent. Charles' (2007) findings confirm a considerable tendency for using epistemic certainty nouns in hard science, and nouns which are more tentative, argumentative, and attitudinal in soft science. Among the other studies in this area are those of Parkinson (2013), and Kim and Crosthwaite (2019). Parkinson's (2013) research explores *that-complement clauses* in ESL students reports on questionnaire survey data and research articles that focus on the frequency of controlling words, the content of and sources of *that-clauses* in the above-mentioned corpora, and Kim and Crosthwaite's (2019) study deals with disciplinary differences in the use of the evaluative *that* in business and medicine.

Quite similarly, on the grounds of disciplinary variations, Hyland and Jiang (2016) and Jiang and Hyland (2017a, 2017b, 2021) refer to stance nouns as metadiscursive nouns "which are essentially evaluative and engaging, rather than cohesive, helping to convey a writer's perspective on the content the noun refers to" (Jiang & Hyland, 2021, p. 5). It is important to note that in their understanding, these nouns refer to both interactive and interactional functions, expressing entities, describing attitudes, and analysing relations between entities. In terms of disciplinary writing, their research on metadiscursive stance nouns revealed the increased tendency for nominalisation in academic practice in research articles over the past 50 years in three corpora (1965, 1990, 2015), analysing the most common lexico-grammatical patterns with nouns (*this N*, *N be clause*, *N+nominal*, *this be N*) with *this N pattern* as the most frequent

across the 50 years. Their findings indicate that "there has been a substantial 31% increase in the use of *evaluative-that constructions* over the past 50 years" (Jiang & Hyland, 2019, p. 153). Additionally, their modified classification of evaluative *that* construction (p. 152), based on the previously published model by Hyland and Tse (2005), clearly defines four major aspects of evaluative *that*, and inspired much other authors' research on stance devices in academic writing (Kim & Crosthwaite, 2019). In Jiang and Hyland's (2019, p. 152) model, an evaluative *that-clause* is interpreted with regard to the evaluated entity (e.g., "Our research results show that..."), the evaluative stance (e.g., "I hope that…"), the evaluative source (e.g., "Johnson notes that...") and the evaluative expression (e.g., "This demonstrates that…").

As mentioned above, a considerable amount of literature has focused mainly on the role of metadiscursive nouns in academic writing, so the concept of metadiscursive adjectives has been entirely neglected. The pioneer in this field is Douglas Biber (2006a, 2006b). His research focuses on grammatical variations among university registers, analysing the model of stance nouns and adjectives (stance adjective plus *that-clause/to-clause* and stance noun plus *that-clause/to-clause*) in various academic registers. His study is based on four registers from the above-mentioned corpus (classroom teaching, class management talk, textbooks, and written course management) and produces interesting results. In his view, stance has been analysed as a grammatical phenomenon or a linguistic mechanism which aims to modulate the propositional content of an utterance via stance devices of all grammatical types: modals, adverbs, and complement clauses. His in-depth research results confirm *that to-clauses* controlled by nouns and adjectives are much more common than *that-clauses* controlled by nouns and adjectives in written university registers. Biber's (2006a) taxonomy of lexico-grammatical stance devices clearly shows that stance can be expressed via linguistic devices of many different types, with their predominant use in spoken academic registers. His lexico-grammatical model for stance analysis offers a valuable insight into other sub-types of stance-forming devices, with a prevailing tendency for certainty nouns and adjectives across registers. In his view, stance adjectives are subdivided into single adjectives and complement clauses which form the scope of this study.

Even though Biber's (2006a) investigation was aimed at various academic written registers (such as textbooks, course packs, syllabi, or institutional writing), his study completely overlooked academic research papers. All the above-mentioned studies show that metadiscursive nouns and adjectives in academic discourse are important grammatical devices for expressing a writer's opinion, for maintaining indirect contact with readership, and evaluating in(direct) commitments to the truth of propositions.

3 Data and methodology

3.1 Corpus

The present research aims to analyse the distribution, functions, and frequency of complement clauses controlled by nouns and adjectives in the corpus of linguistics research papers. Moreover, it tries to analyse the distribution of stance complement clauses across the rhetorical sections of research articles proposed by Swales (1990), who developed the IMRD framework (which refers to Introduction-Method-Results-Discussion used in empirical research in natural and social sciences).

An analysis of stance nouns and adjectives was carried out on the corpus that comprised 20 research papers published in two indexed journals – the *Journal of English for Academic Purposes* and *Discourse and Interaction*. These two journals were selected because they are prestigious journals in the field, they are indexed in international databases and follow a standard procedure for submitting manuscripts (all papers sent to the journals are first reviewed by editors for suitability; then two reviewers make comments with a recommendation to accept, rewrite and resubmit, or reject the paper). All selected research articles were published in 2016–2021 by non-native writers of English, and the corpus in the study consists of 188,246 running words with 457 stance complement clauses controlled by nouns and adjectives. It should be noted that this study is not aimed to be contrastive and comparative, even though it consists of EAP corpus (research papers from the *Journal of English for Academic Purposes*) and DI corpus (research papers from the *Discourse and Interaction* journal). To ensure the study's accuracy, the texts were first manually cleared of abstracts, footnotes, tables, and references, secondly the corpus data was converted into text files to enable automatic annotation by AntConc (Anthony, 2019), and thirdly the raw frequencies of metadiscourse marker tokens in the research papers were counted. Raw frequencies of items were then converted into frequencies per 1,000 words. Finally, a manual reading and analysis of the metadiscursive nouns and adjectives was carried out for a qualitative investigation of the data.

3.2 Analytical framework

This study uses Biber's (2006a) model of common lexico-grammatical features for stance analysis, focused on the attribution of stance in written and spoken university registers (pp. 92–93). In his framework for the study of stance (Table 1), stance is grammatically realised by modal verbs, stance adverbs, and complement clauses controlled by stance verbs, adjectives, and nouns in various genres of academic discourse.

1. Modal and semi-modal verbs		*In a certain case the majority must agree.*
2. Stance adverbs		*Unfortunately, it is not a matter of what we decide.*
3. Complement clauses controlled by stance verbs, adjectives, or nouns	STANCE COMPLEMENT CLAUSES CONTROLLED BY VERBS	*Other authors argue that they have different priorities for representing their research in academic journals.*
	STANCE COMPLEMENT CLAUSES CONTROLLED BY NOUNS	Stance noun+that-clause *Their findings stress the claim that academic writing is shaped by an author's academic background.* Stance noun+to-clause *The tendency to devote a separate section for acknowledgments has also been noted by the interviewees.*
	STANCE COMPLEMENT CLAUSES CONTROLLED BY ADJECTIVES	Stance adjective+that-clause *It also seems obvious that the expression of stance is shaped not only by culture.* Stance adjective+to-clause *It is important to consider some other aspects of the abovementioned model.*

Table 1: Common lexico-grammatical features used for the stance analysis by Biber (2006a)

In Biber's view, complement clauses are viewed as one of the main grammatical devices to overtly mark stance. Their potential value lies not only in their metadiscursive functions, but also in the way they grammatically signal the subordinating and coordinating part of the utterance, that is, how they modulate the proposition (a noun or an adjective phrase) by a subordinating clause, as for instance in Example (4) with the metadiscursive adjective in the post-predicative position and follow-up complement *that-clause* (Hyland & Tse, 2005; Kim & Crosthwaite, 2019):

(4) ***It seems paradoxical that*** *such negative, even chaotic discourse as above should induce well-planned, convenctional discourse and wishful thinking that "writing for immediate consumption" requires "a more disciplined approach to writing".* (DI corpus, Schmied: 102)

Quite similarly, metadiscursive adjectives with a dependent clause allow the researcher to assess the credibility and potential value of a proposition that is grammatically realised by a dependent clause.

Based on Biber's (2006a) research, stance nouns/adjectives are quite dense in academic discourse and cannot be viewed as the main grammatical devices for marking stance; their importance lies in the way they modulate sentence structure by assessing the reliability and adequacy of a statement as in Example (5) with the postponed subject and the anticipatory subject *it*.

(5) ***It thus became plain that*** *many of these occurrences were linked to online planning and lower certainty…* . (EAP corpus, Szczyrbak: 80)

If we compare the use of stance nouns/adjectives modified by dependent clauses, we can find certain similarities with stance verbs and their complement clauses. The most important similarity is that academic writers use these clauses to protect themselves from possible criticism, and to establish a(n) (in)direct contact with their readership (Kozáčiková, 2021, p. 21), another similarity is that in all these examples, the evaluation is followed by an evaluated entity (Kim & Crosthwaite, 2019, p. 3).

4 Results and discussion

4.1 Stance complement clauses controlled by nouns

The proportion of complement clauses controlled by metadiscursive nouns and adjectives was first compared. The quantitative analysis results are given in Table 1.

Clause type	Raw No.	Per 1,000 words	% of total SCC
1.Stance complement clauses controlled by N	**352**	**1.86**	**77.0%**
a. Stance THAT-clauses	234	1.24	51.2%
b. Stance TO-clauses	118	0.62	25.8%
2. Stance complement clauses controlled by A	**105**	**0.55**	**23.0%**
a. Stance THAT-clauses	43	0.22	9.4%
b. Stance TO-clauses	62	0.32	13.6%

Table 2: Frequency of stance complement clauses (SCC) controlled by nouns and adjectives

From the above-mentioned results, it is quite evident that the proportion of stance complement clauses controlled by nouns is higher (77%) than the proportion of adjective-controlled clauses (23%) in the corpus. This may result from the tendency for nominalisation, which is a common technique in academic writing (Biber et al., 1999, as quoted in Hyland & Jiang, 2021, p. 3) and because nouns are the most frequent word class in English which – apart from various roles in academic discourse – also function as a conceptual shell (Schmid, 2000), metadiscoursive noun (Hyland & Jiang, 2021) and stance noun (Biber, 2006b).

Table 3 presents the overall distribution of stance complement *that-clauses* together with their normalised frequencies per thousand tokens in the corpus.

Stance nouns	Raw No.	Per 1,000 words	% of total SCC
1. EPISTEMIC NOUNS	**197**	**1.04**	**84.2%**
Certainty	155	0.82	66.2%
Likelihood	42	0.22	18.0%
2. ATTITUDE NOUNS	**25**	**0.13**	**10.7%**
3. COMMUNICATION NOUNS	**12**	**0.06**	**5.1%**

Table 3: Stance complement *that-clauses* controlled by nouns

From the quantitative analysis, it is clear that in the corpus of linguistics research papers, writers prefer to use epistemic nouns (84.2%, either of certainty or likelihood) in their research papers, followed by attitude and communication nouns. Certainty nouns (as their name implies) simply reflect that academic writers are certain (or almost certain) of what they present, referring to facts, principles, analyses, and general statements – as in Example (6) with the epistemic head noun *the fact*, or Example (7) with the likelihood/probability head noun *claim*.

(6) *We admit **the fact that** the umbrella term of Thesis Discussion section could take a broad range of configurations and disciplinary variations...* (DI corpus, Bahardofar: 30)

(7) *Their findings stress **the claim that** academic writing is shaped by the writer's disciplinary background.* (DI corpus, Ebrahimi: 7)

Communication stance nouns (e.g., *proposition*, *note*, *comment*) which are semantically non-factual are the least frequent in the selected corpus (5.1%).

The most common stance nouns can be found in Table 4 with *the fact* as the most common epistemic noun phrase of certainty, modal noun (Liu & Deng, 2017, p. 9), one of the five most common controlling words (*show*, *find*, *think*, *fact*, *report*) in research articles (Parkinson, 2013, p. 440), signalling noun (Flowerdew, 2003, p. 330), or a noun complement construction categorized in the status group of head nouns (Jiang & Hyland, 2015, pp. 13–14). Its leading status in research papers lies in its argumentative power to present a proposition as a universal truth or an acceptable statement by a research community. Quite similarly, the head noun *finding* indirectly evaluates the factual status of information that refers other authors' outcomes (Example 9 with stance complement clause). It is important to mention that adjective relative clauses with relative pronoun *that* were excluded from the analysis, even though they

are used to modify a preceeding noun or pronoun as stance complement clauses and thus, to clarify the author's intention. There are 16 occurences of adjectival relative clauses with relative pronoun *that* in the corpus. The difference between these two types of dependent clauses is illustrated by the following examples with the head noun *findings*.

(8) *It should first be mentioned that the very exercise of checking individual items in the frequency lists against the raw data in the corpora rendered* ***a great number of potentially interesting findings that*** *lie beyond the scope of the present research.* (EAP corpus, Martinez: 43)

(9) *This parallels* ***previous findings that*** *integral citations were remarkably more frequent in novice than in expert writing.* (EAP corpus, Marti: 106)

Stance noun	Raw No.
FACT	24
STUDY	13
FINDING	12
TENDENCY	11
NEED	11
IDEA	9
ABILITY	8

Table 4: The most common stance nouns modified by stance *that-clause* and stance *to-clause*

It is generally known that most scientific papers are prepared according to a standard format called IMRD, as proposed by Swales (1990). In terms of the distribution of the noun complement *the fact* in the above-mentioned parts of a research paper, it is interesting to note that in most cases (11 out of 24, i.e., 45.8%) *the fact* with its prevalent use in the results section of a research paper refers mainly to major findings in research and the evaluation thereof. Additionally, *the fact* phrase is typically combined with inanimate subjects in the initial position of a dependent complement clause (Example 10) in contrast to animate subjects which were used only to a limited extent (Example 11). This may result from academics' tendency to avoid other authors' representation in their papers and to foster an impersonal academic writing character.

(10) *I also acknowledge* ***the fact that*** *global measures employed in this study may not offer nuanced aspects of the structural complexity.* (EAP corpus, Nasseri: 12)

(11) *It derives from* ***the fact that*** *writers need to show explicitly the importance of their study.* (DI corpus, Ebrahimi: 10)

To-clauses controlled by nouns are relatively rare in comparison with dependent *that-clauses* controlled by nouns. This is in line with Biber et al. (2002), who claim that "these clauses do not typically present a personal stance" (p. 304). The most common controlling nouns with *to-clause* construction in our corpus include the nouns *tendency* and *need*. It should be emphasized that their use in the corpus strictly depends on their meanings e.g. the noun *need* allows authors to refer to a certain gap in the previous research, and therefore, there is an inclination to place this noun in the introductory parts of research papers (Example 12). In contrast, the noun *tendency* conveys a slightly different trend since it is used in the result-discussion section of a research paper. Its stance meaning is achieved via the evaluation of an author's or other authors' previous research findings (Example 13).

(12) *There is **the need** to re-establish in the eyes of the discourse community the significance of the research field itself.* (DI corpus, Ebrahimi: 6)

(13) *The analysis also suggested that **a greater tendency** for these writers to include research questions or hypotheses may be a discipline-specific feature.* (EAP corpus, Kawase: 25)

4.2 Stance complement clauses controlled by adjectives

Academic writing is currently viewed as a special type of writing which, more than ever, reflects the strong tendency of academics to communicate and share their ideas, theories, and research findings interactively with their readers and prospective audience. Moreover, in order to be accepted by a research community, academics need to react or refer to the current state of knowledge and critically approach it from different perspectives. According to Hyland (2010), academic texts typically consist of "careful evaluations and interactions" (p. 116). Several other studies (e.g., Kaatari, 2013; Mindt, 2011) support the fact that the complementation of adjectives serve – with some other grammatical constructions – as one of the main grammatical means to express an author's attitudes or viewpoints to written or spoken (academic) discourse.

As for stance complement clauses controlled by adjectives, most of them occur in post-predicative extraposed position and mark an attitude towards the proposition in a dependent clause, either *a that-complement* or *a to-infinitive clause*. Based on the research results mentioned above (Table 2), it is evident that stance *to-clauses* controlled by adjectives are slightly more common (with a normalised frequency of 0.32 per 1,000 words) than stance *that-clauses* controlled by adjectives (with a normalised frequency of 0.22 per 1,000 words) in a selected corpus of linguistics research papers. Table 5 provides an overview of stance complement clauses controlled by adjectives in the selected corpus.

Stance adjective	Raw No.	Per 1,000 words	% of total SCC
Epistemic Adj	26	0.14	24.8%
Attitude/Emotion Adj	7	0.03	6.7%
Evaluation Adj	41	0.22	39.0%
Ability Adj	6	0.03	5.7%
Ease/Difficulty Adj	25	0.13	23.8%

Table 5: Stance complement clauses controlled by adjectives

Within the context of the analysis of stance complement clauses controlled by adjectives, the most common adjectives combined with stance complement clauses are epistemic adjectives of certainty such as *clear* and *possible*, and evaluation adjectives such as *noteworthy*, *important*, and *interesting*. On the other hand, ability adjectives such as *able* or *willing*, and attitude/emotion adjectives such as *surprised* or *afraid* (which presuppose their use with animate agents and not with abstract rhetors, as in Example 14), were applied only to a limited extent, and their use in the selected corpus was not statistically significant.

(14) *Of course, readers will always find coherence if* ***they are willing*** *to work on it, but it is always polite by writers if they make the work easier for their readers or avoid misunderstandings.* (DI corpus, Schmied: 113)

A generally accepted fact is that agreeing, disagreeing, disputing, and highlighting the most important and interesting research findings are crucial skills for academics when writing research papers, and adopting these skills helps academics to be accepted by the research community. It is therefore no surprise that the most common stance adjectives in the selected corpus are evaluation adjectives with *noteworthy* and *interesting*. The preference for *noteworthy* gives a strong emotional appeal to the research ideas, theories, and findings of which the potential readership should be aware, that is, those research findings that are worth reading, analysing, and remembering. It can be assumed that academics predominantly use stance adjectives combined with *that-complement clause* in the final sections of their research papers (conclusion, discussion, implications) to refer to:

a. important research results

(15) *Indeed, when we took a closer look at text excerpts from texts that scored high vs. low on adjectival modification and prepositions per noun phrase,* ***it became clear that*** *the quantitative differences extended to more qualitative ones as well.* (EAP corpus, Larsson, Kaatari: 11)

b. unexpected research findings

(16) ***Alternatively, it is possible that*** *this very ambiguity of first-person plural pronouns empowers authors to use the pronouns to a greater extent.* (DI corpus, Walková: 98)

c. research limitations

(17) ***It was extremely difficult to*** *access student papers that followed the same or similar programs, assessment structure, and assignment types.* (EAP corpus, Marti: 110)

4.3 Stance complement clauses and IMRD structure of a research paper

Most research papers currently follow the common research paper structure as proposed by Swales (1990) – IMRD (Introduction, Methods, Results and Discussion), even though in recent decades we have seen a slight change to Introduction-Literature, Review-Results, Discussion-Conclusion patterns (Lin & Evans, 2011; Posteguillo, 1999). In the papers under study, the main standard headings (IMRD) were not followed in all the research papers, so in this study the Literature review section is treated as part of the Introduction, and the Conclusion as part of the Discussion section. It is important to note that in some cases the Results and Discussion sections were blended together, so this section was viewed as a Results section (Table 6).

STANCE CLAUSES CONTROLLED BY ADJECTIVES	**105**	**%**
a. Introduction	28	26.7%
b. Methods	12	11.4%
c. Results	65	61.9%
d. Discussion	0	0 %
STANCE CLAUSES CONTROLLED BY NOUNS	**352**	
a. Introduction	122	34.7%
b. Methods	45	12.7%
c. Results	171	48.6%
d. Discussion	14	4.0%

Table 6: Distribution of stance complement clauses controlled by nouns and adjectives according to the IMRD structural pattern

As the results of quantitative analysis show (Table 6), there are no significant differences in terms of the distribution of stance complement clauses controlled by adjectives and nouns according to the IMRD structure. Most arise in the Results section of research articles (61.9% for stance complement clauses controlled by adjectives, and 48.6% for stance complement controlled by nouns) and are least common in the Discussion section (with no stance complement

clauses in the Discussion section). This is partially in line with other authors, such as Dontcheva-Navratilova (2016), who studied the distribution of hedges and boosters across the rhetorical structure of research articles. As she noted "hedges and boosters peak in the Results section and to a lesser extent in the Discussion section" (p. 174). In the research papers under my investigation, the Discussion section was viewed as a separate section only in a limited number of research papers and, as already noted, there was a considerable tendency to blend the Discussion section with the Results section of a research paper. The highest incidence of stance complement clauses in the Results section can indicate that academics present their research results in a more interactive and cautious way, thereby deflecting potential criticism from readers (Example 18), and can also be viewed as a face-saving act for the author.

(18) *Thus we become* ***aware of the well-known observation that*** *"A language is a series of redundancies"* (Halliday & Matthessen 2014: 25; although they use it in a phonetic context!) (EAP corpus, Riazi et al.: 16)

In contrast, the rate of complement clauses in the Methods section (11.4% for stance complement clauses controlled by adjectives, and 12.7% for stance complement controlled by nouns) implies an explanatory and descriptive function of the section, which defines the study design and data collection instruments and procedures. The Introduction is considered to be a problematic section of a research paper, as it is necessary to decide what to include in it and how to arrange the information (Swales, 1990, p. 137). It is interesting to note that there is a tendency to use stance clauses controlled either by nouns (26.7%) or adjectives (34.7%) in Introduction sections of research papers. An analysis of these complement clauses in Introductions indicate that in most of the cases they refer to previous research (Examples 19 and 20) or accepted knowledge in the field (Example 21). In some cases, these clauses also indicate the topic/problem which motivates the research in question (Example 22).

(19) ***It is interesting that*** *even Hyland did not include them in the list of code glosses in some other studies* (e.g. Hyland 2005, Hyland 2012). (DI corpus, Guziurová: 40)

(20) ***It is thus clear that*** *linguistic complexity can be studied at different levels of abstraction; in fact, studies on the topic increasingly operationalize syntactic complexity as a "multidimensional construct" (Norris & Ortega, 2009), encompassing both global and more fined-grained measures* (Casal & Lee, 2019). (EAP corpus, Larsson, Kaatari: 3)

(21) *The distinctness problem refers to* ***the fact that*** *global measures confound different linguistic categories.* (EAP corpus, Larsson, Kaatari: 3)

(22) ***The need to*** *cite relevant literature in academic writing is also required because knowledge of all topics has been previously developed by others and the main purpose of an academic text is to extend readers' knowledge on a particular topic.* (DI corpus, Arsyad et al.: 28)

5 Conclusion

The study described in this paper is based on an analysis of metadiscursive complement clauses controlled by nouns and adjectives in linguistics research papers. Stance complement clauses controlled by nouns and adjectives were analysed on the basis of the model for lexico-grammatical features for stance analysis as proposed by Biber in his work on university registers (1999, 2006a, 2006b) and the IMRD pattern model introduced by Swales (1990). The findings suggest that apart from numerous functions of nouns and adjectives in written and spoken discourse, their function as an evaluative grammatical means in academic discourse is by no means accidental. The results of the investigation have shown that *that-clauses* controlled by nouns are more common than *to-clauses* controlled by nouns, and quite surprisingly, *to-clauses* controlled by adjectives are more frequent than *that-clauses* controlled by adjectives in linguistics research papers. In the selected corpus of linguistics research papers, the most common nouns and adjectives combined with stance complement clauses are epistemic nouns of certainty and likelihood controlled by *that-clauses* (*fact*, *study*, *finding*, etc.), evaluation adjectives controlled by *to-clauses* (*noteworthy*, *important*, *interesting*), and epistemic adjectives of certainty controlled by either *that* or *to-clauses* (*clear*, *possible*, etc.). This prevailing tendency for epistemic linguistic devices may result from the fact that "linguists tend to argue more explicitly" (cf. Dontcheva-Navratilova, 2018, p. 160), and from the inclination to express the degrees of truth (the speaker's degree of commitment to the proposition expressed) and their strong commitment to research findings.

The frequent distribution of stance complement clauses controlled by adjectives and nouns according to the IMRD structure (Swales, 1990) in the Results section, displays the ongoing writers' tendency to present research results and findings in a reader-centred way, appealing to shared knowledge in the field and their own research outcomes. The present research naturally has limitations due to the size of the corpus and due to a limited research sample which consists of only two academic linguistics journals. Even though the corpus is relatively small, and further research is needed in order to shed more light on the presented phenomena, it is believed that the results can serve as a starting

point for a wider-scope analysis. Obviously, further research involving more linguistics research papers would be required to verify the above mentioned findings. Moreover, it would be interesting to analyse the use of metadiscursive clauses by native and non-native writers of English and to compare similarities, and differences in the use of these clauses in two or more journals from different disciplines in order to reveal disciplinary differences of the above mentioned structures.

Nowadays, due to the pressure to publish, academics are more aware than ever of how research results are disseminated to prospective readers, colleagues, and academia. This trend is clear in the lexico-grammatical choices that academics make to express their commitment to factual information in research papers. The stance-making role of nouns and adjectives is indisputable, since they shape discourse by making it more interactive, dialogic, and communicative.

In conclusion, this study's findings show how stance-taking devices in the genre of linguistics research papers shape discourse and confirm their importance in discursive practise.

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References

Anthony, L. (2019). *AntConc* (Version 3.5.8) [Computer software]. Waseda University. http://www.laurenceanthony.net/software

Biber, D., Conrad, S., & Leech, G. (1999). *Longman grammar of spoken and written English.* Pearson Education.

Biber, D., Conrad, S., & Leech, G. (2002). *Longman student grammar of spoken and written English.* Longman.

Biber, D. (2006a). *University language: A corpus-based study of spoken and written registers.* John Benjamins.

Biber, D. (2006b). Stance in spoken and written university registers. *Journal of English for Academic Purposes*, *5*(2), 97–116. http://dx.doi.org/10.1016/j.jeap.2006.05.001

Dontcheva-Navratilova, O. (2016). Cross-cultural variation in the use of hedges and boosters in academic discourse. *Prague Journal of English Studies*, *5*(1), 163–184. https://doi.org/10.1515/pjes-2016-0009

Dontcheva-Navratilova, O. (2018). Intercultural and interdisciplinary variation in the use of epistemic lexical verbs in linguistics and economics research articles. *Linguistica Pragensia*, *28*(2), 154–167.

Dontcheva-Navratilova, O. (2021). Engaging with the reader in research articles in English: Variation across disciplines and linguacultural backgrounds. *English for Specific Purposes*, *63*, 18–32. http://dx.doi.org/10.1016/j.esp.2021.02.003

Flowerdew, J. (2003). Signalling nouns in discourse. *English for Specific Purposes*, *22*, 329–346. https://doi.org/10.1016/j.esp.2003.10.001

Francis, G., Hunston, S., & Manning, E. (1998). *Collins COBUILD grammar patterns 2: Nouns and adjectives.* HarperCollins.

Charles, M. (2007). Argument or evidence? Disciplinary variation in the use of the noun that pattern in stance construction. *English for Specific Purposes*, *26*(2), 203–218. https://doi.org/10.1016/j.esp.2006.08.004

Hyland, K. (2010). Constructing proximity: Relating to readers in popular and professional science. *Journal of English for Academic Purposes*, *9*, 116–127. https://doi.org/10.1016/j.jeap.2010.02.003

Hyland, K., & Tse, P. (2005). Hooking the reader: A corpus study of evaluative that in abstracts. *English for Specific Purposes*, *24*, 123–139. http://dx.doi.org/10.1016/j.esp.2004.02.002

Hyland, K., & Jiang, F. K. (2016). Change of attitude? A diachronic study of stance. *Written Communication*, *33*(3), 251–274. https://doi.org/10.1177/0741088316650399

Kaatari, H. (2013). Adjectival complementation: Genre variation and meaning. *May 2013 Conference Paper: ICAME 34*, Santiago de Compostela, Spain.

Kim, C., & Crosthwaite, P. (2019). Disciplinary differences in the use of evaluative that: Expression of stance via that-clauses in business and medicine. *Journal of English for Academic Purposes*, *41*, Article 100775. https://doi.org/10.1016/j.jeap.2019.100775

Kozáčiková, Z. (2021). Stance complement clauses controlled by verbs in academic research papers. *Topics in Linguistics*, *22*(1), 16–26. https://doi.org/10.2478/topling-2021-0002

Lin, L., & Evans, S. (2011). Structural patterns in empirical research articles: A cross-disciplinary study. *English for Specific Purposes*, *31*, 150–160. https://doi.org/10.1016/j.esp.2011.10.002

Liu, Q., & Deng, L. (2017). A genre-based study of shell noun use in the Nbethat construction in popular and professional science articles. *English for Specific Purposes*, *48*, 32–43. https://doi.org/10.1016/j.esp.2016.11.002

Jiang, F. K., & Hyland, K. (2017a). The fact that: Stance nouns in disciplinary writing. *Discourse Studies*, *17*(5), 529–550. https://doi.org/10.1177/1461445615590719

Jiang, F. K., & Hyland, K. (2017b). Metadiscursive nouns: Interaction and cohesion in abstract moves. *English for Specific Purposes*, *46*, 1–14. https://doi.org/10.1016/j.esp.2016.11.001

Jiang, F. K. (2017). Stance and voice in academic writing. *International Journal of Corpus Linguistics*, *22*(1), 86–107. https://doi.org/10.1075/ijcl.22.1.04jia

Jiang, F. K., & Hyland, K. (2019). *Academic discourse and global publishing: Disciplinary persuasion in changing times.* Routledge.

Jiang, F. K., & Hyland, K. (2021). "The goal of this analysis...": Changing patterns of metadiscursive nouns in disciplinary writing. *Lingua*, *252*, Article 103017. https://doi.org/10.1016/j.lingua.2020.103017

Mindt, H. (2011). *Adjective complementation: An empirical analysis of adjectives followed by that-clauses.* John Benjamins.

Parkinson, J. (2013). Adopting academic values: Student use of that-complement clauses in academic writing. *System*, *41*, 428–442.

Posteguillo, S. (1999). The schematic structure of computer science research articles. *English for Specific Purposes*, *18*(2), 139–160. https://doi.org/10.1016/S0889-4906(98)00001-5

Schmid, H. J. (2000). *English abstract nouns as conceptual shells: From corpus to cognition.* De Gruyter Mouton. http://dx.doi.org/10.1515/9783110808704

Swales, J. M. (1990). *Genre analysis: English in academic and research settings.* Cambridge University Press.

Walková, M. (2019). A three-dimensional model of personal self-mention in research papers. *English for Specific Purposes*, *53*, 60–73. https://doi.org/10.1016/j.esp.2018.09.003

Warchał, K. (2015). *Certainty and doubt in academic discourse: Epistemic modality markers in English and Polish linguistics articles.* Wydawnictwo Uniwersytetu Śląskiego.

Wu, B., & Paltridge, B. (2021). Stance expressions in academic writing: A corpus-based comparison of Chinese students' MA dissertations and PhD theses. *Lingua*, *253*, Article 103071. https://doi.org/10.1016/j.lingua.2021.103071

Zou, H., & Hyland, K. (2022). How the medium shapes the message: Stance in two forms of book reviews. *Journal of Pragmatics*, *193*, 269–280. https://doi.org/10.1016/j.pragma.2022.03.023

Sources

Arsyad, S., Zaim, M., & Susyla, D. (2018). Review and citation style in research article introductions: A comparative study between national and international English medium journals in medical sciences. *Discourse and Interaction*, *11*(1), 28–51. https://doi.org/10.5817/DI2018-1-28

Bahadorfar, R., & Gholami, J. (2017). Types and functions of citations in master's theses across disciplines and languages. *Discourse and Interaction*, *10*(2), 27–45. https://doi.org/10.5817/DI2017-2-27

Ebrahimi, S. F. (2017). The overall aim of this work is…Functional analysis of functional subject in research article introductions across four disciplines. *Discourse and Interaction*, *10*(1), 5–30. https://doi.org/10.5817/DI2017-1-5

Granger, S., & Larsson, T. (2021). Is core vocabulary a friend or foe of academic writing? Single-word vs multi-word uses of THING. *Journal of English for Academic Purposes*, *52*, Article 100999. https://doi.org/10.1016/j.jeap.2021.100999

Guziurová, T. (2020). Discourse reflexivity in written academic English as lingua franca: Code glosses in research articles. *Discourse and Interaction*, *13*(2), 36–54. https://doi.org/10.5817/DI2020-2-36

Huang, C. J. (2017). What do subject experts teach about writing research articles? An exploratory study. *Journal of English for Academic Purposes*, *25*, 18–29. https://doi.org/10.1016/j.jeap.2016.10.004

Hublová, G. (2017). Reiteration relations in EFL student academic writing and the effects of online learning. *Discourse and Interaction*, *10*(1), 71–89. https://doi.org/10.5817/DI2017-1-71

Kawase, T. (2018). Rhetorical structure of introductions of applied linguistics PhD theses. *Journal of English for Academic Purposes*, *31*, 18–27. https://doi.org/10.1016/j.jeap.2017.12.005

Larsson, T., & Kaatari, H. (2020). Syntactic complexity across registers: Investigating (in) formality in second-language writing. *Journal of English for Academic Purposes*, *45*, Article 100850. https://doi.org/10.1016/j.jeap.2020.100850

Malá, M. (2020). Phraseology in learner academic English: Corpus-driven approaches. *Discourse and Interaction*, *13*(2), 75–88. https://doi.org/10.5817/DI2020-2-75

Martí, L., Yilmaz, S., & Bayyurt, Y. (2019). Reporting research in applied linguistics: The role of nativeness and expertise. *Journal of English for Academic Purposes*, *40*, 98–114. https://doi.org/10.1016/j.jeap.2019.05.005

Martinez, R. (2018). Specially in the last years: Evidence of ELF and non-native English forms in international journals. *Journal of English for Academic Purposes*, *33*, 40–52. https://doi.org/10.1016/j.jeap.2018.01.007

Nasseri, M. (2021). Is postgraduate English academic writing more clausal or phrasal? Syntactic complexification at the crossroads of genre, proficiency, and statistical modelling. *Journal of English for Academic Purposes*, *49*, Article 100940. https://doi.org/10.1016/j.jeap.2020.100940

Omidian, T., Shahriari, H., & Chanturia-Siyanova, A. (2018). A cross-disciplinary investigation of multi-word expressions in the moves of research article abstracts. *Journal of English for Academic Purposes*, *36*, 1–14. https://doi.org/10.1016/j.jeap.2018.08.002

Qiu, X., & Jiang, F. K. (2021). Stance and engagement in 3MT presentations: How students communicate disciplinary knowledge to wide audience. *Journal of English for Academic Purposes*, *51*, Article 100976. https://doi.org/10.1016/j.jeap.2021.100976

Riazi, A. M., Ghanbar, H., & Fazel, I. (2020). The contexts, theoretical and methodological orientation of EAP research: Evidence from empirical articles published in the Journal of English for Academic Purposes. *Journal of English for Academic Purposes*, *48*, Article 100925. https://doi.org/10.1016/j.jeap.2020.100925

Schmied, J. (2020). Limits of discourse: Examples from political, academic, and human-agent interactions. *Discourse and Interaction*, *13*(2), 89–118. https://doi.org/10.5817/DI2020-2-89

Szczyrbak, M. (2019). Epistemic stance in the Kavanaugh confirmation hearing: Focus on mental and communication verbs. *Discourse and Interaction*, *12*(2), 72–94. https://doi.org/10.5817/DI2019-2-72

Šinkūnienė, J., & Dudzinskaitė, G. (2018). Acknowledgement patterns in English and Lithuanian research writing. *Discourse and Interaction*, *11*(2), 65–86. https://doi.org/10.5817/DI2018-2-65

Walková, M. (2018). Author's self-representation in research articles by Anglophone and Slovak linguists. *Discourse and Interaction*, *11*(1), 86–105. https://doi.org/10.5817/DI2018-1-86

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METAPHORS AND ANTHROPOMORPHISM IN MEDICAL DISCOURSE

Gabriela Miššíková and Anna Shkotina

Abstract

The crucial question in this study is how anthropomorphic metaphors influence medical discourse by attributing human characteristics to illnesses. We implemented the research design based on the frameworks of cognitive linguistics and critical discourse analysis, placing emphasis on developments in the conceptual metaphor theory (CMT) by Lakoff and Johnson (1980), more recently elaborated by Kövecses (2010), Semino et al. (2017), and Gibbs (2017). In the process of analysing a manually collected corpus of communicative exchanges between patients, non-patients and medical workers retrieved from online platforms, the Metaphor Identification Procedure VU University Amsterdam (MIPVU) as outlined by Steen et al. (2010) was employed. We narrowed down the focus of our study to previously underexplored linguistic analysis of anthropomorphic metaphors in health and disease narratives. We hypothesized that 1) anthropomorphic metaphors are the most prevalent form of metaphors in medical communication, and 2) they are effective in bridging the experiential gap. Consequently, the research questions were formulated: What is the occurrence of anthropomorphic metaphors? What are the functions of anthropomorphic metaphors from the speakers' and recipients' perspectives? In what way can such language constructions influence patients' mutual understanding and interaction? Which conceptual domains are most frequently represented through anthropomorphic metaphors? Results indicate that 40 per cent of the metaphors used in medical discussions are anthropomorphic. On the interpersonal level, they enhance both empathy and comprehension by creating a sense of shared experience. Corpus analysis further revealed that the strategic use of anthropomorphic metaphors in medical communication can potentially improve patients' engagement and comprehension. In this sense our findings align with the current research on the impact of metaphors on speakers. More importantly, our research brings new perspectives on anthropomorphic metaphors, providing classification of direct and metaphoric anthropomorphism as well as further analysis of subtype categories.

Keywords

medical discourse, metaphor, anthropomorphism, disease, communication

1 Introduction

The recent global pandemic has put pressure on the healthcare systems in English-speaking countries, which are currently experiencing a crisis with limited-service availability, poor health outcomes, and general public dissatisfaction. Studies (Commonwealth Fund, 2021; Nuffield Trust, 2023) highlight significant flaws and complexities in healthcare performance.

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Discussion of these complexities often entails the use of figurative language such as metaphors, which could affect healthcare communication by serving as framing devices. Defined as complex cognitive mechanisms by Lakoff and Johnson (1980), they extend from poetry and rhetoric to everyday speech, education and medicine and can enhance understanding by linking abstract ideas to concrete and widely recognized concepts.

Similarly, as explained by Kövecses (2010), metaphors have the capacity to influence discourses, opinions and decisions. Medical discourse is filled with complex terms and concepts that may be difficult for the general public to grasp, and the interaction between healthcare professionals, patients and non-patients – in essence, people with different experiences – often presents challenges. Charon (2006) and Kövecses (2010) describe a lack of 'shared experience' as one of the main causes of misunderstanding in communication. One way of bridging this experiential gap would be to create what we term 'artificial shared experience' by talking about the unfamiliar in terms of the familiar. Anthropomorphism, attributing familiar human traits to non-human entities, could offer a way of achieving that. Evidently, the practice of using metaphors to make information more accessible, relatable and emotionally resonant is common in discussions about health, disease and emotional states (Semino et al., 2015). Anthropomorphic metaphors are frequently seen in discussions of disease, pain, treatment, symptoms, emotions and feelings. Whether these metaphors are simply convenient vocabulary tools, lead to oversimplification and misunderstanding, or could indeed improve healthcare communication is a matter that requires in-depth analysis.

The aim of this paper is to find out how anthropomorphic metaphors are used in addressing health and disease. Our hypothesis suggests that anthropomorphic metaphors are the most prevalent form of metaphorical expression in medical communication and are effective in bridging the experiential gap. Their success stems from their ability to create an artificial shared experience, which could increase empathy and understanding in discussions about health and disease. To confirm this, we ask the following research questions: What is the occurrence of anthropomorphic metaphors? What are the functions of anthropomorphic metaphors from the speakers' and recipients' perspectives? In what way can such language constructions influence patients' mutual understanding and interaction? Which conceptual domains are most frequently represented through anthropomorphic metaphors?

2 Literature review

Lakoff (1992, p. 1) argues that metaphor does not exist inside the language itself, but rather in the manner in which one mental domain is conceptualized in terms of another. The traditional theory of metaphor has evolved with the conceptual metaphor theory (CMT) proposed by Lakoff and Johnson (1980) and expanded in more recent works by Lakoff (2008), Kövecses (2010), Semino et al. (2017), Gibbs (2017), and Steen (2023), which highlight that our cognitive and behavioural processes are metaphorical in nature, using concrete source domains to understand abstract target domains, particularly in complex fields like health and disease. The current body of academic work on the use of metaphors in medical discourse has grown significantly and encompasses a wide range of perspectives and topics. In a general sense, scholarly investigations pertaining to metaphor within healthcare settings can be categorized into three primary classifications: i) metaphor as a practical tool in medical communication (Taylor & McLaughlin, 2011); ii) the use of metaphor in public communication about disease in media (Koteyko et al., 2008) and pharmaceutical marketing (Reisfield & Wilson, 2004), physical symptoms including pain (Loftus, 2011), emotions (Locock et al., 2012), and patients' self-perception (Appleton & Flynn, 2014); iii) the role of metaphor in the personal experience of disease, particularly in relation to cancer and AIDS (Gibbs & Franks, 2002; Semino & Demjén, 2017). The existing literature may have focused on specific domains or diseases, however, in our study, we perform a broader examination across medical specialties or contexts, which could provide a more comprehensive understanding. The matter of generalizability or applicability has major significance across different fields of medical and social research (Polit & Beck, 2010, p. 1457). The greater the scope of the analysed factors, the higher the potential for universality of the results. Hence different studies assess various kinds of data, such as patient-doctor conversations, questionnaires (e.g., Appleton & Flynn, 2014), interviews (e.g., Gibbs & Franks, 2002), and online blogging (e.g., Semino et al., 2015). Scholars employ different approaches based on the data and research aspects. For instance, Appleton and Flynn (2014) apply a qualitative technique in their study, while other studies use quantitative analyses, such as the computer-assisted methods of corpus linguistics, as demonstrated by Crawford and Csomay (2015). Regarding our research, the study by Semino et al. (2018) was most inspiring and influential. Working with extensive data on the use of metaphors in the context of cancer and end-of-life experiences, this research identified patterns of metaphorical language and examined their underlying functions and implications. The authors showed the benefits of employing a corpus-based methodology to analyse

metaphors related to health and disease. In this line, the project on the impact of vaccine metaphors published by Flusberg et al. (2024) was influential mostly in terms of project design and procedures applied.

3 Anthropomorphism and personification

Anthropomorphism is more common in metaphor studies than one might initially expect. In *Metaphors We Live By*, while not using the term explicitly, Lakoff and Johnson (1980) explore its connection with ontological metaphors, which help structure our experiences by conceptualizing abstract concepts, objects or forces as entities or substances (p. 23). These metaphors often lead to personifications, where non-human entities are given human characteristics – in other words, are anthropomorphized. For example, describing cancer as an entity that 'attacks' or 'steals' transforms it into a personified force, allowing us to understand and respond to complex medical phenomena in familiar human terms (p. 28). This process is a form of anthropomorphism, where we ascribe human-like qualities to non-human agents. Epley et al. (2007, p. 864) define anthropomorphism as "the tendency to imbue the real or imagined behaviour of nonhuman agents with humanlike characteristics, motivations, intentions, or emotions," emphasizing how it serves as a cognitive tool, often realised through language and metaphor, to interpret the non-human world through a human lens. Anthropomorphism in metaphors can be represented in two ways. Directly anthropomorphic metaphors attribute human characteristics to non-human entities explicitly, for example, 'Mother Nature' uses direct anthropomorphism by portraying nature as a parental figure (Ziliang & Zheng, 2023). On the other hand, metaphorically anthropomorphic metaphors, widely known as personification, merely imply human characteristics through symbolism or analogy. For example, in the context of war, such metaphors are often used to evoke emotional responses, framing war as a sentient entity without direct naming, as seen in the case of '*Mother Nature' – war takes lives and steals youth*, *face of war*, etc. (Materynska, 2021). Both types serve to bridge a gap in understanding; the distinction between them lies in their contextual implications and their representation of human traits.

The study of anthropomorphic metaphors within medical discourse has drawn some scholarly interest in the past, notably in organization studies by Schoeneborn et al. (2013) and in scientific communication by Wood (2019), which have made significant contributions. Furthermore, the work of Newton et al. (2017) explores the potential behavioural changes resulting from these metaphors in health contexts. This array of studies demonstrates the diverse applications and implications of anthropomorphic metaphors across various fields. Although

existing studies offer valuable insights, the use of anthropomorphic metaphors in health and disease narratives has yet to be fully examined. Everyday language is filled with anthropomorphic phrases, such as referring to a car as 'hungry' for gas or describing the weather as 'angry' (Airenti, 2018). However, the human capacity for imagination expands anthropomorphism well past humanlike objects (e.g., dolls, mannequins) to abstract concepts like disease and pain. The reasons why people anthropomorphize in the context of metaphors of health and disease are briefly discussed by Kövecses (2010, p. 18), and, in more detail by Vaňková et al. (2005, p. 60–61). Our research suggests that the main reason could be an innate tendency towards anthropomorphism and done in order to create shared experience.

4 Methods and language material

This is a corpus-based study, employing the method of conceptual metaphor theory (CMT), as supported by Musolff (2012), Pražmo (2020), and Zhao et al. (2023), supplemented by critical discourse analysis of the language material collected. Our research material consists of a manually collected corpus of communicative exchanges, comments and narratives, considered as a 'target corpus' providing the language material that we examine. The corpus consists of three sets of data involving an account of health-related subjects, such as descriptions of disease, symptoms, patient experiences, and treatments, currently comprising 200 texts. The largest data set contains 100 communicative exchanges collected from Reddit, at an average length of 400 words each. The second data set comprises 50 narratives collected from specialized forums such as *Healthboards*, *PatientInfo* and *Mental Health Forum*. The average length of each example is 600 words. The third set contains texts excerpted from articles published in online journals, such as *Very Well Health*, *Health Affairs*, *Medical News Today*, *Beyond Blue* and others, devoted to health and lifestyle issues and published between 2013 and 2023, with an average length of 1,000 words. All texts were selected randomly without preference for age, gender or profession. Information on social and cultural background of the speakers was not available in all cases; thus socio-cultural aspects were discussed only marginally. A lack of more complex information on the speakers' backgrounds may be considered one of the potential limitations of the presented research, since these aspects might be useful in deriving a broader perspective. However, it was established that the majority of speakers were citizens of the USA, UK and Canada. Table 1 below illustrates the corpus composition in more detail, providing information on the total size of the corpus linked to metaphor occurrences provided in Table 2. We consider both figures significant: the information on the word count

shows differences between the structuring of narratives when addressing an open community of participants such as Reddit, a closer community of patients sharing their thoughts on specialized forums, and the more complex narratives provided by unspecified authors in online journals. By means of identifying particular dissimilarities we may better understand speakers' communicative goals and related discourse practices. Breaking the size of the corpus down by occurrence of metaphorical expression is further illuminating, showing the speakers' state of mind as reflected in their preferences for using and reusing particular metaphorical expressions. The corpus consists of three data sets. Table 1 differentiates between communicative exchanges and commentaries, commentaries and posts, and narratives.

Corpus overview	**Total word count**	**Number of texts**
Total size of corpus	82,638	200
Corpus composition		
Data set 1. Communicative exchanges and commentaries collected from Reddit	22,489	100
Data set 2. Commentaries and posts collected from specialized forums	15,735	50
Data set 3. Narratives collected from articles in online journals	44,383	50

Table 1: Corpus composition

For convenience and clarity, the texts in the corpus were tagged following this scheme **//#/publication_date/access_date/source**, where # stands for the number of the text; **publication_date** – for date of its creation; **access_date** – date of our access; and **source** – the source where the text was taken from. As an example, the following text is number 7 in the corpus, the year of publication is 2018, date of access is 28 July 2023, and the source is a Reddit community dedicated to discussion of mental health:

(1) **//7/2018/28072023/ https://www.reddit.com/r/mentalhealth/**
Speaker A: Tell me what your mental illness feels like. I have ADHD and it's that one friend in the group that never shuts up, except he is in my head.
Speaker B: How I describe my anxiety. When you're a kid in you're sitting in a chair, and you lean back on two legs and you're just balancing. […] Anxiety is like a school bully who is gonna keep pushing your chair back so the feeling of falling lasts.
Speaker C: Close to mine. Mine is like the feeling when you're jaywalking and a car just misses you

The complete annotated corpus is publicly available and can be accessed via this link: https://docs.google.com/spreadsheets/d/1vU_vGmD3mPPa3dMJgdP2gBHtl-U_APzd/edit?usp=drive_link&ouid=103680490371389194376&rtpof=true&sd=true

Since our work centres around metaphors in medical discourse, we examine how language is implemented in social interactions through a discourse perspective. Our method consisted of a manual search through the corpus materials and applying the MIPVU (Metaphor Identification Procedure VU University Amsterdam) (Steen et al., 2010), an advanced and systematic procedure for identifying metaphor-related words. MIPVU builds on the basic principles of MIP (Metaphor Identification Procedure) (Pragglejaz Group, 2007) by incorporating additional guidelines and handling more complex linguistic phenomena. The key steps of MIPVU include: i) identifying lexical units within the text, ii) determining the contextual meaning of each lexical unit, iii) establishing the basic meaning of each lexical unit, iv) comparing the contextual meaning with the basic meaning to identify potential metaphors, v) evaluating whether the difference between these meanings can be explained by cross-domain mapping, and vi) addressing complex lexical phenomena such as phrasal verbs, compounds and indirect metaphors.

5 Anthropomorphic metaphors and cognitive target domains in the corpus

Eighty per cent of samples contained at least one metaphorical linguistic expression. The total number of metaphorical expressions that were identified following MIPVU is 552, with 239 in the first data set (commentaries from Reddit), 131 in the second data set (commentaries and posts from specialized forums), and 182 in the third data set (articles from online journals). All expressions were further divided into groups according to their target conceptual domains, namely DISEASE, TREATMENT, PAIN, EMOTION, PATIENT, and BODY. This can serve as the answer to our research question “Which conceptual domains are most frequently represented through anthropomorphic metaphors?”. As listed above, we identified six target conceptual domains. A more detailed distribution of target domains in the corpus is demonstrated in Table 2. The third column provides examples of metaphor tokens, i.e., the number of individual metaphor occurrences in the corpus.

Target domain	Number of metaphorical linguistic expressions	Examples of metaphorical linguistic expressions	Metaphor words
DISEASE	257	soldiers do not **fight**, my liver **attack**s my body, illness is **kill**ing me, **battling** the fear of death, the final **battle** of my life, mental **war**, anxiety is a **bitch**	FIGHT/23, ATTACK/20, KILL/9, KILLER/7, BATTLING/10, BATTLE/23, WAR/15, BITCH/3
TREATMENT	92	needed to replace the **darkness** and despair, to shift that **dark** cloud and let the **light** back in, a **blessing** in disguise, still **fighting** every day, **race** against time, pull out **weeds**, time the best **healer**	DARKNESS/1, DARK/13, LIGHT/4, BLESSING/3, FIGHTING/13, RACE/4, WEEDS/4, HEALER/2
PAIN	67	pain is **killing** me, pain is a **bastard**, kid **carving** pumpkins, pain is a damn **torturer**	KILLING/9, BASTARD/6, CARVING/1, TORTURER/4
EMOTION	61	putting a **brave face** on, moments of sunshine that **break** through the clouds, my heart **breaks**, you are near your **breaking** point, trying to **juggle**, **exploded** like bomb	MASK/1, BREAK/12, BREAKING (point)/4 JUGGLING/1, EXPLODED/2,
PATIENT	39	they see women as **incubator**, hovering above my own body like a **ghost**, I am essentially a **slave** to whichever customer, continue to feel like a **robot**, a **burden** to everyone close,	INCUBATOR/1, GHOST/3, SLAVE/1, ROBOT/1, BURDEN/9 (repeatedly used by many patients)
BODY	36	body is like a **garden**, like a **computer** that says ‘error not found’, my brain was **jump-started**, a very intolerant **bouncer**, help the **gatekeeper** regain control	GARDEN/8, COMPUTER/2, JUMP-START/1, BOUNCER/2, GATEKEEPER/4 (by the same speaker/nurse)

Table 2: Target domains

Metaphors that give human attributes to various aspects of disease are divided into directly anthropomorphic and metaphorically anthropomorphic (personification). The following table demonstrates the distribution of such metaphors in the corpus: out of the total number of metaphors, 40 per cent are anthropomorphic and refer to the act of assigning human attributes or behaviours to objects or entities that are not human.

Type of metaphor	Number	Individual metaphor words	%
Direct anthropomorphism	**91**	ENEMY, THIEF, KILLER, SHADOW MAN, ROBBER, HITMAN, TORTURER, BASTARD, CREEP, VILLAIN, JACKASS, FIREFIGHTER, POSTMAN, MESSENGER, CLOWN	**16%**
Personification	**127**	TORTURES/TORTURING, KILLS/KILLING, FORCES/FORCING, ATTACKS/ATTACKING, STEALS/STEALING, COOPERATES, UNDERSTANDS, CREEPS/CREEPING, TRAVELLING, JUMPING	**24%**
Other	**334**	JOURNEY, TOOL, GARDEN, SALAD, BLESSING, CURSE, HELL, GHOST, ALIEN, SHADOW, CLOUD	**60%**
Total	**552**		

Table 3: Anthropomorphic metaphors in the corpus – general word count

Metaphors that directly named disease and its aspects as humanlike are in the minority, with a total of 91 instances. We categorized direct anthropomorphism into three distinctive groups: pejorative, violent and social. In the absence of a widely accepted standard for classifying metaphors specifically within the context of health and disease, we created this classification based on how diseases and pain are personified, signifying the different levels of animosity, familiarity or social engagement associated with them. While broader classifications such as those by Semino and other respected scholars (Semino, 2008; Cameron, 2011; Demmen et al., 2015) distinguish general domains like VIOLENCE, these were too expansive for our analysis; therefore, we narrowed them down to better suit the specificities of the topic. Pejorative concepts are often represented by anthropomorphic metaphorical models (Kulchytska, 2022). Pejorative metaphors tend to be employed to mock or diminish the disease and its aspects, serving as a coping mechanism for patients to minimize the perceived threat of their condition. Metaphors such as PAIN IS A BASTARD, DISEASE IS A CREEP, DISEASE IS A JACKASS we classified as pejorative because they attribute unpleasant characteristics to diseases. In this context, the term ‘pejorative’ refers to the act of minimizing the disease’s perceived power or importance, presenting

them as annoyances rather than major obstacles. Metaphors we labelled as violent depict diseases as forceful or destructive entities, highlighting the confrontation between the patient and their disease. Examples include DISEASE IS A KILLER, DISEASE IS A THIEF, DISEASE IS AN INTRUDER, DISEASE IS A ROBBER, DISEASE IS AN ENEMY, DISEASE IS A TORTURER. These metaphors emphasize the combative aspect of the disease, typically using the imagery of assault or theft of health, in order to motivate the individual to resist and battle against it. The 'social' category covers metaphors that ascribe social roles or behaviours to diseases, emphasizing the complex nature in which diseases can become part of an impact individuals' social life. Examples in this category include metaphors such as PAIN IS AN OLD FRIEND, DISEASE IS A SCHOOL BULLY. The term *bully* is often associated with abuse; however, its categorization as 'social' is based on the focus on the interpersonal dynamics and manipulative tactics that are typical for harassing actions. Similarly, an *enemy* might mirror an inherent inclination towards violence, although its classification is determined by the specific context of antagonism within a socially established framework, such as warfare or competition. The 'other' category in Table 3 includes metaphors that do not attribute human characteristics to health and disease. These might incorporate natural forces, mechanical operations, or any non-human entities affecting the individual or their condition. For example, describing cancer as a *storm* or depression as a *shadow* corresponds to this classification. These metaphors use a variety of real-life experiences to understand disease, demonstrating various ways in which medical discourse can be metaphorical.

Table 4 conveys the data related to the research question "What is the occurrence of anthropomorphic metaphors?". The identified six target domains and their occurrences are listed separately for each set of data. Anthropomorphic metaphors are classified into direct and metaphorical anthropomorphism, with their occurrences stated. Illustrative examples of individual metaphors within each domain are provided within both categories. Metaphors are often accompanied by personification; thus, some metaphors were listed in both categories since both direct and metaphorical anthropomorphism can be identified. For instance, *ADHD is a clown that is controlling my mind* is both named explicitly and is attributed with a human-like action.

	Target domain	Metaphor occurrences/ illustrative examples			
		anthropomorphism			
		direct		metaphorical	
Data set 1	DISEASE	53	that **toxic boyfriend** that keeps messaging you; **magician** performing unexpected acts; mysterious **person talking in riddles**;	32	chronic illness **tells** me, „No!“; my liver **attacks** my body; silently **shooting**; tragedy is going to **haunt** me; get violently **mugged**;
	PAIN	7	a really strong **man** was **squeezing** my head with his arms; **kid** carving pumpkins; nasty little **dwarfs** are trying to push all that outside of my body;	4	state that makes it nearly impossible; pain is **killing** me; pain **travelled** from my bladder to my kidneys; cramps **would make me** pass out;
	TREATMENT	2	brave **firefighter**,	-	
	BODY	5	a very intolerant **bouncer**; brain as an **adult**, the unconscious part as a **child**;	5	tongue **doesn't cooperate** with me; my brain was splitting open and **made me cry**; body **starts to attack itself**;
	PATIENT	5	I'm some sort of **android**;	-	
Data set 2	DISEASE	9	anxiety is a bitch,	11	my **bladder wakes me up** with pain; illness that attacks me; self-destructing;
	PAIN	2	ripped away by someone slightly,	7	Tingling up and down my arms; despair washes over you again; it could switch off;
	PATIENT	1	brave firefighter,	1	makes me turn into mad hatter;
	BODY	-		8	my mind noticed itself and suddenly zoomed out and put my whole reality into perspective; my body is forever attacking itself; my body betrayed me and left me alone;

	Target domain	Metaphor occurrences/ illustrative examples			
		anthropomorphism			
		direct		metaphorical	
	TREATMENT	-		5	12 chemos nearly killed me; Morphine did great job; fentanyl made me have some really nasty side effects; Your mind has to understand you;
	EMOTION	-		2	fuels my anger; thoughts pass my mind;
Data set 3	DISEASE	3	Cancer used to stand behind your back as a watcher; invaded by enemy cells; the shadows and the man;	31	Depression convinces you; dark feelings returned; Cancer used to stand behind your back as a watcher; invaded by enemy cells; my cancer diagnosis taught me to live in the present;
	BODY	1	Dopamine is the brain's chemical messenger;	3	listen to your body; mind convinced me; my body serves as a constant reminder;
	EMOTION	1	battling with my employer;	7	you been bothered by little interest; the past had evaporated; lost my mind;
	4. TREATMENT	-		3	kill the virus that's living in me; the treatment failed the patient;

Table 4: Target-domain occurrences as identified in each data set, direct and metaphorical anthropomorphism occurrences, and illustrative examples

The results show that the conceptual target domain DISEASE comprises the largest number of anthropomorphic-metaphor occurrences in all three data sets. Certain differences between the number of occurrences of direct and metaphorical anthropomorphism are seen in all three data sets; however, the difference in Data set 3 (3/31) seems most significant. A smaller difference was calculated in Data set 1 (53/32), while the figures in Data set 2 appear insignificant (9/11). While the dominance of cognitive target domains of DISEASE and PAIN, as well as the absence of metaphorical anthropomorphic metaphors in the domain TREATMENT were predictable, the absence of direct anthropomorphic

metaphors in the domains of BODY, TREATMENT and EMOTION in Data set 2 seem revealing. Similarly, Data set 3 shows no direct anthropomorphic metaphors in the TREATMENT domain. These manifestations are discussed in more detail below.

6 Social, discursive and textual dimensions of anthropomorphic metaphors

In this section, the functions of anthropomorphic metaphors from the speakers' and recipients' perspectives, and the influence of particular language constructions on patients' interaction are considered. The data were analysed following the model of the three-dimensional approach in CDA (Fairclough, 1995).

6.1 Data set 1. Communicative exchanges and commentaries collected from Reddit

As noted earlier, the occurrence of anthropomorphic metaphors is highest in Data set 1 where speakers employ a rich variety of informal language inventory. Anthropomorphic metaphors seem to best accommodate speakers' communicative needs. For instance, calling ADHD disease (attention deficit hyperactivity disorder) *a tiny clown sitting inside my head* or PTSD disease (post-traumatic stress disorder) *a butcher who killed the old me* can be seen as expressive speech acts executing a unique illocutionary force, allowing speakers to voice an array of feelings. Participants make inferences about expressions of fear and despair behind seemingly brave speeches, and react with compassion, suggesting ways of handling the disease. Informal colloquial language helps to ease the sharing of the most difficult experiences (e.g., *Cancer fucking stole her from me. That stupid thief, violent robber who got in our life.*). Optimistic attitudes were inferred in expressive speech acts, enhanced by boosters and other devices, such as visual foregrounding (e.g., *You should **definitely** give **YOURSELF** a chance and go see a doctor! Maybe it's **not** cancer **at all**.*), and often expressed non-verbally by emoticons, self-invented acronyms and symbols. Humour and irony are also used (*I guess it doesn't sound too bad haha…*).

6.2 Data set 2. Commentaries and posts collected from specialized forums

While Data sets 1 and 2 share similar characteristics, specialized-forum speakers are considerably more focused in their talk, asking direct questions and seeking advice (e.g., *anyone else have the same?*). Social and discursive dimensions are observable via the notion of shared experience. Interlocutors interact via sharing their views on treatment results, medication (e.g., *I had to stop the meds, doctor advised me*), doctors and other medical workers (e.g., *my*

doctor an absolute legend; has been my rock), sometimes referring to the diverse reactions of the neighbouring community to their health conditions (*Noone understands me.*). The closeness of community is demonstrated by framing the discourse with the speech acts of greeting and saying goodbye, respectfully addressing the speaker's face, using verbal politeness to express sincere interest, respect and understanding:

(2) **//115/2022/12092023/mentalhealthforum/**
Hi everyone. I have posted on here a few times but I haven't been back since. First of all *how is everyone I hope your all well*.

(3) **//115/2022/12092023/mentalhealthforum/**
Im not a religious person *but always happy to hear someone* find comfort in anything, including in religion. *Maybe you can share* your anxiety depression episode? *What triggers them, how does it make you feel and how you went through it?* As someone who suffer anxiety, im *always eager* to learn from others. *Cheers.*

The narratives of speakers A in Data sets 1 and 2 often take the form of a story, where speakers introduce their health conditions as stories of their lives. Providing a brief context to their stories, they share basic personal information, such as age and gender, as well as briefly describing their social situation. The other participants' responses convey sincere concern and a desire to offer helpful advice (e.g., *Have you talked to a disability lawyer…, you could freelance…*). Politeness strategies are employed by both speaker A and other participants reacting to initial posts. The frequent occurrence of *sorry* in a variety of linguistic formulations shows the informal nature of the communication (45 occurrences). When used by speaker A, it commonly denotes apologies, and recipients infer their worry of being a bother (e.g., *I'm sorry for the long rant*…). Functioning as maxim hedges, these expressions enhance the efficient flow of the talk via instigated cooperation. Respondents B and C employ the phrases with *sorry* as expressions of understanding and sympathy, often with increasing expressiveness (e.g., *I am so sorry for your loss. I'm so sorry…, I'm sorry you're going through it. I'm very sorry about your struggle. That's awful. Fuck cancer!*). Avoiding potential face threats, speech acts expressing concern for others are used all through the corpus. A variety of linguistic structures functioning as mitigating devices are used (e.g., *not doubting you…, it sucks out here, I'm sorry.*). In truly difficult emotionally challenging situations, these posts turn out to be extensive, often more than 800 words long (e.g., //106/2023/12092023/ hivnet).

Throughout the data in Data sets 1 and 2, the patients were the only interlocutors initiating every interaction. Medical workers, especially specialist

doctors, entered communication when explanation, correction or expert advice were required. Doctors never exercised their power over patients. They were careful not to threaten the patients' face needs avoiding performing directive speech acts without using redressive strategies (e.g., then *maybe* don't attend anymore; …, *Not sure what* judo is other…). There were no systematic recurrences of expressions that indicate the manifestation of power relations between the doctors and the patients. On the contrary, the forums display a place of noticeable openness and trust (e.g., *I'm trying so hard to get better and be better; I'm scared. And tired. And angry. I would just like to hear some nice words please. Or that I'm not alone in this.*). Social life options, such as relationships, dating, working possibilities, hobbies and treatment options were discussed with genuine concern, respecting both cooperative and politeness principles to pursue successful communication. On occasion, professional debate between two or more doctors developed, providing a chain of responses offering expertise and medical advice. Here, the patients were not involved, and the talk was informal but professionally valid. Direct speech acts were performed with no intention to harm but be quick, specific and accurate (e.g., *You have a 63 y old pt.*). When providing suggestions or expert advice maxim hedges and other mitigating devices were used (e.g., *If possible…, Would obtain…, seems* to fit). The corpus data did not show any dominance of participating doctors. Similarly to 'patient – non-patient – other' communicative exchanges, no asymmetrical relations were detected.

(4) **//116/2021/12092023/acp**
Speaker A: I am working in a rural hospital in Sri Lanka with limited facilities. We have a 63 year old lady who presented with proximal muscle weakness for 1 week in both lower limbs…
Speaker B: *You have a 63 y old pt* with an acute presentation of proximal weakness and dysarthria, with preserved reflexes…
Speaker C: *If possible*, an MRI may be needed to rule out stroke.
Speaker D: *Would obtain* a detailed dermatological exam as well. Dermatomyositis seems to fit the clinical picture if a consistent rash is present.

Generally, speech acts of appreciation and thanks were frequently used (e.g., *Hi, just want to say it's amazing how so many people are experiencing the same thing! I thought I was going insane until I found this forum!*). Cases of metaphor hedging were also identified in the corpus. Throughout the corpus we identified 26 occurrences of *kind of* used as hedging devices, out of which 20 can be classified as maxim hedges and six as metaphor hedges. The example below illustrates the use of a maxim hedge (*I kind of enjoyed*) and metaphor hedge

where *paint a picture* metaphorically names the existing stage of a disease (*kind of paint a picture*).

(5) **//3/2023/15072023/https://www.reddit.com/r/ChronicIllness/**
It helped to ***kind of paint a picture*** *of what a day in my life with my unknown mystery illness was.*
I kind of enjoyed *that phase, it comes and goes.*

Other metaphor hedges can be listed here:

HIV is that corrupt border guard who gets all ***kind of scum*** *in without checking, but do not give up.* (DISEASE)
Now it's ***kind of like having a balloon wedged*** *in there or I have some* ***kind of flesh-eating disease*** *that is spreading to consume my whole body…*(BODY)
It's ***kind of like an interview*** *to see if it's a good match* (TREATMENT)

From the speakers' point of view, metaphor hedges help them to adjust the force of metaphorical utterances, while from the recipient's point of view, metaphor hedges enable the making of accurate inferences of the messages implied between the lines. Occasionally, other maxim hedges were used, such as *I believe*, *I think*. Frequency of boosters was also noted. Unsurprisingly, the most frequent one was *really* with 160 occurrences, followed by *especially* used 27 times, *total/y* with 11 occurrences, *absolute* with 14 occurrences and *absolutely* used eight times.

Data sets 2 and 3 reveal noticeably less direct anthropomorphic metaphors with the majority used to describe disease. Speakers preferred to use personifications of disease, body parts, and pain. For instance, disease was often described as an entity that has power over a person's life, performing both violent and non-violent actions (*waking up*, *teaching*, *stopping*, *forcing*, *understanding*, *killing*, etc.) In metaphorical anthropomorphism (personification), disease and pain become active performers of actions characteristic of humans. Various illnesses from cancer to depression were attributed predominantly violent actions, such as stealing, murdering and killing. These findings dovetail with previous studies (e.g., Gibbs & Franks, 2002; Semino et al., 2015) proving that the concept of violence is most frequently used. Another common theme identified in the corpus material was being healthy and overcoming disease. Several patients described health as a *blessing* or *heaven*, while being ill as a *curse*, *hell* and *punishment*. Such comparisons have religious connotations and provide insights into the impact of cultural and religious views on language and comprehension of health.

6.3 Data set 3. Narratives collected from articles in online journals

Data set 3 differs significantly on a textual level, displaying formal characteristics of thoughtfully edited popular-scientific writing. More importantly, the articles reveal different communicative purposes. Whereas posts and commentaries in the first two sets generally functioned as a form of 'group therapy', where all participants share the same condition and via talking about it seek understanding, help and encouragement, the primary purpose of the articles is to inspire via providing instances of successful coping with the disease and the most effective illness management. This aim is achieved through telling 'life stories' of 'real' people – other patients. Unlike Data sets 1 and 2, where all communication was initiated exclusively by patients, these stories are told from the third-person perspective by unspecified narrators, probably medical workers (e.g., *Kali had always been labelled as unreliable. Philip was a married man with two children. Annmarie has lived with psoriasis since she was 11*, etc.). All the stories have an opening sentence serving as a title, establishing the topic (e.g., *How my cancer diagnosis taught me to live in the present. / In February 2021 I checked into a psychiatric ward. / A black tunnel with no way out. / My Story of Living with Obesity.*). Personal data, such as gender, age and location (a city and/or state) are given to enhance trust, such as in *Mariana Castrillon, a 17-year-old from the Bronx has struggled with her weight her entire life.* Occasionally, articles written by doctors occur, yet these are explicitly marked as "doctor article" and take a significantly more explanatory and educational attitude towards a particular topic, as implied by the opening sentences *'War on cancer' metaphors may do harm, research shows* or *Like many diseases, cancer has its own special language.* The articles vary in length, alongside articles 4-600 words long, extensive texts over 2,000 words long were noted, and, on challenging topics, such as AIDS or ADHD, they were even more extensive (e.g., *AIDS epidemic takes toll on black women* – 2,984 words; *With her long dark hair flying*, *Saorla Meenagh*, *10*, *can execute a perfect switch leap* – 5,970 words). In several samples, medicine and treatment procedures are compared to tools or instruments, which suggests that disease is considered a malfunction that can be corrected or fixed. The tool/instrument metaphors convey perception of power over illness. They propose a dynamic and direct approach to healthcare, where healthcare workers are viewed as skilled technicians or mechanics having the ability and knowledge to resolve issues. This can mirror more extensive social and cultural beliefs regarding the function and power of medical knowledge and technology in the management of health.

7 Conclusion

Our research has built on the hypothesis that anthropomorphic metaphors are the most prevalent form of metaphorical expression in medical communication and are effective in bridging the experiential gap. The results confirm their ability to create an artificial shared experience, as shown mainly in the analysis of Data sets 1 and 2. The results of the discourse analysis provide linguistic evidence that the use of anthropomorphic metaphors increases the level of empathy and understanding between speakers. The research results brought insights into the frequency and distribution of anthropomorphic metaphors, showing that pejorative, violent and social metaphors are frequently used by both patients and medical workers.

Throughout the corpus, we identified six target conceptual domains, namely DISEASE, TREATMENT, PAIN, EMOTION, PATIENT, and BODY. The most frequently represented domain through anthropomorphic metaphors is DISEASE with 257 examples of metaphor; the least frequent is the domain BODY with 36 identified metaphors. The discourse analysis method was employed to explore the functions of anthropomorphic metaphors from the speakers' and recipients' perspectives. The results show that participants in communication respect both cooperative and politeness principles to pursue successful and smooth flow of the talk. The closeness of the patients' and medical workers' community is palpable via framing the discourse by speech acts of greeting and saying goodbye, respectfully addressing the speaker's face, and employing politeness strategies expressing sincere interest, understanding and encouragement. Throughout the data, the patients are the only interlocutors initiating every interaction in Data sets 1 and 2. Doctors and other medical workers never exercised their power over patients. The forums in Data set 3 display room for noticeable openness and trust. We presented evidence on the effectiveness of anthropomorphism in metaphors in eliciting emotional reactions and establishing insightful relationships between speakers. Statistically, metaphors directly naming disease and its aspects as humanlike are in the minority with a total number of 91 instances out of a total of 552 metaphorical linguistic expressions identified in the corpus. Compensating for the absence of a widely accepted standard for classifying metaphors within the context of health and disease, we categorized direct anthropomorphism into three distinctive groups: pejorative, violent and social. This enabled us to produce a classification showing how diseases and pain are personified, and identify the different levels of animosity, familiarity or social engagement associated with them accordingly. In contrast with previous studies, such as Semino et al. (2015) and Gibbs (2017), this paper contributes to current research on metaphors by

narrowing the focus specifically onto the notion of anthropomorphism and its application in metaphor creation. Hence our findings dovetail with the research of Epley et al. (2007) and Newton et al. (2017). Aiming at identifying specific types of anthropomorphic metaphors, we created an in-depth classification of direct anthropomorphic metaphors as compared to metaphorically anthropomorphic metaphors. Prospective research could expand to include a wider variety of cultural contexts and languages to explore how different cultural backgrounds may influence the use and interpretation of medical metaphors. Particular types and forms of disease, such as non/treatable diseases, need to be considered in further research, as these aspects directly influence the recipients' attitude toward the use of metaphors talking about these sensitive topics. With the rise of digital health communications, studying the role of metaphors in telemedicine and online health forums could provide insights into their effectiveness across different media.

References

Airenti, G. (2018). The development of anthropomorphism in interaction: Intersubjectivity, imagination, and theory of mind. *Frontiers in Psychology*, *9*, Article 2136. https://doi.org/10.3389/fpsyg.2018.02136

Appleton, L., & Flynn, M. (2014). Searching for the new normal: Exploring the role of language and metaphors in becoming a cancer survivor. *European Journal of Oncology Nursing*, *18*, 378–384. https://doi.org/10.1016/j.ejon.2014.03.012

Cameron, L. (2011). Metaphor in medical discourse: The functional perspective. *Journal of Applied Linguistics and Professional Practice*, *8*(1), 1–23.

Charon, R. (2006). *Narrative medicine: Honoring the stories of illness.* Oxford University Press.

Commonwealth Fund. (2021). Mirror, mirror 2021: Reflecting poorly. https://www.commonwealthfund.org/publications/fund-reports/2021/aug/mirror-mirror-2021-reflecting-poorly

Crawford, W., & Csomay, E. (2015). *Doing corpus linguistics.* Routledge. https://doi.org/10.4324/9781315775647

Demmen, J., Semino, E., Demjen, Z., Koller, V., Hardie, A., Rayson, P., & Payne, S. (2015). A computer-assisted study of the use of Violence metaphors for cancer and end of life by patients, family carers and health professionals. *International Journal of Corpus Linguistics*, *20*, 205–231. https://doi.org/10.1075/ijcl.20.2.03dem

Epley, N., Waytz, A., & Cacioppo, J. T. (2007). On seeing human: A three-factor theory of anthropomorphism. *Psychological Review*, *114*(4), 864–886. https://doi.org/10.1037/0033-295X.114.4.864

Fairclough, N. (1995). *Critical discourse analysis: The critical study of language.* Longman.

Flusberg, J. S., Mackey, A., & Semino, E. (2024). Seatbelts and raincoats, or banks and castles: Investigating the impact of vaccine metaphors. *PLoS ONE*, *19*(1), Article e0294739. https://doi.org/10.1371/journal.pone.0294739

Gibbs, R. W., Jr. (2017). *Metaphor wars: Conceptual metaphors in human life.* Cambridge University Press. https://doi.org/10.1017/9781107762350

Gibbs, R. W., Jr., & Franks, H. (2002). Embodied metaphor in women's narratives about their experiences with cancer. *Health Communication*, *14*(2), 139–165. https://doi.org/10.1207/s15327027hc1402_1

Koteyko, N., Brown, B., & Crawford, P. (2008). The dead parrot and the dying swan: The role of metaphor scenarios in UK press coverage of avian flu in the UK in 2005-2006. *Metaphor and Symbol*, *23*(4), 242–261. https://doi.org/10.1080/10926480802426787

Kövecses, Z. (2010). *Metaphor: A practical introduction.* Oxford University Press.

Kulchytska, O. V. (2022). Pejoratives and cognitive metaphor in modern American novel. *Transcarpathian Philological Studies*, *2*, 62–66. https://doi.org/10.32782/tps2663-4880/2022.21.2.12

Lakoff, G., & Johnson, M. (1980). *Metaphors we live by.* University of Chicago Press.

Lakoff, G. (1993). The contemporary theory of metaphor. In A. Ortony (Ed.), *Metaphor and thought* (2nd ed.) (pp. 202–251). Cambridge University Press.

Lakoff, G. (2008). The neural theory of metaphor. In R. W. Gibbs, Jr. (Ed.), *The Cambridge handbook of metaphor and thought* (pp. 17–38). Cambridge University Press.

Locock, L., Mazanderani, F., & Powell, J. (2012). Metaphoric language and the articulation of emotions by people affected by motor neuron disease. *Chronic Illness*, *8*, 201–215. https://doi.org/10.1177/1742395312443390

Loftus, S. (2011). Pain and its metaphors: A dialogical approach. *Journal of Medical Humanities*, *32*, 213–230. https://doi.org/10.1007/s10912-011-9139-3

Materynska, O. (2021). Translating anthropomorphic metaphors of war: An ecolinguistic approach. *SHS Web of Conferences*, *105*, Article 01004. https://doi.org/10.1051/SHSCONF/202110501004

Musolff, A. (2012). The study of metaphor as part of critical discourse analysis. *Critical Discourse Studies*, *9*(3), 301–310. https://doi.org/10.1080/17405904.2012.688300

Newton, F. J., Newton, J. D., & Wong, J. (2017). This is your stomach speaking: Anthropomorphized health messages reduce portion size preferences among the powerless. *Journal of Business Research*, *75*, 229–239. https://doi.org/10.1016/j.jbusres.2016.07.020

Nuffield Trust. (2023). British social attitudes: Satisfaction with the NHS falls to the lowest level ever recorded. https://www.nuffieldtrust.org.uk/news-item/british-social-attitudes-satisfaction-with-the-nhs-falls-to-the-lowest-level-ever-recorded

Praggleaz Group (2007). MIP: A Method for Identifying Metaphorically Used Words in Discourse. *Metaphor and Symbol*, *22*(1), 1–39. https://doi.org/10.1080/10926480709336752

Polit, D. F., & Beck, C. T. (2010). Generalization in quantitative and qualitative research: Myths and strategies. *International Journal of Nursing Studies*, *47*(11), 1451–1458. https://doi.org/10.1016/j.ijnurstu.2010.06.004

Prażmo, E. (2020). Foids are worse than animals: A cognitive linguistics analysis of dehumanizing metaphors in online discourse. *Topics in Linguistics*, *21*(2), 62–79. https://doi.org/10.2478/topling-2020-0007

Reisfield, G. M., & Wilson, G. R. (2004). Use of metaphor in the discourse on cancer. *Journal of Clinical Oncology*, *22*, 4024–4027. https://doi.org/10.1200/JCO.2004.03.136

Schoeneborn, D., Blaschke, S., & Kaufmann, I. M. (2013). Recontextualizing anthropomorphic metaphors in organization studies: The pathology of organizational insomnia. *Journal of Management Inquiry*, *22*(4), 435–450. https://doi.org/10.1177/1056492612448463

Semino, E. (2008). *Metaphor in discourse.* Cambridge University Press.

Semino, E., & Demjén, Z. (Eds.). (2017). *The Routledge handbook of metaphor and language.* Routledge.
Semino, E., Demjén, Z., Hardie, A., Payne, S., & Rayson, P. (2018). *Metaphor, cancer and the end of life: A corpus-based study.* https://doi.org/10.4324/9781315629834
Semino, E., Demjén, Z., & Hardie, A. (2017). The language of illness and death on social media: The case of #BellLetsTalk. *Journal of Pragmatics*, *109*, 113-128.
Semino, E., Demjén, Z., Koller, V., Payne, S., Hardie, A., & Rayson, P. (2015). The online use of violence and journey metaphors by patients with cancer, as compared with health professionals: A mixed methods study. *BMJ Supportive & Palliative Care*, *5*(1), 60–66. https://doi.org/10.1136/bmjspcare-2014-000785
Steen, G. J. (2023). *Slowing metaphor down.* John Benjamins Publishing Company.
Steen, G., Dorst, A. G., Herrmann, J. B., Kaal, A. A., Pasma, T., & Vermeer, A. A. J. (2010). *A method for linguistic metaphor identification: From MIP to MIPVU.* John Benjamins Publishing Company.
Taylor, R., & McLaughlin, K. (2011). Terror and intimacy: Unlocking secrets at the end of life. *Journal of Holistic Healthcare*, *8*, 12–17.
Vaňková, I., Nebeská, I., Saicová Římalová, L., & Šlédrová, J. (2005). *Co na srdci, to na jazyku: Kapitoly z kognitivní lingvistiky.* Karolinum Press, Charles University.
Wood, M. (2019). The potential for anthropomorphism in communicating science: Inspiration from Japan. *Cultures of Science*, *2*(1), 23–34. https://doi.org/10.1177/209660831900200103
Ziliang, J., & Zheng, X. (2023). Anthropomorphic metaphors of parent-child relationship in pro-environmental public service advertising. *Journal of Language & Communication*, *10*(2), 257–274. https://doi.org/10.47836/jlc.10.02.07
Zhao, X., Zheng, Y., & Zhao, X. (2023). Global bibliometric analysis of conceptual metaphor research over the recent two decades. *Frontiers in Psychology*, *14*. https://doi.org/10.3389/fpsyg.2023.1042121

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AI AND POLITICS: DO POLITICAL IDEOLOGIES INFLUENCE PEOPLE'S VIEWS ON AI?

Ronnakrit Rangsarittikun, Richard Watson Todd and Stephen Louw

Abstract

Generative artificial intelligence (AI), with its potential to disrupt several industries, including the art industry, has been a controversial subject of discussion in mainstream newspapers. To understand the impact of political ideologies on this controversy, this study compares concerns about AI-generated art between liberals and conservatives in the United Kingdom. Data comprised comments of readers of the *Daily Mail* and *The Guardian* on a news story about an award-winning AI artwork at the Colorado State Fair, a topic that has stirred up controversies over various AI-related issues. Keyword analysis was conducted to indicate the overall concerns and to identify similarities and differences in opinions between the readers of both newspapers. A thematic analysis was then performed, and the frequencies of each theme within the two data sets were also examined to highlight the perspectives of each group of readers. Overall, in contrast to much existing literature, the findings indicate that the similarities noticeably outweigh the differences, and the differences are not immediately relevant to AI. Instead, the readers used the topic of AI as a segue to talk about other concerns. This finding suggests that political beliefs about AI are not yet entrenched.

Keywords

generative AI, art, political beliefs, Midjourney, keyword analysis, thematic analysis

1 Introduction

The widespread availability of generative artificial intelligence (AI) tools, like ChatGPT for text and Midjourney for images, has led to increased interest in their potential impacts on society. The ability of AI to compute and execute projects with unparalleled accuracy and speed, often surpassing human capabilities, has significantly enhanced workplace efficiency and diminished costs, catalyzing transformative shifts across numerous industries. The rapid adoption of AI is noteworthy, and there are indications that it will continue to evolve, becoming faster, more sophisticated, and more deeply integrated into societal frameworks, akin to a 'digital revolution' (Gates, 2023; Makridakis, 2017).

Despite the commendable speed and efficiency of these tools, concerns have arisen, as they threaten to replace humans in occupations across various sectors (Mirbabaie et al., 2022). This apprehension extends even to traditionally secure positions in fields like journalism (Biswal & Gouda, 2020), medicine (Topol, 2019), and areas traditionally associated with human creativity, such as art

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(Matthews et al., 2023). The transformative potential of AI, while promising, raises ethical considerations and prompts a reevaluation of the societal implications of its integration into various aspects of human life.

The emergence of deep neural networks capable of learning aesthetics from datasets of example images has given rise to text-to-image models like Midjourney and Stable Diffusion. These machine learning applications synthesize digital art using deep generative models trained on text-image pairs obtained from the internet. By utilizing natural language input, these programs can generate diverse images and artworks (Oppenlaender, 2022). Ongoing advancements in these models empower users to employ style modifiers to guide the output and incorporate metrics for assessing output quality (Lee et al., 2023). The iterative process involved in generating art through this medium poses a challenge for artists seeking to harness this tool for artistic expression (Oppenlaender, 2023). These developments mean that AI-generated images can be of high quality but raise the question of whether generative AI is a legitimate tool for artists to use.

The widespread accessibility of AI tools for generating art has sparked debate over their role in the art community. With the ability to produce high-quality images solely based on text prompts, ethical and philosophical questions arise. One such question is whether AI text-to-image output can be deemed creative. Csikszentmihalyi's (1997) systems model of creativity comprises three integral components: the idea, the domain (rooted in cultural context), and the field (encompassing gatekeepers). According to this model, social validation is a prerequisite for considering something as creative. Therefore, the assessment of AI-generated output within artistic circles and the ensuing debate about its position in the artistic realm are key to deciding whether AI-generated images should be considered art.

Traditionally, art philosophy delineates art as a human endeavor grounded in culture, context, and systematic processes, distinguishing it from mere imitation or spontaneous activity (Adajian, 2024). AI-generated images have demonstrated an ability to be virtually indistinguishable from those created by humans (Gangadharbatla, 2022; Köbis & Mossink, 2021), even by art experts (Gu & Li, 2022). Despite this, studies reveal a prevailing negative bias against art labeled as AI-generated, with preferences consistently leaning towards human-created art. Judgments favoring human-created art as more beautiful, profound, and valuable persist even when labels of 'human-created' and 'AI-created' are randomly assigned or reversed (Bellaiche et al., 2023; Gu & Li, 2022; Millet et al., 2023).

Millet et al. (2023) propose that this bias against AI-created art reflects a challenge to anthropocentric perspectives, suggesting that the production of

high-quality AI art challenges the notion that creativity is an exclusive domain of human endeavor. This argument contends that the success of AI in tasks traditionally considered quintessentially human, or those imbued with higher symbolic value, such as art, challenges the belief that human properties like soul, emotion, or suffering hold exclusive and meaningful value.

One significant concern over these tools on artists is the potential threat to creative professions, including graphic designers, illustrators, and artists, as clients increasingly turn to digital alternatives for faster and more cost-effective solutions (Jiang et al., 2023). Another pressing concern is that of plagiarism. Given that AI image generators are trained on existing examples of art, including copyrighted material, there exists the risk of copyright infringement. With their ability to access images in their databases, AI-image generators may risk unauthorized use and reproduction of copyrighted content. More importantly, and perhaps unfortunately, this opens the door to potential digital forgery or the misuse of image generators for illicit purposes, such as generating deep-fake images for political deception (Jiang et al., 2023; Vaccari & Chadwick, 2020).

Amidst ongoing public controversies surrounding the definitions of art, Joseph Allen's submission, Théâtre D'opéra Spatial, emerged victorious in the Colorado State Fair's art contest in August 2022. The noteworthy aspect of Allen's win lies in the utilization of Midjourney, an AI tool, to create the artwork, sparking considerable debate. The controversy surrounding the victory prompted organizers of the event to reevaluate their submission criteria for subsequent competitions (https://www.smithsonianmag.com/smart-news/this-state-fair-changed-its-rules-after-a-piece-made-with-ai-won-last-year-180982867/). The impact of Allen's win reverberated through major newspapers, including *The Guardian* and the *Daily Mail*, further fueling the public discourse on the implications of AI-generated art. This study centers on the public debate spurred by this victory.

2 Influences on artistic taste

While reactions to art are often viewed as personal and subjective, research has shown some common preferences in artistic taste and identified factors shaping individuals' aesthetic preferences. In an exploration employing twin dimensions of abstract versus representational art and curved versus angular visuals, Zenner (2020) found a widespread inclination toward representational and curved images.

Personality traits, aesthetic preferences and political affiliations have been shown to be interlinked. For example, a penchant for representational art tends to be associated with high conscientiousness and neuroticism (Chamorro-Premuzic et

al., 2009); openness tends to predict a left-wing alignment, while conscientiousness is associated with more conservative leanings (Ekstrom & Federico, 2019); and conservatives exhibit a preference for representational art (Wilson et al., 1973). These findings contribute to the understanding of potential connections between personality, artistic preferences and political inclinations.

Past research has shed light on the intricate relationship between artistic preference and political ideologies. Carl et al. (2019), investigating art preferences and support for Brexit, further support these associations. They observed that Brexit supporters, who lean conservative, were more inclined to prefer representational art. The link between conservatives' higher conscientiousness and neuroticism and their potential lower tolerance for ambiguity and greater need for closure may contribute to a diminished appreciation for abstract art. Aesthetics and judgments of taste in art, then, are cultivated and influenced by social pressures (Greenberg, 2000). The interplay between political leanings, cultural values, and individual perceptions of beauty and taste in art reflects the complex and multifaceted nature of how individuals engage with and interpret artistic expressions within broader societal contexts.

3 Investigating the influence of political beliefs

News media play a crucial role as conduits for political content and perspectives, and in the United Kingdom, this political divide is often exemplified by two prominent newspapers with opposing ideologies: *The Guardian* and the *Daily Mail*. *The Guardian*, a left-of-center broadsheet, espouses a liberal ideology and attracts a younger and more educated readership (Thurman & Fletcher, 2019). On the other hand, the *Daily Mail*, a right-leaning tabloid, is popular among middle to working-class readers and supports an anti-liberal stance. Both newspapers wield significant influence within their respective communities.

The political polarization of these two newspapers is evident in their divergent perspectives on issues such as populism, immigration, and Brexit (Demata et al., 2020; Delannoy, 2019). For instance, in the lead-up to the Brexit vote in 2016, the *Daily Mail* portrayed the EU as detrimental to British national interests, while *The Guardian* advocated for Remain. The differences in the political positions mean that the readership of these newspapers represents different political viewpoints. Comments by readers of each newspaper, then, should explicitly show the concerns of that political group. Collecting and analyzing the comments on an article about AI art in newspapers with different political standpoints is a promising approach for identifying how liberals and conservatives differ in their perspectives on this issue.

4 Methodology

This research originated in a competition to elicit research topics in applied linguistics from the general public (see Watson Todd, 2023). [The winning idea to investigate political attitudes to AI-generated art was submitted by Suttipong Phansomboon, an undergraduate student of engineering at King Mongkut's University of Technology Thonburi.]. This paper investigates the similarities and differences in the concerns about AI art of liberals and conservatives. By examining the comments of readers of the *Daily Mail* and *The Guardian* on the topic of AI-generated art winning an art competition, the study aimed to answer the following research questions:

1. What are the beliefs of liberals concerning AI-generated art?
2. What are the beliefs of conservatives concerning AI-generated art?
3. What are the similarities or differences between the beliefs of the two groups?

By linking attitudes to AI-generated art and political beliefs, the findings of the study may shed light on the likely roles of AI art generators in the future. For example, as governments come under increasing pressure to regulate AI, the concerns that political groups' politicians represent may influence such regulations.

4.1 Data collection

To investigate attitudes towards AI-generated art, we used reader comments on newspaper articles, one from *The Guardian* representing liberal attitudes (e.g., de Burgh, 2008), and one from the *Daily Mail* representing conservative attitudes (e.g., Delannoy, 2019). To facilitate a comparison, we looked for two articles providing similar coverage of a news story concerning AI art generation. In addition, both newspapers needed to allow readers to comment on the story, and there should be roughly the same number of comments. A news story fitting these criteria concerns the winning of the Colorado State Fair arts competition in 2022 by an AI-generated artwork submitted by Jason Allen. The award sparked controversy and was reported in popular media, including both newspapers (https://www.theguardian.com/technology/2023/sep/24/an-old-master-no-its-an-image-ai-just-knocked-up-and-it-cant-be-copyrighted and https://www.dailymail.co.uk/sciencetech/article-11169535/Human-creators-uproar-AI-generated-photo-wins-place-Colorado-art-competition.html). A total of 410 comments were taken from the two online newspapers: 193 from the *Daily Mail*, and 217 from *The Guardian*. The *Daily Mail* corpus consisted of roughly 4,000 words, and *The Guardian* corpus of roughly 14,000 words.

4.2 Data analysis

To provide multiple perspectives on the data, we used mixed-methods data analysis (Onwuegbuzie & Leech, 2006). To gain an overview of the concerns in each set of comments, we first treated the data as two corpora and conducted keyword analyses to identify salient concepts in each corpus. Selected keywords were then investigated in depth through concordance lines. To identify shared and disparate concerns across the comments within each corpus, we conducted a deductive thematic analysis manually and analyzed the frequencies of each theme in the two data sets and also what each set of readers had to say about each theme.

4.2.1 Keyword analysis

Keywords are words which are relatively more frequent in a target corpus when compared to a benchmark corpus. Keywords can be indicative of the main concerns of the target corpus since they provide information suggesting what the corpus is about (Scott & Tribble, 2006). Conducting a keyword analysis requires decisions to be made at several stages. First, the corpora to be compared need to be identified. In this case, we had two corpora, the *Daily Mail* corpus and *The Guardian* corpus. To see how concerns differ, we compared each corpus (the target corpus) against the other (the benchmark corpus) using AntConc (Anthony, 2019). Second, we need to choose a method for measuring the differences between the two corpora. Given that our corpora consisted of numerous very short texts, dispersion was not an appropriate measure. Instead, we used relative frequency, and, since we were interested in the aboutness of the corpora, we used probability statistics rather than an effect size statistic (see Pojanapunya & Watson Todd, 2018), namely, log likelihood (LL). Third, we need to set a cutoff threshold above which words are considered key. The higher the LL value, the more significant the word, but LL values are heavily influenced by corpus size. Given that our corpora were quite small, we decided to focus on only the top 10 keywords in each corpus as indicators of different attitudes, values and concerns. For similarities, we examined those words which appear at very similar proportional frequencies in the two corpora, in other words, those words whose LL value is very close to zero and whose overall frequency is at least three.

The keyword analyses produced three lists of keywords: words of particular concern in the *Daily Mail* comments, words of particular concern in *The Guardian* comments, and words which appear similarly in the two corpora. For each list, concordance lines were generated for each keyword, and those which appeared particularly insightful were presented for interpretation.

4.2.2 Thematic analysis

To gain insights into the patterns of the overall concerns of the readers of the two newspapers, we conducted a thematic analysis. To identify themes, we used a deductive approach, basing our themes on concerns we had identified in the literature review. This allows the findings to be more easily compared to other studies. From the literature, six themes were identified (quotations are taken from the literature review of this article):

- Quality of art: the quality of finished art, especially that produced by Midjourney ("AI-generated images can be of high quality") and comparisons of AI-generated and traditional art.

- Nature of art: comments on what does and does not constitute art ("the assessment of AI-generated output within artistic circles"; "art philosophy delineates art as a human endeavor").

- Technology and art: the role of technology (including AI) in art ("whether generative AI is a legitimate tool for artists to use"), and role of technological changes in the past.

- AI capabilities: what AI is and what it can and cannot do, including discussion of how AI works ("machine learning applications synthesize digital art using deep generative models", "unauthorized use and reproduction of copyrighted content").

- Role of the artist: what role does the artist play, especially in AI art ("the iterative process involved in generating art through this medium").

- Social impact: what the implications of AI-generated art are for society and the future ("threat to creative professions").

These six themes were applied to both sets of reader comments, with each comment considered a single data entry coded only once. This enabled the majority of the comments to be coded. Uncoded comments fell into two categories. First, there were some comments which were purely textual in that they evaluated previous comments with no mention of the content (e.g., "Exaggerate much") or which included obscure references which the coders could not understand (e.g., "Not a surprising when we are celebrating men with no cucumbers"). Second, there were some comments which discussed the Colorado State Fair arts competition, leading to the creation of a seventh theme:

- Competition: comments relating to the competition itself, such as the competition rules or the fairness of the decision.

Having set up the themes, a selection of 40 random comments was coded by two coders as an inter-rater reliability check, producing a Cohen's kappa of 0.76, an acceptable level of reliability.

To investigate whether there are differences between themes in the two corpora, the frequencies of themes were counted and compared using chi-square. To examine similarities and differences within the themes, an in-depth interpretive qualitative analysis of the comments coded with the same theme in the two corpora was conducted. In presenting extracts to illustrate this analysis, we have kept the original form for all quotations, including mistakes.

5 Results

5.1 Keyword analyses

Before we examine the differences in the concerns of the *Daily Mail* and *The Guardian* readers, we will first examine shared concerns. Keywords with an LL value close to zero appear at roughly the same relative frequency in the two corpora and thus can indicate issues that the readers of both newspapers share concerns about. These common keywords are shown in Table 1.

Keywords
any
always
come
create
difference
industry
much
really
used

Table 1: Common keywords in both newspapers

For the content words that are common keywords, three salient patterns emerge from Table 1. First, there is some skepticism that human-generated and AI-generated art can be distinguished: "would you know the *difference*? I have my doubts" (*Daily Mail*), and "If it is a machine doing the creating, how many could tell the *difference*?" (*The Guardian*). Second, there is concern about the impacts of new technologies, including AI, on the creative industries: "CGI killed stunts in the film *industry* too" (*Daily Mail*), and "There is not a shadow of a doubt that AI will kill creative *industry*" (*The Guardian*). Third, readers of

both newspapers argue that AI is not genuinely creating art: "A computer can't *create* like humans" (*Daily Mail*), and "it doesn't have the ability to *create* actual art" (*The Guardian*), although *The Guardian* commenters also argue that true creation is rare for people: "relatively few humans actually *create*, they merely consume what others have *created*" (*The Guardian*). Despite their very different political views, the *Daily Mail* and *The Guardian* readers share skeptical views of AI-generated art and concerns about potential damage to creative industries.

As might be expected, the corpus-specific keywords show that there are also clear differences in the concerns and beliefs of the two sets of readers. To identify the concerns specific to the *Daily Mail* commenters, we examined the top 10 keywords ranked by LL using the *Daily Mail* comments as the target corpus and *The Guardian* comments as the benchmark corpus. These are shown in Table 2.

Ranking	*Keyword*	*Log-Likelihood*
1	better	39.64
2	modern	24.90
3	artists	20.30
4	humans	18.86
5	bed	18.67
6	telling	18.67
7	unmade	15.56
8	artistry	12.45
9	equivalent	12.45
10	liberal	12.45

Table 2: Top 10 keywords in the *Daily Mail* corpus

The majority of the *Daily Mail* keywords show that the commenters are more concerned with criticizing the quality of modern art than they are with AI-generated art. This can be seen through the keywords "*better*" (e.g., "It looks *better* than most of the art produced by famous human artists of the 20th and 21st century"), *unmade* and *bed* (e.g., "I like it, a LOT better than Tracey Emin's '*unmade bed*' !!!"), and *modern* and *liberal* (e.g., "This just goes to show how crap *modern liberal* art is."). They appear to attribute the poor quality of modern art to the demise of *artistry*: "*Artistry* died years ago." and "The death of *artistry* came years ago." *The Daily Mail* readers, then, take the article about AI-generated art winning a competition as an opportunity to vent their feelings about modern art.

The only keyword which is clearly linked to issues of AI-generated art is, somewhat paradoxically, *humans*. The *Daily Mail* readers see AI-generated art as largely dependent on humans: "Did not a human/*humans* write the program/s that created the AI?" and "It very much involves *humans*, even more so than photography does". This perspective, in fact, highlights the broader reality of AI's role in artistic creation, where AI art is not entirely autonomous given its reliance on datasets composed of human inputs (Garcia, 2024). The issues that distinguish the *Daily Mail* readers from *The Guardian* readers, then, mostly concern the quality and processes of art. Although these readers are not clearly impressed with the quality of AI-generated art, they see it as better than modern art and appear to imply that people would be better employed using AI tools than creating modern art.

The keywords generated from *The Guardian* comments (see Table 3) show a greater range of concerns, but some themes do emerge.

Ranking	*Keyword*	*Log-Likelihood*
1	creativity	22.80
2	we	18.60
3	doing	13.29
4	learning	11.87
5	intelligence	10.92
6	doesn't	9.49
7	where	9.49
8	produce	8.92
9	or	8.81
10	making	8.54

Table 3: Top 10 keywords in *The Guardian* corpus

While the keywords from the *Daily Mail* apparently show the readers' concerns about the quality of the products, those of *The Guardian* appear to reflect wide-ranging discussions on the processes of creating art. *Creativity*, the highest-ranked keyword, is what defines art (e.g., "I would argue that *creativity* is a human need"). Other keywords include *produce* and *making* (e.g., "Pieces of art involve feelings and emotions and so can AI ever *produce* a piece of art that evokes a emotional response from the images produced?" and "However accurate, amazing and representational AI images are they can never replicate or harness the actual personal human experience of *making* art"). It is clear that the main argument from *The Guardian* comments is that true creativity, and thus

art, is human, which requires experience and emotion, providing support for the belief that AI is not genuinely creating art, that we saw was common to both newspapers.

A second theme is concerned with the nature of AI. The keywords include *learning* (e.g., "It is only by means of imitation. I don't it's the tool, and I prefer machine *learning* to AI") and *intelligence* (e.g., "What's the difference between machine *intelligence* and human *intelligence*? Or machine *learning* and human *learning*? And what is *intelligence* anyway?"), showing an understanding of the lack of clarity in defining AI.

While the function keywords cannot be directly linked to issues of content, two of these keywords have suggestive patterns. First, *we* is most commonly used as a generic inclusive pronoun implying an assumption of shared experiences and beliefs: "*We* live in a highly individualistic culture that teaches us *we* consume therefore *we* are". This, therefore, likely suggests a greater sense of collective identity or shared experiences among *The Guardian* readers compared to those of the *Daily Mail*. Second, *doing* frequently has technology, including AI, as the subject, suggesting that AI takes an active role: "AI doesn't know why it's *doing* what it's *doing*". Overall, from the keywords, *The Guardian* comments not only show their preference for human-made arts over AI-created art but also are more clearly focused on AI and its impacts than the *Daily Mail* comments.

5.2 Thematic analyses

The comments were categorized using seven thematic categories, six derived from our review of the literature and one induced from the data. In Table 4, comments from each of the six deductively-derived themes appeared in both the *Daily Mail* and *The Guardian*, while the inductive theme concerning the arts competition only appeared in the *Daily Mail*. To see if the proportional themes in the two data sources were similar, we conducted a chi square analysis and found a significant difference ($\chi 2 = 52.67$; df = 6; $p < .0001$) with a medium effect size (Cramer's $V = 0.16$), suggesting that there are different patterns of thematic concerns in the comments of the two newspapers. From Table 4, the two deductive themes with the largest differences between the two sources are Quality of art (more frequent in the *Daily Mail*) and AI capabilities (more frequent in *The Guardian*). Midjourney is a tool combining art and technology, and from this difference, we can tentatively suggest that the *Daily Mail* commenters are more concerned with the art aspects of Midjourney and *The Guardian* commenters are more concerned with the technology aspects.

	The Daily Mail		*The Guardian*	
Theme	*F*	*%*	*F*	*%*
Quality of art	27	17.53	10	5.38
Nature of art	44	28.57	65	34.95
Technology and art	20	12.99	33	17.74
AI capabilities	8	5.19	31	16.67
Role of the artist	8	5.19	22	11.83
Social impact	27	17.53	25	13.44
Competition	20	12.99	0	0.00

Table 4 Frequencies of comments in the two data sources

To investigate this tentative conclusion more deeply, we examined the nature of the comments from the two sources within each theme to see if the concerns of the two sets of commenters differed, in addition to the overall difference in the proportional frequencies of the themes.

5.2.1 Quality of art

Comments categorized as Quality of art, referring to the quality of Midjourney output, are noticeably more frequent in the *Daily Mail* than in *The Guardian*. These comments could be further sub-categorized into straightforward evaluations of Midjourney output and comparisons between Midjourney output and modern art. The number of straightforward evaluations is fairly similar between the two sources and both show ambivalence. A few comments in both evaluate Midjourney positively: "It actually looks good" (*Daily Mail*) and "If the outcome is beautiful most welcome" (*The Guardian*), but these are outnumbered in both sources by negative evaluations. Midjourney art is seen as kitsch and formulaic: "So AI creates kitsch! Who knew?!" (*Daily Mail*), "It's not art. I'd describe it as 'AI kitsch'" (*The Guardian*), "Technically proficient but with zero charm or character" (*Daily Mail*), and "There is an indefinable mundanity about them" (*The Guardian*). When viewing Midjourney art in isolation, then, the two sets of commenters hold similar views.

The major difference in the Quality of art between the two sources are those comments which compare Midjourney output with modern art. Such comments dominate the *Daily Mail* but are very rare in *The Guardian*, and it is the frequency of these comparison comments that is the cause of the difference in proportional frequencies for this category. The *Daily Mail* commenters take the article on Midjourney art as an opportunity to disparage modern art and the "liberal" groups and values associated with it. These criticisms are so dominant in the *Daily Mail* that five of the top ten keywords (*better*, *modern*, *bed*, *unmade*,

liberal) pervade these comparative comments. The focus of these comments is not to praise Midjourney art, at best, AI-generated art is viewed neutrally, but to denigrate modern art. For example, "The AI generated art is better than 99% of the garbage art that is created today" and "this image is x1,000 better than the post modern pooooo people are putting out as art these days". The article on Midjourney art is seen by the *Daily Mail* commenters as an opportunity to inveigh against a related bugbear rather than focus on the issue of AI-generated art itself.

5.2.2 Nature of art

Since the Midjourney artwork won first place in an art competition, comments naturally centered around whether it does constitute a piece of art, and were therefore categorized as Nature of Art. These comments attempted to define 'art', with some going on to use this definition to decide on whether AI output such as *Théâtre D'opéra Spatial* can be considered art. Readers of both newspapers offered a variety of definitions of art. While there is a wider range of possible definitions in *The Guardian*, the responses in the two corpora are comparable. For instance, readers in both corpora define art as invoking an emotional response: "It has to provoke an emotional reaction or trigger a memory, or capture a moment. Some dull uninspired generic design by a computer does neither of those" (*The Guardian*) and "what makes art art, the 'soul' of the artist" (*Daily Mail*). *The Guardian* readers also emphasize the need for creativity (the top-ranked keyword) in art: "there is no original creativity, just a constant repackaging of previous ideas". Overall, however, the definitions proposed for the nature of art in the two newspapers are similar.

The main difference between the two sets of comments is the evaluation of the Midjourney output based on the proposed definition. Readers of the *Daily Mail* were more likely than those of *The Guardian* to evaluate AI output as 'art', albeit not necessarily of a high quality. As with the findings from the Quality of art theme showing that the *Daily Mail* readers' critique of modern art led to favorable evaluations of Midjourney's output, *Daily Mail* comments in this theme, too, were generally more favorable about the win: "You only know the "soul" of the artist if you know the artist, but knowing the artist is not required to appreciate art" (*Daily Mail*). By contrast, *The Guardian* readers used their definitions of art to decide that the AI production is not art: "I thought art was more about making you feel and think because the artist wanted to make you feel and think, perhaps some way in particular. These are just pretty, funny and strange pictures" (*The Guardian*). While the readers of both newspapers define art similarly, their judgments of whether a particular work should be considered art appear to be

based on different criteria, with the *Daily Mail* readers prioritizing aesthetic reactions and *The Guardian* readers expecting art to elicit deep personal effects.

5.2.3 Technology and art

Output from Midjourney relies on technological advances in the form of AI, which form the focus of comments in this theme. In both newspapers, comments compare the new technology of AI with previous technologies that were considered disruptive: "Painters cried when the camera was invented claiming it was the end of artists" (*Daily Mail*) and "When the first digital art programs became available, they told us that it was the death knell for illustrators and painters" (*The Guardian*). Having identified AI as a potential disrupter, commenters in both newspapers contemplate the implications. For instance, AI is posited to simply be a tool to be used by professional artists: "This is merely a new set of tools to create art, like artist brushes use a variety of different materials" (*Daily Mail*).

The main difference in the two data sets for this theme concerns the impacts of these technological advances. In *The Guardian*, the new technology is largely portrayed as leading to an improvement, whereas the commenters in the *Daily Mail* see these technological changes as problematic. *The Guardian* readers, for instance, highlight how technology may expand the range of artistic output: "Photography enabled a different approach to recording what was seen" (*The Guardian*), or might lead to improvements as a result of their speed and reliability: "Machines have been significantly better than humans at medical diagnosis for a couple of decades now" (*The Guardian*). In contrast, comments in the *Daily Mail* are not as optimistic about the technological changes: "CGI killed stunts in the film industry too. Kind of ruined action movies for me. And this is no different" (*Daily Mail*).

5.2.4 AI capabilities

Comments considering the nature of technology used by Midjourney or AI in general were themed as AI capabilities. Comments in *The Guardian* for this theme were not only much more frequent, but also much longer than those in the *Daily Mail*, with an average comment length of 105 words in *The Guardian*, and only 37 in the *Daily Mail*. Perhaps because of the different sizes of the corpora for themes, only one topic in this theme was common across both newspapers, that is, the derivative nature of AI. Commenters in both newspapers point out that AI output is restricted only to what is available for copying: "Computers aren't really able to create art so seems more likely it's borrowed with from various artists to piece this together" (*Daily Mail*) and "The AI is not creative at all; all

you can ask of it is to produce something in the style of an existing, human artist" (*The Guardian*).

Given the number and length of comments in *The Guardian* on this theme, it is no surprise that the readers in this newspaper gave a greater range of ideas about AI's capabilities. The key feature of *The Guardian* comments in this theme, in comparison to those from the *Daily Mail*, is the extent to which commenters share technical expertise and insights. Two examples of this are worth highlighting. First, many readers appear to have had some experience with AI programs and were able to share these: "I ran an experiment training one of these diffusion models solely on good photography and i was surprised to find that the resulting compositions were impressive, and while not in the dataset i fed, the rudiments of image composition were drawn from the data". A second example is with the distinction these commenters make about the difference between Machine Learning and AI: "Please stop calling this AI. It's got nothing to do with intelligence, artificial or not. The correct term is Machine Learning though even that is over egging it. Pattern matching with basic maths on a huge scale". The greater depth of comments in this theme suggests that *The Guardian* readers were responding to this topic with greater technical background knowledge and personal experience.

5.2.5 Role of the artist

Some readers present ideas about how the introduction of AI in art would affect artists, and these were categorized as Role of the artist. As with the previous theme, the number and length of responses in *The Guardian* were greater than the *Daily Mail*. Nevertheless, readers in both newspapers can be identified as either optimists or pessimists. Pessimists in both corpora take the view that AI will put artists under pressure, for example by demanding greater effort to compete, or by eliminating potential income streams: "It means artists are going to have to up their game" (*Daily Mail*) and "Jobs where artists could make some cash to support their work will be harder to find" (*The Guardian*). Optimists take the position that artists will adapt to the innovation and will maintain their current role: "I doubt the ai would have much success on its own with being fed good combos of prompts" (*Daily Mail*) and "Can this software decide which front to use, what size, bold or italic, later the kerning and leading and decide where the text will go on a page? If not, it is not replacing graphic designers yet" (*The Guardian*). According to these optimists, AI could never replace artists as the technology is necessarily dependent on human input. The proportion of commenters taking this optimistic view of artists adopting a new role in a post-AI art world is approximately 40 per cent of comments in both newspapers.

5.2.6 Social impact

In addition to comments on the impact of AI on artists, readers made predictions about the impact of AI on society as a whole, and these were categorized into the theme of Social impact. As may be expected, readers in both newspapers expressed concern over the possible negative ramifications of AI. Some extreme readers in the *Daily Mail* see AI as a harbinger of the fall of society: "We are watching the death of the human being as relevant – this is just the beginning". The most upvoted post in this theme in *The Guardian* similarly ponders the long-term consequences: "do we end up in Star Trek where humans want for nothing and work to better themselves, Wall-E where we are all slobs, or Terminator". Common to both corpora are concerns over the effects of AI on jobs and the entertainment industry, concerns also raised by the authors of the articles in the respective newspapers.

There are two differences in the comments that are worth highlighting. First, *The Guardian* readers express concerns over AI's impact on society over a wider range of topics, such as copyright law, the economy, and the power hierarchy in society. In fact, these readers linked the news of a relatively minor win by an AI artist with much larger political debates. For example, in one comment, the introduction of AI is seen as part of much larger political and economic woes: "Is there a need for humans to be replaced by half baked ML algorithms in a sustainable world – what is the destination of endless cycles of job destruction combined with endless cycles of state destruction? It's as if anglo business are using Marx and 1984 as a manual" (*The Guardian*). Second, there is a group of readers in both newspapers who express optimism for a future with AI. There is, however, a difference in the tone of these optimists. In the *Daily Mail*, readers' optimism is linked to perceived current shortcomings in society, as we noted in the Quality theme: "Wait till Hollyweird figures out the AI can write better movies and create better CGI actors and that they aren't needed anymore". In *The Guardian*, however, readers are more cautious with the scope of their optimism: "I suspect the main use for this kind of thing in the longer run is not 'art' as such, but rather 'content' for games and films. It will be used I suppose to greatly reduce the effort in the creation of animated characters and so on". These optimistic views aside, however, the majority of the posts in both corpora express alarm at the possible ramifications of AI and how it is likely to affect our lives, and the nature of art in society.

5.2.7 Competition

The final theme, the competition, was found only in comments from the *Daily Mail*. These comments focus away from the broader views taken by other readers and are much more neutral. There is an even split of posts in this theme between supporters of the competition rules for allowing the entry and those criticizing them. Of those supporting the competition, readers point out that the Midjourney picture appeared in a specific art category: "It was entered into the digital category. Who cares?" This was, however, clearly not common knowledge. Other readers suggest this artwork needed to be in a separate category in the competition: "Very nice. But they should make a new category because this is not fair to humans". Also in this theme are comments critical of the news article reporting the results: "Perfectly legit entry won, someone else disagreed, made a comment, DM gives discontented a massive column piece". That this theme is absent from *The Guardian* may indicate that those who commented tended to direct their consideration to the bigger issues related to AI.

6 Discussion

With the implications of AI likely to be far-reaching and controversial in the creative industries, this study compared the concerns about AI-generated art among readers with two contrasting political ideologies. Given that the *Daily Mail* and *The Guardian* readers are in clear political opposition to each other (Roe & Perkins, 2023), and that individual differences such as political stances can dictate how people perceive art (Childress & Friedkin, 2012), we initially expected that readers of the more conservative newspaper, the *Daily Mail*, would hold a more traditional view of AI-based technologies, and thus, AI-generated art, whereas *The Guardian* readers were anticipated to have a more progressive view of the issue. The findings, however, suggest that their actual views on AI are not noticeably dissimilar. Overall, there are more similarities than differences, and the majority of the differences that do exist are not relevant to AI per se. Rather, the readers were using the topic of AI as a vehicle for expressing their strong beliefs about other peripheral issues. For example, the readers of the *Daily Mail* largely discussed the quality of AI-generated art to articulate their dissatisfaction with the quality of modern art. *The Guardian* readers, meanwhile, defined the nature of art and the process of creating art to determine that AI-generated art is not art. These findings, thus, highlight that while readers of both outlets engage in discussions about the quality or nature of art in relation to AI-generated art, the differences in their views were not specifically tied to AI or AI art but rather reflected their broader perspectives on art and other related issues.

In other words, there are a lot of similarities in how readers of both groups viewed AI. These include, for example, the view that AI is not capable of producing particularly exceptional art (*Quality of art*), the doubt whether AI-generated art can be distinguished from human-made art (*Nature of art*), and the mixed feelings of optimism and pessimism regarding how AI will change the way people work (*Technology and art* and *Social impac*t). Despite the tendency for conservatives to place a greater emphasis on social order and security than liberals (Wilson et al., 1973), both groups agree that the potential impacts of AI on society are worrying. This finding partially substantiates research findings in previous studies, such as those of Roe and Perkins (2023), which indicated that concerns about the impending dangers of AI were evident in newspapers of both political leanings.

These findings, then, challenge existing discussions on the extent to which political ideology influences people's perceptions of AI. Several studies have previously argued that conservatism is associated with resistance to change and stability, whereas liberalism represents a preference for innovation and reform (e.g., Feist & Brady, 2004). In line with previous studies, Castelo and Ward (2021), for example, found that a right-wing alignment could be a predictor of people's dislike for AI, since it is seen as likely to lead to disruptive changes. On the other hand, liberals' greater willingness to accept change could lead them to adopt AI technologies more quickly and easily than conservatives. While there is some evidence that *The Guardian* readers are more likely to use AI, there is little evidence that the two groups have clearly distinct attitudes toward AI. In terms of artistic preferences, right-wingers have been shown to prefer simple and representational art (Wilson et al., 1973), while leftists have a greater preference for abstract art (Feist & Brady, 2004), which is commonly considered modern and untraditional (Chamorro-Premuzic et al., 2009). Our findings show that readers of both newspapers judge AI-generated art to be adequate, but not of particularly high quality, irrespective of its style.

Overall, this study has shown that the similarities outweigh the differences in how people with different political orientations perceive AI-based technologies. This implies that people's beliefs about AI are not yet entrenched. AI is a relatively new technology, and as such, its implications, potential directions, and societal expectations are still unclear. Together with this uncertainty, this apparent lack of politicization surrounding attitudes and beliefs about AI suggests that there is still room for shifts in public opinion toward AI.

7 Conclusion

In our title, we asked whether political ideologies influence people's views on AI. To answer this, we explored the concerns liberals and conservatives express about AI-generated art. Our findings have shown that there are surprising similarities in the concerns expressed by both groups, and that on this issue, then, political standpoint does not influence opinion. This finding runs contrary to previous work on art and political leaning. We posit that opinions on AI, and particularly the question of AI-generated art, may not yet be well established enough to coalesce around political differences. It is also possible that the issue of AI-generated art may be too peripheral to constitute a focus for political leanings, and further investigation into the question of AI and ideological orientation might focus on more central concerns, such as AI's influence on job security. Even so, that commenters in our data used AI art as a platform for expressing opinions on other, more politicized topics, would indicate that a movement towards ideological division may already have begun.

References

Adajian, T. (2024). The definition of art. In E. N. Zalta & U. Nodelman (Eds.), *The Stanford encyclopedia of philosophy* (Fall 2024 Edition). Retrieved from https://plato.stanford.edu/archives/fall2024/entries/art-definition/

Anthony, L. (2019). *AntConc* (Version 3.5.8) [Computer software].

Bellaiche, L., Shahi, R., Turpin, M. H., Ragnhildstveit, A., Sprockett, S., Barr, N., Christensen, A., & Seli, P. (2023). Humans versus AI: Whether and why we prefer human-created compared to AI-created artwork. *Cognitive Research: Principles and Implications*, *8*(1), 42. https://doi.org/10.1186/s41235-023-00499-6

Biswal, S. K., & Gouda, N. K. (2020). Artificial intelligence in journalism: A boon or bane? In A. J. Kulkarni & S. C. Satapathy (Eds.), *Optimization in machine learning and applications* (pp. 155–167). Springer. https://doi.org/10.1007/978-981-15-0994-0

Carl, N., Richards, L., & Heath, A. (2019). Preference for realistic art predicts support for Brexit. *The British Journal of Sociology*, *70*(4), 1128–1134. https://doi.org/10.1111/1468-4446.12489

Castelo, N., & Ward, A. F. (2021). Conservatism predicts aversion to consequential artificial intelligence. *PLOS One*, *16*(12), 1–19. https://doi.org/10.1371/journal.pone.0261467

Chamorro-Premuzic, T., Reimers, S., Hsu, A., & Ahmetoglu, G. (2009). Who art thou? Personality predictors of artistic preferences in a large UK sample: The importance of openness. *British Journal of Psychology*, *100*(3), 501–516. https://doi.org/10.1348/000712608X366867

Childress, C. C., & Friedkin, N. E. (2012). Cultural reception and production: The social construction of meaning in book clubs. *American Sociological Review*, *77*(1), 45–68. https://doi.org/10.1177/0003122411428153

Csikszentmihalyi, M. (1997). *Flow and the psychology of discovery and invention.* Harper Perennial. Retrieved from https://www.rochester.edu/warner/lida/wp-content/uploads/2022/11/creativity-by-mihaly-csikszentmihalyi.pdf

de Burgh, H. (2008). Journalism with attitude: The Daily Mail. In H. de Burgh & P. Lashmar (Eds.), *Investigative Journalism* (pp. 283–299). Routledge.

Delannoy, B. (2019). *The dismantling of the 'Jungle' of Calais in October 2016: A critical discourse analysis of the Daily Mail and The Guardian* [Master's thesis]. Université de Liège.

Demata, M., Conoscenti, M., & Stavrakakis, Y. (2020). Riding the populist wave: Metaphors of populism and anti-populism in the *Daily Mail* and *The Guardian*. *Iperstoria*, *15*, 8–35. https://dx.doi.org/10.13136/2281-4582/2020.i15.686

Ekstrom, P. D., & Federico, C. M. (2019). Personality and political preferences over time: Evidence from a multiwave longitudinal study. *Journal of Personality*, *87*(2), 398–412. https://doi.org/10.1111/jopy.12398

Feist, G. J., & Brady, T. R. (2004). Openness to experience, non-conformity, and the preference for abstract art. *Empirical Studies of the Arts*, *22*(1), 77–89. https://doi.org/10.2190/Y7CA-TBY6-V7LR-76GK

Gangadharbatla, H. (2022). The role of AI attribution knowledge in the evaluation of artwork. *Empirical Studies of the Arts*, *40*(2), 125–142. https://doi.org/10.1177/0276237421994697

Garcia, M. B. (2024). The paradox of artificial creativity: Challenges and opportunities of generative AI artistry. *Creativity Research Journal*, 1–14. https://doi.org/10.1080/10400419.2024.2354622

Gates, B. (2023). The age of AI has begun. *Gates Notes.* Retrieved May 2024, from https://www.gatesnotes.com/The-Age-of-AI-Has-Begun

Greenberg, C. (2000). *Homemade esthetics: Observations on art and taste.* Oxford University Press.

Gu, L., & Li, Y. (2022). Who made the paintings: Artists or artificial intelligence? The effects of identity on liking and purchase intention. *Frontiers in Psychology, 13*. https://doi.org/10.3389/fpsyg.2022.941163

Jiang, H. H., Brown, L., Cheng, J., Khan, M., Gupta, A., Workman, D., & Gebru, T. (2023). AI art and its impact on artists. In F. Rossi, S. Das, J. Davis, K. Firth-Butterfield, & A. J. London (Eds.), *Proceedings of the 2023 AAAI/ACM conference on AI, ethics, and society* (pp. 363–374). Association for Computing Machinery. https://doi.org/10.1145/3600211.3604681

Köbis, N., & Mossink, L. D. (2021). Artificial intelligence versus Maya Angelou: Experimental evidence that people cannot differentiate AI-generated from human-written poetry. *Computers in Human Behavior*, *114*, 1–13. https://doi.org/10.1016/j.chb.2020.106553

Lee, T., Yasunaga, M., Meng, C., Mai, Y., Park, J. S., Gupta, A., & Liang, P. (2023). *Holistic evaluation of text-to-image models.* Retrieved from arXiv preprint arXiv:2311.04287.

Makridakis, S. (2017). The forthcoming artificial intelligence (AI) revolution: Its impact on society and firms. *Futures*, *90*, 46–60. https://doi.org/10.1016/j.futures.2017.03.006

Matthews, B., Shannon, B., & Roxburgh, M. (2023). Destroy all humans: The dematerialisation of the designer in an age of automation and its impact on graphic design – A literature review. *International Journal of Art & Design Education*, *42*(3), 367–383. https://doi.org/10.1111/jade.12460

Millet, K., Buehler, F., Du, G., & Kokkoris, M. D. (2023). Defending humankind: Anthropocentric bias in the appreciation of AI art. *Computers in Human Behavior*, *143*, 107707. https://doi.org/10.1016/j.chb.2023.107707

Mirbabaie, M., Brünker, F., Möllmann, N. R., & Stieglitz, S. (2022). The rise of artificial intelligence – Understanding the AI identity threat at the workplace. *Electronic Markets*, 1–27. https://doi.org/10.1007/s12525-021-00496-x

Onwuegbuzie, A. J., & Leech, N. L. (2006). Linking research questions to mixed methods data analysis procedures. *The Qualitative Report*, *11*(3), 474–498.

Oppenlaender, J. (2022). The creativity of text-to-image generation. In M. Scheutz, R. Calo, M. Mara, & A. Zimmermann (Eds.), *Proceedings of the 25th international academic Mindtrek conference* (pp. 192–202). Association for Computing Machinery. https://doi.org/10.1145/3569219.3569352

Oppenlaender, J. (2023). A taxonomy of prompt modifiers for text-to-image generation. *Behaviour & Information Technology*, 1–14. https://doi.org/10.1080/0144929X.2023.2286532

Pojanapunya, P., & Watson Todd, R. (2018). Log-likelihood and odds ratio: Keyness statistics for different purposes of keyword analysis. *Corpus Linguistics and Linguistic Theory*, *14*(1), 133–167. https://doi.org/10.1515/cllt-2015-0030

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. https://doi.org/10.1057/s41599-023-02282-w

Scott, M., & Tribble, C. (2006). *Textual patterns: Key words and corpus analysis in language education.* John Benjamins.

Thurman, N., & Fletcher, R. (2019). Has digital distribution rejuvenated readership? Revisiting the age demographics of newspaper consumption. *Journalism Studies*, *20*(4), 542–562. https://doi.org/10.1080/1461670X.2017.1397532

Topol, E. J. (2019). High-performance medicine: The convergence of human and artificial intelligence. *Nature Medicine*, *25*(1), 44–56. https://doi.org/10.1038/s41591-018-0300-7

Vaccari, C., & Chadwick, A. (2020). Deepfakes and disinformation: Exploring the impact of synthetic political video on deception, uncertainty, and trust in news. *Social Media + Society*, *6*(1). https://doi.org/10.1177/2056305120903408

Watson Todd, R. (2023). *Crowdsourcing research topics to raise public understanding of applied linguistics. Qeios*. https://doi.org/10.32388/XDN1K2

Wilson, G. D., Ausman, J., & Mathews, T. R. (1973). Conservatism and art preferences. Journal of Personality and Social *Psychology*, *25*(2), 286. https://doi.org/10.1037/h0033972

Zenner, S. (2020). *What informs our visual taste? The impact of personality and political orientation on visual preferences* [Doctoral dissertation]. The University of North Carolina at Chapel Hill.

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REVIEWS

Cheng, L., & Machin, D. (Eds.) (2024) *The law and critical discourse studies.* Routledge. 114 pp.

While critical discourse studies (CDS) involve widespread applications in humanities and social sciences, barriers exist in applying CDS to law, which positivists view as a distinct and autonomous system (Rajah, 2018, p. 480). However, the volume, *The Law and Critical Discourse Studies*, presents a significant interdisciplinarity by integrating CDS with the study of law and legal discourse. It explores how language in legal discourse exercises discursive power in legal practice and also highlights that CDS serves as a valuable toolkit for uncovering issues of social justice and social values within specific legal contexts.

The volume is organized into two parts, comprising one introductory section and seven chapters. The editors of this volume are prominent scholars in the field of discourse studies, Le Cheng, focusing on legal discourse and semiotic studies, and David Machin, specializing on multimodal analysis and critical discourse studies into new media. The chapters contributors include various scholars with diverse educational backgrounds from different countries and areas of expertise, including specialized fields in law, such as comparative law, land law, and sociology, policy studies and language research. These scholars offer robust support for the interdisciplinary inquiry on critical discourse studies.

In the introduction, Cheng and Machin outline the central theme of the book: the bridging of legal research with CDS, and the presuppositions embedded within legal discourse. The aim of the book is to reveal the socio-political and ideological factors embedded within the language used in legal contexts. It focuses on discussing the ideological traits of legal discourse, the discursive dynamics involved in legal application and interpretation. This includes an exploration and examination of the evolving nature or temporal significance of legal usage and understanding, and the dynamic interactions that occur among various legal actors within legal proceedings that influence the outcome of cases.

In Chapter 1, Popiel conducts a case study of the AT&T-Time Warner merger lawsuit to analyze how language is employed by various stakeholders – government, defendants, and courts – to interpret and apply US antitrust law. Using an interpretive critical policy framework, the author argues that both the trial and the appeal courts supported the merging parties, indicating the role of courts in shaping the digital media market. As evidenced by the courts'

approval of the merger, the chapter reveals the complexities and contradictions inherent in this legal framework: while it purports to protect competition, it often inadvertently shields dominant firms. The analysis critically engages with the neoliberal political context surrounding US antitrust jurisprudence, illustrating how legal arguments often obscure the strategic choices made by courts that ultimately benefit dominant market players. Popiel's examination of legal documents demonstrates that the discourse surrounding competition often masks significant anticompetitive outcomes, particularly for smaller competitors in video markets. By approving the merger, the courts not only facilitated market consolidation but also reinforced existing power dynamics favoring incumbents over emerging competitors, thus questioning the efficacy of antitrust law in promoting genuine competition in rapidly evolving digital markets.

In Chapter 2, Dolhare and Rojas-Lizana analyze a pivotal constitutional judgment by the Plurinational Constitutional Court of Bolivia, which holds the supreme authority in interpreting and applying the nation's 2009 Constitution. The chapter focuses on addressing the disputes of Indigenous Peoples' rights to consultation on legislative matters affecting their ancestral lands. Combining Case-Law Analysis (Hall & Wright, 2008) with CDA, the authors explore how the Court interprets and applies the concept of 'Vivir Bien' (VB, or Living Well), a deep-rooted Indigenous cosmovision that emphasizes living in harmony with nature and community well-being. The analysis of linguistic resources and discursive strategies show a divide in the court's approach; the majority opinions favor Western liberal constitutionalism, while the minority opinions advocate for an Indigenous-based communitarian approach to resolve the legal dispute. The authors highlight that judges selectively foreground and background various aspects of VB principles, indicating a hierarchical application that diverges from the Constitution's intent. This discrepancy underscores a broader gap between the formal incorporation of VB into legal frameworks and its practical application in judicial decisions, suggesting that despite constitutional advancements, the judiciary often reverts to entrenched Western legal frameworks. Critically, the analysis suggests that while the court's majority opinion seeks a balanced discourse, it often fails to fully embrace the transformative potential of VB, which advocates for decolonization and social equity. In contrast, the dissenting opinion articulates the need for Indigenous epistemologies to be prioritized in legal interpretations, emphasizing that true adherence to VB requires dismantling colonial legacies embedded within existing legal structures. This chapter thus offers crucial insights on how language and discourse shape legal realities and influence legal outcomes within a post-colonial context.

Neller in Chapter 3 employs an 'Intertextual genealogy' framework (a constructivist approach within CDA) to investigate the distinction between racial and religious hatred in the UK's Public Order Act of 1986. This constructivist approach challenges traditional interpretivist methodologies by emphasizing the context-dependent nature of meaning construction. By tracing historical and textual interconnections across legislative provisions, parliamentary debates, and the Mandla case judgments, Neller uncovers how contemporary legal interpretations have evolved and been problematized over time. The study reveals a significant discrepancy: while parliamentary discourse often views that race is an immutable characteristic, judicial interpretations acknowledge its mutable and socially constructed nature. This discrepancy indicates that the law, despite attempting to tackle inequalities, may inadvertently reinforce them. Neller calls for a re-evaluation of legislative language regarding hate crimes, advocating for a more inclusive and flexible understanding of both race and religion in legal contexts. By interrogating these distinctions, he not only reveals systemic biases but also opens avenues for potential legal reforms that could better align with evolving societal values and promote genuine equality among diverse communities.

Chapter 4 also addresses the issue of social inequality. Manalo Francisco discusses the Magna Carta of Women in the Philippines, a local adaptation of the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW). Applying Feminist Critical Discourse Analysis (FCDA), the author uses the gender relationality principle to clarify the debates over contentious provisions in the legislative proceedings. The study highlights discrepancies between the Philippine CEDAW translation and the original, particularly regarding reproductive health, gender definitions, and equal access to education. These differences are not merely linguistic but reflect deeper narratives shaped by pervasive Catholic doctrines and stark gender ideology disparities among legislators. Francisco's work underscores the tension between progressive legal frameworks and entrenched cultural ideologies, suggesting that true gender equality in legislation is hindered by such ideological constraints. This study vividly illustrates how cultural and religious beliefs significantly influence interpretations and implementations of gender equality principles within a legal landscape.

In Chapter 5, Cheng et al. critically examine the BBC's coverage of the politically charged legal case – US vs. Huawei/Wanzhou Meng, focusing on how the media recontextualized the lawsuit through legal language and foregrounded US legal processes, such as extraterritorial jurisdiction. The authors analyze 28 BBC news reports to reveal that the coverage not only emphasizes the US legal

proceedings but also subtly reinforces the US Department of Justice's narrative, casting China as a potential threat to Western interests. The study suggests that the BBC's framing inadvertently legitimizes the use of extraterritorial laws by the US, which are widely contested by other nations. By not scrutinizing the validity of these laws, the media's portrayal is argued to uphold hegemonic power structures that favor US interests. This analysis underscores how media representations of legal issues are entwined with broader sociopolitical discourses, influencing public perception and understanding of international relations.

Chapter 6 by Smith investigates an interview between a Royal Canadian Mounted Police officer and a female Indigenous minor who reported her sexual assault. Adopting a feminist approach and Discourse Historical Approach in CDA, the author identifies how the policeman's choices of lexical expressions and transitivity structures assert his dominance and skepticism, reflecting institutional authority and gendered power imbalances. The analysis reveals troubling patterns of female victim blaming, male perpetrator mitigation, and the minimization of the violent nature of sexual assault, which collectively contribute to a culture of silence in such crimes. Smith introduces 'discursive Yentling', a concept analogous to the Yentl syndrome, to describe the male-centric bias in the discourse around sexual assault. This framing suggests that the discourse surrounding sexual assault is not only shaped by legal frameworks but also by societal attitudes that prioritize male perspectives. By illuminating these discursive practices, Smith advocates for a reform in police interview techniques to create more supportive environments for victims while fostering feminist sensibilities within law enforcement.

Chapter 7, authored by Yu, conducts an interdisciplinary analysis of discourse in another sexual violence case in South Korea. Applying a framework that combines judicial rhetoric and argumentative legal reasoning inspired by Aristotle and Fairclough, the study examines the language utilized in legal decision-making processes and its impact on the perception of victims and perpetrators. Yu's analysis underscores how the rhetoric in sexual violence trials often reinforces gender biases, portraying female victims as less credible and male perpetrators as unjustly victimized. The findings also reveal the perpetuation of gender inequality and discrimination against female victims in East Asian legal contexts, reflecting a societal preference for patriarchal narratives. The study emphasizes the importance of challenging and transforming current legal narratives to amplify victims' voices and achieve fair representation in courtrooms. It calls for addressing these discursive biases and enhancing discourse strategies to foster equitable trials and advance social justice.

This book contributes significantly to the advancement of the interdisciplinary paradigm of combining CDS with the study of law and legal discourse. First, the chapters cover a diverse range of legal discourse genres, including legislative texts, courtroom discourse, police interrogations, and media reports on legal cases which also cover different legal processes in judicial practice. It thus sheds light on how legal discourse analysis uncover pressing issues in legal practice through linguistic evidence. Converging with the linguistic trend in the study of law (Goźdź-Roszkowski & Pontrandolfo, 2022), the volume presents complex linguistic phenomena in judicial discourse with a new perspective of applied linguistics, and reveals ideological, socio-political factors impacting on specific legislative interpretation and law enforcement.

Additionally, it addresses current social issues and crises. Given that both laws and CDS share same concerns on social inequalities, these chapters shed light on how CDS, as an analytic approach, reveals judicial tendencies of social inequalities within specific contexts. It underscores the practical value of how discourse analysts examine legislative interpretation, law enforcement and other legal practices through the process of legal discursive construction.

Methodologically, the collection primarily conducts detailed, thorough and insightful qualitative analysis. The researchers have refined and innovated current research analytical frameworks to adapt to specific legal text genres, advancing the development and application of the critical analytical theories. It also improves the applicability and effectiveness of the CDS approaches in legal discourse.

Despite its strengths, the book has minor shortcomings. While most chapters employ case study method, which may lack objectivity due to limited data, incorporating a corpus-based and cross-verification methodology (Egbert & Baker, 2020) could strengthen the findings. Moreover, using a multimodal discourse analysis approach to analyze judicial video-record discourse may yield further discoveries and insights.

Overall, this volume successfully bridges the fields of CDS and law. It delves into legal language and legal discursive construction, uncovering the conceptualization of legal language and the realization of discursive manipulation influenced by ideology and other socio-political factors. This book represents an in-depth advancement for CDS, law and applied linguistics, and especially benefits those interested in the interface research of law and linguistics.

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References

Egbert, J., & Baker, P. (Eds.) (2020) *Using corpus methods to triangulate linguistic analysis.* Routledge. https://doi.org/10.4324/9781315112466

Goźdź-Roszkowski, S., & Pontrandolfo, G. (Eds.) (2022) *Law, language and the courtroom: Legal linguistics and the discourse of judges.* Routledge. https://doi.org/10.4324/9781003153771

Hall, M. A., & Wright, R. F. (2008) Systematic content analysis of judicial opinions. *California Law Review*, *96*(1), 63-122. https://ssrn.com/abstract=913336

Rajah, J. (2017) Legal discourse. In J. Flowerdew, J. and J. Richardson (Eds.) *The Routledge handbook of critical discourse studies.* (pp. 480–496). Routledge. https://doi.org/10.4324/9781315739342

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