Papers from the Lancaster University Postgraduate Conference in Linguistics & Language Teaching

Volume 13. Papers from LAEL PG 2021

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2023

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Introduction to the volume

This volume presents papers based on research presented at Lancaster University's 15th Annual Postgraduate Conference in Linguistics and Language Teaching (LAEL PG), held virtually from the 22nd July – 24th July 2021. The conference has been an annual international conference running since 2006, and returned in 2021 after a one-year hiatus due to the Covid-19 pandemic. The 2021 conference ran for the first (and only) time in a fully online mode.

Every year, this conference aims to bring together postgraduate researchers working in linguistics to share their research and to meet other postgraduate students working in the same field. It is organised every year by a band of postgraduate students at Lancaster, who come together in December the year before and organise the event fully independently. This is only possible with the generous backing of Lancaster's tight-knit, collegiate community in the Department of Linguistics and English Language.

Bringing together students spread across six continents for the 2021 online conference is an achievement we are proud of. We want to acknowledge the efforts of everyone involved in the conference. This includes presenters of posters and longer presentations as well as every other attendee. The organising committee for their hard work making this virtual conference a reality and other postgraduate students at Lancaster who helped with reviews and chairing. Departmental staff who are world leaders in their respective fields – Prof Paul Baker, Prof Veronika Koller, Prof Elena Semino, and Dr Johnny Unger – joined us to deliver plenaries on their exciting new research, but also generously gave their time to join breaktimes and speak with attendees about their work, their backgrounds, and their own experience as postgraduate and early career researchers. We also want to thank Susan Nacey, Inland Norway University of Applied Sciences, for kindly sharing her experiences with organising an online conference.

The online mode was the most accessible iteration, enabling over 200 participants from more than 35 countries to take part; with attendees joining us from very early in the morning as far west as Arizona in the U.S., and very late in the evening from as far east as South Korea. The conference boasted over 40 talks across 8 panels, with topics encompassing discourse studies on health and social media, the interface between corpus linguistics and language acquisition or psycholinguistics, literacy studies, cognitive linguistics, and pragmatics and second language acquisition. This generous offering of presentations was complemented by over a dozen poster presentations, held in a unique virtual format which offered participants the chance to watch recordings of presenters verbally delivering their posters, but also the option to drop into channels to speak directly to the researchers. Finally, the conference was held together by the glue of social events, bringing people together to meet new colleagues and friends, and those small interactions that are always the treasure of academic conferences.

Conferences, particularly for postgraduates and early career researchers, are a formative experience: they allow us to share our progress and work and to get feedback in a safe and friendly atmosphere, to meet other researchers doing similar work in similar spaces, and to see the academic community and academia beyond the walls of our individual universities. The Covid-19 pandemic challenged us to find new ways of gathering people and made it possible to hear from those who might not otherwise have been able to come to Lancaster for a physical conference. This made for a more diverse and inclusive experience.

This edited volume represents the proceedings from presentations delivered at the conference in July 2021. The presentations underwent a double-blind review process by PhD students in linguistics at Lancaster to be accepted to the conference, as did the papers submitted for these written proceedings. The work recorded here was presented at that point in time and represents work-in-progress shared by postgraduates on their journey as early career researchers. It was a chance to present the work to a diverse group of peers from across the globe and discuss it in a friendly atmosphere. We are proud to present a diverse collection of work presented at the conference.

The volume opens with three papers addressing political discourses. In the paper: *COVID 19: Constructing a Specialised Sample Corpus to Test Trends in Deontic Obligation,* Thomas Hammond conducts an analysis of a corpus of official briefings from the UK government in the first months of the pandemic. Focusing his analysis on deontic modality, he demonstrates how modal markers are used by discourse internal and external sources. Through an interpretation of their pragmatic function, he discusses the communicative strategies in the texts. The second paper, *Visual rhetoric in internet memes: The curious case of r/PoliticalCompassMemes,* takes us to US politics. Drawing on rhetoric, Daniel Tamm presents an analysis of internet memes with political content. He discusses how they engage users of a subforum on Reddit, who have to use their knowledge of the forum's visual codes as well as awareness of current political events in the US. In the following paper, *Wars, Floods and Avalanches: Metaphorical Representations of Immigrants in Brazilian and American Media,* Cássio Morosini Filho presents a metaphor analysis to provide insights into the immigration discourse in Brazil and the United States. He identifies metaphors that echo previous studies of immigration discourse, but also discusses how WAR metaphors express the discourse applied by political leaders of the two countries at the time.

In the fourth paper: *Complimenting Behaviour on Instagram: The Case of Bookstagram*, Chara Vlachaki analyses compliments exchanged on the Instagram community #bookstagram. Further, she discusses how the compliments contribute to the establishment of an in-group identity in the light of a small survey she conducted to uncover perceptions on the role of complimenting within the community.

This is followed by a paper applying corpus linguistics to a study of multilingualism. *The Early Stages of the Multilingual College Email Corpus (MCEC): A Resource for Researchers and Language Instructors*, presents the MCEC, a corpus of emails written by academics at the University of Arizona. Damian Y. Romero Diaz, Wei Xu, Hui Wang, Peiwen Su, and Hanyu Jia and Maria Laura Viale discuss potential uses of the corpus. Further, they demonstrate a qualitative analysis of language accommodation to illustrate one potential use of the corpus. The following two papers address bilingualism with experiments. *Examining Grammatical Gender Transfer in the Bilingual Mind* explores an experimental study design through a pilot study. Arpita Gargesh sets out to test Hindi-speakers and Welsh-speakers use of grammatical gender when primed with visual stimuli. She discusses whether grammatical gender is a linguistic/morphosyntactic attribute or it exists at the conceptual level. In the following paper, *The Automaticity of Reading in Bilingual Lexical Processing: Evidence from a Chinese-English Bilingual Stroop Task*, Yuxin Lu explores the automaticity of reading using the Stroop task. While facilitation effects are not seen in the study, interference effects are seen in both languages, with more interference from the dominant language.

Finally, Peter Clynes explores the motivation among Japanese language learners to use digital flashcards in the paper *Digital flashcards for autonomous learning: How acceptable are they*

among Japanese high school students? He finds a preference for physical flashcards and discusses strategies for improving use of either approach.

We hope this volume will serve as an inspiration for future post-graduate conferences. The success of Lancaster University's 15th Annual Postgraduate Conference in Linguistics and Language Teaching would not have been possible without the support from the department and the participants, including the authors and reviewers of this volume. To achieve this in a global pandemic reflects the determination and kindness of the people involved. We thank them all warmly for collaborating with us.

Sam Oliver and Pernille Bogø-Jørgensen

COVID 19: Constructing a Specialised Sample Corpus to Test Trends in Deontic Obligation

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Author's Note

There are no conflicts of interest to disclose.

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Abstract

This paper reports on the construction and analysis of a specialised sample corpus made of transcripts from official UK Government statements from the COVID-19 daily briefings between March and April 2020. It tests trends in deontic obligation proposed by Leech et al. (2009) by applying a re-defined parameter of source through a qualitative analysis of competing modal forms in the data. The forms under analysis are the 'core' modals 'must' and 'should' and the semi-modals 'have to' and 'need to'. Source (i.e. the object at the origin of the obligation) is operationalised following Depraetere and Verhulst (2008) and distinguishes between discourse internal/external and intersubjective (mixed) sources of necessity, where discourse external is divided between circumstance, condition and rule/regulation.

Results from the analysis show that the data conforms to the trends suggested by Leech et al. (2009), both in terms of competing modal frequency counts and their differing functions. 'Need to' is the most frequent deontic modal in the corpus, used predominantly with discourse-internal sources which highlights the collective nature of its use. 'Have to' has largely regulatory discourse-external sources, used by the Government to refer back to pre-existing regulations. When the obligation arrives for the first time via a discourse-internal source (i.e. when the Government issue new rules), 'should' is overwhelmingly favoured, particularly in negative constructions with the second person singular i.e 'you should not'.

This reflects its categorisation as a 'less face-threatening' alternative to 'must', which is consequently the least frequent modal in the corpus. Taken together, it seems that 'should', 'have to' and 'need to' are indeed beneficiaries of 'must's decline in contemporary use. It further suggests that the Government deem a more collective and less directive strategy of obligation to be more effective when seeking the conformity and compliance of the general public, reflecting perhaps a less admirable attitude towards strong authoritative instruction within society. The study also shows how applying the redefined parameter of 'source' can prove insightful to the subtly differing functions of competing modal forms in spoken language.

Keywords: corpuslinguistics, deontic modality

1. Introduction

The present study seeks to test trends in deontic obligation proposed in Leech et al. (2009) by applying a re-defined parameter of source of obligation (Dapraetere & Verhulst 2008) to competing modal forms in the UK Government's communications to the public during the COVID-19 pandemic. The analysis of a specialised sample corpus shows that the data strongly conform to those patterns identified in Leech et al. (2009), with the Government showing a preference for less directive obligation which could be reflective of a less commendable attitude towards strong authoritative instruction within society.

2. Background

2.1 Deontic obligation/necessity

Modality is closely related to tense and aspect. Whilst tense and aspect features are associated with the time and nature of an event/situation, modality features do not refer directly to an event or situation, but to the "status of the proposition that describes the event or situation" (Palmer, 2003: 5). Modality in English is primarily expressed through core modal/semi-modal verbs; an area of grammar whose description and usage has strongly benefited from corpus analysis. One notable study is Leech et al. (2009), who examined frequency counts of modal verbs from a range of corpora between 1961 and 1991 respectively, to arrive at findings which suggest diachronic variation and change. This change was mainly manifested through the competing of modal verbs within semantic fields of meaning. The authors note that within modality, the "most interesting and complex field to examine is that of obligation/necessity" (2009: 114), expressed through deontic modality shown in (i) below, as opposed to epistemic modality in (ii):

(i) They must come in now.

(ii) They must be in the office.

Whilst epistemic modality is concerned with a speaker's attitude to the status of the proposition, deontic modality relates directly to the potentiality of the event as signalled by the proposition (Palmer, 2003). Within the latter field, Leech et al. (2009) note a steep fall in the frequency of deontic must, which they suggest is a result of two elements, summarised (very) briefly in what I have labelled (C)onclusions (1) and (2):

(C1)

The 'authoritative' sense of must has been losing flavour for socio-cultural reasons.

(C2)

The rise of other verbal means (including semi-modals) of expressing more muted or indirect deontic obligation/necessity (mainly should, have to, and need to) represent present-day beneficiaries of must's decline.

Although their main focus is primarily on changes of overall comparative frequencies, the authors also comment on the 'subtly differing functions' (Leech et al., 2009: 117) of must's competitors; namely should, have to and need to. Their interpretations of such are summarised in (C)onclusions 3-5:

(C3)

Should shows a rise in deontic usage and has benefited as a less 'face-threatening' alternative to must.

(C4)

Need to in its most basic sense marks inherent obligation/necessity, rather than external or unmarked. With need to, the obligation is often collective with a "double mitigation of imperative force" (Leech et al., 2009: 111), represented as being in the obligatee's best interest.

(C5)

Have to has shown fierce competition in frequency with must over the years not only because of its greater syntactic flexibility, but also due to its more unmarked sense of obligation, where the authoritative source is often external or otherwise left vague.

As is clear from (C3)-(C5) above, notions of 'internal' and 'external' seem to be central in distinguishing deontic obligation functions, notions that are associated with the source of the necessity.

2.2 Source of obligation/necessity: Re-defining the parameter

Source is generally agreed to be a key concept in deontic modality (e.g. Heine 1993; Verhulst et al. 2013) to refer to the object at the origin of the obligation. In an attempt to redefine this parameter for a more accurate understanding of variation between modal verbs, Depraetere & Verhulst (2008) propose a distinction between discourse internal, discourse external and intersubjective (mixed) sources of necessity. Further, the authors split discourse external sources into three categories; circumstance, condition and rule/regulation. As the details of these notions will form a central part of the analysis to follow, direct quotations from Depraetere & Verhulst (2008) are used in the following definitions to ensure accuracy, but all examples given are images of extended concordance lines taken from the corpus constructed for this pilot study.

Circumstantial obligation covers "results from arrangements of particular situations that necessitate the actualisation of another particular situation" (Depraetere & Verhulst, 2008: 6):

(iii)

separate.</s><s>And the clearest way to keep separate is to stay in your house, and that's why that's the core message.</s><s>There are people who

haveto

go to work in some jobs who cannot stay in their house all day and the most obvious one is in the NHS, but there are others as well.</s><s>And then it's important to break the Figure 1: concordance line "have to go to work"

Conditional obligation refers to when a particular situation is necessary in order to achieve a particular purpose, differing from circumstantial obligation in that "the conditioning situation is posterior to the modal meaning of necessity" (Depraetere & Verhulst, 2008: 9). That is, circumstantial obligation can be understood as being 'because A is true, B must be done', whereas conditional obligation is 'if B is to be true, then we must do A':

(iv)

of the disease over a longer period so that our society is better able to cope.</s><s>The Chief Medical Officer will set out our lines of defence.</s><s>We

haveto

deploy these at the right time **to** maximise their effect.</s><s>The most important task will be to protect our elderly and most vulnerable people during the peak weeks when there is the Figure 2: concordance line "have to deploy"

Regulatory obligation is used as a cover term to refer to "compelling situations resulting from stronger binding forces such as laws, household rules, and institutional rules... as well as weaker binding forces such as accepted social patterns... etc." (Depraetere & Verhulst, 2008: 6):

(v)

spread of the disease and reduce the number of people needing hospital treatment at any one time.</s><s>That's why we've given the clear instruction that people

must

stay at home unless they have one of the reasons we've set out.</s><s>With your help, we will slow the spread of the disease.</s><s>I want to thank everyone who's been following Figure 3: concordance line "must stay at home unless"

Discourse internal sources are used here as an umbrella term to refer to examples where "the speaker is identified as the source of the necessity" (Depraetere & Verhulst, 2008: 11):

(vi)

support not just businesses but also individuals and their families to keep our economy going as Rishi Sunak, the chancellor, outlined yesterday.</s><s>I also needto

remind parents, as we've already advised, that children should not be left with older grandparents or older relatives who may be particularly vulnerable and fall into some of the Figure 4: concordance line "need to remind"

Mixed sources are when there is a combination of any of the discourse external and internal ones mentioned above; for example (vii) seems to have a source which is a mix of discourse- internal plus regulatory:

(vii)

further because, according to SAGE, the Scientific Advisory Committee on Emergencies, it looks as though we're now approaching the fast growth part of the upward curve.</s><s>And without drastic action, cases could double every five or six days.</s><s>So, first, we

needto

ask you to ensure that if you or anyone in your household has one of those two symptoms, then you should stay at home for 14 days.</s><s>That means that, if possible, you should Figure 5: concordance line "need to ask"

The obligation to 'ask you to ensure' here is an internal choice made by the Prime Minister, but the motivation for doing so is ultimately based on a pre-existing regulation which specifies a 14-day period of isolation upon showing symptoms of COVID-19.

3. Research Questions

Refining the notion of source as outlined above allowed Depraetere & Verhulst (2008) to describe function distinctions between deontic must and have to in an analysis of the ICE-GB corpus. Taking inspiration from such, this pilot study aims to carry out a qualitative analysis of a specialised sample corpus of the UK Government's communications to the public between March and April 2020 during the COVID-19 pandemic, in order to:

(a) test Leech et al's general findings presented in (C1) and (C2);

and

(b) apply Dapraetere & Verhulst's (2008) parameter of source to 'competing' modal terms in the data, to compare with Leech et al's (2009) interpretations of their differing meaning functions as summarised in (C3) - (C5).

4. Design considerations

4.1 Sampling frame

The corpus built for the purpose of this study can be said to be specialised (Flowerdew, 2004), in that it was compiled for the specific purpose of investigating particular grammatical items (deontic modals) within a certain genre (Government communications to the public). It can also be said that it follows a sample corpus approach (Biber, 1993; Leech, 2007), where it seeks to use a 'sample' of data to reflect the language used by a particular population (the UK Government) at a given point in time (during the COVID-19 pandemic). A factor of central importance then, was ensuring that the corpus is appropriately representative of this.

The decision was made to sample transcripts of official UK Government statements from the 'COVID-19 daily briefings' between March and April 2020, taken from Gov.uk (see Section 5). Such a sample seemed to be an appropriately balanced and representative 'snapshot' (McEnery & Hardie, 2012: 9) of the language and population the Research Questions seek to analyse; these briefings and statements occurred at the peak of the COVID-19 pandemic and therefore include all major 'strategy' announcements, and their purpose is to communicate directly to the public. More importantly, they include a variety of speakers from the central government and also contain spontaneous spoken responses to questions posed by journalists and members of the media. This ensured that the corpus was not just made up of what one could assume to be read-aloud statements which were in fact previously planned and written. The corpus is a collection of spoken samples only; a decision made largely to adhere to consistency, but also in the hope of more frequent occurrences of the grammatical items under analysis, as the rise semi-modal use has increased most dramatically in spoken language (Leech et al., 2009).

4.2 Sample size

As mentioned above, only a select number of transcripts were used to compile the corpus, namely those that occurred between March and April 2020, and these amount in total to 51,761 words. Although this is a particularly small sample size, the research questions rely heavily on detailed analysis involving rather large amounts of labour-intensive work. For more discourse-oriented analyses of a particular genre of language, it is possible to use much smaller amounts of data (McEnery & Hardie, 2012), and indeed when building a specialized corpus focusing on the behaviour of one particular feature only, it is not so much the size of the corpus which should be

taken into consideration, but rather how often we would expect to find that particular feature mentioned within it (Baker, 2006).

Another advantage of using such a small corpus is that the study can adhere to total accountability (Leech, 1992: 112), in that the entire corpus is used to address the research questions. This ensures that a favourable subset of the data is not selected in any way; although the corpus contains data spanning across a limited time period, it is somewhat better to have such a small sample, as all the data can be used in order to satisfy falsifiability (McEnery & Hardie, 2012).

5. Methodological issues

5.1 Transcription

The transcription of spoken language presents considerable challenges (Newman, 2008); there are issues with clarity, overlapping dialogue and a range of additional prosodic and paralinguistic information to deal with (Baker, 2006). Such issues were largely able to be bypassed, as due to the topical and official nature of the genre, there were readily available transcripts of the briefings on the web. All transcripts were taken from 'gov.uk' and were of a similar size; this area of consistency being another advantage of using the daily briefings as a sampling frame, and due to the formal and instructive nature of the genre, occurrences of overlapping dialogue and interruptions were minimal. However, this process became more complex when it was taken into consideration that "there are serious hazards involved if transcripts that were made by non-linguists for purposes of their own are to be used for linguistic analysis" (Mollin, 2007: 188). Despite 'gov.uk' claiming that all data is transcribed "exactly as it was delivered", where studying linguistic phenomena is not the main aim in archiving data, transcripts are often cleaned or glossed to limit factors that could affect the clarity of the message (Baker, 2006). This required me to read the transcripts simultaneously alongside video coverage of each corresponding briefing (a rather lengthy process) in order to ensure accuracy in representation.

5.2 Building

The actual building of the corpus was a relatively simple process. Gries & Newman (2014) note that important steps in corpus construction include removing unwanted elements and converting all data into one interoperable file format. To do this, the transcripts were copied and pasted into an empty word document, allowing me to extinguish unwanted elements such as menu options on the websites, links to other pages and more importantly, transcriptions of questions posed by parties external to the Government during the latter phases of the briefings. This method also seemed to make sense from a technical perspective, as concordance programs usually function best when working with plain text files (Baker, 2006).

The word documents were then uploaded manually to SketchEngine's 'create a corpus' feature. This uses TreeTagger for English files, which adopts the Penn Treebank POS Tagset to tag the data with an accuracy of around 96.36% (Schmid, 1994) and provided me with a platform in which to carry out my analysis.

5.3 Procedures adopted for the analysis

Basic concordance searchers of must and should brought up their overall frequencies, whilst for the more syntactically flexible have to and need to, an advanced CQL search was required to include all variations of their forms. The KWIC (Key Word In Context) view allowed me to manually extract of all epistemic uses of these modals, as well as instances where, for example, need occurred in its nominal form in direct adjacency with infinitival to, as in:

(viii)

'As a nation, we're confronted with the **need to** make big changes and enormous sacrifices to our daily lives'.

Figure 6: concordance line "need to make"

SketchEngine then allows you to copy multiple concordance lines and paste them into a word document, which shows the Key Word in its larger context:

(ix) file_copy

9

info_outline^{doc#0}

the disease because that is the way we reduce the number of people needing hospital treatment at any one time so we can protect the NHS's ability to cope and save more lives.</s><s>That's why we've been asking people to stay at home during this pandemic.</s><s>Though huge numbers are complying, and I thank you all, the time has now come for us all to do more.</s><s>From this evening, I must give the British people a very simple instruction.</s><s>You must stay at home, because the critical thing we

must

do to stop the disease spreading between households. </s><s> That is why people will only be allowed to leave their home for the following very limited purposes: Shopping for basic necessities as infrequently as possible; one form of exercise a day, for example, a run, walk, or cycle alone or with members of your household; any medical need to provide care or to help a vulnerable person; and traveling to and from work, but only where this is absolutely necessary and cannot be done from home.</s><s>That's all

Figure 7: key word in co-text

The main advantage of this view is that the wider discourse context surrounding the modal allows for a more accurate interpretation of its source. Strictly following the formal descriptions outlined in Section 2, this parameter was applied and distinguished between the examples through colour-coding. Findings from such procedures and a small discussion addressing the Research Questions posed in Section 3 are now given.

6. Results and discussion

The table in (x) shows the overall frequency counts of the modals under analysis, and the table in (xi) shows the sources associated with these in relative percentages. For a more systematic and reliable picture of the semantically motivated variation between deontic forms, the parameter of source was only applied to present affirmative environments where each modal form could be substituted by one another. This meant that all negative, 'conventional/formulaic' and syntactic forms were not included, as these uses are consequences of structural rather than semantic motivations. Following Myhill (1995), syntactic forms include those tokens that are either following another modal (I'll have to), inflected for past tense (I had to) or inflected for aspect (having to). 'Formulaic' tokens are those which are entrenched within expressions that can justifiably be categorised as 'fixed', via either their frequency of occurrence or idiosyncratic behaviour (I must/have to admit). All such tokens were extracted manually, and the classification of certain phrases as 'formulaic' will obviously bear some degree of individual interpretation.

	modal tokens	epistemic	deontic	negative forms	syntactic	non- syntactic	conventionalised forms
must	33	1	32	3	n/a	n/a	0
have to	62	0	62	0	25	37	3
need to	102	0	99	3	11	88	0
should	69	8	61	14	n/a	n/a	0

raw frequency counts of 'competing' modals

Figure 8: raw frequency counts of 'competing' modals

(xi)

(x)

source'	of	deontic	oblig	ation	/necessitv	(%)	١
0000000	~	acontre	COME	, course in	necessicj	(/0)	,

modal	discourse internal (subjective type B)	discourse external (objective)				mixed (intersubjective)
		regulation	condition	circumstances	total	
must	31.0	13.3	46.6	40.0	51.7	17.2
have to	17.6	20.0	40.0	40.0	58.8	23.5
need to	42.0	3.8	26.9	69.2	29.5	28.4
should	54.2	6.5	63.2	26.3	39.6	6.3

Figure 9: 'source' of deontic obligation/necessity (%)

Raw frequency counts in (x) can immediately be used to address one part of Research Question (a). They show alignment with Leech et al's (2009) general findings in that the frequency of must is particularly low in the data compared to the other modal forms, which suggests that these alternative forms are beneficiaries of must's decline in usage (C1). Whether or not this is due to socio-cultural attitudes towards authority (C2) is unclear from frequency counts alone, and this concept is revisited in Section 7. Before this, an individual discussion of each modal under investigation is given to address Research Question (b).

6.1 Should

A large percentage of tokens with should are utterances with a discourse internal source, (54.2%) that is, where the obligation originates from the Government itself. These include instances where the Government are not just describing actions necessary to take from an internal perspective, but more importantly, instances where they are enforcing new rules and regulations upon the public. Such a large proportion of these compared with that of must (31%) seem to follow Leech et al.'s (2009) description in (C3), in that should is perhaps being used as a 'less-face threatening' alternative. This concept is given further support when we compare their interchangeable negative environments, all of which are instances of the Government instructing the public what not to do. Here, must is almost completely absent; the table in (x) shows 3 instances as opposed to 14 with should. Indeed, in negative constructions (which arguably carry stronger connotations of obligation than affirmative ones) weaker should is overwhelmingly favoured. A typical example of such is given below:

(xii)

your friends ask you to meet, you should say no.</s><s>You should not be meeting family members who do not live in your home.</s><s>You should

not be going shopping except for essentials like food and medicine, and you should do this as little as you can and use

Figure 10: concordance line "should not"

6.2 Need to

The table in (x) presents need to as the most used deontic modal term in the corpus, showing alignment with Leech et al.'s (2009: 94) general description of such as "one of the semi-modals spectacularly increasing in frequency". The greater proportional frequency of need to (and indeed have to) compared to the 'core' modals found here actually goes beyond the authors' trends, as whilst Leech et al. (2009) found a rise in the use of semi-modals in the spoken corpora under investigation, their comparative raw frequency counts were still (but not far) behind the core modals. This proportional frequency is perhaps indicative of a continuingly increasing trend. Leech et al.'s (2009) comparative period of study was between 1961-1991, so it can be predicted that the semi-modals' frequency counts would eventually equal or take over those of the 'core' modals as time progresses, which seems to be the case from the present analysis.

The table in (xi) also supports the authors' description of need to's meaning function summarised in (C4). Uses with discourse external sources are low (29.5%) in comparison to discourse internal ones respectively (42.0%), and the collective nature of the obligation that need to is claimed to express can be seen through its pronominal subjects, with 51 out of 54 of these being the first-person plural 'we'. The high proportion of circumstantial sources (69.2%) further supports this concept; when placing the source of obligation on the unavoidable circumstances of COVID-19, thus relieving responsibility of the Government and uniting them with public, need to is the clear choice.

6.3 Have to

Have to also conforms with Leech et al's description in (C5). It largely has a discourse external source and is by far the most favoured modal in syntactically diverse environments (i.e. following another modal or inflected with tense or aspect); almost half of its tokens are in contexts where both must and should would be unavailable. Of its non-syntactic forms, its label as a direct 'rival' to must (Leech et al 2009: 98) is clear, as the table in (xi) shows its proportional distribution of sources is the most similar to must out of all the modal forms under analysis. What is also

interesting, and further in line with (C5), is its comparatively high percentage of regulatory sources. When the Government issue new rules and regulations, that is, obligation arising from a discourse internal source, the preferred modals are should and must. When these are then referred back to as pre-existing and therefore now external regulations, have to is the more common choice:

(xiii) all, the time has now come for us all to do more.</s><s>From this evening, I must give the British people a very simple instruction.</s><s>You **must**

stay at home, because the critical thing we must do to stop the disease spreading between Figure 11: concordance line "must stay at home, because" Source: discourse internal- implication of a new regulation

(xiv)

and physical wellbeing, but please follow the advice.</s><s>And don't think that fresh air in itself automatically provides some immunity.</s><s>You

haveto

stay two meters apart.</s><s>You have to follow the social distancing advice.</s><s>And even if you think that you are personally invulnerable, there are plenty of people that you can Figure 12: "have to stay"

Source: discourse external regulation: referring to pre-existing rules/advice which need to be followed

7. Conclusions and Reflections

The analysis of competing deontic modal forms in the specialised sample-corpus presents results which strongly align to the trends observed in Leech et al. (2009). Comparative raw frequency counts show an overall preference for semi-modals by the British Government, which seem to be the main beneficiaries of must's proportionally low usage. Have to is must's most direct competitor, showing a similar proportional distribution of sources, where the majority of these are discourse-external. Need to is the most frequently used deontic modal whose large proportion of circumstantial sources are perhaps reflective of the Government's efforts to unite the public against the 'unavoidable' enemy of COVID-19. Should is the preferred modal for discourse-internal sources, used by the Government to introduce new rules/regulations, particularly in structures involving negation.

Returning to the issue of socio-cultural attitudes towards the authoritative sense of must presented in (C1), the data and discussion in Section 6 do show a preference for a less directive representation of obligation; one that is collective as opposed to authoritarian. This is a strategy the Government clearly deem as more effective when seeking the conformity and compliance of the general public (the ultimate purpose of the genre under investigation), and therefore we could posit that this is reflective of a less commendable attitude towards strong authoritative instruction within society.

Limitations of scope and time presented the biggest challenges to this pilot study. Individual speaker profiles along with tagged prosodic information (Lindquist, 2009) could have given more insight into how each modal term was delivered, which could shed further light on their differing meaning functions. The focus of the present study has been on the modal's source, the entity that gives the obligation/necessity. An interesting follow-up would be to consider the reverse, that is,

how the modal tokens could be interpreted by the public who receive the obligation/necessity, and any potential ambiguity that could arise from such.

What the study does hopefully manage to do, however, is highlight the importance of the discourse/pragmatic context and detailed, qualitative analysis of a corpus when attempting to understand the difference in meaning functions of modal forms. More generally, the study demonstrates how the results of a grammatical analysis can lead to implications regarding society's attitude towards a condition such as obligation, which could in turn be influential on the Government's choice of strategy when seeking conformity during a global crisis.

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Visual rhetoric in internet memes: The curious case of r/PoliticalCompassMemes

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Author's Note

There are no conflicts of interest to disclose.

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Abstract

The following paper seeks to outline the rhetorical structure and political potential of internet memes by offering a brief case study on how arguments regarding Joe Biden's political alignment were put forth on the r/PoliticalCompassMemes subforum on Reddit. Drawing from a dataset of the top 100 most popular posts on the online forum, the argumentative content of three selected examples was analysed using the concept of enthymemes.

The analysis demonstrates how the open-endedness of memes allows users to present contradicting value judgements on a single platform and provides them with a way to participate in politics. The paper will also illustrate how memes contribute to the constitution of collective identities, rooted in the shared digital literacy required to decipher them.

Keywords: memes, visual rhetoric, enthymemes, ideology, politics

1. Introduction

As more and more human interaction moves online, new genres of communication are developing on social media platforms and internet forums (Bouvier & Machin, 2018). Among them are internet memes: digital units of expression that combine visual and verbal modes, inviting imitation and alteration from other users (Knobel & Lankshear, 2007; Shifman, 2014; Denisova, 2019). Although often used simply for humorous ends (Dynel, 2016; Vasquez & Aslan, 2021), memes also possess great political potential, as they allow users to compress complex ideas into small nuggets of information that can take advantage of this presumption of playfulness to downplay their ideological intentions (Wiggins, 2019; Tomp, 2020; Askanius, 2021).

Previous studies have demonstrated how memes can empower internet users and make their voice heard in face of police injustice (Bayerl & Stoynov, 2016), public protests (Milner, 2013) and presidential elections (Ross & Rivers, 2017). Digital media is also often used to escape censorship under authoritarian regimes, as in the case of uprisings in Russia (Denisova, 2017) and Singapore (Soh, 2020). In other cases, memes might be used to disseminate extremist and discriminatory content, having been proven particularly popular among far-right movements in Germany (Bogaerts & Fielitz, 2019), the United States (DeCook, 2018) and Finland (Hakoköngäs et al., 2020). At the same time, most case studies (including those mentioned) tend to adopt a content-based approach, choosing to focus on the main topics and themes in a given set of memes, but not on the precise rhetorical devices used to advance those ideas (cf. Huntington, 2016).

To bridge this gap in research, the present paper provides an introductory insight into how the influence and persuasiveness of memes can be described in rhetorical terms. The following section will present a more detailed definition of internet memes, to then introduce the subgenre of Political Compass memes, which will be used as source material for the analysis. The paper goes on to discuss the general debate on visual rhetoric and argues for the usefulness of Aristotelian enthymemes in analysing it. Following the theoretical considerations, a brief case study will be conducted on the representation of Joe Biden on r/PoliticalCompassMemes in the context of the 2020 U.S. presidential election.

2. What makes a meme?

No discussion on memes would be complete without a nod to evolutionary biologist Richard Dawkins (1976), who first coined the term by combining the words 'gene' and 'mimeme' (Ancient Greek for 'that which is imitated'). Dawkins (1976) saw memes as self-replicating units of culture – analogous of genes – that pass information and ideas between individuals and generations (examples include popular jingles, catchphrases and pottery techniques). Although Dawkins has been heavily criticised for his dismissal of human agency (e.g. Laineste & Voolaid, 2016; Denisova, 2019), the concept found new life with the arrival of the internet and was repurposed to describe new types of viral media that began to emerge online.

Here, memes are understood as "(a) a group of digital items sharing common characteristics [...], which (b) were created with awareness of each other, and (c) were circulated, imitated, and/or transformed via the internet by many users" (Shifman, 2014, p. 41). In other words, individual memes always function in relation to a larger whole, as iterations of specific meme templates, which are themselves subject to change. Additionally, memes have to be recognised as such by their audience. Even though memes can spread across different networks, the users posting them usually have a particular target group in mind, who are assumed to relate to the memes content and stance (in hopes that they would spread it further) (Silvestri, 2018; Varis & Blommaert, 2015). Henceforth,

I use the term 'poster' instead of 'author', because there is no guarantee that the person posting the meme has made it themselves. This reliance on a shared digital literacy and cultural competence can also lead to the formation of highly specific online communities, where group membership is based on the ability to communicate in memes (Yus, 2018; Katz & Shifman, 2017; Nissenbaum & Shifman, 2017; Literat & van den Berg, 2019).

3. Introducing Political Compass memes

A prime example of such a community would be r/PoliticalCompassMemes (r/PCM) – a subforum on Reddit, with just over half a million members as of September, 2021 (Reddit 2021). Reddit.com is an American online forum created in 2005, where users can submit text posts and links to news articles, videos, images, etc. for others to comment and up- or downvote on. The website is comprised of subreddits, which users can subscribe to (posts from those will make up their 'Home page') or visit separately. r/PCM was founded in 2017 and is home to a rather unique subgenre of memes called Political Compass memes (PCM). PCM have in turn spawned from the Political Compass test, created by political journalist Wayne Brittenden, which people can complete online by responding to 62 propositions (Pace News Ltd. 2021). The Political Compass (Figure 1) is composed of two axes: the economic (left-right) and the social (authoritarian-libertarian) scale, dividing it into four quadrants: Authoritarian Right (blue), Authoritarian Left (red), Libertarian Right (purple) and Libertarian Left (green). Libertarian Right is sometimes also represented by the colour yellow on r/PCM.



Figure 1: The Political Compass

On r/PCM, this simple mold for demarcating ideology has been turned into a meme template, which allows users to (a) comment on day to day politics by categorising social actors, statements and real-life events according to the compass, and (b) bring abstract ideologies into life, primarily by representing different parts of the ideological spectrum as cartoon figures in imagined situations.

This observation is based on a previous study concerned with the representation of different actors, phenomena and processes on r/PCM (Tamm, 2021), for which I recorded the top 100 most upvoted posts on the subreddit as of May 18, 2021. Although the dataset is far from comprehensive, it allows me to make reasonable generalisations as the amount of upvotes is assumed to indicate what the community values and agrees with (Massanari, 2015). All the examples used here are from this dataset, which was anonymised in accordance to the latest ethical guidelines from the Association

of Internet Researchers (Franzke et al., 2020). I have, however, chosen to include the titles of the posts, (reproduced in quotation marks) and the amount of net upvotes they had received at the time of data collection (in square brackets) in the interest of context. Net upvotes refers to the number of upvotes minus the number of downvotes.

Figure 2, for example, illustrates how the categories of political commentary and personification of ideology are often combined on r/PCM. The original comic features a visual metaphor of LOVE IS HEAT, rooted in a common association between blue as cold and red as warm. As it is turned into a PCM, however, this change in colour is reinterpreted to also indicate movement on the Political Compass, from the blue Authoritarian Right to the red Authoritarian Left (combined with the change in background). At the same time, the textual labels and time of posting (April 15, 2020) relate the meme to the handling of the coronavirus pandemic in the U.S. where the first stimulus checks were being rolled out at the time.



Figure 2: "Cute content that will get some people pissed" [47 866 upvotes]

Figure 3 below exemplifies how users can also negotiate the meaning of the quadrants. In this case, the poster has pictured a dialogue between the Political Compass and the Republican Party. As the former attempts to argue for the classification of the latter as Authoritarian Right, they explicate a number of assertions claimed to represent the quadrant. The party appears to agree with all the premises, but not with the conclusion, alluding that republicans are also hypocritical and lack self-awareness. Due to the rather evaluative choice of attributes, I would assume that the figure asking the questions is not the actual Political Compass test, but it acts as a spokesperson for the poster of the meme. It would follow that the aim of the meme is not to just position the Republican Party in relation to their political views, but to attribute 'supporting torture' (among other things) to both the party and the quadrant.



Figure 3: 'Small Welfare State =/= Small Government' [55 014 upvotes]

By doing so, the poster of the meme distances themselves from the actual test, using its system of categorisation to put forth their own evaluations. In consequence, it also offers a reinterpretation of what it means to be Authoritarian Right, which, given the high amount of upvotes, has struck a chord with the community. It is worth noting that r/PCM in general appears to stand completely separate from the Political Compass test, which is never mentioned nor linked to in the About section of the subreddit (and neither is r/PCM mentioned on the official website). As Gal et al. (2016, p. 1700) put it, "internet memes are 'performative acts': each selective choice reflects a specific attitude of the meme creator, yet also contributes to the ongoing negotiation over norms". But to further delineate how value judgements are advanced in memes, an overview of visual rhetoric is in order.

4. Introducing (visual) enthymemes

The debate on whether arguments can be visual is far from settled (Groarke et al., 2016; Kjeldsen, 2015). The main issue is the inherent ambiguity of visual communication (Fleming, 1996; Champagne & Pietarinen, 2019). However, as philosopher J. Anthony Blair (2012a, 2012b) notes, the real power of visual arguments relies precisely in their non-propositional character, allowing images and other multimodal texts to disguise their argumentative ability and influence the audience in a more covert manner. One way to operationalize this is to make use of the concept of enthymemes, first developed by Aristotle, who saw the study of rhetoric precisely as "an ability, in each [particular] case, to see the available means of persuasion" (Aristotle, 2007, p. 37).

For Aristotle (2007, p. 31), enthymemes constitute "the 'body' of persuasion"; and stand for a type of deductive reasoning "derived from probabilities and signs", often expressed as truncated of elided syllogisms. In those cases, it is the hearers (or viewers) who have to supply the alluded parts. "For example, [to show] that Dorieus has won a contest with a crown it is enough to have said that he has won the Olympic games, and there is no need to add that the Olympic games have a crown as the prize; for everybody knows that" (Aristotle, 2007, p. 42). This participatory element also highlights the role that assumed contextual knowledge plays in enthymemes. The connection between crowns and success at the Olympic Games may have been intuitive for Aristotle's contemporaries, whereas today, Olympic achievements are measured in medals. Enthymemes can be based on circumstantial evidence as well, as in conditional statements such as "since someone breaths rapidly, they have fever", which is only probably true, "for it is possible to breathe rapidly and not be feverish" (Aristotle, 2007, p. 43).

Even though Aristotle exclusively spoke of verbal persuasion, the notion of enthymemes can be adapted to address visual rhetoric as well (Smith, 2007; Blair, 2012b). As Wiggins (2019, p. 64) argues, the discursive power and ideological potential of memes lies precisely in their ability to achieve salience in a group by appealing (and contributing to) existing attitudes, assumptions, and prejudices. Wiggins (2019, p. 65) also stresses that in order for the ideology to be understood, users often have to "fill in necessary but absent information", going as far as to suggest that "enthymeme [...] captures the essence of internet memes" (Wiggins, 2019, p. 1). Nonetheless, to the best of my knowledge, no case studies on enthymematical arguments in memes have been carried out.

5. Analysis

Because r/PCM is a subforum on an American website and the top 100 memes were all posted after 2019, it was no surprise that Joe Biden and Donald Trump were among the most often mentioned social actors in the dataset. What was surprising, however, was the disparity in Biden's alleged political alignment. While Trump was always claimed to belong to the Authoritarian Right (or at least to the Right), all three instances of Biden being represented on the Political Compass featured different evaluations: Authoritarian Right (Figure 6), Leftist (Figure 5), or unaligned (Figure 4). Biden's political alignment was only represented in three posts. The following analysis aims to delineate how these claims were advanced.

The qualitative study follows the Discourse-Historical Approach (DHA) (Reisigl & Wodak, 2001) in its structure. First, the content and topic(s) of a given meme are outlined to then describe the argumentation strategies it entails and their linguistic realisation. Although the DHA advocates for the use of Aristotelian topoi – reoccurring conclusion rules – in analysing argumentation (Reisigl & Wodak, 2001, pp. 74–75), I prefer the notion of enthymemes in this case, because I find it better suited for the evaluation of visual discourse, as outlined above. Because all the arguments analysed here attribute ideological positions, I will also make use of the DHA's concept of predication. Predication strategies are concerned with the evaluative characteristics or qualities that are assigned to different social actors or processes and are expressed by specific forms of reference, attributes, predicates, allusions and other rhetorical figures (Reisigl & Wodak, 2001, pp. 54–60).

5.1. Representing Biden as an unaligned politician

Figure 4 features a verbal interaction between 'doomer leftists' and Biden. The prefix 'doomer' refers to a pessimistic outlook on the future of the planet, which assumes that natural resources will eventually run out, leading to the collapse of society. It is based on a meme template from the 2018 movie 'Avengers: Infinity War', where the original lines of dialogue read "You took everything from me // I don't even know who you are" and is typically used to belittle whoever is portrayed in the first panel. In the present case, however, the opposite appears to be true, as the altering of Biden's line to express doubt about his own self-awareness predicates him as slightly mentally impaired, not fully present in the situation, perhaps even as senile.



Figure 4: 'No refunds' [62,591 upvotes]

Moreover, I suggest that the meme contains another, more enthymematic argument. The ideological alignment of doomer leftists is mirrored in the canonical colour scheme of red and green, designated to the left side of the compass, whereas the head of the figure standing in for Biden is superimposed by a picture of the Political Compass. This is often done to portray the Political Compass test (cf. Figure 3), but I would argue that it acts as a visual metaphor in this case, illustrating the very lack of Biden's political alignment. This suggests a return to the original form of the meme template, now predicating Biden as actually not knowing who doomer leftists are, because he does not know who he is himself. In other words, he is unaware of the Political Compass as a concept. In different circumstances, Biden's neutrality might be considered commendable, especially after four years of increasing political division in the US. But in the context of r/PCM, a community solely based on partisanship, ideological ambivalence, it does not sit well.

Hence, the meme implies a conditional enthymeme: since Biden does not know the Political Compass, he is unfit for office, which relies on the suppressed premise that everyone ought to be aware of their position on the compass and stand by it. Illustrating the prevalence of this assumption is the fact that users are encouraged to add flairs next to their usernames on r/PCM, signifying their own allegiances. Out of the top 100 posts, for instance, only one was made by an unflaired user. In the case of Figure 4, the poster had chosen Authoritarian Right as their quadrant of preference, lending credibility to the interpretation that the meme attempts to discredit Biden's lack of authority as a leader contra commonly Authoritarian Right-associated Trump, who is all too familiar with political division. Such a reading does not necessarily contradict the initial interpretation of Biden's lack of mental ability, but adds a layer of depth to it.

On top of familiarity with the subreddit's norms, the poster may have assumed their audience to be aware of the plot of the movie as well. Because the figure in the bottom panel (Thanos) is the main antagonist in 'Avengers: Infinity War' and is defeated in the end, the meme could be alluding that Biden too is a villain, who will eventually be dethroned.

5.2. Representing Biden as an Authoritarian Right politician

Figure 5 depicts the alleged reactions of all four quadrants in the aftermath of the presidential election and includes an assessment of the current state of U.S. politics, which is claimed to have undergone only a slight shift to the left, as signified by the black arrow. What makes Figure 5 relevant in the context of this study is the fact that this evaluation relies on the premise of Biden belonging to the Authoritarian Right, together with Trump. To delineate how this claim was put forth, it is worth reiterating how r/PCM differs from The Political Compass test.



Authoritarian

Figure 5: "Meanwhile among the American Right..." [38 670 upvotes]

The central idea behind the Political Compass as a whole can be described as a method of predication, which assigns subjects a place on the compass in accordance to their political values. The Political Compass test follows a specific (albeit undisclosed) algorithm for this, whereas r/PCM relies more on the collective hive mind of its members. Individual users put forth their own evaluations for others to judge and whatever achieves salience will be upvoted (and thus spread

further). The two approaches follow the same system of categorisation (the Political Compass), but make use of different types of predicables.

The Political Compass test is primarily focused on what Aristotle (1997, p. 4) calls definitions: formulas for expressing the essence of something (the quadrants in this case). When taking the test, one is asked to evaluate propositions such as "In a civilised society, one must always have people above to be obeyed and people below to be commanded" and "The freer the market, the freer the people". Even though no official definition of Authoritarian Right is given, it can be assumed that strongly agreeing with both aligns with its essence.

But on r/PCM, users are more concerned with predicating rather then evaluating ideology, therefore focusing not on definition, but on genus: the essence of something which can be predicated on different things (Aristotle, 1997, p. 5). In the context of PCM, the quadrants can be said to act as genuses, which, although initially demarcated by the test, are now open for reinterpretation and - evaluation. Their essence is never defined, but is expressed in memes. Hence, the relevant argument in Figure 5 can be reconstructed as a *modus ponens*: being Authoritarian Right is about X. Biden supports X. Therefore, Biden is Authoritarian Right. What makes it an enthymeme is the fact that X is not given in the meme and is left for the audience to assume. In Figure 3, this process of reasoning was made remarkably explicit, but was apparently successful in the case of Figure 5 as well, as it reached a similar number of upvotes.

5.3. Representing Biden as a Leftist politician

Admittedly, evaluating Biden is not the focal point of Figure 6, which appears to be more about signalling group membership. The mention of highlighters references a popular PCM format called highlighter memes, where users overlay utterances with colours that represent the quadrants. In those cases, the colours act as a particularising synecdoche – a part (the colour) standing for the whole (the ideology), which, again, has to be recognised as such by the audience. Here, Biden is covered in red and green lines, suggesting that he speaks for the left side of the political spectrum in the debate. It therefore stands in sharp contrast with the previous two examples, as Biden appears firm in his political alignment and in his opposition to Trump.



Figure 6: "No need to thank me" [30 434 upvotes]

At the same time, it is worth noting that this meme was posted before the election (on September 30, 2020), unlike the other two. Although a similar process of reasoning was used to reach an opposing conclusion in Figure 5, the argument in Figure 6 was made in a different context, namely in relation to the first presidential election debate, held on the day of posting. The format of a debate itself encourages polarisation, much like two-party system of the US. Further, it is unhabitual for politicians to oppose incumbents when running for office, only to assume similar policy positions once they assume power.

Nevertheless, Figure 6 illustrates how contradictory evaluations of social actors can proliferate on r/PCM, as the rules of categorisation are not set in stone and can be challenged by users. It is true, as Blair (2012a, p. 222) points out, that "visual arguments tend to be one-dimensional: they present the case for one side only, without including the arguments against it, or without doing so sympathetically, and without representing alternative standpoints and their merits and defects". But at the same time, memes' ease of access allows other users to readily put forth counterarguments. PCM in particular are not hard to create from a technical standpoint; meme templates can easily be repurposed across different contexts and the primary visual codes of the compass are simple enough to reproduce in basic image editors.

6. Conclusions

The rhetorical structure of three memes was analysed in the study to outline how different evaluations of Biden's political alignment were put forth using similar patterns of enthymematic reasoning. The results suggest that memes can be exploited to put forth arguments and that the concept of (visual) enthymemes can be used to scrutinise them. Additionally, the use of enthymemes provides a way to stress the participatory element of memes, while acknowledging that the arguments they contain might only be probable. In the context of r/PCM, the brief analysis also illustrated how users can negotiate the essence of the quadrants in the process and how contradicting value judgements can subsist on the subreddit. But perhaps even more importantly, the paper demonstrated the extent to which PCM rely on the contextual knowledge and digital literacy of their audience in order to be understood. Members of r/PCM are expected to be aware not only of the forum's visual codes and other conventions, but also of current political events.

As to avenues for future research, further investigations would benefit from larger datasets, organised by specific themes or templates. One such trend that definitely merits analysis would be the use of visual modality in the sense of making images seem more or less 'real' (i.e. distant from reality) (Kress & Van Leeuwen, 2006, ch. 5) and how this can be used to mitigate blame (Hansson, 2018) and accusations of extremism (Tomp, 2020). Another interesting question would concern the impact that the users' own ideological preferences have on the content that they share. As Reisigl & Wodak (2001, p. 44) maintain, evaluative discourse is primarily about positive self- and negative other-presentation. But in the case of r/PCM and other highly specific online communities, the shared ability to interact in memes might take precedence over political disagreements. In Figure 6, for instance, the meme does not display any personal preferences, but seeks to demarcate those familiar with the unwritten rules of r/PCM from the ones that are not.

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Wars, Floods and Avalanches: Metaphorical Representations of Immigrants in Brazilian and American Media

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Author's Note

I would like to acknowledge the Minas Gerais Research Funding Foundation (FAPEMIG) for the grant that supported this research.

There are no conflicts of interest to disclose.

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Abstract

According to the Migration Data Portal, Brazil is home to 1,1 million international immigrants, a small number compared with the US, which holds around 50 million immigrants (IOM, 2021). Previous studies show that immigration has been metaphorically described as a 'wave' and a 'flood' (Charteris-Black, 2006), and migrants as 'parasites' (Musolff, 2015) and 'goods' (Ferreira, Flister & Morosini, 2017; Arcimaviciene & Baglama, 2018). This study aims at providing more recent data on the representation of immigration in Brazil and in the US.

In order to do so, we performed a corpus-assisted metaphor analysis (Stefanowitsch, 2006). Two corpora were assembled from news containing the word 'immigration' in the New York Times, and 'imigração' in Brazilian newspaper Folha de São Paulo in 2018. The data were examined through concordance lines in AntConc, and metaphors were identified through the Metaphor Identification Procedure (Pragglejaz Group, 2007).

The analysis showed that the immigration discourse in Brazil is highly influenced by the US context. I found metaphors that support the findings of previous studies, describing migrants as WATER and GOODS/COMMODITIES, but also the mapping WAR, which is specifically connected with Donald Trump's policies towards migrants.

Keywords: metaphor, media, immigration, corpus-assisted metaphor analysis

1. Introduction

Immigration is not a recent issue in the Americas. Since Europeans found the New World, territories that would become countries such as Brazil and the United States of America have constantly received immigrants from across the Atlantic. It is possible to claim that both of these countries were built on immigration through very similar processes (Schwarcz & Starling, 2015; Ewing, 2012). Today, however, the situation is different. According to data from the United Nations International Organization for Migration (IOM), Brazil holds around 1.1 million immigrants, whereas the USA has over 50 million (IOM, 2021). Therefore, immigration has been one of the most important issues in US-American public debate, and a decisive factor in the election of Donald Trump, known for his violent discourse on immigration, in 2016 (Waldinger, 2018). In Brazil, however, it is still a minor issue, although the recent humanitarian crisis in Venezuela has caused many people to flee to neighboring countries, leading to conflicts in Brazilian northern borders (Boechat, 2018).

In recent years, immigration has been an important issue around the world, especially in far-right political discourses in Europe and in the USA (Wodak, 2015). Several metaphor scholars have also pointed out interesting uses of metaphor in immigration discourses (Charteris-Black, 2006; Hart, 2010; Musolff, 2015; Montagut & Moragas-Fernández, 2020), describing how metaphors are employed to present immigration mostly as a negative phenomenon. The goal of this study is to present a Brazilian perspective on immigration discourses in media and to compare it to American media in order to observe if different political and cultural contexts might motivate different metaphors.

For this research, two corpora were built – one in Portuguese and one in English – from the newspapers that have the highest circulation in Brazil and in the US: Folha de São Paulo (FSP) and the New York Times (NYT), respectively, in 2018. The data were analyzed through concordance lines in AntConc (Anthony, 2020) following the methodology provided by Stefanowitsch (2006). This procedure will be outlined later in the paper. Then, metaphors were grouped according to their metaphorical mappings and the results were compared in order to establish similarities and differences between Brazilian and American immigration discourse.

2. Metaphor, media and immigration

Conceptual Metaphor Theory defines metaphor as more than a linguistic ornament, but rather a fundamental cognitive operation through which human beings make sense of the world (Lakoff & Johnson, 2003). Therefore, metaphors do not occur in isolation in language, but are organized in mappings that make a systematic correspondence between a Source Domain and a Target Domain. According to Lakoff and Johnson (2003), when, for instance, a person talks about 'buying time', 'investing time', 'selling time', they are using the metaphor TIME IS MONEY, in which the Target Domain TIME is represented in terms of the Source Domain MONEY. This metaphor reflects not only a linguistic categorization of time, but it provides access to how this concept is structured in cognition, allowing us to partially understand how people perceive time.

Since Lakoff and Johnson's first publications, metaphor has gained a lot of attention from linguists, and it has been a particularly interesting linguistic feature for Critical Discourse Studies (CDS). In the words of Hart, "metaphor is conceptualisation not colouration" (2010, p. 126), therefore metaphors provide access to structured, coherent representations of phenomena that may also bring an evaluation of these issues (Musolff, 2016), and it is especially effective for conveying ideology (Charteris-Black, 2004). For instance, Charteris-Black (2006) describes how two different
metaphors were used by right-wing politicians in order to provide coherent negative representations of immigration. The author claims that there is a conceptual link between representing migrants as BODIES OF WATER and countries as CONTAINERS that creates a structured setting in which immigrants are perceived as a threat that must be controlled not to 'overflow' the country.

In order to better comprehend the use of metaphors in this work, we also adopted the notion of metaphor scenarios. Analyzing language use, Musolff (2016, p. 30) proposes the category of metaphor scenario as a "discourse-based conceptual structure that incorporates evaluative bias elements, which make it useful for argumentative exploitation". The important aspect of metaphor scenarios is that they constitute mini-narratives that bring an evaluation, therefore it is more than a random selection of aspects from a Source Domain: it is a coherent set of elements brought together to provide a particular interpretation of a phenomenon.

Considering this, many researchers have described how metaphor is used to frame political issues; immigration has been a particularly prolific topic in this line of work. Studies on metaphor and immigration discourses in the US and Europe show that migrants are described metaphorically as ANIMALS (Santa Ana, 1999), PARASITES (Musolff, 2015) and even portrayed as CARRIERS OF DISEASES (O'Brien, 2003). Research on Brazilian data prior to the Venezuelan crisis shows similar results, with migrants being described as WATER, FELONS, and GOODS/COMMODITIES (Ferreira, Flister & Morosini, 2017; Ferreira et al., 2019; Ferreira & Flister, 2019). Such metaphors build a dehumanizing image of migrants, and they have been widely used by politicians and the media (Charteris-Black, 2006; Hart, 2010; Ferreira, Flister & Morosini, 2017; Montagut & Moragas-Fernández, 2020). Therefore, we attempted to identify if there were any relevant changes in the use of metaphors that could be motivated by the Brazilian and American political contexts in 2018, when both countries were dealing with turbulences concerning immigration. Additionally, we looked for 'extreme' metaphors in the data. Hart (2020) defines extreme metaphors as metaphors that are particularly derogatory, therefore they are salient in discourse, thus being easily perceived as both metaphorical and negative, such as natural disaster metaphors, e.g., 'flood of immigrants' or plague-related metaphors, e.g., 'swarm of refugees'. Our findings show that the differences in the political context of these countries regarding immigration might influence the production of this type of metaphor.

3. Methodology

The first step of this study was performing a search in both newspapers' websites with the word 'immigration/imigração' and collecting all the results from 2018. Metaphors are likely to reflect the social climate of a given context; therefore, we chose to study data from the same year in order to avoid this interference. Information about the size of the corpora is displayed in Table 1.

Newspaper	Texts	Tokens
FSP	1,700	2,219,133
NYT	5,976	8,462,399

Table 1.	Corpora	information
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It must be noted that the NYT corpus is larger than the FSP corpus, which is probably because of immigration's importance in political discourses in the US. The next step consisted of a manual metaphor analysis through concordance lines in AntConc (Anthony, 2020) from the items 'imigr*' and 'immigr*' in Portuguese and English, respectively. This analysis followed Stefanowitsch (2006), whose methodology defines that, in order to manually analyze metaphors in large corpora,

researchers should look for those directly connected with a lexical item from the Target Domain, such as 'wave of immigrants'. Even though this methodology might leave some metaphors aside, it is still effective because it assures that the metaphors found are related to the specific Target Domain we wish to explore, while still enabling the analysis of large corpora, which is a great challenge in corpus-assisted metaphor research. Metaphors were identified through the Metaphor Identification Procedure (MIP) developed by the Pragglejaz Group (2007), which states that, considering the context of each text, researchers should look for words employed with a meaning that differs from their more basic, concrete sense. After identification, metaphors were grouped according with their corresponding Source Domain: water-related metaphors were grouped under the label WATER; war-related metaphors were labeled WAR, etc. From these groupings, the data were analyzed and compared.

4. Results

Considering these steps, we identified 108 metaphors directly linked to lexical items from the Target Domain IMMIGRATION in the FSP corpus, and 510 metaphors in the NYT corpus. The most frequent metaphors were similar: in both corpora, immigration was mostly described as a BODY OF WATER entering a CONTAINER and as a WAR. The former is similar to findings from other studies concerning water metaphors and immigration, whereas the latter is connected with the political context of 2018. In the next sections, we will present a discussion on these metaphors, followed by some reflections on their possible motivations and implications.

4.1 Water metaphors

WATER metaphors compose the predominant mapping in the FSP corpus, with 47 instances, and are one of the most frequent in the NYT as well, with 145 instances. The examples are similar to those studied by Charteris-Black (2006) and Hart (2010), in which migrants are represented as a shapeless body of water entering a container – sometimes calmly, sometimes violently. Most of the examples from Brazilian data talk about a 'flow', 'inflow' or a 'wave' of migrants, as in the examples below:

(1)

Uma nova <u>onda de imigrantes</u> haitianos está chegando ao Brasil. (FSP – 01.07.2018) A new <u>wave of Haitian immigrants</u> is arriving in Brazil.

(2)

[...] o aumento do intenso **fluxo** de imigrantes, especialmente vindos do Haiti e da Venezuela. (FSP – 11.03.2018)

[...] the increase of the intense $\underline{\mathbf{flow}}$ of immigrants, especially those from Haiti and Venezuela.

Metaphors such as 'flow' and 'inflow' are not necessarily employed with a negative evaluation, but they are often regarded as a dehumanizing way of referring to migrants as a shapeless entity without motives or volition (Hart, 2010). Also, the combination of metaphors that represent migrants as bodies of water and countries as containers can build an image of immigrants as potentially dangerous entities that should be controlled (Charteris-Black, 2006).

(3)

[...] no estado, que enfrenta descontrole nas finanças e na segurança pública, além de <u>tensão</u> <u>com o fluxo de imigrantes venezuelanos</u> [...] (FSP – 11.12.2018) [...] in the state, which deals with uncontrolled finances and public security, as well as <u>tension with the inflow of Venezuelan immigrants</u> [...]

Example 3 is a particularly interesting illustration of how water-container metaphors might be problematic, as the 'flow of immigrants' is responsible for a 'tension' in the 'container'. Political actors and the media often mobilize this type of representation in order to legitimize restriction policies on immigration (Montagut & Moragas-Fernández, 2020). Many similar metaphors were found in the NYT corpus, as illustrated in the examples below.

(4)

[...] and the <u>rising tide of immigration</u> was making America a more diverse place. (NYT – 29.03.2018)

(5)

[...] falsely charging that they support <u>migrants to stream</u>, unchecked, into the country. (NYT - 25.10.2018)

Example 4 presents an interesting case in which the author talks about a "rising tide of immigration". This metaphor could be perceived as negative, since tides represent an event in which the body of water 'grows', possibly causing problems to those on the shore. However, the last part of the sentence highlights a positive aspect of immigration, i.e., that it is making America a more diverse place. Therefore, even though the sentence presents a positive aspect of immigration, the metaphor points to a negative interpretation of it as potentially disturbing. The metaphors in examples 1 to 5 are frequent in both corpora, reinforcing that to talk about migrants as BODIES OF WATER is a common practice in media (Charteris-Black, 2006; Ferreira, Flister & Morosini, 2017; Ferreira & Flister, 2019). However, extreme metaphors (Hart, 2020) were also found in the corpora.

(6)

Corre-se o risco de que a nação dissolva como açúcar em um como de leite, espremida entre a **avalanche** imigratória, a monstruosa espoliação fiscal [...] (FSP – 19.05.2018) There is a risk that the nation will dissolve, like sugar in a glass of milk, squeezed between the <u>immigration **avalanche**</u>, the monstrous tax despoliation [...]

(7)

[...] and to stop the <u>flood of illegal immigrants</u>, drugs, contraband and crime coming across the [...] (NYT - 18.06.2018)

Example 6 is a clear instance of an extreme metaphor, describing immigrants as an avalanche, i.e., a natural disaster (Charteris-Black, 2006; Musolff, 2011). 'Flood', in example 7, which is one of the most frequent metaphors in the NYT corpus, also fits that category. Examples 8 and 9 represent migrants similarly, as water forming puddles or 'swamping' the people who were already in the country.

(8)

Queremos evitar o <u>empoçamento de imigrantes</u> em uma cidade como Pacaraima [...] (FSP – 23.08.2018) We want to avoid the **puddling** of immigrants in a town like Pacaraima [...]

(9)

They felt <u>swamped by waves of immigration</u>, frustrated by economic stagnation and disgusted [...] (NYT - 05.03.2018)

Both examples 8 and 9 describe immigration as a phenomenon that could negatively affect the lives of the country's population. It could be argued that, depending on the context, 'puddling' would not be considered a negative metaphor. However, the discussion in example 8 is related to the situation of Pacaraima, a Brazilian town of around 18,000 people which has been receiving thousands of Venezuelan migrants since 2018 (Bassi, 2021). Considering this context, 'puddle' might be considered as muddy water in the ground that disturbs those who walk on that space, and thus it would be ideal to have it removed, as the claim "we want to avoid the puddling of immigrants" points out. Then, the meaning of 'puddle' is closely related to that of 'swamping', which is particularly negative. Therefore, both can be defined as extreme metaphors (Hart, 2020). WATER metaphors are very similar in the immigration debate in the US and Brazil, both in terms of their quantity and how they are used. However, the NYT data present more variety and a higher number of extreme metaphors. 'Flood', for instance, does not occur once in the FSP data, whereas it is one of the most frequent metaphors in the NYT corpus.

The total number of extreme metaphors in the NYT data were 20, whereas there were only three in the FSP data. Since extreme metaphors can be identified as metaphors that are "obviously offensive, inflammatory or derogatory" (Hart, 2020, p. 229), the higher frequency in the NYT data points to a more explicitly ideological language use. The reason for this might be simple: immigration is a complicated subject in the US and mainstream media has not been traditionally in favor of welcoming migrants, as previous studies have shown (Charteris-Black, 2004; Ferreira & Flister, 2019). In Brazil, one might expect that traditional media would behave similarly, considering that the Brazilian population tends to have a negative view towards certain groups of immigrants, specially those of non-white origins (Mundim & Rodrigues dos Santos, 2019), such as Haitians and Venezuelans, who form the major migration movements in the last decade. However, the fact that immigration is still a minor political issue in Brazil might motivate more neutral language in traditional media. Still, our analysis shows that the domain of WATER is particularly productive for describing immigration in both countries.

4.2 War metaphors

Other than WATER, another relevant finding concerns the domain of WAR. In the FSP corpus, 18 war metaphors were found, and in the NYT corpus there were 162. Using war metaphors to talk about immigration is not a new practice, as many studies show that migrants are often portrayed as INVADERS (Musolff, 2011; Hart, 2020). However, the metaphors in our corpus describe a different scenario, motivated by the political context of the US in 2018. In both corpora, WAR metaphors were recurrent in discussions about Trump and his speeches and policies towards migrants.

(10)

[...] Trump, que se elegeu prometendo <u>combater a imigração ilegal</u>. (FSP – 20.06.2018) [...] Trump, who got elected promising he would <u>fight illegal immigration</u>.

(11)

[...] exploração econômica e a <u>ofensiva contra a imigração</u> marcam o <u>front</u> interno do trumpismo. (FSP – 13.01.2018)

[...] economic exploitation and the <u>offensive against immigration</u> mark the internal <u>front</u> of trumpism.

In the FSP corpus, it is important to note that these metaphors were employed to talk about Trump and immigration in the US, issues that have little connection with most Brazilians' everyday life. It should also be noted that among data there were 59 translations, since some news in Brazilian online newspapers are actually translations of articles in English. Since the goal of this work is to study metaphor production in Portuguese, the results obtained from translated texts were excluded from the analysis.

In the NYT corpus, WAR composes the most frequent and diverse mapping. A previous study on news from the New York Times in 2015, i.e., prior to Trump's election, does not show any records of war metaphors to discuss immigration (Ferreira, Flister & Morosini, in press), suggesting that this specific set of metaphors has become common after the 2016 election, in which immigration was one of the most debated issues. Therefore, what our concordance analysis shows is that war metaphors are used to describe the relationship between Trump – or his supporters – and migrants, as examples 12-15 show.

(12)[...] were reactions to Trump's <u>war on immigration</u>. (NYT – 10.10.2018)

(13)

[...] coming midterm elections as a **<u>battle</u>** over immigration and race. (NYT – 23.10.2018)

(14)

Instead on Tuesday, he opted to <u>blast immigrants</u> and the country's immigration laws [...] (NYT - 05.04.2018)

(15)

President Trump escalated his <u>verbal fusillade against immigrants</u> this week by announcing [...] (NYT – 04.04.2018)

These metaphors refer mostly to Trump, although there are references to other Republican politicians who share his views on immigration. It is possible then to describe the emergence of a distinct scenario that is highly motivated by the political climate during Trump's administration: a war in which there is a fight/battle between Trump and the immigrant community of the US. In most cases within this scenario, Trump is placed in the position of agent – the attacker – whereas migrants are described as victims of his violent assaults. These metaphors pose a significant change to the way immigrants are usually portrayed in media: all metaphors indicate a more humanizing

representation that shows them as victims in a war waged by Trump, his allies, and political supporters.

In 2018, Jair Bolsonaro, a notorious Trump supporter, became president of Brazil. It was expected that he would adopt Trump's ideas on immigration, which he did on a smaller scale. Despite similar declarations, perhaps knowing that the Brazilian population does not usually engage in discussions concerning immigration, Bolsonaro chose to target other minorities, e.g. LGBT people and indigenous populations. Immigration remained a minor issue for most Brazilians, which is reflected in the fact that most of the news on this topic were centered on the US situation.

It is still interesting to notice how metaphors were mobilized in order to describe the relationship between extremist politicians and a minority group. Flusberg, Matlock, and Thibodeau (2018) show how war metaphors are prolific in political debates because of their cognitive effect and of how easy it is to describe any dispute as a war. The authors also show that war metaphors can evoke different emotions depending on the context they are used. For instance, the discussion about the War on Drugs in the US employed war metaphors to elicit fear of the consequences of drug use in US-American society, while war metaphors in the War on Poverty debate caused people to understand the importance of eliminating poverty without dehumanizing the poor (Flusberg, Matlock & Thibodeau, 2018). Considering that the data consistently portray Trump as the attacker and migrants as victims, I argue that the WAR metaphors in this data are employed to criticize his extremist stance on immigration, showing a more sympathetic view towards migrants.

4.3 Goods/commodities metaphors

Metaphors that portray migrants as GOODS/COMMODITIES were the third most frequent in the FSP corpus, with 8 instances, and an important mapping in the NYT corpus, with 26 instances. This amount might seem small, but that is because water and war metaphors dominate most of the data. In this mapping, migrants are portrayed as GOODS/COMMODITIES which can be 'delivered in quotas' and 'distributed' in the countries that receive them, as in examples 16 and 17.

(16)

O advogado ressalta, porém, que o Japão está criando <u>cotas de imigração</u> para trabalhadores qualificados. (FSP – 02.09.2018)

'The lawyer claims, however, that Japan is creating <u>immigration **quotas**</u> for skilled workers.'

(17)

<u>Immigrants are assets</u> to our community and bring diversity for our 'free' nation. (NYT - 25.01.2018)

About example 17, one could argue that 'asset' is a positive metaphor that aims at highlighting the good side of immigration. Even if this is true, referring to migrants as assets still dehumanizes them. As Musolff (2011) argues, this type of metaphor reveals a trend of viewing social issues in terms of economic phenomena. Once again, migrants are represented not as human beings, but as objects without control or volition: 'assets' who can be 'distributed' or 'received in quotas' by governments. Another consequence of representing migrants as GOODS/COMMODITIES is that it defines the immigration debate on the basis of capitalist trade. Thus, representing immigrants as commodities presupposes that they can be discussed in terms of the value they could bring to a community or in terms of the 'cost' of welcoming them (Arcimaviciene & Baglama, 2018).

5. Final remarks

War metaphors are prolific in political debates, as they have been for a long time (Flusberg, Matlock & Thibodeau, 2018). In immigration discourses, the INVADER metaphor, which derives from WAR and portrays migrants as invaders, has also been found in several studies (O'Brien, 2003; Taylor, 2021). In the context of Trump's administration, however, it is interesting to notice how they are used to set a distinct scenario in which there is a conflict between Trump and the migrant community of the US. The emergence of these metaphors in both Brazilian and American news shows how metaphors can be used to frame complex political issues. Therefore, this particular use of WAR metaphors – employed, as I argued, to criticize Trump's stance on immigration – might be seen as a reaction to his extremist discourse.

Water metaphors share many similarities in both corpora. However, in the NYT corpus, extreme water metaphors are very frequent, whereas they are scarce in the FSP corpus. This might be motivated by the political context concerning immigration, which is very different in Brazil and in the US. Finally, GOODS/COMMODITIES were also employed similarly in both corpora, presenting a dehumanized picture of immigrants and supporting previous studies on metaphor and immigration. Although comparative, cross-cultural studies usually focus on differences in metaphor use, our analysis shows that most of the data is similar for both corpora, which can be also an interesting finding (Taylor, 2013). In this study, we believe that the similarity between languages can be explained by the following facts: i) immigration is not as relevant in the Brazilian public debate as it is in the US; as a result, many of the Brazilian news discuss issues related to the American or European political contexts; ii) the political/cultural influence of the US in the Global South might also mean a linguistic/discursive influence.

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Complimenting Behaviour on Instagram: The Case of Bookstagram

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Author's Note

I would like to thank Professor Emerita Maria Sifianou and the two anonymous reviewers for their valuable comments.

There are no conflicts of interest to disclose.

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Abstract

In the Instagram in-group community of #bookstagram, which has recently attracted scholarly interest, photographs provide the impetus to various forms of interaction, one of which is complimenting. This study was based on the hypothesis that compliments affect the co-construction of in-group identity. I combined qualitative and quantitative methods to analyse a corpus of data to examine how compliments in Greek are constructed in the socio-digital context. The data was retrieved from 161 posts uploaded within a timespan of six months by three remarkably active Greek users. Additionally, a short questionnaire was distributed to explore the participants' perceptions on the role of complimenting within this community.

The results reveal that the affordances of Instagram as a platform and the bookstagram community itself affect the construction and the rate of occurrence of compliments; they tend to be formulaic and are more frequently manifested than comments which do not convey or express any sort of complimenting attitudes. Direct compliments (verbal, non-verbal or a combination of both forms) appear to be more recurrent than indirect complimenting strategies. As for the main topics, they involved either possessions or performance. Since the complimenters are members of the bookstagram community, the function of compliments in the virtual space of Instagram appears to establish a type of digital solidarity, which serves as a requirement for the construction of in-group identity.

Keywords: compliments, computer-mediated discourse, Instagram, bookstagram, identity construction

1. Introduction

Within social networking sites such as Instagram, virtual groups similar to offline social units are formed fostering asynchronous communication with bookstagram being a representative case. In the digital environment of Instagram in particular, photographs provide the impetus to conversation in various forms, one of which is complimenting. Compliments are "a speech act which explicitly or implicitly attributes credit to someone other than the speaker" (Holmes, 1988: 446) and are perceived as "overt expression[s] of praise and admiration" (Sifianou, 1992: 52), a way to communicate one's "favourable judgement or opinion [by] saying something nice to another individual" (Wolfson & Manes, 1980: 399). Since compliments appear to be "culturally specific" (Sifianou, 1992: 55; 2001: 391), their nature in the context of the contemporary digital culture seems a rich topic for investigation. Apparently, the virtual-in group community of bookstagram has recently attracted scholarly interest (Jaakkola, 2019; Thomas, 2021). However, the role of complimenting strategies on bookstagram seems to have eluded the academic radar.

Building on previous work on complimenting, this study seeks to examine the construction of compliments in Greek in the digital context and more specifically, within an in-group virtual community, as there is a paucity of research on online complimenting behaviour. Based on the relational nature of language, i.e. "people use [it] to shape their identities vis-à-vis their interactional partners" (Locher, 2006: 251), I hypothesise that compliments affect the construction of in-group identity in the socio-digital environment and I address the following research question: how are compliments in Greek constructed within the in-group Instagram community of bookstagram?

The paper is divided into six parts. Section 2 offers a brief overview of Instagram and bookstagram. Then, section 3 briefly presents previous literature on complimenting whereas the following section focuses on the data, methodology, and ethical issues. Section 5 discusses the findings concerning the frequency of compliments (5.1), their forms (5.2), topics (5.3), the complimenters and the function of complimenting in an in-group community (5.4) before concluding with final remarks and pointing to future research (section 6).

2. Instagram and #bookstagram

Instagram is a social media platform accessible through an image/video-sharing application in which users interact with others by sharing (audio)visual content either accessible to anyone with an account or privately to their *followers*, i.e. their network of friends. Instagram, similar to other social networking applications, has its affordances: filters, hashtags, location share, 'heart'/'like' and follow buttons, messaging, uploading short video available for 24 hours (stories), the option to advertise, etc. Instagram users interact with each other either by directly leaving a comment on posts they are interested in or by praising them through the medium-specific affordance, i.e. 'heart' button. These affordances facilitate communication between posters and commenters within various virtual communities.

A typical example of an Instagram community is #bookstagram, which can be realised either as a type of online affiliation that "orient[s] around shared interests" (Tagg, 2015: 165), i.e. love of books, or as a "hashtag community formed through *ambient affiliation*" (ibid. drawing on Zappavigna, 2011). *Bookstagrammers*, as the in-group members like to name themselves, express themselves creatively by sharing photos of the book they are currently reading. Both the image and the book review included in the caption function as a type of stimulus to trigger interaction between users in the form of comments or compliments. By exploiting varied backgrounds and objects to

make their posts aesthetically pleasing to their target audience, bookstagrammers have been criticized for fetishising the book and reducing it to nothing more than a lifestyle accessory (Connolly, 2018) as the narcissistic Generation Y is determined to be a part of the 'attention economy' (Thomas, 2021). Publishing houses, marketing companies even authors promote new releases through #bookstagram and use different hashtags to attract readership, who interact through compliments underneath the photo-posts.

3. Studies on complimenting behaviour

Complimenting has been mainly examined through the prism of face-to-face interaction. In the realm of politeness, compliments can be perceived as a positive politeness strategy in Brown and Levinson's (1980) terms or as an intrinsic FTA in cases when the speaker might express envy towards the addressee (ibid.; Holmes, 1988). Wolfson and Manes' (1980) seminal work on compliments in American English has instigated further research on the topic in various sociocultural contexts (see, Lewandowska-Tomaszczyk, 1989 – Polish; Sifianou, 2001 – Greek; Yu, 2005 – Mandarin Chinese) as they were the first to observe high formulaicity in addition to solidarity being the main function of complimenting. Regarding the formulaicity of compliments in Greek in particular, Sifianou (2001: 399) proposed a distinction between routine and non-routine compliments to pinpoint differences in form and function emphasising the dependence on "the specific context in which they occur", whereas Altani (1990) observed a group of syntactic patterns in the structure of compliments. Offering compliments has been also identified as a sex-preferential politeness strategy since complimenting appears to be used more frequently by women than men (Holmes, 1988; Wolfson, 1986), especially when they are about appearance (Rees-Miller, 2011).

At the other end of the spectrum, complimenting behaviour in the socio-digital environment has not received much attention until recently. Research has addressed compliments in English, Spanish, and Persian on Facebook. Similarities with face-to-face interaction have been observed concerning formulaicity, the predominant topic of appearance, the gender of both complimenters and complimentees, and solidarity as the most prominent function of complimenting (Placencia & Lower, 2013). However, research on responses to compliments in English are scarcer in the digital context of Facebook (Placencia et al., 2016) or the virtual gaming environment of Second Life (Cirillo, 2012) than in the offline world with exceptions like Maíz-Arévalo's (2013) study exploring responses to Facebook compliments. This illustrates the extent to which complimenting is socioculturally context-bound as the complimenters' cultural values affect their linguistic choices both at the grammatical and lexical levels (Maíz-Arévalo & García-Gómez, 2013). One recent study on the topic is by Placencia (2019), who examined complimenting on Instagram within a group of teenage girls from Ecuador. Compliments within this particular context are used to express support to their friend's identity and maintain their social bonds. Compliments might be brief, but they are emotionally loaded: through multimodality, prosodic orthography, or paralinguistic restitution as supportive techniques they manifest 'high emotional involvement' (ibid.: 110-11). Using this theoretical background, I will attempt to investigate the construction of compliments in Greek and their role in this specific digital environment.

4. Data, methodology and ethical issues

Since the focal point was the virtual community of bookstagram, I selected three Greek bookstagram accounts based on the number of their followers to retrieve as many compliments as possible by taking into account that popularity is interrelated with the total amount of comments and consequently, the compliments. The participants were drawn from my personal Instagram *following list*, albeit to minimize bias I had engaged in minimum contact with them in the recent

two years. Following research ethics procedures (British Psychological Association, 2021), as a first step, I contacted them to gain written consent to access the content uploaded (see Appendix B) and then, they were assigned an alphanumeric code, i.e. B1, B2, B3. While the letter stands for their role, as *bookstagrammers*, the number was given according to alphabetical order of their Instagram username. As for the complimenters, they were also given an alphanumeric code (C1, C2, etc.) to identify the possibility of regular complimenters.

Then, a database was formed, which included the photos uploaded by each participant, on which date, the number of 'hearts', the number of compliments and other types of comments, and lastly, the exact content. To examine the frequency and the formulaicity, they were further classified (see 5.1 - 5.2). Furthermore, due to time limitations, it seemed sensible to focus on a specific time span for my corpus to be manageable. Hence, only photos uploaded between the 1st July and the 19th December 2019 were examined. Although there were 188 photos in total, 27 did not receive compliments, and as a consequence they were excluded from the study. As illustrated in table 1 below, this resulted in 634 comments including 459 compliments, and 42,667 likes which were elicited from 161 photos whereas 209 people were involved in the production of compliments – excluding those that had reacted with 'hearts' alone. Although the database functioned as a reference, the verbal comments were further uploaded on Sketch Engine (https://www.sketchengine.eu) to investigate the occurrence of certain lexical items, any syntactic patterns and test the possibility of formulaicity. Apart from the quantitative analysis, I distributed a short questionnaire (Appendix A) to the three participants to qualitative analyse their answers and

explore their perception on the role of complimenting behaviour in relation to #bookstagram.

•	Participant	•	Total posts	•	All comments	٠	Compliments	•	'Hearts'
•	B1	•	97	•	396	•	284	•	28,961
٠	B2	٠	36	٠	157	•	116	٠	8,070
•	B3	•	28	•	81	•	59	•	5,636
٠	Totals	•	161	٠	634	•	459	٠	42,667
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Table 1 – Comments and compliments

When collecting data from cyberspace, ethical issues should not be disregarded. Instagram might be a web platform, but its users seem to expect a type of privacy and they should be informed when their content is used for research. In this case, the subjects provided the researcher with written consent in which they were informed that they could withdraw from the research at any given point. Parent/guardian consent was not necessary as none of the subjects was under 18 years old whereas the alphanumeric codes were used to safeguard the participants' anonymity as previously mentioned above. Additionally, it should be noted that the data used were not classified as sensitive content according to the Terms of Use of the social media platform. Lastly, following the guidelines of the British Psychological Association (2021), data was not paraphrased. However, the English translation presented here is as close to the original meaning as possible.

5. Data Analysis

5.1. Frequency of Compliments

As each post was examined, three different tallies were taken regarding the total comments, the compliments, and the 'hearts'. Although 'hearts' being one of the many affordances of Instagram are an explicit way to pay a compliment (5.2), I did not include them in the second tally mainly for two reasons: first, I wanted to have a more transparent view of the verbal compliments occurring in

the comment section to investigate their frequency among other comments. Second, this type of affordance is not language-specific since my focus was specifically on Greek.

As will be seen below, table 2 (previously referred to as table 1) depicts the frequency of comments, compliments, and 'hearts'. The data revealed that the rate of occurrence of 'hearts' is outstandingly higher in comparison with the total number of compliments suggesting that this specific Instagram affordance facilitates complimenting effortlessly (Placencia, 2019) due to its practicality and vagueness corresponding to Facebook 'likes' (Placencia & Lower, 2013). Overall, 161 posts elicited 42,667 'hearts' and 459 compliments; this corresponds to 226 'hearts' and 2.4 compliments per photo. Nonetheless, I should note that 87 out of 459 compliments were in English paid by non-Greeks.

٠	Participant	٠	Total posts	٠	All comments	٠	Compliments	٠	'Hearts'
•	B1	•	97	•	396	•	284	•	28,961
٠	B2	•	36	٠	157	•	116	٠	8,070
•	B3	•	28	•	81	•	59	•	5,636
٠	Totals	٠	161	٠	634	٠	459	•	42,667

Table 2 – Frequency of compliments

The variation in the activity of the participants seems to be interrelated with the number of comments and compliments found in their posts. The frequency of content uploaded affecting the recurrence of compliments appears in line with previous research on complimenting on Facebook (Placencia & Lower, 2013). However, this might not be linked to their level of participation in the social-digital environment only as all three share the role of '[content-] creator' (Li et al., 2007: 4), but also to the number of followers each participant has.

5.2. Form of Compliments

Apart from the 'hearts', the basic complimenting strategies identified in my corpus were direct, indirect, and non-verbal compliments as can be seen in Table 3 below. A similar distinction between direct and indirect compliments was presented by Placencia and Lower (2013). The difference between direct and indirect compliments lies in how explicit or implicit the compliment was – direct compliments can be either formulaic or the phrase used as a compliment is very common in Greek, therefore they would be easily identified as compliments. Additionally, with the term *non-verbal* I refer to compliments that include solely the use of emoticons. Although 'hearts' are non-verbal as well, they were perceived as a separate category; since the 'heart' button is an Instagram affordance, similar to the Facebook 'like' button, 'hearts' cannot be found in the comment section. On the other hand, non-verbal compliments are an example of the expressive language use in internet-mediated discourse with users opting to post a comment instead of the fast and frugal 'heart'. Between direct and indirect, I observed that in agreement with data on digital complimenting (Eslami et al., 2019: 77; Placencia & Lower, 2013: 634), direct ones were more frequent and that similar to this earlier research, the combination of verbal and non-verbal compliments (32%) appeared slightly more frequently than non-verbal ones (23.9%).

Total	Direct	Indirect	Non-verbal	
372	230	32	110	
	Table 3 – Form and frequency			

Although the focus was on Greek, I detected a small portion of Greek users code-switching between Greek and English, as illustrated in example 1. This might occur due to the asynchronous nature of CMD that allows creative use of code-switching (Androutsopoulos, 2013).

(1)

C104: *Τι ωραία, fuzzy, Χριστουγεννιάτικη φωτογραφία!* What a nice, fuzzy, Christmas photo!

Similar to the 'likes' in the context of Facebook (Placencia & Lower, 2013), on Instagram the 'heart' affordance functions as an online formula; however, it is not language-specific. Nevertheless, online direct compliments in Greek appear to be formulaic to some extent as the following syntactic patterns and their variations were identified:

ADJ NP 1a. (Very) ADJ NP 1b. (What) ADJ NP How ADJ NP (V) NP ADJ

Additionally, figure 1 depicts the frequency of these patterns with 'ADJ NP' being the most recurrent. Formulaicity was also highlighted by the recurrent use of adjectives, such as $v\pi\epsilon\rho o\chi o\zeta$ 'wonderful', $\omega\rho a i o\zeta$ 'nice', $\tau\epsilon\lambda\epsilon\iota o\zeta$ 'perfect' or $\alpha\gamma\alpha\pi\eta\mu\epsilon\nu o\zeta$ 'favourite', modifying $\varphi\omega\tau o\gamma\rho\alpha\varphi i\alpha$ 'photo' or $\beta\iota\beta\lambda io$ 'book' whereas verbal constructions including verbs like $\alpha\gamma\alpha\pi\phi$ 'love [it]'/ μov $\alpha\rho\epsilon\sigma\epsilon\iota$ 'like [it]'/ $\lambda\alpha\tau\rho\epsilon\nu\phi$ 'adore [it]') were less regularly used as seen in figures 2 and 3 below.



Figure 1 – Formulaicity in compliments



Figure 2 – Frequency of adjectives



Figure 3 – Frequency of verbs

On the other hand, indirect compliments are non-formulaic as they are creatively constructed; yet they were scarce in my corpus contrary to data on face-to-face interaction (Sifianou, 2001). For instance:

(2)

C63: Ωω κειμήλιο Oh, this is an heirloom

In the bookstagram community photos with old books, hardbacks, or eye-catching dust jackets attract more comments, compliments, and likes. In this case, B3 was complimented on having in their possession an old book, which connotes that the book is priceless and therefore, that B3's book collection is of incalculable worth.

(3)
C78: λέλουδο στο λέλουδο
flowers upon flowers

B1's account has a vintage vibe from the filters they use to the props (objects appearing in the background which give a sense of dimension to the photo) and backgrounds in their photo-posts. In this particular photo, B1 was featured holding a book and a flower. By calling someone ' $\lambda ov\lambda ov \delta i$ ' in Greek you compliment their physical appearance and beauty, whereas the older variation

 $\lambda \epsilon \lambda ov \delta o'$ gives a vintage note to the compliment. The complimenter instead of focusing on the book chooses to praise B1's physical characteristics. Even though it might be not on book-related content, it is addressed to a member of #bookstagram.

(4) C156: Ελα διακόσμησε το σπίτι μου! You should decorate my place!

Lastly, the above compliment was retrieved from one of B2's posts, where they had posted a photo of their book corner. The complimenter admires the organisation and decoration skills of the poster expressing it through implicit flattery. As most compliments were formulaic, it was expected that indirect – and, consequently, creative – compliments would be rare in the corpus.

5.3. Topic of Compliments

Since the corpus under examination consists entirely of bookstagram posts, all photos retrieved depict books. Instagram users may exploit props to add context to the background and visually complement the book they present. In a relatively small portion (12.2%), bookstagrammers appear in the photo as well, exposing themselves to their followers. Based on what was featured in the photos the topics of compliments varied.



Figure 4 – Topics of compliments

Figure 4 illustrates the topics of compliments with the most prominent category being that of possessions, i.e. books, followed by performance, i.e. the photography skills or the book review. This contrasts with previous research either on face-to-face interaction or digital communication as in both cases appearance seemed to be the predominant category (Holmes, 1988: 455; Yu, 2005: 108 – offline; Placencia & Lower, 2013: 636 – online) whereas in my data, compliments on appearance were the fourth most frequent. Unlike previous studies on complimenting behaviour, compliments on pets were less recurrent in the socio-digital context of bookstagram. What should be noted is that a small number of compliments could not be classified into a specific category; hence, I labelled them as 'other' based on Rees-Miller's (2011: 2675) classification, who included in the 'other' category compliments that their topic either could not be identified or they did not seem to fit in the topics of appearance, performance, possessions, and personality. Let me illustrate this category with example 5 below. Although 'wow' expresses astonishment and admiration, it is difficult to pinpoint the referent of the praise as it could be the photography skills, the possession or even the appearance. For this reason, its topic was classified as 'other'.

(5) C68: Ováov!!! Wow!!!

The findings further suggest that the topic of compliments is relevant firstly to the virtual community (example 6) and secondly, to the medium since it is more likely for photos with book reviews included in the caption to attract compliments (example 7), as can be seen below:

 (6) C49 : Τι υπέροχο εξώφυλλο ♥φαντασίας είναι;
Amazing cover ♥is it fantasy?

(7)
C58: Υπέροχη κριτική!!! Μια αναγνωστική πρόταση που θα ακολουθήσω
Lovely review!!! I'll definitely follow this recommendation

Additionally, in example 8, the complimenter refers to the poster's photography skills. This is not arbitrary considering that Instagram focus is primarily on the visual element.

(8)
C157: Αυτή είναι μια αζιοζήλευτη φωτογραφία για τα δεδομένα του ελληνικού bookstagram
What an enviable photo to found in Greek bookstagram

According to the findings, the main topics found in my corpus were predominantly on performance and possessions, whereas appearance was the third most recurrent category. Compliments on pets were scarcely found as the members of this Instagram community are expressing their interests in books – pets if appearing are complementing the photo. A small portion of compliments could not be classified into the aforementioned categories, therefore, they were included in 'other'.

5.4. Complimenters and Function of Compliments

Similar to compliments "establish[ing] a degree of rapport" (Wolfson & Manes, 1980: 399) in faceto-face interaction, in an in-group virtual community, the social function of complimenting is to establish a type of digital solidarity between regular complimenters and complimentees as it is part of the norms of the virtual group. This view was unanimous and evident in all three participants' responses on why they believe users compliment their posts as illustrated below:

B1: Στην bookstagram κοινότητα είναι πιο εύκολο να σχολιάσεις γιατί μπαίνει στην μέση και το βιβλίο οπότε πολύ πιο εύκολα θα αφήσεις σχόλια σε κάποιον που δεν ξέρεις αλλά σου

αρέσει το περιεχόμενο του. Τα σχόλια γίνονται από άτομα που αλληλεπιδρούμε συστηματικά! στο bookstagram τα άτομα ανήκουν στην κοινότητα και γι αυτό είναι πιο ευκολο και συχνό να αφήνουν σχόλιο καθώς υπάρχει ο κοινός παράγοντας το βιβλίο!

"It's easier to leave a comment on a bookstagram post by someone you don't really know in person because you like their content. Those who regularly interact with each other are the ones who will comment! it's easier to leave a comment since the community is built on shared interests, that is books!"

B2: επειδή ειλικρινά αρέσει η φωτογραφία, η αισθητική της ανάρτησης,το βιβλίο που υπάρχει στη φωτογραφία(μιλώντας για bookstagram account)ή τα captions "cause they really like the photo, the aesthetics, the book(when it comes to bookstagram accounts) or the captions"

B3: Για να ανταποδώσεις συνήθως βάσει του ρόλου σου στη κοινότητα. Τουλάχιστον στην πλειοψηφία

"To reciprocate [the compliment] according to your role within the community. At least, most of them [act accordingly]"

In addition to formulaic compliments further asserting solidarity (Manes & Wolfson, 1980: 124), the creative use of compliments is a sign of awareness of the in-group values and norms (Eslami et al., 2019: 87). On Instagram and #bookstagram in particular, the photo-post "acts as a kind of summons inviting some sort of" (Placencia & Lower, 2013: 618) compliment from in-group members to create a friendly atmosphere and enhance rapport within the bookstagram community. These conditions reinforce the notion of support and solidarity, which, according to Tzanne (2019: 61), are expressed through positive opinions and are prerequisites to the construction of in-group identity as this lies at "the heart of discursive processes" (Garcés-Conejos Blitvich, 2013: 16-17). Similarly to that, complimenting strategies on bookstagram may suggest that users/bookstagrammers acknowledge compliments as an implicit way of communicating within the virtual book-oriented community of Instagram.

6. Conclusion and final remarks

In an in-group digital community, compliments are more recurrent than other types of comments with the 'heart' function, in particular, being the most frequent complimenting strategy due to its effortlessness. Complimenting in Greek appears through different forms, i.e. verbal, non-verbal, and a combination of both. With respect to my findings, a further distinction of verbal compliments was made as direct and indirect compliments were manifested in my data with the first being formulaic to some extent and occurring more often. Concerning the topics of compliments in the Instagram context, they do not fall into the same categories as in face-to-face interaction; hence, the most prominent were of possessions and performance. As for the complimenters, the majority was predominantly Greek members of the bookstagram community regularly paying compliments. Therefore, the function of online complimenting within virtual communities seems to be the establishment of digital solidarity as a requirement for the construction of in-group identity, thus, verifying my hypothesis. Nonetheless, this small-scale study focused on a limited number of participants and was not concerned with responses between bookstagrammers or the gender of the complimenters. A combination of questionnaires with interviews of more bookstagrammers might have given a more holistic view of this Instagram community.

Online complimenting behaviour should not elude the academic radar, as future research is needed to investigate compliments and responses on different social networking environments or to cross-culturally analyse them in the digital context.

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Appendices

Appendix A

Questionnaire in Greek (English translation below)

I) Το παρόν ερωτηματολόγιο δημιουργήθηκε στα πλαίσια του μαθήματος 'Language and Culture', του μεταπτυχιακού προγράμματος 'Linguistics: Theory and Applications' του Εθνικού και Καποδιστριακού Πανεπιστημίου Αθηνών. Αφορά την εκπόνηση μεταπτυχιακής ερευνητικής εργασίας με θέμα "Complimenting behaviour on Instagram: The case of Bookstagram". Οι απαντήσεις σας θα παραμείνουν ανώνυμες, και ως εκ τούτου θα χρησιμοποιηθούν αποκλειστικά για τους σκοπούς της ερευνητικής μου δραστηριότητας. Για οποιαδήποτε απορία, μπορείτε να επικοινωνήσετε στην ηλεκτρονική διεύθυνση: cvlachak@enl.uoa.gr. Σας ευχαριστώ εκ των προτέρων για τη συμμετοχή σας, Χαρά Βλαχάκη

II) Παρακαλώ, σημειώστε το Instagram username σας

III) Ερωτήσεις για τους followers σας:

Πιστεύετε πώς υπάρχει κάποιος λόγος που κάποιοι χρήστες σχολιάζουν ή σας κάνουν κάποιο κοπλιμέντο μία φορά μόνο;

Για ποιο λόγο πιστεύετε οι χρήστες αφήνουν κοπλιμέντα κάτω απ' τα posts σας;

Questionnaire in English

I) This questionnaire was designed for the purposes of collecting data for my research entitled *Complimenting Behaviour on Instagram: The Case of Bookstagram.* The study was conducted as part of the module *Language and Culture* of the postgraduate course Linguistics: Theory and Applications at the National and Kapodistrian University of Athens. The answers provided will remain anonymous and will be used solely for the purposes of my research. For further queries, please don't hesitate to contact me at <u>cvlachak@enl.uoa.gr</u> Thank you in advance,

Chara Vlachaki

II) Please, fill in your Instagram username

III) Questions regarding your followers:

Do you think there's a specific reason why some Instagram users leave comments or compliments underneath your posts just once and not on a regular basis? Why do you think Instagram users compliment your posts?

Appendix B

Informed Consent Form in Greek (English translation below)

ΕΘΝΙΚΟ ΚΑΙ ΚΑΠΟΔΙΣΤΡΙΑΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ, ΦΙΛΟΣΟΦΙΚΗ ΣΧΟΛΗ ΤΜΗΜΑ ΑΓΓΛΙΚΗΣ ΓΛΩΣΣΑΣ ΚΑΙ ΦΙΛΟΛΟΓΙΑΣ

ΈΝΤΥΠΟ ΣΥΝΑΊΝΕΣΗΣ ΓΙΑ ΜΕΤΑΠΤΥΧΙΑΚΗ ΕΡΕΥΝΗΤΙΚΗ ΕΡΓΑΣΙΑ Τίτλος Ερευνητικής Εργασίας: Κοπλιμέντα στο Instagram: Η περίπτωση του Bookstagram Ερευνήτρια: Χαρά Βλαχάκη (email: cvlachak@enl.uoa.gr)

Σκοπός της ερευνητικής εργασίας

Είμαι μεταπτυχιακή φοιτήτρια του Τμήματος Αγγλικής Γλώσσας και Φιλολογίας του Εθνικού και Καποδιστριακού Πανεπιστημίου Αθηνών στο πρώτο εξάμηνο των σπουδών του προγράμματος



Γλωσσολογία: Θεωρία και Εφαρμογές. Η εν λόγω εργασία αποτελεί μέρος της αξιολόγησής μου για το μάθημα Γλώσσα και Κοινωνία. Σκοπός της εργασίας είναι η διερεύνηση της συμπεριφοράς των μελών της κοινότητας του bookstagram μέσω των κοπλιμέντων και ποιο ρόλο διαδραματίζουν στην δημιουργία και τη διατήρηση της κοινότητας.

Διαδικασία

Για το λόγο αυτό, θα σας παρακαλούσα να μου παραχωρήσετε ανώνυμα τη συγκατάθεσή σας ώστε να χρησιμοποιήσω τα σχόλια αλλά και τον αριθμό των likes που βρίσκονται στις φωτογραφίες που έχετε ανεβάσει το διάστημα μεταξύ 1^{ης} Ιουλίου και 19 Δεκεμβρίου 2019. Από τις συνομιλίες αυτές μπορείτε να ζητήσετε να παραλειφθούν συγκεκριμένα τμήματα. Τα σχόλια θα μελετηθούν με στόχο την ποσοτική και ποιοτική τους ανάλυση, χωρίς να ταυτοποιείσθε με οποιονδήποτε τρόπο καθώς θα σας δοθεί ένας τυχαίος κωδικός. Επίσης, θα σας ζητηθεί η ανώνυμη συμπλήρωση ενός σύντομου ερωτηματολογίου με στόχο τη διερεύνηση του ρόλου που παίζουν τα κομπλιμέντα στην κοινότητα του bookstagram, έτσι ώστε τα σχόλια/ κοπλιμέντα να μπορούν να αναλυθούν με τον καλύτερο δυνατό τρόπο.

Δημοσίευση δεδομένων – αποτελεσμάτων

Η συμμετοχή σας στην έρευνα είναι εθελοντική και μπορείτε να μην συναινέσετε ή να διακόψετε τη συμμετοχή σας όποτε το επιθυμείτε. Συμμετέχοντας στην έρευνα συμφωνείτε με τη μελλοντική παρουσίαση σε συνέδρια ή δημοσίευση των αποτελεσμάτων της, με την προϋπόθεση ότι οι πληροφορίες θα είναι ανώνυμες και οι συμμετέχοντες δεν θα ταυτοποιούνται με οποιονδήποτε τρόπο. Μόνο ο ερευνητής θα έχει πρόσβαση στα δεδομένα αυτά.

Πληροφορίες

Αν έχετε οποιεσδήποτε ερωτήσεις, ανησυχίες ή αμφιβολίες σχετικά με τον σκοπό ή τη διαδικασία της έρευνας επικοινωνήστε μαζί μου να σας δώσω περισσότερες διευκρινίσεις.

Δήλωση συναίνεσης

Διάβασα το έντυπο αυτό, κατανοώ τις διαδικασίες που θα ακολουθήσω και συναινώ να συμμετάσχω στην έρευνα. Σας ευχαριστώ πολύ για τη συμμετοχή σας.

Ονοματεπώνυμο και Υπογραφή ερευνητή Υπογραφή συμμετέχοντος

Ημερομηνία: __/__/ Ημερομηνία: __/__/__

Informed Consent Form in English

NATIONAL AND KAPODISTRIAN UNIVERSITY OF ATHENS, SCHOOL OF PHILOSOPHY DEPARTMENT OF ENGLISH LANGUAGE AND LITERATURE

CONSENT FORM FOR POSTGRADUATE RESEARCH PAPER

Title: Complimenting behaviour on Instagram: The case of Bookstagram

Researcher: Chara Vlachaki (email: cvlachak@enl.uoa.gr)

Purpose of the research paper

I am a postgraduate student of the Department of English Language and Literature at the NKUA and I'm currently on my first semester of the MA programme *Linguistics: Theory and Applications*. This research paper is part of my assessment for the module *Language and Culture*. The purpose of this research is to investigate complimenting behaviour on bookstagram and its potential role in the construction and maintenance of the bookstagram community.

Procedure

I would like to request for your anonymous consent to use the comments and the number of likes on posts uploaded during the following timespan: 1/7 - 19/12/2019. If you wish to, you can request certain comments or photos to be excluded. I will qualitatively and quantitatively analyse the comments and you will not be identified by any means. Additionally, I will also distribute a short questionnaire to explore the role compliments play in the bookstagram community as to analyse the data with the best possible way.

Publishing data - results

Participation in the research is completely voluntary and you can withdraw at any given point if you wish to. By participating in the research you agree that the data may be used in conference presentations or the research may publish documents related to this study using the data. In case this happens, participants will not be identified and all data shall remain anonymous. Only the researcher will have access to the data.

Further enquires

In case you have any questions regarding the purpose or the procedure of the study, please do not hesitate to contact me.

Consent form

By signing this form, I confirm that I have read the consent form, I have understood the procedure the researcher will follow and agree that my participation in this research project is voluntary. Thank you.

Researcher's name and signature Participant's signature Date: _/_/_ Date: _/_/_



The Early Stages of the Multilingual College Email Corpus (MCEC): A Resource for Researchers and Language Instructors

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Authors' Note

We want to thank Dr. Carmen King de Ramirez and Dr. Julieta Fernandez for their advice and support. We would also like to thank the Organising Committee of the 15th annual Lancaster Linguistics and English Language Postgraduate Conference and the editors of these proceedings. Moreover, we thank all the participants who decided to be part of the MCEC project.

This research was partially funded by the 2019-20 College of Humanities Graduate Student Research Grant awarded to Damian Y. Romero Diaz.

The authors have no competing interests to declare.

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Abstract

Email continues to be one of the most common forms of communication in academia (Savić, 2018). However, available resources for researching academic email language and teaching academic email writing are scarce. We introduce the Multilingual College Email Corpus (MCEC), an ongoing collection of emails at the University of Arizona that contains participant demographics, linguistic background, frequency of email usage, and other information relevant to researchers interested in email language.

The goals of the MCEC project include creating an openly accessible corpus for linguistic research and providing initial pedagogical resources for educators to help students' email writing. In this paper, we reflect on how researchers, instructors, and students can benefit from this corpus. As an illustration, we present a modest qualitative analysis of language accommodation (Giles, 2016) focusing on language choice. Based on our findings, we create a lesson plan and describe two sample Discourse Completion Tasks for the language teaching classroom.

The MCEC team is open to new ideas and welcomes research and pedagogical contributions. Data collection will continue for the foreseeable future, hoping to make this corpus one of the first publicly available corpora of personal email communication in academia.

Keywords: email corpus; language data collection; academic writing; computer-mediated communication; language accommodation

1. Introduction

The Multilingual College Email Corpus (MCEC) is a recently-started monitor corpus of email conversations between students and instructors at the University of Arizona. The corpus texts are accompanied by participant demographic and linguistic background information. We use the word 'instructor' as an umbrella term for all lecturers, teachers, instructors, and anyone teaching a class at a university.

The corpus is currently under construction. However, a sample dataset is already publicly available through the University of Arizona Research Data Repository (*Romero Diaz et al., 2021*). We are currently working on a publicly available de-identified version of the corpus and its accompanying information following open access (Suber, 2012) and FAIR principles (Wilkinson et al., 2016). We believe this corpus will be helpful for language researchers across a wide range of disciplines, and pedagogical purposes.

The MCEC project started as a postgraduate student initiative and is under the supervision of two faculty members of the College of Humanities. Data collection began during the fall semester of 2020, and the corpus currently consists of 202 email conversations or 'chains' containing 515 emails collected from 43 consenting participants (15 instructors and 38 students). An Institutional Review Board (IRB) at the University of Arizona approved the MCEC research protocol during the first half of 2020. We have designed our data management plan to comply with the United States of America Family Educational Rights and Privacy Act (FERPA) and hold up to the ethical standards of the Declaration of Helsinki.

It is not our goal to provide a complete description of the corpus but rather to reflect on the usefulness of this resource for researchers, instructors, and students. To illustrate how email studies would benefit from this corpus, we present a modest qualitative analysis of language accommodation (Giles, 2016), focusing on language choice. We then co-opt our findings to create a lesson plan that instructors can implement in the language teaching classroom.

2. Background

In academia, emails are "still one of the forms of communication consistently used" (Savić, 2018). Some of the practical and educational advantages of using emails as a form of communication between teachers and students include the possibility instructors have of communicating details of class activities, asking about their students' wellbeing, and reminding students about any other upcoming quizzes or tests. For students, email provides additional opportunities to ask for assignment clarifications, communicate excuses, and request lecture clarifications (Weiss & Hanson-Baldauf, 2008). Despite these and other advantages, academic email communication has its pitfalls for students and instructors.

Student emails often fail to follow politeness norms and conventions expected in academic and professional settings (Kim et al., 2016; Shim, 2013). This, in turn, leads to adverse reactions on the part of faculty and can harm their perception of students' personalities (Byron & Baldridge, 2007; Economidou-Kogetsidis, 2016; Hendriks, 2010).

The emails sent by second language (L2) learners to faculty members are noteworthy. In a study of 200 English emails written by Greek students, Economidou-Kogetsidis (2015) found that pragmatic failures caused by high degrees of directness, lack of mitigators, and inappropriate greetings caused emails to be perceived as impolite or as status-incongruent by British English L1 lecturers. The author argues that in these situations, grammatical accuracy, L2 pragmatic competence, and L2

cultural knowledge vis-a-vis culture and power relations present additional challenges for L2 speakers (Economidou-Kogetsidis, 2015). Chen (2006) also maintains that L2 learners face more significant challenges in writing emails to authority figures than their L1 counterparts, as this task requires a high level of competence in pragmatics and sophisticated cultural awareness. Through a longitudinal study, Chen (2006) found that L2 learners' evolving composing competence is related to their changing understanding of the medium of communication, their identity as students, cultural aspects of politeness, and the interactional knowledge of student-professor communication.

A possible explanation for the difficulties of academic email writing is that, as Biesenbach-Lucas, (2007) pointed out, "appropriate models for emails from students to faculty are lacking" (p. 60). For instance, Chen's (2006) longitudinal case study points out that the student "could not imitate the way native speaker students wrote e-mails to their professors since she had no opportunity to read those e-mails" (p.50). We would like to add that most instructors would also benefit from evidence-based email writing resources as they too seldomly have access to other instructors' email communication with students. This view becomes even more apparent when we consider that universities host intercultural communities of students and instructors with many second language users who would benefit even further from appropriate email models. Despite this, there are no publicly available email corpora of academic emails. Such corpora would help develop teaching materials and serve as a reference bank of email models for students and teachers. The MCEC seeks to help bridge these gaps.

3. Corpus design

3.1 Participants

We collect email conversations between instructors and students while they are engaged in a teaching-learning relationship during an academic term. At the University of Arizona, the Spring and Fall academic terms typically last four months (although there are seven-week courses and other modalities), while the Summer and Winter terms typically hold two to five-week courses. Participants can be either instructors or students. Instructors can participate as long as they are actively teaching or helping to teach a class during data collection. For instance, postgraduate students working as teaching assistants and full professors count as instructors under our data collection regime. Students may be undergraduate, postgraduate, or community members as long as they are enrolled in a class at the university, be it in person, online, or hybrid. Apart from these requirements, the only restriction is that participants must be over eighteen years of age.

Through an online questionnaire, we collect information about the participants' linguistic background (first, second and other languages), identity (relative to the U.S, culture, or nationality), email experience (estimate number of emails sent and received per day), as well as general demographic questions such as ethnicity, gender, race, age, and level of education. We also collect information about participants' place of birth, language development, time living in the United States, and time of affiliation with the University of Arizona.

Some of the limitations of the MCEC corpus are related to its data collection regime, which focuses on one-to-one student-instructor emails only. We do not collect other valuable sources of emails such as instructor-instructor interactions, student-student interactions, group interactions, or data from other university staff such as administrative assistants.

3.2 Representativeness, data collection, and processing

One major challenge of building a university-wide email corpus is to achieve representativeness. The University of Arizona, like other universities, is organized in a multi-layered structure of academic units, illustrated in Figure 1. The university is home to 20 colleges, which may or may not cluster into different Schools. These colleges host 106 departments with an uneven distribution of academic programs. Additionally, there are several restrictions to collecting these emails, such as obtaining permission to recruit participants at the program, department, and possibly even at the college levels.



Figure 1: The multi-layered structure of the University of Arizona

To address these challenges, we have adopted a monitor corpus model (McEnery & Hardie, 2012). We have decided to collect emails from as many colleges and departments as our resources allow for an undetermined duration. We are aware that this does not solve the issue of representativeness, but we believe this is the best we can do with the resources at our disposal.

Since acquiring permission to recruit participants often needs to start at the department level, our approach is to recruit departments first in a top-down sampling approach (Figure 2). We use stratified random sampling with the strata being colleges and academic departments to recruit department participation proportionally. Once the department chair or head has permitted us to recruit participants, we contact the instructors in the approved departments or programs. Instructors who consent to our request then proceed to inform their students. Students who consent, in turn, forward their emails to our principal investigators. This data collection process takes place every academic term.



Figure 2: Data collection

Once our principal investigators receive the participants' emails, they contact the participants to give them the option to withdraw any number of emails from the study. After this step, we deidentify the emails and questionnaire data, annotate, and publish the de-identified emails. The last step of this process is researching and developing corpus materials. We illustrate the dataprocessing workflow in Figure 3 below.



Figure 3: Data processing

3.3 Data collection challenges

To gain accurate insights, email data collection is usually expected to be as naturalistic as possible (Economidou-Kogetsidis et al., 2021, p. 180; Savić, 2019). Naturalistic language data is fundamentally different from sociolinguistic interviews, laboratory data, and elicited language data in that it is usually non-reactive, and there is no particular setting where participants are explicitly aware that they are being observed. Participants might not be aware that their language will be analyzed depending on whether researchers seek their consent before or after data collection. Although the use of Discourse Completion Tasks, or DCTs, (Barón & Ortega, 2018; Pan, 2012; Woodfield & Economidou-Kogetsidis, 2010), and email elicitation (Kanik, 2017; Kedrowicz et al., 2017; Rife, 2007) are common in the field, to the best of our knowledge, there has been no direct experimental comparison between elicited and naturalistic email data (see Pan, 2012, p. 153 and Eslami et al., 2015, p. 102 for a discussion between naturalistic data and DCTs).

Most corpora of naturalistic emails are not publicly available. Emails from private companies (De Felice & Deane, 2012; Machili et al., 2019; Millot, 2017, among others) or universities (Barón & Ortega, 2018; Biesenbach-Lucas, 2007; Economidou-Kogetsidis, 2015, among others) are only available to the researchers who collected them and protected by non-disclosure agreements or university and government regulations. Notable exceptions include corpora from public mailing lists (Bevendorff et al., 2020; Ulrich et al., 2008), phishing and fraudulent emails (Radev, 2008), law-enforcement investigations into corporate activity (Klimt & Yang, 2004; Oard et al., 2015), and the political sphere (De Felice & Garretson, 2018). The lack of publicly available email corpora hampers reusability and, in turn, replicability of research. Currently, researchers are left with no option but to collect their own corpora without being able to test their hypotheses against other data. However, it is precisely at the moment of data collection when researchers face ethical and practical dilemmas that usually end in the impossibility of sharing their corpora.

On the ethical side of the dilemma, as a form of personal communication, naturally-occurring emails usually contain personal information that, if released publicly, may damage people's personal and professional lives. Researchers have previously raised concerns about the sharing of email communication (Cohen, 2015; De Felice et al., 2013; Herring, 2002; Economidou-Kogetsidis, 2011). Email corpora are not the only corpora that face these ethical issues. McEnry and Hardie (2012) give an overview of the ethical issues involved in corpus construction and argue that data must be anonymized properly, for the sake of the participants and the people mentioned in the text whose consent would be more difficult to obtain (p.62 & 63). Datasets without proper de-identification or anonymization increase the possibility of re-identification (Narayanan & Shmatikov, 2008).

As researchers, academic ambassadors, and stakeholders, we know that protecting people's privacy and confidentiality must be prioritized over any research goals. Email data collection is different from news articles and other texts from the public sphere; aside from public mailing lists, there is an expected level of privacy from the people involved (Weisband & Reinig, 1995). As Pan (2012) notes, email data "imposes constraints on the data collection procedure since the majority of the emails involve personal information, which may be confidential, and which people may be reluctant to disclose" (p. 128). For this reason, we limit the publication of personal data, even if this lowers the usability of the public version of the MCEC. One of the ways we do this is by excluding both direct and indirect identifiers from texts. For example, we redact references of people participating in academic or non-academic groups or activities such as reading groups or sports activities, and we also redact any mentions of specific places when related to participants' groups or activities. This process extends to people who are not participants but that appear mentioned in the emails. The reader can refer to Tables 1-3 below for examples of how our texts are de-identified. We believe it is possible to create a corpus of academic emails despite these challenges. Corpora like the MCEC will benefit researchers and all stakeholders in general.

4. Language accommodation analysis

Language accommodation (Giles, 2016; Giles et al., 1991; Giles et al., 1973) is a social interaction phenomenon where people orient themselves with respect to others in a multitude of linguistic and extra-linguistic communicative behaviors. Examples of these behaviors include speech rate (Manson et al., 2013), lexical items and phrase structure (Wang et al., 2014), parts of speech, and other grammatical features (Danescu-Niculescu-Mizil et al., 2011). In this section, we look at what we call 'language choice accommodation', by which we mean the orientation that interlocutors display through their choice of language in a multilingual environment.

As our theoretical framework, we make use of Communication Accommodation Theory (CAT), which "provides a wide-ranging framework aimed at predicting and explaining many of the adjustments individuals make to create, maintain, or decrease social distance in interaction" (Giles & Ogay, 2007, p. 293). Specifically, we will examine if, during each conversational turn, as marked by each email in the conversation, an interlocutor uses one of three accommodation strategies (adapted from Giles & Ogay, 2007):

- Divergence. The use of a language or combination of languages that the addressee did not use during the previous email. For example, the writer uses both Spanish and English in their email even when the addressee only used English in their previous email.
- Maintenance. The writer persists in their original language choice regardless of the language or combination of languages used in the addressee's previous email. For example, the writer continues to use Spanish as they did in their previous email message even though the addressee had responded with an email written in English.
- Convergence. The writer uses one or more languages that the addressee included in their previous email but that the writer had not used in their previous turn. For example, the writer changes their language choice from Spanish to English because the addressee used English in the previous email.

Because CAT is a theory that aims to explain behavior during social interactions, the above communication strategies are usually interpreted in terms of social distance, societal valence, and cooperation (Giles & Ogay, 2007). However, our goal in this analysis is only to describe which interactions provide more opportunities for language learners to use their second language in authentic email interactions with their instructors outside the classroom.

4.1 Analysis

To explore language choice accommodation in the MCEC, we select three conversations between second language students and their respective language instructors. We selected these conversations because they exemplify how teachers and students converge or diverge from one another in their language choices in the extent of the email chain. Table 1 below illustrates a conversation a French class conversation.

Email # in chain and sender	Language(s)	Text
A1: Student	English + French	"Bonjour Mme [[last-name]instructor], Merci beaucoup, "
A2: Instructor	English only	"Dear [[first-name]student], Best,"
A3: Student	English + French	"Allo, [] and again thank you very much for your help."
A4: Instructor	English + French	"Dear [[first-name]student], à bientôt"
A5: Student	English + French	"Bonjour Mme, Thank you,"
A6: Instructor	English + French	"Dear [[first-name]student], Let me know if you have any more questions! à bientôt"

Table 1: Email conversation A

Note. The main body of each email was written in English and was irrelevant for the analysis, so we substituted it with an ellipsis (...). We also redacted all participant information and substituted it with the de-identification tags in square brackets ([]).
In Table 1, the student starts by using a French greeting and farewell message to the instructor (A1). This email is followed by a divergence of the instructor (A2), who does not use French anywhere in their email. The student follows up in (A3) with another greeting in French, a case of maintenance; however, this time, the student did not use French in the farewell message. This maintenance inclination seems to influence the instructor, who, for the first time, converges with the student's language choice and uses the French farewell 'à bientôt' (A4). From that moment on, both the student (A5) and the instructor (A6) maintain the use of French as part of their email conversation.

Email # in chain and sender	Language(s)	Text
B1: Student	English + Russian	"Здравствуйте Professor[[last-name]], Best Wishes,"
B2: Instructor	English only	"Dear [[first-name]student], Best,"
B3: Student	English only	Hello Professor [[last-name]instructor] Best Wishes,"

Table 2: Email conversation B

In Table 2, we present a different case. Here, the student first reaches out to the instructor with the Russian greeting 'Здравствуйте' (B1), but, as in (A2), the professor diverges to English only (B2). At the end of the conversation (B3), the student converges with the English-only language choice of the professor.

Email # in chain and sender	Language(s)	Text
C1: Student	English only	"Hello,
		Thank you,"
C2: Instructor English + Spanish		"Hola [[first-name[student]]],
		Atentamente,"
C3: Student	English + Spanish	"Estimada profesora,
		Gracias,"

Table 3: Email conversation C

Finally, in Table 3, we present a case where the student starts the email chain in English only (C1). However, the professor diverges with a greeting and a farewell in Spanish (C2). The student then converges by using a Spanish greeting and a Spanish farewell (C3).

We can take conversations (A) and (C) as cases of language choice accommodation that favor the use of L2 outside of the language classroom, regardless of who is the converging interlocutor. On the other hand, there are also conversations like B where students diverge from their use of L2. Admittedly, greetings and farewells in emails only represent small opportunities to use a second language, especially for intermediate learners, which was the case for all the students in the above email chains.

5. Co-option of language choice accommodation into pedagogical resources

In this section, we co-opt our analysis of language choice accommodation into a sample lesson plan for the language classroom. With this lesson plan, we provide beginner language learners with the opportunity to use greetings and farewells through Discourse Completion Tasks (DCTs) in a lowstakes setting.

DCTs can be used as guided exercises to elicit data in a contextually varied and reality-like setting, in this case, the use of emails between students and instructors. In this way, we create a scenario for target language greetings and farewells while also increasing their pragmatic proficiency by discussing these courtesy expressions in class. Our lesson plan is divided into five progressive

moments, which culminate in the use of an open DCT as a final activity to consolidate the use of L2 greetings and farewells in an academic email in the language classroom.

Lesson plan

- Objectives:
 - Students will understand the pragmatic effects of different discursive strategies in writing greetings and farewell messages.
 - Students will establish sociopragmatic awareness in their L2 request email writing through specific knowledge of producing greetings and farewell messages.
 - Target Learners and Language Proficiency: A1-A2 second language learners at the college level. Students should have a minimum knowledge of greetings and farewells. This activity is planned for learners of Spanish, but it can be tweaked to any language.
 - Skills: Writing greetings and farewells in a pragmatically appropriate manner in requestive emails.
 - Materials: Paper or any electronic device to write on, sample emails from the corpus.
 - Total duration: 50 minutes

Warm-up activity: Greetings (3-5 minutes)

Remind students what types of greetings and farewells they have learned so far and encourage them to greet and say goodbye to each other verbally in the target language. You can participate in the activity while monitoring the group.

Practice writing an email in L1 with L2 greetings and farewells (8 minutes)

- 1. Inform the students of the lesson objectives for this class.
- 2. Introduce the email writing activity. Make emphasis on the importance of courtesy expressions in the L2, especially in the context of email requests and comment on any cultural differences in asymmetrical power-distance encounters such as professor-student interactions (e.g., keep communication respectful, build rapport, show politeness).
- 3. Tell students to individually write an email using one of the following example situations or any other you find appropriate to your class: (A) Write to your professor asking for access to your learning platform, or (B) Write to your instructor asking for an extension for an assignment. Once they are done writing, ask them to leave their work aside for a while.
- 4. Show the class the sample email from the Multiple Choice DCT (Appendix A). Make sure to draw attention to the use of greetings and farewells (like it was done orally at the beginning of the class) and comment that these are good opportunities for them to use their second language skills. Note that you can address the diversity of salutations by asking students to use different words and phrases to replace the original salutations. You may also want to comment on different types of greetings and farewells and their appropriate situations.

Multiple Choice DCT and small-group discussion (12 minutes)

Ask your students to complete the Multiple Choice DCT and discuss the results in groups of three. Go around and listen to their reflection, and make corrections if necessary. At this point, it would be helpful for students to go back to the emails they previously wrote in Activity 1 and, in small groups, identify opportunities to use their second language. If possible, you can encourage them to find opportunities beyond the greeting and farewell message. After this, you may want to present the text of the Multiple Choice DCT again, but this time for students to identify appropriate answers (based on example) and share their answers with the rest of the class.

In-class discussion (5 minutes)

Start an in-class discussion addressing issues such as what you, as an instructor, consider appropriate in an email. Ensure that what one person considers appropriate may be different from others. Allow students' opinions on appropriateness to emerge. Other concepts you can bring to your students' attention include how people usually email each other in your academic department, what is the implicit academic contract (the rights and obligations of both parties) in your institution, and which, if any differences, have you found between the students' L1 and target language in email interactions.

Consolidation (10 minutes)

In order to consolidate the concepts learned so far, present students with the Open DCT activity (Appendix B). For this activity, students can be as creative as they want while using their second language appropriately in the email. We encourage you to hold a final small-group discussion about this activity. We also encourage you to invite your students to use greetings and farewells in their target language in their future email correspondence with you.

6. Conclusions

As final remarks, we want to conclude by reflecting on the relevance of the MCEC corpus for researchers and instructors. For researchers, the corpus can be a resource for conducting analyses on diverse linguistic phenomena, as we did with the case of language accommodation. The MCEC will also work as a basis for comparison against other researchers' private and public corpora. Language teaching instructors can profit from the corpus by developing teaching materials for the language classroom. In more general terms, all types of instructors, from university lecturers to high-school teachers, could benefit from this corpus for drawing authentic examples of different levels of academic email proficiency for both instructors and students alike. To these ends, we intend to continue to expand the corpus by recruiting more academic departments and participants and creating collaboration links with researchers and teachers across the globe.

The MCEC represents one of the first attempts to build a model to develop an openly-accessible multilingual corpus of emails. We hope that others will see in the MCEC a foundation for future email corpora that will reflect the state of online multilingual communication. Against the backdrop of globalization, online communication within academic communities around the globe has become an ecology of languages where email communication also changes into a multilingual phenomenon.

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Appendices

Appendix A

Multiple choice DCT

Students should be presented with the instructions and the email below from the corpus and the subsequent question with the response options. Note that we use pseudonyms in the sample email below to protect participant confidentiality. The instructor could always change the name in the email to something appropriate to their context.

Instructions

I. You have assignments due tonight, and your instructor is sending this reminder as some students have not submitted their assignments yet. Read the following email sent to you by your instructor.

Instructor's email:

Sender: Professor Mary, Receiver: Full class, Subject: Spanish 101, Individual assignment due TONIGHT

Hola a todos,¹

Please disregard this message if you already submitted your assignment. Remember that your Individual assignment #1 is due tonight @11:59 pm. You will send me your Zoom or Youtube link via EMAIL. No files will be accepted. Let me know if you have questions. Best,

Prof. Mary

II. From the choices below, select the one you feel is more appropriate for the situation. There is no right answer. You will discuss your choice in small groups during class.

a) Hi profe! Sorry I forgot about homework. I will finish it today.

b) Hello professor, I have been working a lot and have not found the time to complete the assignments yet. I will do my best to finish them on time.

- c) Querido profe²: I forgot, sorry. I will finish my homework by tonight, thanks!
- d) Can I have an extension?

¹ Translation: "Hello everyone"

² Translation: "Dear professor (abbreviated, informal)"

Appendix B

Open DCT

As in Appendix A, the sample email below also contains 'Mary' as a pseudonym to protect participant confidentiality.

Description

You, as a student, have doubts about an assignment, and you have requested office hours with your instructor. Read the email from your instructor, and then write a response.

Instructor's email: sender: Professor Mary, receiver: You subject: Re: Meeteing [sic]

Hola³, I'm waiting for you online to join our meeting. Here is the information, in case you need it: [meeting link], Professor Mary, MA

Now, on a piece of paper, write an appropriate response to this email based on what you have learned.

³ Translation: "Hello"

Examining Grammatical Gender Transfer in the Bilingual Mind

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There are no conflicts of interest to disclose.

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Abstract

For a bilingual, does using one language activate corresponding representations in the other? One indicator of such language co-activation may be grammatical gender transfer (Costa et al., 2003; Paolieri et al., 2010; Phillips & Boroditsky, 2003). This phenomenon is based on the fact that many languages assign grammatical genders to words representing inanimate objects and animals. However, these may differ across a bilingual's two languages. For example, the grammatical gender for 'book' in Hindi is feminine [kita:b], but, in Welsh, it is masculine [łyvr]. If language coactivation were to occur, then the gender of a word in language X (in our study, Hindi/Welsh) should measurably affect the speaker's behaviour in language Y (English) for the corresponding word, causing either facilitation or interference effects pertaining to production latencies. One existing approach towards exploring such potential coactivation is to lexically prime participants in language X while eliciting responses in language Y, therefore using language to prime language.

However, a novel feature of the online experiment presented here is the use, as primes, of iconic gestures from Bharatanaatyam (an Indian classical dance form), representing inanimate objects and animals. The experiment involves a picture-naming task that measures the speed (Reaction-Time) and accuracy of typed responses to normed pictures from the International Picture Naming Project (IPNP) database. These also comprise images of inanimate objects and animals, plus human beings. Bharatanaatyam gestures are interspersed with said images, such that participants see the gesture and, then, the image to which they must respond. This is done in an attempt to achieve non-lexical gender-based priming, wherein the RTs between gender-congruent pairs are compared to those from gender-incongruent ones within and across participant groups (Hindi/English and Welsh/English bilinguals, and English monolinguals). It is hypothesised that a significant difference between the Reaction Times (RTs) of gender-congruent and -incongruent pairs from data collected would be indicative of the existence of grammatical gender transfer.

Keywords: grammatical gender transfer; bilingualism; coactivation; non-lexical gender priming; picture-naming; reaction-time; Bharatanaatyam; IPNP; Hindi; Welsh; English

1. Introduction

In recent years, an increasing interest in bilingualism and multilingualism has expanded the foci of grammatical gender studies, inviting new theoretical and experimental approaches. The study described here is part of an ongoing project which attempts to test the occurrence, nature, and behaviour of grammatical gender and its transfer in the bilingual mind. Studies carried out so far only incorporate single, specific methodological approaches towards testing the phenomenon (Costa et al., 2003; Kousta et al., 2008; Lemhöfer et al., 2008).

The current overall project attempts to remedy this situation by testing the potential occurrence of grammatical gender transfer using three different methodologies – Picture-Naming/Reaction-Time (PN/RT), Cognitive Discourse Analysis (CODA), and Voice Assignment. However, discussing all three is beyond the scope of this paper. Therefore, we shall focus on the Picture-Naming/Reaction-Time experiment herein. Essentially, the objective of this study is to test whether grammatical gender transfer occurs for bilingual speakers of one gendered and one ungendered language.

The specific research questions addressed in the full study are mentioned below. This paper describes the methodological framework of an ongoing study, thus only partial results are available. Hence, these research questions are not fully addressed in this paper. Nevertheless, the methodology discussed herein (the PN/RT experiment) directly addresses these questions in the full study, testing for Reaction Times (RTs) in a Picture-Naming task.

 In a Picture-Naming experiment, do bilingual participants with Hindi/ English and Welsh/ English linguistic proficiency show statistically significant shorter (faster) or longer (slower) RTs for gender-congruent gesture-image pairs, as compared to gender-incongruent ones?
 What patterns emerge in the RTs for gender-congruent and gender-incongruent pairs for English monolingual speakers, and how do these compare to those from the bilingual groups?

This paper represents a progress report on the endeavour to answer these overarching questions. Question 1) offers empirical evidence towards the objective of the study following the reasoning that, if RTs for bilingual speakers were significantly shorter or longer for gender-congruent pairs when they respond in English, this significant difference may be caused by grammatical gender facilitation or interference, respectively, from their other languages. Essentially, since all entities presented in the pictures are Neuter in English, the only point of potential difference in RTs would be due to their respective genders in Hindi or Welsh. This is because both Hindi and Welsh are gendered languages with a binary gender system (Hall, 2002; Hammond, 2016), and apply either the Masculine or Feminine to inanimate entities. Consequently, it may be inferred that participants incorporate information from Hindi or Welsh while processing each picture – i.e., grammatical gender transfer.

While the rationale behind this study's methodological structure will be discussed in the relevant section below, there are two major points that set this study apart from others. The first is the selection of the languages being tested – we have chosen Hindi/English and Welsh/English bilinguals, as well as English monolinguals to achieve a baseline. Hindi and Welsh both have a binary grammatical gender system, including the Masculine and Feminine only. The inclusion of English monolinguals was made to assess whether, when faced with the same task despite the lack of grammatical gender in the language, they are likely to produce any particular patterns that might be echoed in those of the bilinguals, thus removing the potential for item-specific behaviours across

the board. The second major point, as will be shown, is the use of non-lexical visual primes in the form of Bharatanaatyam gestures, presented for open interpretation by participants.

Finally, the current study is ongoing. Any results discussed herein are provisional and limited to Hindi bilinguals. While this particular study – once completed – may show results leaning towards the occurrence of grammatical gender transfer or the contrary, the results achieved from the other two studies will provide more comprehensive and conclusive outcomes.

The next section offers an overview of major studies carried out using a variety of experimental structures. It also outlines some issues with their approaches, thus defining gaps in the literature.

2. Literature Review

A variety of methodological approaches have addressed the study of gender transfer, sometimes offering evidence towards various psycholinguistic phenomena. One of the major scholarly works in the area was carried out by Costa et al. (2003). It explores the integration or autonomy of gender across languages with the help of a picture-naming task, employing Italian/Croatian bilinguals as participants. The study involved three picture-naming tasks, all of which involved eliciting verbal responses in the Determiner + Noun Phrase format and a special focus on cognates – words that have similar meanings and structures across related languages – with the same or opposite genders. While it produced no significant results in support of gender transfer, this may have been due to differences in the grammatical and gender systems of Croatian and Italian. For instance, Croatian does not have determiners in its grammar, whereas Italian incorporates gendered determiners such as 'il' and 'la'. The fact that cognates and non-cognates were incorporated into the same unit under investigation could have also skewed the data, as discussed by Lemhöfer et al. (2008).

Grammatical gender transfer can also be used as a means to determine how the Sapir-Whorf hypothesis and linguistic relativity may function. The hypothesis suggests that the structure of a language establishes how a speaker would perceive and categorise the world around them (Kay & Kempton, 1984). In this instance, we focus on the categorisation of gender for bilinguals. For bilinguals, the process of gender categorisation would have to function in one of two ways – either the categories would only be activated based on the language being spoken, or they would coexist as sub-categories that affect each other. A paper by Phillips and Boroditsky (2003) presents grammatical gender transfer as a means to resolve the Sapir-Whorf Hypothesis through the use of similarity indices for animate-inanimate entity pairs. Essentially, they examined whether speakers of gendered languages perceived and conceptualised non-neuter genders for inanimate objects in the same manner as in their speech. The results were supportive of transfer. On the other hand, while a similar research focus is shown by Kousta et al. (2008) – who studied linguistic relativity using grammatical gender, comparing error-based results from monolingual English and Italian speakers in a picture-naming task to those produced by Italian-English bilinguals – their data did not support transfer.

Lemhöfer et al. (2008) incorporated lexical decision tasks and picture-naming to gauge the interaction between grammatical gender systems of two languages and to differentiate between production and comprehension in the process. They attempted to bridge these processes using cognates and late bilinguals. Paolieri et al. (2010) used late bilinguals as well to study whether pairs of objects that are gender-congruent show facilitation effects compared to incongruent ones and found results supporting transfer. However, they specifically excluded cognates. Kurinski and Sera (2011) attempted to examine whether learning a gendered language (in this case Spanish) would

change object categorisation processes for native English speakers. Results indicated that, while categorisation did change to a certain degree, it did not occur across all items, nor was it directly correlated to an increase in proficiency, thus suggesting that said changes only occur at the beginning.

Hoshino and Thierry (2011) presented a study that went a step further by removing the linguistic element entirely from both the stimuli and the responses. They focused on using Event-Related Potentials (ERPs) – a means of measuring the brain's responses to specific events (in this case visual input) – to measure RTs for object categorisation to work out if gender transfer occurs in bilingual speakers and found evidence supporting transfer.

The studies mentioned above, while vital to the discussion of grammatical gender transfer, are limited either by the underlying assumptions or the method. One of these limitations is the focus on European (and especially Romance) languages – many of which influence one another due to historical interactions, seen clearly in the volume of cognates available across them. Another issue is that several of these languages use determiners as clear markers of gender, suggesting to participants that gender may be a (if not the) focus of the study. In order for the data to remain as pristine as possible, participants must not have explicit knowledge of the research focus of the study in question. Furthermore, one sees the use of late bilinguals in many of these works. This ought not to be the case for the study of grammatical gender transfer. This is because the grammatical gender system for the second language would not likely be entrenched as deeply for a late bilingual as it would be for an early bilingual, thus causing the data to be potentially distorted.

Finally, one must note that variations of only one experimental method are used per study, which, while instrumental in providing data for validity, does not test the efficiency and effectiveness of the methodological structure itself. The current project, as discussed above, attempts to address this issue. Since the discussion thereof is beyond the scope of this paper, however, we now return to the study at hand.

3. Methodological Framework

As discussed above, this paper focuses on the ongoing PN/RT study that investigates the existence of grammatical gender transfer. The framework thereof is described in detail below.

3.1 Participants

19 Hindi/English and five Welsh/English early L2 or native bilingual speakers have been tested so far as part of this study, with more of the latter having been recruited for participation. Nine English monolinguals have also participated in the tasks, allowing for comparisons across groups and baselines. Participants are aged between 18 and 45 years and are fluent in their respective languages, using them consistently across various social contexts.

Of the Hindi speakers, three did the task in Hindi and 16 did so in English. One participant's data was incomplete due to network issues and was therefore discarded. Of the Welsh speakers, all five so far have completed the experiment in English. Further experiments aim to balance the speakers across the languages so as to achieve a baseline, as was done with the Hindi speakers.

These languages were chosen for specific reasons. Hindi, being an Indian language, is part of a language group that has not been given much attention so far for psycholinguistic studies – especially with regards to grammatical gender transfer. The same applies to Welsh. Also, while they

have both had a great deal of contact with English over the centuries and borrowing across these languages is common, they retain their uniqueness in that potential cognates can be easily avoided.

As regards grammatical gender, Hindi and Welsh are both 'opaque' (Caffarra et al., 2014). The nouns in neither language bear specific gender markers like gender-based suffixes. This allows for more implicit testing, where gender is not revealed as the focus to the participant.

While the grammatical gender marking system in Hindi involves the use of verbs, adverbs, adjectives, and case markers, with either [a] or [i] to mark the masculine and feminine respectively, the system in Welsh primarily incorporates mutations as the basic gender marker. For instance, feminine nouns undergo soft mutation (from a voiceless phoneme to a voiced one) when preceded by 'a' (meaning 'and'), as in 'ci a gath' [ki a gao] instead of 'ci a cath' [ki a kao] ('a dog and a cat'), whereas masculine nouns do not vary. However, both languages have no more than two genders - masculine and feminine - which makes comparison more viable.

All Hindi and Welsh speakers tested were early bilinguals – that is, they acquired both languages at an early age, ensuring these languages and English were all entrenched to an at least near-native proficiency. English learning either occurred in the household simultaneously with Hindi or Welsh – making them native speakers – or during early schooling. This varies across participants, but they all received formal education in both languages, and they use both languages on an everyday basis. However, it must be noted that most Hindi speakers are multilingual - at least trilingual - from an early age (Schiffman, 2005), and this is reflected in the sample population. In contrast, apart from second-generation immigrants, native Welsh speakers are mainly bilingual from an early age (Gathercole & Thomas, 2009), which is also reflected in the participant group.

3.2 Materials

This experiment was executed using two tasks – primary and secondary, respectively. Within the primary task, two kinds of visual stimuli were used – gestures and images. 26 black and white pictures of gestures (22 iconic gestures from Bharatanaatyam and four made-up ones) were paired in various permutations and combinations with 37 images from the International Picture Naming Project (IPNP) database (seven humans, nine animals, and 21 inanimate objects) (see Figures 1 and 2 below). Each iconic gesture created a visual representation similar to that of a certain object or animal. Eleven of these were Masculine and eleven were Feminine in both Hindi and Welsh, although they did not necessarily coincide across languages.



Figure 1: Gesture Representing a Bird

These gestures were created by the author based on the descriptions provided in Coomaraswamy and Duggirala (1917).



Figure 2: IPNP Image of an Arrow (Centre for Research in Language, 2022)

For the primary task, visual stimuli are presented in a series of blocks. Each block has 20 stimuli pairs which were combined based on set patterns, with the sequence of their presentation randomised for each block. There are four blocks in total, with different permutations and combinations for each stimulus, such that if a specific gesture was paired with a certain image in Block 1, it would be paired with other items in Blocks 2, 3, and 4, respectively. The presentation of each block sequence is also completely randomised across three iterations, and each 3x4-block iteration is randomised across three more iterations, minimising potential pattern-based errors. Therefore, each participant provides a total of 720 responses. The task was programmed using PsychoPy3 and is hosted online on the Pavlovia platform (https://run.pavlovia.org/Arpita_16/jyotirlingam_e-hp).

The secondary task incorporates the use of gestures only. All the gesture stimuli used in the primary task are presented to participants in a single block run through three iterations. The use of gestures in both tasks offers a combination of non-linguistic (potentially conceptual) processing, along with a level of open interpretation. This is useful for data analysis reasons that are discussed later.

3.3 Procedure

Due to the effect of Covid-19, the experiment is carried out online, requiring typed responses from participants as opposed to verbal ones. In order to achieve this, participants are asked to attend a Zoom call, during which the experimenter collects consent forms, provides information, and instructs the participant. The medium of instruction depends on the language in which the participants must respond; for Hindi/Welsh responses, instructions are given purely in those languages, whereas for English responses, instructions are presented using code-switching across Hindi/Welsh and English, allowing the languages in question to be primed. This is done especially in the case of Hindi speakers, since many of them, despite high proficiency in the language, might have other dominant languages which could interfere with the data.

According to the instructions, the participant is required to provide certain typed responses to the gesture-image pairs that appear onscreen. They are informed that, within each pair, the gestures must be observed without response. Gestures remain onscreen for only one second, after which the image is shown. Once the image appears, it remains onscreen until the participant types the name of whatever object or entity they see and presses the Enter or Return button. It is emphasised that these responses must be as quick and as accurate as possible. This is so RTs can be measured from the appearance of the pictures to typing onset. Also, this way RTs for each response are relatively consistent across pairings, blocks, and iterations. Given that the primary task involves just observation of gestures followed by simple picture-naming, it allows for potential non-lexical mental interpretation from the participant in the first part. If gender exists on a conceptual (non-

morphosyntactic) level, non-lexical interpretation will consequently incorporate it as an attribute. Hence, on interpreting a gesture as representing a tree, the gender thereof ought to be part of this interpretation, assuming it is a conceptual attribute. Since the selected languages enable potential transfer between one gendered (Hindi/Welsh) and one ungendered language (English), this transfer would potentially be more evident, as the gender values assigned to all items in English would be Neuter.

RTs are measured after the gestures are presented, from image onset until the participant begins typing their response. It can be argued that, provided gender is a conceptual feature, the gestures would prime participants on a conceptual, non-lexical level. They would therefore affect the response latencies for the images that follow due to facilitation or interference effects (Paolieri et al., 2010). That is, for gender-congruent pairs, it is possible that the gender value in question is foregrounded by the gesture interpretation, making it easier for the participant to process (interpret) the following image, consequently enabling the participant to respond faster. The other possibility is that of interference, wherein congruence could potentially interfere with the image interpretation process (c.f. semantic interference effect (Oppenheim et al., 2010)). Participants are asked to begin the task, keeping the call on in the background in case they have any queries. A randomised practice block is presented, involving different gesture-image pairs than those from the main task. Once the practice block is completed, participants are asked to continue at their own pace, with a break after every three iterations of each block. Once all blocks are completed, participants are offered a longer break, after which they are required to begin the next task.

The secondary task is a timed one, wherein participants are asked to interpret only gestures. There are no object images in this task. Participants are required to name whatever (preferably concrete) object or entity they believe the gesture represents within five seconds. Each gesture is presented three times, and the responses that appear in majority are selected as the specific interpretations for each gesture. Analyses are carried out on the basis of these responses.

3.4 Analysis

Here, data from the secondary task is used as the foundation for the primary task. Each participant's interpretation of each gesture is placed within each occurrence of the gesture within their primary task data sheet. Therefore, if a participant interpreted a certain gesture as representing a bird, all instances of the gesture as they were randomly presented to the participant in the primary task are assigned the value 'bird'. This is done for all the gestures, thus creating individual interpretations of each gesture-image pair. Each of the entities in each pair is then assigned a gender value of Masculine or Feminine based on the languages they speak. For instance, if a gesture-image pair is interpreted as 'bird' followed by 'crown' for a Hindi speaker, based on the genders assigned to these nouns in Hindi, the gender value for the pair would be MM. In case of 'bird'- 'butterfly', it would be MF, and so on. Therefore, each individual participant has their own unique numbers of MM, FF, MF, and FM gesture-image pairs. These are collated into gender-congruent (MM, FF) and gender-incongruent (FM, MF) pairs. The mean Reaction-Times (RTs) for each participant are calculated in milliseconds. The process is repeated across each group of participants, therefore arriving at the mean RTs across each group. Finally, the mean RTs for gender-congruent pairs are compared with those for gender-incongruent ones for each group. This is done using a t-test so as to work out whether this difference is statistically significant. If results are less than conclusive upon the collation of all data, more stringent tests may be employed.

4. Results and Discussion

Due to the ongoing nature of the current study, not all the data collected has been analysed yet. Given below is a preliminary analysis of data from some of the Hindi speakers who responded in English. Table 1, below, demonstrates the relative instances and Mean RTs of gender-congruent and gender-incongruent gesture-image pairs from each of the first six Hindi/English bilingual participants. It also shows the overall Mean RTs for this group.

P. ID	MM		FF		MF		FM		Overall	
	Count	Mean	Count	Mean	Cou	Mean	Cou	Mean	Cou	Mean
					nt		nt		nt	
HP001h	164	2034.4	176	2084.2	153	2996.2	277	1686.0	720	2141.1
		4		3		3		2		4
HP002h	261	751.88	144	707.18	216	729.26	99	752.37	720	736.22
HP003h	243	1035.2	143	1147.5	207	1035.9	127	1013.9	720	1054.0
		7		9		4		1		1
HP004h	223	1307.5	150	1251.9	190	1236.6	156	1184.8	720	1250.1
		1		0		8		9		5
HP005h	257	1342.4	93	1236.0	220	1298.3	150	1477.4	720	1343.3
		0		4		7		7		5
HP006h	217	1188.8	135	1112.3	215	1250.3	153	1322.5	720	1221.2
		3		5		1		9		7
	MM+FF: 1271.97			MF+FM: 1306.92						

Table 1: Preliminary Results

As is evident in Table 1, there exist similarities across participants with regards to the numbers of gender-congruent and -incongruent pairs generated, even though the interpretations themselves were not necessarily the same.

A simple t-test has been run to compare the mean RTs for gender-congruent and -incongruent pairs for the data collated so far. The resulting p-value is 0.19. Since p > 0.05, in the data collated from these participants, the result is not statistically significant. However, this is only a third of the Hindi speaking participants, which suggests that these numbers may change once all data has been analysed.

While it would be premature to project an outcome in this case, we can discuss the hypothetical implications of potential results. If the p-value indicates statistical significance across the bilingual groups, it is likely there is some consistent form of interaction between languages when it comes to gender. This would also imply that gender is not necessarily a linguistic or morphosyntactic attribute and that it exists on the conceptual level. A theory for gender as a conceptual feature could then be developed, as suggested earlier. If the p-value remains statistically insignificant, it would indicate that gender is indeed language-specific and does not act as a nexus for crosslinguistic interaction.

However, these conclusions would depend on the results seen in the other experimental approaches within the project, which at the very least would provide insight into potential methodological biases.

5. Conclusion and Limitations

As discussed above, no concrete conclusions can be drawn from the current study at this point. Once data analysis has occurred for this and the other experiments, this project is likely to produce a thorough set of outcomes with regards to both the nature of grammatical gender and of methodological biases.

However, there are limitations to this study. Responses from Hindi speakers may not be entirely streamlined, as most Hindi speakers are multilingual. Their dominant languages might bleed through, despite priming in the languages specific to this study. An analysis of the dominant languages and genders across the data collected might shed further light on the issue. However, this is beyond the scope of both this paper and, at this stage, the overall project.

This is why Welsh bilingual participants are also incorporated into this study - so any differences between results could be identified. It is hoped that comprehensive, if not conclusive, results would be presented through the use of two groups of different types of bilinguals as well as the employment of three different methodological frameworks to test the same phenomenon.

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The Automaticity of Reading in Bilingual Lexical Processing: Evidence from a Chinese-English Bilingual Stroop Task

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Author's note

There are no conflicts of interest to disclose.

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Abstract

The Stroop task is one of the greatest paradigms to examine whether word meaning can be automatically activated by reading. It has been successfully used to test bilinguals' cognitive advantage in inhibitory control. The present study aims to investigate the automatic activation of reading in Chinese-English bilinguals' (N=17) native language (Mandarin) and second language (English) by using a Chinese-English Stroop task. This study partially replicates Experiment 3 of Sabourin and Vinerte (2015) and Experiment 2 of Geukes et al. (2015).

It is hypothesized that bilinguals would receive the facilitation effect and interference effect in both first language (L1) and second language (L2), and the effects are supposed to be more pronounced in L1 than in L2. While the results show that the facilitation effect is not present, there are significant interference effects in both L1 and L2. More importantly, the interference effect is more significant in L1 than L2, suggesting that bilinguals receive more interference from their dominant language than the weaker language. In conclusion, it is advocated that a more comprehensive and precise measurement of bilinguals' profiles is crucial.

Keywords: literacy, bilingualism

1. Introduction

In recent research on bilingualism and cognition, the debate on the notion of bilingual advantage continues to take centre stage (Antoniou, 2019). The claimed bilingual advantage includes superior executive functions over monolinguals, such as attention, selection, inhibition and working memory. Among those, inhibition or inhibitory control refers to human's ability to restrain their automatic, natural and dominant response to stimuli. In the example of word recognition, some word candidates compete for selection in the mental lexicon, but bilinguals must inhibit the undesired ones and choose the appropriate one. In the automatic process, their ability to inhibit distractors is constantly trained by managing the conflicts caused by the competition between their first language (L1) and second language (L2) (Kroll & Bialystok, 2013).

The Stroop task (Stroop, 1935) is one of the widely used experimental paradigms to measure inhibitory control ability and has been successfully applied to the studies of bilingualism (Macleod, 1991). In the manual Stroop task using colour words as visual stimuli, participants need to press buttons to suggest the font colour rather than the word meaning. In the congruent condition, the meaning of the colour word is matched with its font colour (i.e., the word blue displayed in blue font). In contrast, in the incongruent condition, the meaning of the colour (i.e., the word blue displayed in the yellow font). In the control condition, stimuli can be neutral words (e.g., the word chair displayed in green font) or X strings (e.g., xxX). It should be noted that participants should identify the font colour rather than the word meaning. It is easy to give a rapid and correct response to the control trials and even easier to the congruent trials. However, response to the incongruent trials is usually the most challenging task, so the participants tend to need more reaction time and may have lower accuracy. The delay of reaction times (RTs) between incongruent trials is defined as the 'interference effect', and that between control trials and congruent trials is defined as the 'facilitation effect' (Stroop, 1935).

One of the theoretical explanations for the facilitation effect and the interference effect is the automaticity of reading (Augustinova & Ferrand, 2014). The word meaning is automatically activated with the presence of visual stimuli because of habitual reading in the human brain. As a result, switching the word meaning to font colour can cause extra reaction time while the brain is inhibiting interference. According to the mechanism of selection in the Inhibitory Control (IC) model (Green, 1998), bilinguals must manage to inhibit other competitors from selecting the target word in their mental lexicon, whereas monolinguals lack these opportunities to cultivate their inhibitory control ability. Thus, bilinguals are self-trained to gain an advantage in inhibitory control over monolinguals by mediating the conflicts between two language systems. Bialystok et al. (2008) found that bilinguals had superior executive functions to monolinguals owing to the shared mechanism of general executive functions and mental lexicon management. Assuming that mechanisms involved in language control are similar to those of general control abilities, the need to manage lexicon conflict can have a negative impact on lexical retrieval but bring beneficial effects on bilinguals' executive functions.

Nevertheless, some researchers reported null findings in attempts to replicate the bilingual advantage in more recent research (Lehtonen et al., 2018; Paap & Greenberg, 2013). Duñabeitia et al. (2014) found no apparent difference in the response times and accuracy between Basque-Spanish bilingual and Spanish monolingual children in the Stroop task, casting some doubt on the bilingual advantage in inhibiting interference. In addition, Coderre et al. (2013) pointed out that L2 proficiency, language immersion, language experience and the scripts of languages can be variables in the bilingual advantage debate. For example, Coderre and van Heuven (2014) discussed how

scripts similarity could affect bilingual cognitive control abilities by testing German-English bilinguals', Polish-English bilinguals' and Arabic-English bilinguals' performance in the Stroop task. As delineated by von Bastian et al. (2016), some failure to find robust results for the bilingual advantage can be attributed to limitations in the theoretical framework and research methods.

In light of these inconsistent findings, it is worth reviewing factors that could modulate bilingual advantage in the Stroop task: L2 proficiency and language use, age of acquisition (AoA), socioeconomic status (SES), and task difficulty. Among those, the role of L2 proficiency has been widely discussed (Singh & Mishra, 2013; Tse & Altarriba, 2012). In a recent study, Hui et al. (2020) argued that bilinguals of higher L2 proficiency had more difficulty ignoring distractors in L2. On the one hand, they need to put more effort into managing their integrated mental lexicon; on the other hand, their inhibitory control ability was further exercised. However, the claim was questioned (Heidlmayr et al., 2014; Śmiecińska et al., 2014) because bilinguals still differ in language use or language exposure after controlling for language proficiency. Therefore, it is crucial to have a more comprehensive description of bilingual populations.

In the discussion of the role of bilingualism, one methodological issue is how to give an objective, precise and comprehensive description of bilinguals' language background. Self-rating is potentially subjective due to the participants' cultural backgrounds, personalities and psychological conditions. In a review article, de Bruin (2019) advocated for a more accurate assessment of bilingual's profiles regarding AoA, language proficiency, language use, language contexts, and language switching. In this case, more detailed contexts should be provided while assessing language proficiency and exposure, such as language use in school, with family and friends (Grosjean, 1997). Alternatively, available language background questionnaires, such as Language Experience and Proficiency Questionnaire (LEAP-Q), Language and Social Background Questionnaire (LSBQ, Anderson et al., 2018) and Language Entropy (Gullifer & Titone, 2020), can serve as valuable tools to measure language use in interactional contexts and diverse social contexts.

The present study aims to investigate the automatic activation of reading in Chinese-English bilinguals' L1 (Mandarin) and L2 (English) by a mixed-language Stroop task. This study partially replicates experiment 3 from Sabourin and Vinerte (2015), but instead of using neutral words, we use non-lexical strings (e.g., strings of Xs). In the English-French Stroop task, Sabourin and Vinerte (2015) found significant facilitation and interference effects in sequential bilinguals as well as early bilinguals. It also partially replicates experiment 2 from Geukes et al. (2015), but instead of training participants on new colour labels, we test a group of bilingual population. Similarly, Geukes et al. (2015) reported the novel-word Stroop task. In sum, the adapted Mandarin-English Stroop task tests the facilitation effect or interference effect in bilinguals' lexical processing and two factors that may account for this: language proficiency and language exposure.

The research questions are as follows:

- RQ1: Does Chinese-English bilingual receive facilitation effect or interference effect in their L1 (Mandarin) and their L2 (English) in Stroop task?
- RQ2: Is the facilitation effect and interference effect stronger in L2 than L1 for Chinese-English bilinguals?
- RQ3: Does the facilitation effect and interference effect correlate or differ based on L1/L2 language proficiency or L1/L2 language exposure?

2. Methods

2.1 Participants

A total of 17 participants (15 females, two males) participated in this experiment voluntarily. The participants' age range was between 22 and 45 years old: 14 participants aged between 22 and 26, and the remaining three participants were at the age of 40, 45 and 45, respectively. So the median age (median=23) instead of the mean age (mean=26.65) was more appropriate to describe participants' distribution of age (see Table 1). In addition to age, all participants held a bachelor's degree or above, most of whom studied English literature or translation and interpretation or related subjects at the undergraduate level. Participants were studying abroad in English-speaking countries when they took part in this experiment. All participants had normal or corrected-to-normal vision, and none of them reported symptoms of colour vision deficiency. Language exposure refers to how much time the participant was exposed to that language during the last week.

Bilingual's profile	Mean	SD
Age	26.65	8.08
L1 proficiency (/10)	9.53	0.62
L1 exposure (percentage)	61.00	12.98
L2 proficiency (/10)	7.65	0.86
L2 exposure (percentage)	35.00	13.44

Table 1: Participants' Profile

All participants were Chinese-English bilinguals proficient in English (L1 Mandarin, L2 English). Firstly, they were native speakers of Mandarin-Chinese. Only one participant reported Cantonese as L1 (proficiency 9/10, exposure 40%) but also spoke Mandarin at the native level (proficiency 10/10, exposure 40%) and English (proficiency 7/10, exposure 20%). After asking for clarification, we agreed to record this participant's language background as 'L1 Mandarin: proficiency, 10; exposure 80%' and 'L2 English: proficiency, 7; exposure, 20%'. According to the self-rating 10-point scale, the mean L1 proficiency was 9.53, and L1 exposure over the last week was 61% on average.

Secondly, all participants marked themselves proficient in a second language in the questionnaire. However, participants may tend to underestimate or overestimate their language proficiency, especially in non-native languages, due to the reporting bias of self-ratings (MacIntyre et al., 1997). In light of this, an IELTS (International English Language Testing System) overall score of 7.0 or above was the minimum requirement for participation. As a result, all participants were Chinese-English bilinguals with desirable L2 proficiency. Their mean L2 proficiency was 7.65 on the 10-point scale, and the mean L2 exposure over the last week was 35%. Thirdly, 14 out of 17 participants can speak a foreign language(s) other than English, but only 3 participants reported proficiency in other languages at an intermediate level or above, which are German (6/10), Spanish (6/10) and Korean (7/10). Also, all of them rated their other languages exposure from 0% to 10% over the last week.

2.2 Stimuli

The Chinese-English Stroop task was programmed using Gorilla, an online behavioral experiment builder. The online experiment was designed to be conducted on a computer or laptop only, not on a tablet or mobile phone. The stimuli words used were green, red, blue in English and (green), (red), (med), (blue) in Chinese. In the congruent trials, the word meaning was matched with the colour of its ink (e.g., the word red written in red font). In the incongruent trials, the written meaning and

colour of the ink were mismatched (e.g., the word red written in blue font). There was only one type of control condition in the task: a non-lexical X-strings. Each control trial consisted of 3 to 5 letter X, with capitalized X and lowercase x intermixed (for example, xXX presented in green font). The Chinese and English conditions each included 30 congruent trials and 30 incongruent trials, plus 30 trials in the control condition, so there were 150 trials in the Stroop task. In the mixed-language Stroop task, the English colour words, Chinese colour words and X-strings were intermixed. All trials were counterbalanced and represented in random order.

2.3 Procedure

Participants first completed a consent form and demographic questionnaire. In the online experiment, three standardized buttons on the keyboard (left arrow, up arrow, and right arrow button) were utilized because of their availability on all types of keyboards. Participants were required to press the left arrow button for words in green ink, the up arrow button for words in red ink, and the right arrow button for words in blue ink. For example, if the participants saw the word green written in red ink, they needed to press the up arrow button rather than the left arrow button. Before the experiment started, the researcher briefly explained what they needed to do in the task. Participants were suggested to familiarize themselves with each ink colour's corresponding button to avoid any possible confusion during the task.

As shown in the sample trial (see Figure 1), a fixation cross was displayed in the middle of the screen for 0.5 ms following each trial. When the colour word appeared, participants needed to respond by pressing the corresponding button as soon as possible. There were eight practice trials prior to the main task. Participants got feedback about whether they gave the correct answer or not in the practical phase, but there was no feedback in the main task. The whole experiment needed approximately 10 minutes to complete.



Figure 1: Sample Trial

The first five trials in the main task functioned as a smooth transition, and those results were not analysed. The response times (RTs) and accuracy of the subsequent 150 trials were recorded and analysed. Response times were excluded from the data analysis if the trial timed out (the cut off was at 4,000 ms). The incorrect results were excluded when calculating mean RTs; in other words, only the results of correct responses were analysed.

3. Results

The mean RTs of each condition in the Chinese-English Stroop task were calculated using Microsoft Excel and further analysed by Jamovi (see Table 2). As mentioned before, there was only one set of neutral stimuli in this experiment, so the mean RTs of the control trials was 815.61 ms for both L1 and L2. Comparing the mean RTs of congruent trials and control trials, the reactions to congruent trials were even slower than those to the control trials in both L1 and L2, 36.93 ms and 33.20 ms on average, respectively. While no facilitation effect (facilitation effect = RTs_control-RTs_congruent) was found in L1 or L2, the interference effects (interference effect = RTs_incongruent trials were 195.64 ms longer in L1 and 154.76 ms longer in L2 than in the control trial, indicating that the interference effects were shown in both languages.

Conditions	Mean	Median	SD
L1 congruent	852.54	808.09	206.59
L1 incongruent	1011.25	953.79	283.48
L2 congruent	848.81	841.81	194.25
L2 incongruent	970.37	981.19	235.86
Control	815.61	783.61	172.29



Table 2: Mean Reaction Time

Figure 2: Mean Reaction Time

Figure 3 presents that participant had a high overall accuracy of 96.78%. The overall accuracy of the L1 condition was 96.18%, and the overall accuracy of the L2 condition was 96.76%. Participants got similar accuracy in L1 congruent trials, L2 congruent trials, and control trials, 98.04%, 98.82% and 98.04%, respectively. In contrast to congruent trials, the accuracy of incongruent trials was slightly lower, which was 94.31% in L1 incongruent trials and 94.71% in L2 incongruent trials.



Figure 3: Response Accuracy in the Stroop Task

A paired sample t-test was carried out to further examine whether the effects were significant. The mean RTs of four experimental trials (Chinese_congruent, Chinese_incongruent, English_congruent, English_incongruent) were compared with that of the control trial (neutral stimuli) (see Table 3). The result of Chinese incongruent trials (t(16)=4.22, p<.001) and English incongruent trials (t(16)=4.87, p<.001) revealed that the interference effect was significant in both L1 and L2. More specifically, the interference effect in L1 was larger than in L2. However, there was no significant results in Chinese congruent trials (t(16)=1.49, p=0.155) and English congruent trials (t(16)=1.70, p=0.109).

Conditions			Statistic	df	p
Chinese_congruent		Student's t	1.49	16.0	0.155
Chinese_incongruent	Neutral	Student's t	4.22	16.0	<.001
English_congruent		Student's t	1.70	16.0	0.109
English_incongruent		Student's t	4.87	16.0	<.001

Table 3: Paired Sample T-Test

The linear regression was calculated to examine whether the interference effect correlates or differs with language proficiency and exposure. The results showed a positive correlation between L1 interference and L1 proficiency (t=1.19, p=0.251) and L2 interference and L2 exposure (t=1.54, p=0.145). However, the p-value showed that the positive correlations were not significant. That is to say, a trend between interference effect and proficiency in L1 and interference effect and exposure in L2 were observed, but the correlations were not statistically significant. In addition, the correlation between L1 interference and L1 exposure (t=-1.61, p=0.128) and that between L2 interference and L2 proficiency (t=-0.09, p=0.929) were negative.

4. Discussion

This study examined the facilitation and interference effect in Chinese-English bilinguals' L1 and L2 and their possible correlation with language proficiency or language exposure. Even though the facilitation effect was not present, the interference effect was found in both L1 and L2, and the interference effect was more significant in L1 than in L2. There was no significant correlation between interference effect and language proficiency or language exposure.

The absence of facilitation effect can be attributed to the simplified research design, namely the task difficulty in the present study. In the present study, participants' reactions to control trials were even faster than to congruent trials, which displayed an opposite pattern to the results in Sabourin and Vinerte (2015). In Sabourin and Vinerte (2015), both simultaneous and early bilinguals had better performance in congruent trials than control trials of L1 and L2, even though the facilitation effect was significant in early sequential bilinguals' L1. A primary difference is the stimuli in the control trials. In contrast to neutral words in Sabourin and Vinerte (2015), the present stud adopted the non-lexical X-strings. X-strings may activate any or little word meaning; therefore, it could be challenging to exhibit a difference between participants' RTs in control trials and those in congruent trials. In addition, the number of colour words was limited, which probably lowered the task difficulty. Further research can increase the task difficulty by adding more stimuli to avoid the potential ceiling effect, especially when testing a group of young bilinguals who are at the peak of cognitive abilities (Antón et al., 2019). Besides, based on the participants' feedback, it was easier to remember that the upper arrow button stood for the neutral trials, but they needed some more time to familiarise themselves with which arrow button stands for congruent and incongruent trials.

Furthermore, the interference effect of L1 and L2 were both shown, and it showed a more significant interference effect in L1 than in L2. The asymmetrical cost of language selection could demonstrate the different degrees of interference effect in L1 and L2 (Meuter & Allport, 1999). More specifically, it is believed that sequential bilinguals need to exert greater efforts to inhibit unwanted words from their dominant language (L1) than their weaker language (L2). In the present study, the participants are sequential bilinguals whose dominant language is L1 (Mandarin) because they were more proficient in Mandarin than English and had more exposure to Mandarin than English. This pattern echoes with the results of Experiment 2 of Geukes et al. (2015) if we assume the newly learned novel words in Geukes et al. (2015) were similar to L2 (English) in the present study. In Geukes et al. (2015), German native speakers were trained to learn novel words that were later used in the Stroop task, finding that the effect size of interference from the German words was much more pronounced than newly learned novel words. It can be inferred that the automatic activation of reading is stronger in sequential bilinguals' dominant language (i.e., native language) than in weaker language (i.e., a second language for sequential bilinguals or newly acquired novel words). So they receive more interference from the dominant language in their mental lexicon caused by the automaticity of reading. Furthermore, the notion of bilingual advantage has been typically found in a dichotomous comparison between monolinguals and balanced bilinguals. Nevertheless, it should be noted that bilinguals with different proficiency in L2 should also be investigated (Hui et al., 2020).

Following the interference effect between languages, the distribution of interference within L2 will be discussed. Previous research shows that bilinguals receive more interference effects as their L2 proficiency increases (Boumeester et al., 2019). However, the present study showed a negative but not significant correlation between interference effect and L2 proficiency. The failure to find a significant correlation is probably because a wide range of L2 proficiency is not available in the sample. As mentioned before, one of the requirements for recruitment is an overall IELTS score of 7.0 or above. Consequently, it is not likely to observe the change of L2 interference by L2 proficiency. Moreover, it is suggested that the ability to suppress interference and monitor conflict can improve as language proficiency increases because bilinguals get more cognitive training from inhibiting stronger distractors. For example, Hui et al. (2020) found that Cantonese-English bilinguals of higher L2 proficiency also scored higher in the coloured-word condition in a Stroop task, indicating that the exercise of inhibition ability became more effective when bilinguals have to

combat more considerable interference. Similarly, Xie and Pisano (2019) found that unbalanced Chinese–English bilinguals' L2 proficiency can be a good predictor of conflict monitoring ability after controlling for their SES, intelligence (IQ), education, age, culture and L1 background. In addition to the small sample size, another possible reason might be the features of young adult bilinguals. There might be less chance to observe pronounced differences resulting from languages when testing young adults who are at the peak of cognitive ability (Bialystok, 2006; Bialystok et al., 2006; Costa et al., 2008).

Moreover, the more participants are exposed to L2, the more interference effect in L2 they receive, as shown by the positive trend between L2 interference and L2 exposure. Unlike L2 proficiency, participants' L2 exposure ranged from 16% to 60% (L2 exposure=35%, SD=13.44), which means L2 exposure could be a better variable than L2 proficiency. However, the correlation between L2 interference and L2 exposure was still insignificant. This result is in line with de Bruin et al. (2016) who grouped Gaelic–English bilinguals into active and inactive bilinguals: the former still use both languages on a daily basis, but the latter speak English dominantly. Even though other background variables were carefully controlled, it did not reveal a pronounced difference between two groups of bilinguals. Thus, it is suggested that language use does not necessarily significantly impact the Stroop effect.

Lastly, two problems on the demographic questionnaire, based on previous discussions, need to be solved concerning the bilingual measurement. First, the demographic questionnaire could be oversimplified because it contained only one question about language proficiency and the other one about language exposure. Also, self-rating scale is likely to be somewhat subjective. The language skills can be assessed from more specific aspects, such as setting four sub-questions on speaking, reading, writing and listening skills, and other measures such as productive vocabulary and sound awareness (Marian et al., 2007). Alternatively, LEAP-Q and LSBQ are also valid measurements of language proficiency and language use. Second, the questionnaire can also include AoA, the context of second language acquisition (e.g., formal instruction in the classroom or through immersion), language dominance, and language switching to provide a more detailed understanding of participants.

5. Conclusion

In conclusion, the facilitation effect was not shown as expected, but the interference effect was found in both L1 and L2. The finding that the interference effect was larger in L1 than L2 provides new evidence for the asymmetrical cost of language selection, suggesting that bilinguals receive more interference effect from their stronger language than their weaker language.

Nonetheless, limitations and further implications of this study are acknowledged. First, a more comprehensive and accurate assessment of bilinguals' profiles is crucial when their language proficiency and language use are considered important variables. Second, further research can increase the task difficulty by adding more stimuli to avoid the potential ceiling effect and using neutral words in the control condition (e.g., table in red font instead of X-strings). Thirdly, adopting arrow buttons on the keyboard as response keys may make the response process less direct and might impact the results. Thus, if technically possible, pressing buttons showing the corresponding colours explicitly could make the Stroop task more rigorous. Lastly, the effect of task-switching remains for further discussion. According to the participants' feedback, they tend to have longer RTs when switched between trials of different languages.

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Digital flashcards for autonomous learning: How acceptable are they among Japanese high school students?

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Author Note There are no conflicts of interest to disclose.

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Abstract

This study investigates students' motivation to use digital flashcards. Learning vocabulary is a crucial part of foreign language acquisition. Spaced-repetition has been shown to be the most effective system for long-term vocabulary retention. Digital flashcards can include this method automatically, while physical flashcards require a sophisticated strategy to achieve the same effect. In 2019 OECD reported that 80% of Japanese teachers had insufficient IT skills. If students could use digital language learning tools independently, the lack of digital literacy among teachers would not be a major factor. The purpose of this study is to investigate whether Japanese high school students are motivated to implement digital flashcards into their self-directed study.

A class of 38 students was selected and randomly divided into two equal groups of 19. The control group studied using physical (paper) flashcards, while the experimental group were given access to digital flashcards on the website Memrise.com. Pre-study and post-study tests were administered, and the students completed a survey after the post-study test to report on their use of the flashcards and their opinions about vocabulary learning. Surprisingly, only one student in the experimental group reported using the digital flashcards. This was backed up by the data on Memrise, which showed that only one student had logged on. The majority of students in the control group reported studying the physical flashcards to some extent. 30 students expressed a preference for physical flashcards, which could be used anywhere and at any time.

These results illustrated that students may need more access to digital resources if this approach is to be followed. Alternatively, vocabulary learning strategies could be taught to students for use with physical flashcards, although further research is required to justify such use of limited classroom time.

Keywords: flashcards, vocabulary acquisition, Memrise, digital language learning

1. Introduction

Research into the use of Computer-Assisted Language Learning (CALL) methods is becoming an increasingly important area in the field of English as a foreign language. Paper flashcards have long been known to be a beneficial method of learning vocabulary (Nation, 2001; Schmitt & Schmitt, 1995), but recently, digital flashcards have emerged as potential alternatives (Yüksel, Mercanoğlu, & Yılmaz, 2020; McLean, Hogg, & Rush, 2013). Data from previous studies have shown that spaced-repetition, a feature of some digital flashcards, has led to increases in vocabulary retention (Hirschel & Fritz, 2013), particularly in long-term retention (Bahrick, Bahrick, Bahrick, & Bahrick, 1993). The role of self-motivated use of digital flashcards in Japanese high schools has remained largely unexamined, with the exception of Nakata's (2008) study, which is 13 years old at this stage. Recent evidence suggests that Japanese students are more digitally literate now than they were even a few years ago (OECD, 2015, 2019).

This research paper aims to investigate the attitude of Japanese students towards different forms of vocabulary self-study. The question to be investigated is whether Japanese high school students are more motivated to use digital flashcards than physical flashcards with little or no teacher supervision. The importance and originality of this study are that it explores an area (technology) where the students, as digital natives, are mostly more literate than their teachers. If students can be motivated to explore new learning methods without much input or assistance from teachers, they will not be limited by the teachers' lack of familiarity with technology. The author's personal experience of using digital flashcards in learning languages, in addition to the fact that the curriculum in the school where he teaches dictates mandatory weekly vocabulary tests, has prompted this research.

2. Literature Review

The literature on second language learning has repeatedly emphasised the importance of vocabulary acquisition (Alqahtani, 2015; McLean, Hogg, & Rush, 2013). This is particularly applicable to English as a Foreign Language (EFL) students, as in Japan. Hunt and Beglar (2005) argue that such students may have inadequate English lexicons to function in the modern world and require focused vocabulary instruction.

In recent years there has been an increasing amount of literature emphasising the need for self-study to complement classroom study (e.g., Aminatun & Oktaviani, 2019; Bakla & Cekic, 2017) especially since there is insufficient time to teach all the vocabulary required during regular classes. Mindog (2016) stresses that students in Japan receive insufficient language instruction. The Japanese government has stated that high school students should pass the STEP EIKEN Grade 2 test (equivalent to level B1 in the CEFR - Common European Framework of Reference, Council of Europe, 2001). However, the Nippon newspaper (Nippon.com, 2019) reported on a government survey from 2018, showing that only about 40% of high school students had passed the lower Grade Pre-2 (A2 in CEFR). These figures suggest that more self-study is needed.

Numerous studies on vocabulary acquisition have shown that flashcards are an effective method for students to learn by themselves (e.g., Ashcroft, Cvitkovic, & Praver, 2018), with Nation and Chung (2009) concluding that flashcards are the best method of deliberate learning. This view is also supported by Elgort (2011) and Ashcroft and Imrie (2014). In recent years, there has been an increasing amount of research supporting the use of digital flashcards over other methods of vocabulary study (e.g., Ashcroft et al., 2018; McLean et al., 2013; Yüksel, Mercanoğlu, & Yılmaz, 2020). Digital flashcards are flashcards that take advantage of computing power. Digital flashcards
vary in content, but most utilise spaced-repetition. This allows the computer to schedule reviews after an appropriate period, for each item individually, requiring no effort from the user. In a critical review of nine digital flashcard programs, Nakata (2011) concluded that digital flashcards stand out as one of the more effective ways of deliberate second language (L2) vocabulary learning.

Some researchers reported no significant difference in the performance of students using digital and physical flashcards (Hirschel & Fritz, 2013; Nakata, 2008). However, the latter two studies found that digital flashcards were superior for long-term retention. Sage, Krebs, and Grove (2017) showed that students performed worse with computer flashcards compared to paper and tablet flashcards. However, that study removed most of the computational benefits of digital flashcards (e.g., spaced-repetition, internet links, audio files). This finding suggests that students may prefer other platforms over computers. Hirschel and Fritz concluded that the long-term retention that students exhibited in their study was primarily due to the spaced-repetition system of the digital flashcards. Spaced-repetition means that newer and more difficult items are shown more frequently, while easier items are seen less often.

Data from several studies highlight the benefits and efficiency of spaced-repetition in both manual and digital forms. Bahrick (1979) and Miles and Kwon (2008) found that post-test scores were similar with or without spaced-repetition. However, both studies show significantly better performances in delayed tests. Bahrick et al. (1993) demonstrated this effect persisting to intervals of up to five years. Bower and Rutson-Griffith (2016) reported that while spaced-repetition systems (SRS) activities took up about 1.5% of student study time, it accounted for approximately 11% of the score increase recorded. These results illustrate that spaced-repetition can be an efficient method for improving the long-term retention of vocabulary. Efficiency should be the key criterion when evaluating vocabulary learning activities (Ellis, 1995).

The evidence presented in this section suggests that digital flashcards can be beneficial to all language learners. However, in Japan, some factors are impeding the implementation of CALL. Murray and Blyth (2011) highlighted the lack of basic computing experience of a group of freshman university students in Japan. Although an OECD (2015) report showed that 25% of Japanese young people (16-29) lacked basic computing skills, this problem had been reduced by 2019, with Japanese young people ranking near the top of OECD nations (OECD, 2019). In the same 2019 report, however, it was shown that 80% of Japanese teachers have insufficient ability when it comes to technology.

Xiao et al. (2005) insist that it is important for teachers to scaffold the learning of students when it comes to studying with technology. Without knowledge of CALL materials themselves, or adequate resources in the schools, teachers will not be able to do so. This present study investigates to what extent students, as digital natives, are capable of and willing to study digital flashcards with little to no teacher supervision or assistance.

3. Methods

3.1 Choice of software

There are many digital flashcard programs available (Nakata, 2011). However, this study is particularly interested in the implementation of SRS in flashcards. Seibert Hanson and Brown (2020) found that students mostly disliked using the program 'Anki' as it was difficult to use and not visually appealing. More favourable feedback was given for 'Memrise' (www.memrise.com) in studies by Aminatun and Oktaviani (2019) and Bakla and Cekic (2017). Memrise also features

motivating gamification features such as points and leaderboards. In the author's personal experience and opinion, using both programs for over ten years, Memrise is more user-friendly, visually appealing, and has a more intuitive interface. For these reasons, Memrise was chosen as the digital flashcard software for this study.

3.2 Using Memrise

After logging on to Memrise, students are introduced to new words in sets of 5. Each English word is presented with its Japanese translation (Figure 1).

PClynes I	Elken Pre-1 - New level		 ×
	ENGLISH literacy JAPANISE 読み書きの能力	o Next	
		¥ 0	

Figure 1: English and Japanese words introduced

The student is then prompted to identify the word through multiple choice (Figure 2) and spelling questions (Figure 3). These are provided in both English to Japanese, and Japanese to English questions.

7 PClynes Elken Pre-1 - New level		-	×
	0		
Pick the correct answer	? I don't		
読み書きの能力	know		
1 literacy 2 conversant	F 0		
I impassive I loiter			

Figure 2 – Multiple choice question to recognize correct translation

PClynes Elken Pre-1 - New level	
	403
Type the correct translation	?
読み書きの能力	I don't know
ENGLISH	×
	40
a u y l e i t c r	

Figure 3 – Translation spelling check

Once an item is considered in short term memory by the algorithm (based on how many correct or incorrect answers), it is scheduled for a review, following spaced repetition patterns. Students are prompted when reviews are necessary.

3.3 Participants

The participants were 38 high school students in a commercial high school in a small city in a rural prefecture of Japan. Students were aged 16-17 (average 16.85). These second-year students were enrolled in the International Business course. 33 students were female, and the remaining five were male. 33 students had passed the EIKEN Grade 2 English test, while the remaining five had passed the lower Grade Pre-2 test. This shows that students were above average compared with the national average (Nippon.com, 2019).

Students were randomly assigned to equal groups of 19. The control group used physical flashcards and consisted of 16 females and 3 males. The experimental group used digital flashcards and consisted of 17 females and 2 males.

3.4 Preparation of materials

Vocabulary items were chosen from a vocabulary list for EIKEN Grade Pre-1, the next test for most students. A commonly used vocabulary book was selected (Obunsha, 2021), and 25 items were randomly chosen from 1800 in the book (see Appendix A). 25 is the number of vocabulary questions that appear in an EIKEN test. Further, this number falls within the range of 20-50 items appropriate for a set of flashcards (Crothers & Suppes, 1967).

Sets of physical flashcards were printed on thick card measuring 5cm by 3cm. These cards were held together with a detachable metal ring. The cards had the English word/phrase on one side and the Japanese translation on the reverse.

The digital flashcards were created using the Memrise website. Individual accounts were set up for each student. Random strings were used as usernames to protect the identity of the students. A video illustrating how to log-in and use the website was recorded. A card containing personal log-in information, a link to the Memrise website, and a link to the video was made for each member of the experimental group.

The pre-test was constructed using sample sentences found in the online corpus: www.englishcorpora.org/iweb/. When such sentences were deemed overly complicated or unclear, a Google search was run to find appropriate, illustrative sample sentences. The post-test was identical in content to the pre-test. However, the order of the questions and the possible answers were randomly rearranged to prevent memory or pattern interference from the pre-test.

A survey was created to gather the opinions of the participants (Appendix B). The survey consisted of two 5-point Likert scale questions, two open-ended questions, and a request to report the amount of time spent studying.

4. Procedure

Prior to data collection, the participants received an explanation of the project. The goal of this study was to determine the most efficient method for them to study vocabulary. Following this explanation, students were asked to complete a consent form, including their parents'/guardians' permission. This form was provided in Japanese and English to ensure informed consent.

In order to identify any disparity between the control and experimental groups, a pre-test was administered. Students were given the test and answer sheets and asked to circle the most appropriate answer. Both the answer sheets and test sheets were collected at the end of the test to prevent them from being used as study aids.

Upon completing the test, participants in the control group were each given a set of paper flashcards. Members of the experimental group were given their individual digital information cards.

After the study period (42 days), students took the post-test. Immediately following the post-test, participants were given the survey to complete in their own time.

After gathering all of the data, independent sample t-tests were carried out to analyse the test data. Due to the small sample size, a p-value of < 0.05 was considered significant. The survey answers were also compiled and analysed.

5. Results

The first set of analyses compared the results of the two groups in the pre-test. Full results can be seen in Appendix C. All tests had a maximum score of 25. Two-tailed t-tests found no significant differences between the groups. Similarly, in the post-test, there was no statistical difference between the two groups (see Table 1).

	Pre-test		Post-test	
	Control	Experimental	Control	Experimental
Mean	11.05	12.26	13.74	11.74
Standard	2.58	2 34	5 1 5	1 18
Deviation (SD)	2.38	2.34	5.15	4.40
2-tailed p-	0.15		0.25	
value	0.15		0.23	
Significant?	No (p > 0.05)		No $(p > 0.05)$	

Table 1: Pre- and post-test analysis between groups

The experimental group showed a slight decrease in scores in the post-test compared to the pre-test. However, t-test analysis revealed that this difference was not significant. However, the control group improved from the pre-test to the post-test, and this difference was statistically significant (see Table 2). Table 2 contains the same raw data as Table 1 but presented in a different format and comparing different groups for the p-value calculation.

	Control		Control			Experimen	ntal
	Pre-test	Post-test		Pre-test	Post-test		
Mean	11.05	13.74	1	12.26	11.74		
SD	2.58	5.15		2.34	4.48		
2-tailed p- value	0.03			0.60			
Significant?	Yes (p < 0.05)			No $(p > 0.$	05)		

Table 2: Differences in pre- and post-test results of each group

Next, the survey data were analysed. 35 of 38 students returned the completed survey. Full details of the survey results can be found in Appendix D.

The most striking result to emerge from this data is that there was almost no participation on the part of the experimental group. 17 students reported using the software for 0-10 minutes. One student reported a study time of 50-60 minutes, and the final student from the experimental group did not return the survey. These figures are backed up by the data on Memrise, which shows that only one student logged on. This was the student who claimed 50-60 minutes study time, with Memrise data showing 57 minutes for that user. In contrast, a majority of the control group who returned the survey (10 of 17) reported that they used paper flashcards for at least 10 minutes.

In response to the question "Which type of flashcard do you prefer?" the overwhelming majority of students (30) expressed a preference for physical flashcards. Three students preferred smartphone flashcards, and only two preferred computer flashcards. Students also detailed the reasons why they liked their chosen medium. The most common advantage of physical flashcards was the ability to study anywhere with them. The results are illustrated in Table 3.

Preferred medium	Reason	Responses
	Can study anywhere	13
	Can study in school	8
	Easy to carry	2
Physical (30)	Get distracted using technology	2
	Unable to use technology	2
	Can write on them	1
	Just a feeling	1
	No reason	1
	Can use all the time	1
Smartphone (3)	Can use commuting to school	1
	Easy to study	1
Commuton (2)	Use computers every day	1
Computer (2)	Fun, gamification	1

Table 3: Preferred flashcard medium and reason

A majority of students (30 out of 38) reported using vocabulary books as their primary method of studying vocabulary. The methods included reading only, writing only, reading and writing, and listening to an accompanying CD. One popular method was using a red sheet. A red sheet is a transparent sheet of red plastic. By placing it on a page, all red ink is hidden. Thus, if the translation or answer is printed in red ink, the user can test themselves. Red sheets are commonly used in Japanese vocabulary books. Other methods of study reported were physical flashcards and electronic dictionaries, with two students not answering this question (see Table 4).

Method of study	Further detail	Responses	
	Reading only	10	
	Red sheet	7	
Vacabulary back (20)	Writing only	6	
vocabulary book (30)	Reading and	6	
	writing	0	
	Listening	1	
Physical flashcards (2)	-	2	
Electronic dictionary	Looking up words	1	
(1)	as they come up	1	
No response	-	2	

Table 4: Students' preferred method of vocabulary study

6. Discussion

This study aimed to investigate Japanese high school students' motivation to use digital flashcards without teachers' direct instruction or supervision.

The results of this study clearly show that students did not engage with the software, with the exception of one student. These results are in line with other studies that show low levels of student use (e.g., Seibert Hanson & Brown, 2020). These findings support Xiao et al.'s (2005) suggestion that scaffolding is vital in CALL instruction.

On the contrary, most students in the control group engaged with autonomous learning under no supervision. This suggests that the students in this class are motivated to study independently and do not require teacher supervision in general. This finding indicates that the problem may lie with technology itself. It is likely that students do not perceive the benefits of digital flashcards. Students also promoted physical flashcards as being accessible anytime. These responses highlight the lack of access to technology in school for Japanese high school students.

Many students responded with preferences for physical learning materials. Although many studies have highlighted the benefits of CALL study methods when correctly applied, it seems that there is still a hesitancy to use them. Mehran, Alizadeh, Koguchi, and Takemura suggest that "technology has not yet been normalised, in Bax's (2011) terms, in Japanese educational settings" (2017, p. 1). Nakata (2011) mentioned that a lack of metacognitive knowledge about software might prevent students from engaging with such software.

Although the literature is clear that digital flashcards with automated SRS are more efficient and beneficial to vocabulary learning, we must address the real issue that students do not always want what is best for them (Kornell, 2009; Seibert Hanson & Brown, 2020). We are left with two

options: to impress upon students the benefits of digital methods; or to introduce vocabulary learning strategies for their physical materials.

The first solution would be for teachers to spend more significant time explaining the benefits of digital flashcards and other CALL methods to students. However, Bush (2008) noted that many language teachers have an unfavourable view of CALL materials. Similarly, Brown, Campbell, and Weatherford (2008) indicated that a lot of technology in Japanese schools was rarely utilised, despite the financial input. As I have already mentioned, many Japanese teachers have low digital literacy levels, which may explain their hesitancy to adopt technological teaching methods. It seems that this approach would be quite challenging to implement. Including more digital literacy training in pre-service and in-service teacher training courses could begin to address this issue.

The second approach would be to promote vocabulary learning strategies (VLS) for students using physical materials. These methods have been shown to improve vocabulary acquisition (e.g., Dizon & Tang, 2017; Mizumoto & Takeuchi, 2009). The advantage would be that no knowledge of technology would be required of the teacher. However, as Nakata (2008) states, such methods require sophisticated strategies to be implemented by the students. These strategies involve accurately monitoring one's own progress and consistently scheduling reviews while also adding new lexical items at appropriate times. Further research is needed to investigate whether students would be motivated to adopt some of these strategies for physical flashcards, for example, manual spaced-repetition.

The most popular reason for preferring physical flashcards was being able to use them anywhere. This seems almost contradictory as that is one of the supposed benefits of digital flashcards. However, given regulations on using technology, including smartphones, in schools, this response makes sense. Providing more access to technology or allowing the use of smartphones in school may affect this, although it would also affect other parts of school policy. After this study took place, the prefectural board of education provided each student with a tablet for use in class, and for distance learning as necessary. Further research could reveal if the provision of tablets has changed student motivation for digital learning tools such as digital flashcards.

7. Limitations

This study has some limitations. First, the number of participants was low, with both the experimental and control groups consisting of only 19 students.

The participants in this study were all members of the same International Business Course and are quite highly motivated. As a result, these findings are not generalisable to all Japanese students. One would expect to see less engagement in less motivated students. More academically minded students, in one of Japan's Super Science High Schools (SSHS), for example, may be motivated towards passing specific tests. Further research would be required to investigate both of these cases.

The study was relatively short in length. School closures, due to significant snowfall and the pandemic, exacerbated the problem. Many of the benefits of digital flashcards can only be seen in the long-term. The main focus of this study was to investigate student motivation to use different formats of flashcards. The t-tests provide detail on the relative efficacy of the format, however the full benefits of digital flashcards, due to automated spaced-repetition, were not expected to be visible in such a short study.

Moreover, the majority of participants were female, with 33 females and just five male participants. Technology fields are usually dominated by men, and the gender gap in STEM is well documented (Casad et al., 2021). This may have influenced female engagement with the software. However, in the experimental group, the software's sole user was female, and the two males in that group did not log on. Further research would be required to investigate whether gender (and other student-related variables such as age) has an effect on the use of digital flashcards.

8. Conclusions

Digital flashcards with built-in spaced-repetition software have been shown to promote high vocabulary retention levels, particularly in the long-term. However, students worldwide have continued to show little interest in using them, although Aminatun and Oktaviani (2019) showed positive responses.

In this present study, students were much more eager to study with physical flashcards than their digital counterparts. Some success has been observed by using class time for instruction (Bakla & Cekic, 2017). However, this solution has several drawbacks: limited classroom time, teachers with limited digital literacy, and lack of technology in classrooms.

This study investigated whether Japanese high school students would be willing to utilise digital flashcards in their self-directed study. However, it was shown that there are still several barriers to this implementation, and students displayed a distinct preference for physical materials. More research is needed, but these findings suggest that either significant support is required for digital flashcards to gain recognition and widespread use, or that time would be better spent teaching students vocabulary learning strategies for use with physical materials.

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Appendices

Appendix A

Random Vocabulary Items 25 random numbers were chosen from 1 to 1800 and linked to vocabulary in the selected book.

Random Number	English	Japanese
1214	nominate	を指名する
1664	get around to	をする余裕ができる
1189	extort	を強要する
819	currency	通貨
1476	redundant	不要な
850	occupancy	占有
1131	loiter	ぶらつく
666	stroll	ぶらぶら歩く
1300	dread	不安
1287	detour	回り道
330	ethnicity	民族性
1479	outstanding	際立った
1453	enviable	うらやましい
409	specific	明確な
732	edge	刃
1164	scribble	を書きなぐる
428	decisive	決定的な
1078	authorize	を許可する
169	creativity	創造性
138	literacy	読み書きの能力
564	precede	に先行する
1182	stumble	つまずく
96	debris	残骸
396	fragile	壊れやすい
1638	drag on	長引く

Appendix **B**

Post-test survey Name: Age:			Survey			
Name:	Post-test survey					
Age:	Name:					
What level of EIKEN have you passed?	Age:					
How useful did you find the flashcards? (digital or physical) Not useful at all Not useful A little useful Useful Very usefu 1 2 3 4 5 How do you usually study vocabulary? How do you usually study vocabulary? How much time did you spend studying the flashcards (digital or physical)? Please circle the clo answer 0-10 minutes 10-20 minutes 20-30 minutes 30-40 minutes 40-50 minutes 50-60 minutes Other: How easy is it for you to use a computer every day? Very easy quite easy easy not so easy difficult 1 2 3 4 5 Which do you think is better: physical flashcards / Computer flashcards / Smartphone flashcards	What level of EIKEN h	ave you passed?				
Not useful at all 1Not useful 2A little useful 3Useful 4Very useful 4How do you usually study vocabulary?	How useful did you find	d the flashcards? (digit	al or physical)			
How do you usually study vocabulary?	Not useful at all 1	Not useful 2	A little useful 3	Useful 4	Very useful 5	
How much time did you spend studying the flashcards (digital or physical)? Please circle the cloanswer 0-10 minutes 10-20 minutes 20-30 minutes 30-40 minutes 40-50 minutes 50-60 minutes Other:	How do you usually stu	dy vocabulary?				
How much time did you spend studying the flashcards (digital or physical)? Please circle the cloanswer 0-10 minutes 10-20 minutes 20-30 minutes 30-40 minutes 40-50 minutes 50-60 minutes Other:						_
How much time did you spend studying the flashcards (digital or physical)? Please circle the clo answer 0-10 minutes 10-20 minutes 20-30 minutes 30-40 minutes 40-50 minutes 50-60 minutes Other:						_
0-10 minutes 40-50 minutes10-20 minutes 50-60 minutes20-30 minutes Other:30-40 minutesHow easy is it for you to use a computer every day?Very easy 1quite easy 2easy 3not so easy 4difficult 5Which do you think is better:physical flashcards/Computer flashcards/Smartphone flashcards	How much time did you answer	a spend studying the fla	ashcards (digital or p	hysical)? Pleas	se circle the closes	st
How easy is it for you to use a computer every day? Very easy quite easy easy not so easy difficult 1 2 3 4 5 Which do you think is better: physical flashcards / Computer flashcards / Smartphone flashcards	0-10 minutes 40-50 minutes	10-20 minutes 50-60 minutes	20-30 minutes Other:	30-40	minutes	
Very easy 1quite easy 2easy 3not so easy 4difficult 5Which do you think is better:physical flashcards /Computer flashcards /Smartphone flashcards	How easy is it for you t	o use a computer every	v day?			
Which do you think is better: physical flashcards / Computer flashcards / Smartphone flashcards	Very easy 1	quite easy 2	easy 3	not so easy 4	difficult 5	
physical flashcards / Computer flashcards / Smartphone flashcards	Which do you think is b	better:				
	physical flashcards /	Computer flashe	cards / Smart	ohone flashcard	ls	
Why?:	Why?:					

Appendix C

Pre-test				Post-test		
Student	Digital	Physical		Student	Digital	Physical
1	11	10		1	7	7
2	12	16		2	10	14
3	16	7		3	22	10
4	14	15		4	4	17
5	12	13		5	12	22
6	10	8		6	8	7
7	11	10		7	11	8
8	15	13		8	9	17
9	15	8		9	19	21
10	12	12		10	9	16
11	12	10		11	13	8
12	15	14		12	9	22
13	15	10		13	18	15
14	6	10		14	8	16
15	11	9		15	15	10
16	11	15		16	11	9
17	12	11		17	8	21
18	10	11		18	15	11
19	13	8		19	15	10
Average	12.26	11.05	1	Average	11.74	13.74
SD	2.34	2.58		SD	4.48	5.15

Test results

Appendix D

Survey results

Student numbers used here are merely to present the data easily in groups. They are not student class numbers or seating numbers. All students were split into groups randomly. The data is broken up into three tables here to allow for readability. A blank cell indicates no answer was given.

Student	Group	Age	EIKEN	Time Spent	Ease of access to computer
1	Experimental	17	2	0-10	2 – Quite easy
2	Experimental	17	2	0-10	2 – Quite easy
3	Experimental	17	2	0-10	2 – Quite easy
4	Experimental	17	2	0-10	1 – Very easy
5	Experimental	17	2	50-60	1 – Very easy
6	Experimental	17	2	0-10	1 – Very easy
7	Experimental	17	2	0-10	3 -Easy
8	Experimental	17	Pre-2	0-10	1 – Very easy
9	Experimental	17	2	0-10	2 – Quite easy
10	Experimental	17	2	0-10	1 – Very easy
11	Experimental	17	2	0-10	4 – Not so easy
12	Experimental	17	2	0-10	
13	Experimental	17	2	0-10	2 – Quite easy
14	Experimental	16	2	0-10	3 -Easy
15	Experimental	17	Pre-2	0-10	2 – Quite easy
16	Experimental	17	2	0-10	1 – Very easy
17	Experimental	17	2	0-10	2 – Quite easy
18	Experimental	17	2	0-10	2 – Quite easy
19	Control	17	2	10-20	4 – Not so easy
20	Control	17	2	10-20	3 -Easy
21	Control	16	2	0-10	
22	Control	17	2		5 – Difficult
23	Control	17	Pre-2	0-10	2 – Quite easy
24	Control	17	2	20-30	
25	Control	17	2	0-10	1 – Very easy
26	Control	16	2	10-20	1 – Very easy
27	Control	17	2	0-10	
28	Control	17	Pre-2	10-20	2 – Quite easy
29	Control	17	2	0-10	2 – Quite easy
30	Control	16	2	20-30	1 – Very easy
31	Control		Pre-2	10-20	1 – Very easy
32	Control	16	2	0-10	3 -Easy
33	Control	17	2	10-20	1 – Very easy
34	Control	17	2	20-30	2 – Quite easy
35	Control	17	2	20-30	1 – Very easy

Student	Preference	Why
1	physical	study anywhere
2	physical	study anywhere
3	physical	use it during school
4	smartphone	use smartphones all the time
5	computer	fun, gamification
6	physical	study anywhere
7	physical	study anywhere, even at school
		computers/smartphones difficult to use, physical can be used
8	physical	quickly anywhere
9	physical	study anywhere. No internet connection
10	physical	don't know how to use digital
11	physical	study anywhere, anytime, even limited time
12	physical	study anywhere
13	physical	study anywhere, speed
14	physical	easy to carry
15	physical	study anywhere
16	physical	distracted using computer or smartphone
17	physical	use it during school, can't use smartphone
18	physical	distracted using computer or smartphone
19	smartphone	Use when commuting to school
20	smartphone	easy to study
21	physical	use it during school
22	physical	study anywhere
23	physical	use during school
24	physical	
25	physical	use it during school
26	physical	use it during school
27	physical	can write on them
28	physical	study anywhere
29	physical	just a feeling
30	physical	easy to carry
31	physical	study anywhere
32	computer	we use computers every day
33	physical	use it during school
34	physical	use it during school
35	physical	can be studied whenever

~ 1	
Student	How they study
1	vocabulary book, read and write
2	vocab book, red sheet
3	vocabulary book, read many times
4	vocabulary book Writing words
5	vocabulary book, reading
6	
7	read vocabulary book - Study in the evening and review in the morning
8	Writing words from the tango book
9	read vocabulary book, every day
10	vocab book, red sheet
11	Writing word from book
12	vocabulary book reading
13	Vocab book, red sheet
14	reading vocabulary book
15	Electronic dictionary, one word at a time
16	vocab book, read and write
17	writing in notebook the words from vocabulary book
18	read words in the morning in eiken tango book
19	reading a wordbook
20	reading, writing, words from vocabulary book
21	vocabulary book and red sheet
22	red sheet with my tango book
23	reading vocabulary book many times
24	physical flashcards
25	writing words from the vocabulary book
26	
27	vocabulary book, read and write
28	writing words from the book
29	physical flashcards
30	listening. Writing is a waste of time
31	vocabulary book, read and write
32	vocab book, read and write
33	read again and again from the book
34	vocab book, red sheet
35	red sheet with my tango book

Authors' and Editors' profiles

Authors

Thomas Antony Hammond received his MA in Applied Linguistics with TESOL in 2020. He is currently undertaking a PhD in Linguistics which concerns the role of formulaic language on the acquisition of a second language. More generally, he is interested in the interaction of cognitive and generative models of language, and the potential theoretical implications this has for the effect of input and usage on the acquisition of linguistic knowledge.

Daniel Tamm completed his MA with distinction in Discourse Studies at Lancaster University in 2021, with a dissertation titled "Multimodal rhetoric in internet memes: Using enthymemes to constitute epistemic communities". He is now a PhD student in Semiotics and Culture Studies at the University of Tartu, researching the discourse of the far-right in Estonia from a cognitive semiotic outlook. The main goal of the thesis is to model said language at different levels of political organisation, from online communities to party politics. His other research interests include the political potential of internet memes and the strategic narratives of the Russian Federation.

Cássio Morosini is an MA student in Theoretical and Descriptive Linguistics at the Federal University of Minas Gerais. Since 2017, he has conducted research on discourses about immigration in Brazilian and American media, and his MA thesis is focused on the metaphors employed by Brazilian far-right groups on this subject. From 2021 to 2022, he also worked as a Portuguese as a Second Language teacher at the same university. He is interested in exploring the relationship between language, culture and ideology within the framework of Cognitive Linguistics, Corpus Linguistics and Critical Discourse Analysis.

Chara Vlachaki received her MA in Linguistics: Theory and Application from the National and Kapodistrian University of Athens in 2021. Her MA thesis "Emotions and mental images in literature: How individuals with Asperger's and neurotypicals infer the ineffable" was a comparative study that explored the relationship between cognition and non-propositionality. As a doctoral researcher at the University of Brighton, she continues to explore non-propositionality and affect. Her research interests include cognitive pragmatics (relevance theory), the role of affect and the interpretation of vaguer aspects of meaning as in artworks.

The Multilingual College Email Corpus (MCEC) team consists of post graduate linguists from the University of Arizona who are interested in corpus linguistics, computational linguistics, genre studies, second language writing, and technology-assisted language learning. Damian Romero Diaz is a Ph.D. candidate in Hispanic Linguistics. Wei Xu, Hui Wang, and Hanyu Jia are three Ph.D. candidates in Second Language Acquisition and Teaching. Laura Viale is currently an MA Fellow in Spanish at the Languages and Culture Studies Department at the University of North Carolina at Charlotte. Peiwen Su is a graduate student from University of Arizona.

Arpita Gargesh received her MA in Cognitive Linguistics from Bangor University in 2016. She returned to pursue her doctorate degree in 2018. While her PhD study is based on grammatical gender transfer in the bilingual and multilingual contexts, she has also carried out and presented an independent study based on Moving Time and Moving Ego spatiotemporal metaphors in Marathi at the Metaphor Festival in Amsterdam (2019). Her research interests have varied across Cognitive

Linguistics and psycholinguistics and include the aforementioned areas, crosslinguistic influence (CLI), as well as gesture perception and interpretation.

Yuxin Lu completed her MA in Language and Linguistics from Lancaster University in 2021 and is currently a PhD student at the University of Tübingen in Germany. Her research interests center around phonetics, psycholinguistics, and quantitative linguistics. Specifically, her focus is on examining the actual realization of lexical tones in connected speech. To explore this topic, she employs quantitative methods and analyzes corpus data.

Peter Clynes received his MA in Applied Linguistics and TESOL from the University of Leicester in 2022. He has given talks on technology in language education and gave a keynote speech to language teachers in Fukui Prefecture, Japan, on Learner Autonomy and Conversation Analysis. He is currently working at Kanazawa Seiryo University in Japan, focusing on language proficiency tests and study abroad programs. His current research focuses on preparing students to study abroad through simulation and gamification to reduce culture shock and maximize the benefits of the experience.

Editors

Sam Oliver was, at the time of this conference, studying for his Ph.D. on a project which developed the first method for inductively locating and analysing (im)politeness metalanguage in a corpusbased approach. Sam Oliver now works as an Insight Application Manager at Cambridge University Press & Assessment, embedding insights from research into English language teaching, learning, and assessment products. His expertise are in the domains of (im)politeness, (meta)pragmatics, corpus linguistics, interjections, historical linguistics, and stylistics.

Pernille Bogø-Jørgensen was awarded her Ph.D. from Lancaster University in 2023. Her work demonstrates an operational approach to the study of metaphor scenarios, combining methods from systemic functional linguistics with cognitive approaches to metaphor. She combines the perspectives of Critical Discourse Studies and Cognitive Linguistics in the tradition of critical metaphor analysis. Her research contributes to the knowledge of how metaphor is used in public health communication, which builds on her practical experience with medical information.