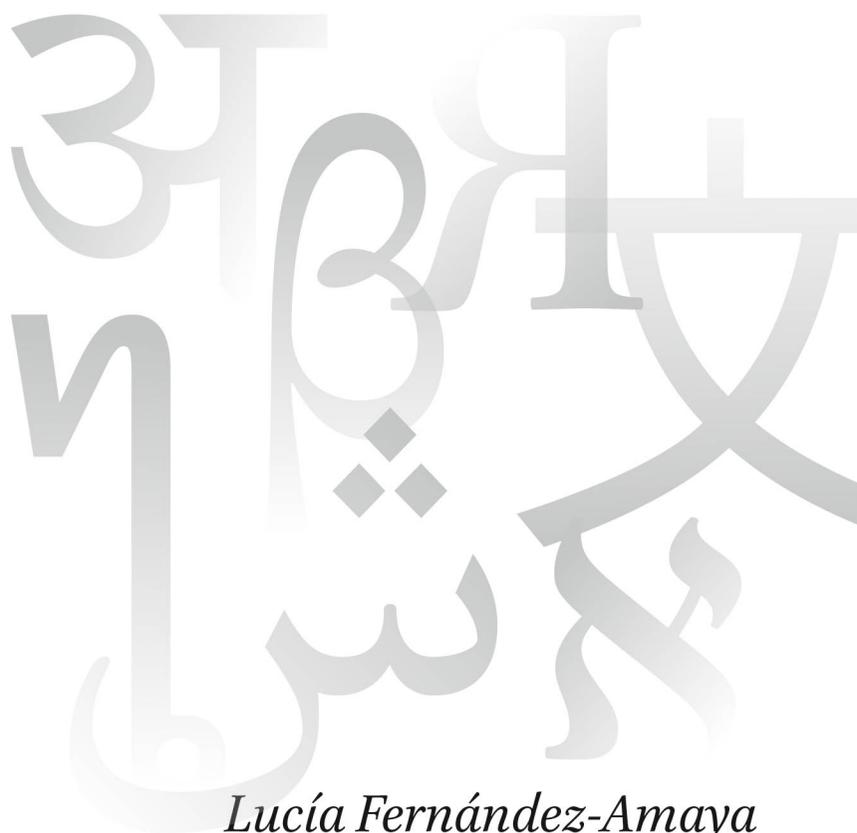


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Lucía Fernández-Amaya

A Linguistic Overview of WhatsApp Communication

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A Linguistic Overview of WhatsApp Communication

By

Lucía Fernández-Amaya



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*This book is dedicated to my family
Thank you for your constant love, emotional support and understanding*



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A Linguistic Overview of WhatsApp Communication

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Abstract

Today, digital discourse has become a mode of communication that is both widespread and global, WhatsApp being one of the most popular Instant Messaging tools. WhatsApp-supported communication is thus gradually attracting the attention of researchers. The present volume seeks to contribute to this field of linguistics by providing a critical review of the state-of-the-art of WhatsApp studies. With this aim in mind, different types of sources were evaluated and the retrieved documents were classified into two main thematic domains. On the one hand, references that focused on WhatsApp linguistic characteristics were included: status notifications, multi-modal elements such as emojis or memes and language variations, among others. On the other, works that described the use of WhatsApp to learn English as a foreign or second language (EFL/ESL) were reviewed. Based on this critical literature review, it was possible to detect relevant lines of future research.

Keywords

WhatsApp – digital discourse – EFL/ESL – Instant Messaging – literature review

1 Introduction

1.1 *Scope and Motivation*

Today, digital discourse has become a mode of communication that is both widespread and global. One of the most popular Instant Messaging (IM) tools is WhatsApp. WhatsApp Inc. was created by Jan Koum and Brian Acton in 2009 in California (USA), as an alternative to SMS. Bought by Facebook in February 2014, it reached 2 billion monthly users by March 2020, according to Statista¹ (2021). WhatsApp-supported communication is thus gradually

¹ A company specialising in market and consumer data.

attracting the attention of researchers. The present volume seeks to contribute to this field of linguistics by providing a review of the state-of-the-art of WhatsApp studies.

Herring's (1996) edited volume on computer-mediated communication is widely regarded as one of the first books in the field. It was followed by other edited collections (Bou-Franch & Garcés-Conejos Blitvich, 2019; Johansson et al., 2021; Jones, et al., 2015; Thurlow & Mroczek, 2011; Xie et al., 2021; Vásquez, 2022, among others), as well as numerous research articles. A number of journal special issues have also contributed to the discipline (e.g., Androutopoulos, 2006, 2021; Androutopoulos & Beißwenger, 2008). All these productive takes have undoubtedly helped to establish digital discourse analysis as a field of research within linguistics.

According to Bou-Franch and Garcés-Conejos Blitvich (2019), digital discourse analysis works fall into three different groups, or waves. The first dealt with descriptive linguistic studies performed in the 1990s. This was followed by a second trend in the 2000s, in which researchers paid more attention to linguistic variability, social diversity and identity, among other issues. Lastly, the third wave corresponds to recent research that takes multimodality into account (i.e., the use of videos, photos, emojis, memes, gifs, etc.). This latter field of research is currently in vogue. Certain digital discourse scholars, however, appear to continue to focus on language only, overlooking other multimodal aspects. In this regard, I share the opinion of Thurlow and Dürscheid (2020, p. 3) according to whom “[t]he increasingly multi-media and inherently multi-modal nature of digital communication makes this single-track, and sometimes single-minded, approach more and more untenable.” Multimodality should therefore not be left out of digital discourse analyses.

The main objective of this volume is to provide a comprehensive literature review of linguistic studies on WhatsApp and to set forth an analysis of the state of the art in the field. A range of sources were evaluated, seeking to identify relevant works that related to this research area. The retrieved documents were classified into two major thematic domains. On the one hand, references that focused on WhatsApp linguistic characteristics were included: status notifications, emojis, language variation, among others. On the other, works that described the use of WhatsApp to learn English as a foreign or second language (EFL/ESL) were reviewed.

There has been a truly widespread adoption of new technologies for language learning. Moreover, these new practices have further intensified with the restrictions of the COVID-19 pandemic and the worldwide implementation – imposed or not – of online teaching and learning. As a consequence,

social media have been incorporated into different teaching methodologies, WhatsApp being one of the IM tools used. In this sense, Al Abiky (2021, p. 776) describes it as “an educational savior” for distance teaching and affirms that “it has become one of the leading apps for voice and video chatting and teaching widely used for live teaching, coaching, learning and virtual communication and training.” That is why one thematic domain I encountered when performing searches for the present review was related to this topic. Based on this critical literature review, it was possible to detect relevant lines of future research.

1.2 *Method*

Searches were performed between 1 March 2021 and 19 March 2021 in three well-known databases (MLA, LLBA and Scopus). The main reason for choosing these three is that all of them compile linguistic sources. Thus, Scopus² is the largest database of peer-reviewed works (books, scientific journals and conference proceedings), the Modern Language Association (MLA)³ International Bibliography compiles references on language and linguistics, and the Linguistics and Language Behavior Abstracts (LLBA)⁴ database covers all linguistic disciplines (i.e., phonology, phonetics, syntax, morphology and semantics).

An advanced search entering the keyword “WhatsApp” and using the Boolean operator OR in the title, abstract and keywords was conducted, resulting in large amounts of publications in different professional fields. The number of results was excessive, so the search was narrowed down to book chapters, books, as well as journal articles. In addition, the following limits were set:

- Publications with a linguistic focus.
- Publications written in English or Spanish.

The search was not limited in time because this field of research, within digital discourse, is very recent. Thus, it was not deemed necessary to exclude old studies since the first dated back to 2013. The total number of resources obtained before and after refining the search are summarised in Table 1 below.

All these references were imported into the *Mendeley* reference manager, an efficient citation organiser that helps to store and manage different sources. After merging duplicates, a total number of 285 resources was obtained.

² <https://www.scopus.com/>.

³ <https://www.mla.org/>.

⁴ <https://about.proquest.com/en/products-services/llba-set-c/>.

TABLE 1 Total number of resources

Database	Initial results	Final results
MLA	30	14
LLBA	6159	150
Scopus	5710	194
Total		358

Subsequently, a complete reading of all these abstracts was performed and certain studies were discarded for the reasons detailed below:

- They did not address a linguistic topic (192 sources). Some of these works analysed WhatsApp usage from a sociological or anthropological perspective in different communities of practice (i.e., parents, women, adolescents, university students, older people) in a specific country. Other works focused on WhatsApp use in various professional fields such as health, library services, business, computer studies (e.g., dealing with security aspects or privacy concerns), journalism, politics, law (i.e., its use as digital evidence in legal cases), teaching (out-of-class communication and its impact on students' development and student-teacher relationship or teachers' use during the COVID-19 pandemic, among others).
- They were not written in English or Spanish (3 sources).

After excluding the above, a total of 90 sources remained which were reviewed in depth. Subsequently, 13 articles were identified based on the reference lists of the sources already detected. An additional 11 references, however, were discarded for the following reasons: they did not meet the initial criteria (Alzubi & Singh, 2018; Annamalai & Abdul Salam, 2017; Asulami, 2018; Centinkaya, 2020; Cremades et al., 2016; Mnkandla & Minnaar, 2017 and Winet, 2016), the article was an exact replica of a previous paper (Arifani et al., 2020), or the study's inadequate level of English made it impossible to follow the authors' train of thought (Ariyanti et al., 2020; Emenike and Uchechi 2019; Maulina et al., 2019).

Figure 1 below illustrates the review guidelines proposed by Moher et al. (2009) which were followed in this study.

Finally, the process of writing this literature review was based on the five steps described by Rowley and Slack (2004):

- 1) Scanning documents in order to group those that focus on similar topics.
- 2) Making notes so that pieces of text may be easily identified when needed later.

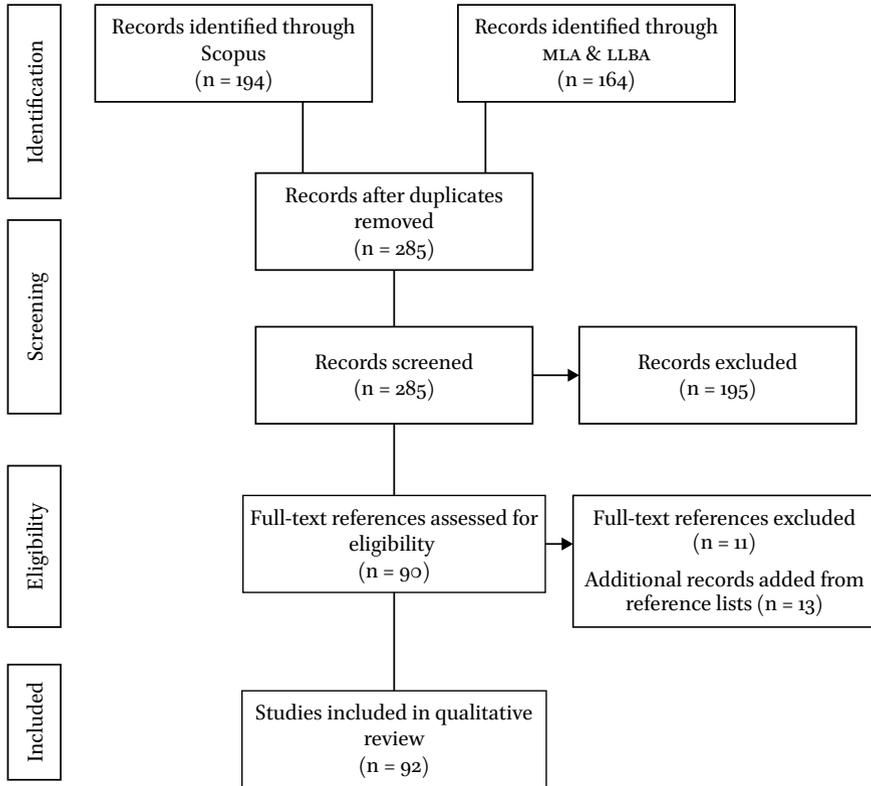


FIGURE 1 Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)

- 3) Structuring the review to organise concepts and documents according to major topics. Worthy of note, some reviewed works could be included in different sections: for instance, Maíz-Arévalo (2018) was not included in the speech events subsection despite the fact that the study analyses expressive utterances. The decision to categorise a reference within a given topic was based on considering, in each case, the main object of analysis.
- 4) Writing the review.
- 5) Building a bibliography, which is in fact an ongoing process from the first step of searching for references.

1.3 Book Overview

This volume is divided into two main sections. Chapter 2 provides a description of the linguistic characteristics of WhatsApp communication. The chapter begins with a description of the IM tool's general linguistic traits, and

the following subsections focus on specific aspects, such as the information contained in profile statuses (2.2), or the use of multimodal elements such as emojis or memes (2.3). The main language variations found are then commented in subsection 2.4: some are common to other kinds of digital discourse, while others are proper to WhatsApp interactions. Subsection 2.5 addresses conflicts originating in WhatsApp interactions and their management, followed by group communication (2.6), the analysis of specific speech events (2.7) and studies based on conversation analysis (2.8). The chapter closes with the linguistics studies reviewed that did not fit into any of the previous topics.

Chapter 3 is devoted to the studies directed towards the effects of using WhatsApp on EFL/ESL acquisition. The different subsections are organised according to the learning aspects addressed in the studies: writing and/or reading (3.1), speaking and/or listening (3.2), vocabulary acquisition (3.3) and other learning purposes (3.4).

Finally, the volume ends with concluding remarks, a summary of the review's main findings and some future lines of research.

2 Linguistic Characteristics of WhatsApp Communication

After more than two decades of digital discourse analysis, it is now widely acknowledged that online communication presents distinctive characteristics, including some which are linked to the multimodal possibilities it offers. As explained in the introduction, WhatsApp was supporting 2 billion monthly users by March 2020 and has thus attracted the interest of linguists.

To facilitate their identification, the reviewed studies are summarised in a table in Appendix 1, which specifies the following categories: author(s), year of publication in chronological order, the type of research, the kind of corpus used and the object of analysis. In the subsections below, the various publications are arranged thematically according to those focusing on WhatsApp's general linguistic characteristics, profile status, multimodality (emojis and memes), language variations, conflict, digital ethnography, speech acts and conversation analysis. The studies that do not fall into any of these categories have been included in the last subsection of this chapter.

2.1 *General Linguistic Characteristics of WhatsApp*

One of the first studies to explore WhatsApp's linguistic characteristics was that of Calero Vaquera (2014). The author performed a highly thorough comparison between the language used in this IM tool and in SMS, on the one hand, and Messenger, on the other. Some of the common characteristics of WhatsApp and SMS are the following:

- 1) Extratextual elements: management of message emissions but not their reception, mutual knowledge among interlocutors or a devaluation of the Maxim of Relevance (Grice, 1975).
- 2) Paratextual elements: dialogic interaction, virtual writing, or lack of anonymity.
- 3) Intratextual elements: punctuation rules not followed, capital letters to emphasize, vowels disappearance, use of present tense, syntactic relaxation.

Some traits common to both WhatsApp and Messenger are as follow:

- 1) Extratextual level: the communicative intention is to transmit information or establish contact, pragmatic politeness is reduced (i.e., absence of greetings and farewells), mutual knowledge among interlocutors or a devaluation of the Maxim of Relevance (Grice, 1975).
- 2) Paratextual level: multimodal turns, dynamic discourse (usually not planned), recording of each intervention's date and time, possibility of including images and audio files, among others.
- 3) Intratextual level: high presence of orality, dynamism and informal register, unconventional use of orthographical signs to compensate the physical lack of interlocutors, communicative function or use of iconic signs (emoticons, emojis or gifs). Calero Vaquera (2014) paid special attention to the latter, indicating that they carried out three main functions: transmitting ideas or feelings; emphasizing the content of the message; and inference softeners or clarifiers of ironic messages.

Unfortunately, the fact that WhatsApp has been continuously updating its options has rendered some of the characteristics mentioned in this article obsolete. For instance, we can silence messages or even block a contact for a given time, thus exercising control over how we receive messages. Furthermore, group communication is not rare – as mentioned by the author – but quite common in WhatsApp. These groups have become tremendously popular as they put family members, friends, workmates, etc., into contact. Thus, dialogic interaction does not have to be the norm since polylogal interactions are usual. Despite the lack of a corpus analysis of natural data, I do believe that Calero Vaquera's complete description in this study (2014) has been the cornerstone of later WhatsApp studies.

Alcántara Plá (2014) could be considered to be the first researcher to have explored a corpus of WhatsApp interactions in Peninsular Spanish in order to compare them with traditional discourse units. After analysing 32 interactions involving 106 participants (176,000 words), he found that the limits of WhatsApp conversations were blurred because opening and closing formulas were often omitted. The author also found that these interactions usually took place simultaneously and/or asynchronously. In this latter case, the

interlocutors' responses sometimes appear after a long delay because the messages they are replying to persist over time in a written form. Overlaps, for their part, were recognised by Alcántara Plá (2014) as characteristic of informal oral Peninsular Spanish and were equally visible in the WhatsApp interactions.

The author also pointed out a further consequence of the lack of physical presence of the interlocutors: the fact that the addressee's identity was not always clear in group interactions. Moreover, he found numerous typographical deformations that sought to make the messages more oral, employing emojis, as well as acronyms and abbreviations. Finally, another characteristic of these IM conversations was their multimodality.

The findings above led the author to conclude that, given the clearly distinct features of WhatsApp interactions, the units of analysis typically employed to approach traditional written/spoken texts were no longer suitable to study these kinds of digital interactions, a stance I agree with.

Vázquez-Cano et al. (2015) and, later, Gómez-del-Castillo (2017) also explored the linguistic characteristics of WhatsApp in Peninsular Spanish. While the former focused on high school students (aged 13 to 16 years), gathering their data in four Spanish provinces (417 chats, 101,401 words), the latter analysed 529 conversations of 38 Master's degree students (3,872 messages and 20,404 words). The most significant findings revealed that WhatsApp writing differed from SMS in that there were fewer shortened words and that orthotypographic variations were less frequent. The orthotypographic and audiovisual characteristics were determined by different variables such as device size, hours of conversation, and the speakers' relationship. Thus, younger participants produced longer conversations. A similar finding was obtained for women, who participated in longer conversations than men. Furthermore, the use of irregular writing and emojis was more frequent among the youngest participants. The kinds of textual characteristics the authors encountered the most were:

- Omission of capital letters.
- Omission of written accents.
- Change of letters in words to make them more oral.
- Joining words.
- Conscious orthographic mistakes (like not using h).
- Words in other languages.
- Use of capital letters for emphasis.
- Omission of letters, especially vowels.

All in all, both Vázquez-Cano et al. (2015) and Gómez-del-Castillo (2017) reached the conclusion that IM communication is no longer solely textual, as it encompasses a range of multimedia elements such as images, videos, audios, stickers, or references to websites. I share these authors' opinion that these

elements are a significant part of WhatsApp interaction, making it a special type of digital discourse worthy of study in itself.

Dhanalakshmi and Subramanian (2017) also compared the language used in WhatsApp but in this case, with Facebook and Twitter language. Unfortunately, despite addressing an interesting topic, the conduct of the study did not meet minimum standards and cannot be regarded as a scientific work. No theoretical section is included, and it is thus not contextualised within a review of previous studies. The goal of the work was too ambitious, and the authors did not accurately explain the procedures followed in the analysis:

The data was collected from various websites such as Facebook, Twitter and WhatsApp. The collected data had been used by different people of different ages, professions, genders in different contexts. The primary data had been collected from social media users who have posted their comments for various videos and images.

DHANALAKSHMI AND SUBRAMANIAN, 2017, p. 428

As can be seen, information on the number of participants, their demographic characteristics, the tools used to gather the data, the quantity of data analysed and the methodological procedures followed, among others, is completely missing. The authors then gave a list of examples in the analysis section without indicating their source and without providing a full, in-depth analysis. Furthermore, they did not present any empirical results. Finally, the paper ended with some general conclusions bearing no relation to the rest of the article.

Molina García (2020) conducted a much more thorough study. She explored WhatsApp communication with the following objectives: analysing the frequency of the grammatical categories; identifying the main characteristics and typographical variations; observing how it was used by university students; and examining possible gender differences. In this case, the corpus was made up of 342 conversations (of 198 women and 144 men) and the participants were 114 university students at the University of Granada (Spain) to whom a questionnaire was also administered in order to complete the gathered information.

The quantitative analysis was carried out using the statistical program SPSS (version 22 for Windows) and the Morphological Text Parameterizer (ParamText TIP) of Carreras-Riudavets et al. (2011). The main linguistic categories found were nouns and verbs. In line with previous studies (Alcántara Plá, 2014 or Calero Vaquera, 2014, among others), instances of typographical variations were numerous (i.e., onomatopoeias, acronyms, exclamations, colloquialisms, etc.). Furthermore, the use of a specific multimodal language was

confirmed. Some gender differences were also revealed. For instance, the number of words and images used by male participants (2,221 words and 8 images) was significantly lower than those used by females (12,005 and 30 images), showing a wider range of vocabulary.

To my mind, the most relevant finding of this study is the confirmation that the language used on WhatsApp has its own, distinctive characteristics. Thus, these interactions are very similar to oral conversations, but in a written form. There are conversational traits, such as the participation of several interlocutors, turn-taking management, the determination of some topics, among others, and, at the same time, interlocutors can review what has been written, the relative temporary permanence, etc. All the above on a digital support which allows combining different resources (e.g., voice messages, video calls, sending images, videos ...) to create multimodal messages.

2.2 *Profile Status*

One of WhatsApp's affordances is that it allows its users to create their own digital profile in which they can provide personal information. Among the different studies analysing WhatsApp linguistic traits, some centre on these profile statuses, such as that of Sánchez-Moya and Cruz-Moya (2015b). The authors carried out a discursive analysis of 420 profile statuses elaborated by male and female participants (247 women and 173 men), reflecting a wide range of ages (from their teens to their sixties) and representing diverse cultures (namely Spanish). Their main objective was to examine the most recurrent discursive realisations of WhatsApp statuses, focusing on the age variable and the preference that users entered when editing their profile. They created the following categorisation according to the linguistic realisation of the profiles analysed:

- 1) automatically-generated statuses, provided by default (i.e., "Hey there! I'm using WhatsApp", "Available", "Busy", etc.)
- 2) self-generated statuses, created by the users. In this case, there were several possibilities: text only, leaving it blank, a bare emoji or a hybrid status (emoji and text).

The results showed that 65% of participants modified the default status provided by WhatsApp. Age was also found to play a significant role: "lower age ranges were prone to make a wider use of purely-iconic statuses [...] participants belonging to higher age ranges clung to either automatically-generated statuses or purely-verbal self-generated ones" (Sánchez-Moya and Cruz-Moya, 2015b, p. 59). The authors explained this difference in terms of the specific technological skills necessary to find the status field and to use the emojis.

Despite Sánchez-Moya's and Cruz-Moya's very useful taxonomy (2015b), they did not delve into the content of the statuses, as Al-Khawaldeh et al. (2016) did. According to these latter authors, "through these written texts, users

openly share their thoughts and emotions with their friends, colleagues and acquaintances" (Al-Khawaldeh et al., 2016, p. 158). In their study, they carried out both a textual and a critical discourse analysis of 200 status notifications from Jordanian participants with three research questions in mind: "What are the key characteristics of the language used in WhatsApp's semantic notifications? What purposes do WhatsApp's semantic notifications serve? Is there a gender difference in WhatsApp's semantic notifications?" (Al-Khawaldeh et al., 2016, p. 160).

Regarding the first question, the analysis revealed that most notifications were in English, Arabic or both. The linguistic features found ranged from the use of a single letter, abbreviations ("omg!", "lol"), or punctuation repetition in order to use many sentences together, such as "my mum in my heart. I love you a lot. Without you, I will be lost" (Al-Khawaldeh et al., 2016, p. 161). These notifications were either verbal or non-verbal (using emojis), or a mixture of both.

In relation to the second research question, the analysis showed that the main themes found were personal, social or cultural (43%), national or political (28%) and religious (26%). An additional 3% could not be classified in any of the previous categories. Finally, concerning gender, there was no significant difference in the structures employed: both men and women made use of non-conventional abbreviations, punctuation and spelling. However, their chosen topics presented dissimilarities: women often focused on religious and romantic themes whereas men highlighted political and social issues. I believe these results are of great interest and it would be worth performing a cross-cultural comparison to verify whether these characteristics are general, whether they are due to the language being digitally mediated through this IM tool, or whether some cultural differences can be expected. Cross-cultural studies are scarce, so future studies could pursue this latter line of research. Finally, in my view, it is disappointing that demographical information regarding participants was not included in this study. Indeed, I strongly believe that age, for instance, is a relevant factor in the use of Arab or English or how language is used, as we will see in subsection 2.4., dedicated to language variation.

Maíz-Arévalo (2018), on her part, analysed emotional self-presentation in a corpus of 206 WhatsApp profile statuses in Peninsular Spanish (of 103 men and 103 women). The analysis revealed a very limited use of emotive utterances, in contrast to other self-presentation strategies, such as a default profile generated by the app itself. When emotions were shown (on 14.56% of the occasions), positive ones (i.e., joy or love) prevailed over negative ones, with a clear preference for love for another person (43% of the occurrences). Regarding variables such as gender and age, results showed that female participants (83%) outnumbered male ones (17%) in this expression of emotions, and younger users (mainly in their 20s and 30s) were more likely to perform

emotive speech acts and use emojis. This greater use of emojis among younger participants seems to be in line with previous studies already mentioned in this review (Gómez-del-Castillo, 2017; Sánchez-Moya and Cruz-Moya, 2015b). Finally, the multimodal analysis also revealed that these emotions were expressed by text only, bare emojis or hybrid combinations, the latter being the most frequent.

Maíz-Arévalo continued examining this self-presentation strategy in profile statuses in two more papers (2021a & 2021b), focusing on its relation to humour this time. Thus, using the same corpus mentioned in the previous work, she carried out both a quantitative and qualitative analysis in order to uncover any common gender or age patterns. After the analysis, the findings revealed this was the case. In line with Sánchez-Moya and Cruz-Moya (2015), most participants aged above 50 years did not change the default status. This was either because they did not know how to do it, or because they had no interest in changing that information. On the other hand, younger users preferred hybrid or purely iconic statuses.

After analysing the language in hybrid or purely verbal statuses, and setting apart humorous statuses, the author found five content categories:

- 1) Default statuses: those automatically generated by the IM tool.
- 2) Emotional statuses: by means of which participants show personal emotions.
- 3) Inspirational statuses: “those where the user is trying to transmit a positive, motivational message hence presenting themselves as a positive, thoughtful and optimistic person generous enough to share this viewpoint with others” (Maíz-Arévalo, 2021a, p. 189). A subcategory here would be famous quotations.
- 4) Implicit statuses: those who are only meaningful to the user’s inner circle.
- 5) Miscellanea: other less frequent statuses that do not fall into the previous four categories.

The quantitative analysis revealed that humorous statuses were used in a 12.62% of cases, constituting the third most common type of self-generated statuses after emotional and purely iconic ones. The qualitative analyses indicated that users employed two macro-strategies to create humour: intertextuality and incongruity. The first took place when users referred to other pieces of discourse, identifiable by the interlocutors. Most of these were framed by emojis to make the user’s humorous intention clear. The second one was realised through puns or paradoxes. Finally, regarding gender and age variables, 80% of male users provided humorous statuses (as opposed to only 20% of female users), and users in their 20s (20.83%) were the group that employed humour most frequently as a self-presentation strategy.



FIGURE 2 Sample questions from the survey
Note: <https://benjamins.com/catalog/ip.00064.are>
MAÍZ-ARÉVALO, 2021, P. 118

Although these profile statuses have a humorous intention, we do not know whether they were ultimately regarded as funny by other users. Maíz-Arévalo attempted to ascertain this in 2021b by means of a survey. Participants were shown eight humorous statuses: four by male users and 4 by female users, deploying different strategies to create humour (e.g., intertextuality, wordplay, absurdity). To make sure the answers given were homogenous and unambiguously interpreted, there were five options in the survey.

As can be seen in Figure 2, the participants could choose among three main types of reaction: positive (smile or laughter), neutral (no reaction at all), and negative (the answerer did not understand the joke or considered it was far from humorous). After launching the survey online for one week, 142 answers were obtained. Surprisingly, the findings revealed that the initial humorous effect pursued by the users was not always understood; it even provoked negative assessments and/or perplexity.

Ehondor (2020) also focused on WhatsApp statuses content, in this case to deal with the delicate topic of plagiarism. According to the author, though we may rely on tools such as *Turnitin* to detect plagiarism, they are not efficient when dealing with a WhatsApp status update or message. For this reason, Ehondor (2020) believed that her study was pertinent and explained that she would conduct a textual and discourse analysis. However, this was not the case: this paper is ultimately a review of previous studies on copyright, plagiarism and intellectual property, together with an author's reflection on WhatsApp messages. No research questions, no data corpus and no discursive analysis were included at all in the study. While this kind of reflection paper does not require them, the author should have made it clear that the study was a review. The author concluded that WhatsApp plagiarism should be avoided and recommended that users refrain from posting messages or status updates without acknowledging their sources. This conclusion is already common knowledge of course, so regrettably, this publication cannot be regarded as a contribution to scientific research.

One of the most recent studies on WhatsApp statuses is that of Mangeya and Ngoshi (2021), who analysed the discursive construction of black Zimbabwean identities. More specifically, they explored how 24-hour temporal statuses created identity discourses that maintained unequal racial relations rooted in colonialism. The authors gathered their data through online participant observation of their list of contacts over a year, downloading the status updates that related to black/Zimbabwean identity. Mangeya and Ngoshi (2021) did not mention how many statuses they collected in total in that year and focused on a convenience sample of nine statuses in their paper. The latter were studied following a Multimodal Critical Discourse Analysis approach, according to which meaning is created in texts and interactions in different ways and is not limited to the traditional written and/or spoken language. As I mentioned earlier, I consider that this multimodal approach is fundamental when dealing with WhatsApp interactions, since many other kinds of elements are present, such as images, links, audios, etc. Unfortunately, not all the studies on this IM tool follow this approach, as we will see later.

In this case, the authors decided to limit their study to images. After a qualitative analysis of the examples, the findings revealed that the WhatsApp temporal status posts analysed distributed ideological value-positions that mocked blackness and praised white racial supremacy. However, the fact that these results were obtained from nine deliberately selected examples invalidates any generalisation. It is useful, though, as a departure point for a more detailed study on identity.

In addition to the profile status, characteristic WhatsApp affordances include, among others, the use of multimodal elements such as emojis or

memes. These have recently attracted the attention of researchers, as we will see in the following subsection.

2.3 *A Multimodal Analysis of WhatsApp*

2.3.1 Emojis

Emojis can be understood as the successors of emoticons, the latter being used in the literature as an umbrella term that covers both. Their use has become so widespread that even the Oxford Dictionaries declared the emoji “a face with tears of joy” (😄) the “Word of the Year” in 2015 (Al Rashdi, 2018).

Over the last two decades, they have been studied across different digital media. In the case of WhatsApp, Sampietro (2016a) explored their use as punctuation marks in a corpus of 3,151 written messages in Peninsular Spanish, which were part of 303 interchanges by approximately 120 users. The quantitative analysis revealed that most messages presented no punctuation marks (supporting Calero Vaquera (2014)), while emojis and emoticons were used to end them. However, the qualitative discourse analysis of the corpus showed that emojis and punctuation did not have the same functions. For example, emojis were employed in positive social contexts to show informality, to reveal the illocutionary force of expressive utterances, and to heighten phatic communication. On the other hand, punctuation marks were used in a broader variety of contexts, that were not always positive.

That same year, the author published another paper about emojis, in this case centring on the thumbs-up (👍) (Sampietro 2016b). The corpus for this study was made up of 3,128 Peninsular Spanish WhatsApp messages, part of 259 interchanges. A main objective of this study was to go beyond the understanding that an emojis' function was to complete or clarify digital messages. The quantitative analysis showed that the thumbs-up emoji was the third most frequently used in the corpus (55 out of 119). On most occasions, it was employed as a bare emoji, without any text. In fact, it was commonly used at the end of an interchange, acting as the closing turn. Furthermore, its function was closely related to the real-life gesture, i.e., to show agreement or confirmation.

In 2019, the author analysed how emojis were used to substitute words in WhatsApp. Following the qualitative analysis of 3,679 dyadic messages in Peninsular Spanish, Sampietro (2019a) found that emojis were either replacing or visually repeating nouns, verbs, adjectives, interjections and more complex expressions. Furthermore, when participants missed a specific emoji, they used metonymy with the aim of providing a rough visual image of the term sought, sometimes also referring to the collective social imaginary. To my mind, this is especially relevant because in this case, the interpretation of these emojis would be linked to the fact of belonging to this specific social or cultural group.

Thus, it is key to analyse how emojis are interpreted in different cultures or even to establish intercultural comparisons.

In this regard, Sampietro (2019b) analysed the functions of emojis in Peninsular Spanish WhatsApp dyadic interactions among acquaintances, in order to ascertain whether specific practices were culturally determined. Based on Spencer-Oatey's (2000, 2005) rapport management theory, she analysed a corpus made of 274,410 words and 1,077 emojis, taking into consideration the following contextual variables:

- 1) the participants' relationship,
- 2) whether the interaction was (a)synchronous,
- 3) whether it was a relation-oriented or task-oriented conversation,
- 4) the section where emojis were placed (openings, closings, or main body) and,
- 5) the content of the written message that emojis were accompanying (when there was one).

The author classified the results obtained in three of the five domains that are important in rapport management: the illocutionary, the discursive, and the stylistic domains. Thus, in the illocutionary domain, it could be observed that emojis upgraded or downgraded different speech acts (as previous scholars had mentioned). In the case of the discourse domain, they contributed to accomplishing a successful conversation, as they indicated openings or closings, or were used to give the floor to the interlocutor. Finally, as regards the stylistic domain, they were employed to indicate the speech genre, the social relationship and to orient the interaction's social purpose. In any event, I consider that the study's most important contribution is how it demonstrated Spanish culture's influence over these practices:

In general, the strive for closeness and *confianza* were prominent in the corpus. This analysis suggests that even if some uses of emoji described in the analysis are also observed in other corpora (Al Rashdi, 2018; Danesi, 2016; Pérez-Sabater, 2019), emoji at the moment should not be considered a universal language. Rather, it could be understood as a means to interact in a socially-appropriate way, in a given culture.

SAMPIETRO, 2019, p. 118

To my mind, this conclusion highlights the need to analyse emojis and WhatsApp language generally in different languages to identify common patterns derived from IM affordances and culturally determined traits. Siever's (2019) study could be helpful in this regard, as he also explored the different functions of emojis. To do so, he used convenience examples, not only from German WhatsApp, but also from Social Media platforms (e.g., Twitter,

Instagram, Facebook). According to this author, “[n]ot all emoji are used and understood in the same way, internationally or even nationally. It cannot be guaranteed that the intended meaning will be grasped. Therefore, emoji cannot be called a ‘universal’ or ‘global’ language as is occasionally stated in the media” (Siever, 2019, p. 134). That is why I believe it is so important to carry out cross-cultural studies in which the multimodal characteristics of WhatsApp communication can be analysed.

Regarding emoji functions, Siever (2019), following the line of Schlobinski and Watanabe (2003), established a distinction between a “modal” and a “referential” function: the first occurs when emojis are used to complement written messages, while the second takes place when emojis replace them. Then, modal functions are subdivided into:

- a. extension of the proposition: additional information, proposition attitude (commenting/evaluating) or decoration.
 - b. repetition of parts of the proposition (semantic redundancy/association).
- Among the different referential functions, we can find the following:
- a. replacement of a letter by an emoji (allographs).
 - b. replacement of parts of words by an emoji.
 - c. replacement of a complete word with an emoji.
 - d. replacement of a complete word with multiple emojis (frame).

Though Siever’s proposal appears to be interesting and useful, I feel it is necessary that these categories be applied to corpora in different languages, since as we have previously seen, emojis are subject to cultural variations (Sampietro, 2019).

In addition to being culturally constrained, emojis’ use and interpretation seem to be influenced by gender differences. To verify this, Pérez-Sabater (2019) examined WhatsApp groups in Peninsular Spanish, comparing women’s and men’s use of emojis. For that purpose, the author used an online questionnaire (200 male and 200 female respondents), case studies of close friends’ interactions (2,087 messages from 8 chat threads: 4 from men-only groups and 4 from women-only groups), and interviews with 23 participants.

One of the study’s major results was that women employed emojis very frequently, whereas men made a very scant use. This was related with the interview findings. Male participants considered that there was no need to use “unnecessary elements”, such as introductions, farewells, and emojis. Conversely, female participants deemed these elements were indispensable. For them, WhatsApp interactions without salutations or closings could be inadequate and those without emoji were regarded as harsh and even impolite.

With respect to the discourse analysis of the interactions, while women habitually introduced their messages with a salutation or addressing someone (also including emojis), men tended to go straight to the point. According to

Pérez-Sabater (2019), all these linguistic choices seem to reflect women's feelings that emojis are necessary to build rapport with the other members in the group, whereas men do not regard this as necessary. In my opinion, this result is highly significant and sheds light on the need to pursue this line of research in other WhatsApp groups composed of both men and women.

Al Rashdi (2018) also analysed the functions of the emojis used by Omani men and women (friends and relatives) on WhatsApp. As in the case of Pérez-Sabater (2019), the corpus was made of interactions within male-only (one with 15 participants) and female-only groups (one with 30 participants), but she did not pay attention to gender differences in this case. The total number of words and emojis analysed was 42,037 and 7,519, respectively.

After the qualitative analysis of the data, the author observed that emojis were used for the following purposes:

- a. to show emotion.
- b. to provide contextual information for the utterances.
- c. to celebrate and throw virtual parties.
- d. to indicate approval (especially with the thumb-up emoji 👍).
- e. to respond to thanking and complimenting.
- f. to open and close conversations.
- g. to establish a link between a textual message and multimedia (usually the finger pointing up or down emoji).
- h. to indicate that a requested task was fulfilled. According to the author, this use is specific to the Omani culture. In my opinion, this highlights the need to perform studies in languages other than English.

An interesting conclusion was that the same emoji could be used to express different emotions or have different purposes. It is therefore polysemous and ambiguous. For that reason, I agree with Al Rashdi (2018, p. 125), who stated that “[i]t was essential to examine emojis as they occur in context in order to understand the reciprocal relationship of emojis and text.” That is why these kinds of studies – that use natural data and that consider the role of emojis and multimodality – are fundamental to understand digital communication.

Cantamutto and Vela Delfa (2019) also analysed how emojis were interpreted, in this case by 70 Peninsular Spanish speakers who were frequent users of social networks. In a survey, they had to indicate how they valued and interpreted different emojis with and without a context. The results showed that the most extensively used emojis were more monosemantic and expressed positive evaluative content, which suggested some kind of unanimity in their interpretation. In contrast, the less utilized emojis presented greater polysemy, but the context helped to disambiguate their meaning in this case.

In the same vein, Anber and Jameel (2020)⁵ explored both the interpretation and use of emojis by 63 Iraqi EFL university students. Unfortunately, the paper is so badly written that it is difficult to take the results seriously. Not only does it reflect a poor command of English, but its structure and content do not meet scientific standards. There were numerous subsections with no logical order, the information was not arranged in a coherent manner and there was no conclusion closing the paper. Furthermore, the literature review failed to mention numerous relevant authors who had already addressed the topic (such as Aull (2019) or Yus (2017), among many others).

Anber and Jameel (2020) explained that they created a test and an attitudinal questionnaire to collect their data: the test to measure participants' knowledge of the meaning of the emojis and the Likert-scale questionnaire to assess their use. However, they presented the results in a very descriptive manner, with no in-depth analysis. Furthermore, they did not show either the test or the questionnaire in its entirety, but in small fragments, making it more difficult to interpret the results.

According to Anber and Jameel (2020, p. 591), the results revealed that participants "use Emoji faces in written communication in a very limited way, and the majority do not know the meaning of most common (26) Emoji faces." However, they did not explain which emojis were the most common and why they were considered so in the methodological procedures. Without this information, it is not possible to know whether this conclusion was based on the authors' impression. In such a case, the study would not be rigorous enough to be considered as scientific research.

Another proof of the poor quality of the article is the following statement made by the authors in the discussion of the results: "The fact of the Iraqi people is that they do not like to use pragmatic features in their communication, due to the varieties in culture and habits among the Iraqi provinces" (Anber & Jameel, 2020, p. 591). First, it does not seem justified to express such a general conclusion after analysing the behaviour of 63 participants only. Second, pragmatics is the branch of linguistics that deals with language in context, so it makes no sense to say that someone is not using pragmatic features: they are always present. Thus, for all the above, I do not believe that this publication meets the minimum standard requisites.

5 Since this study does not focus on the use of WhatsApp as a language-learning tool, I decided not to include it in the following chapter but in this one. The same criterion applies to Cassany et al. (2019), García-Gómez (2020a), Hafner et al. (2015), Magraned Mifsud (2019), Molina García (2020), Mulyono et al. (2019) and Pérez-Sabater (2015).

In addition to age and gender, the distance among interlocutors can influence the use and interpretation of emojis. Exploring this variable, Aull (2019) focused on phatic emoji use in 26 real, one-on-one WhatsApp communications between the researcher and her L2-English students (status-differential relationship), on the one hand, and the researcher and her friends/family (solidary relationship), on the other. The author followed Laver's (1975) description of phatic tokens to explain phatic emoji behaviour in order to check whether there was any difference between the two groups. The quantitative and qualitative analyses showed that the participants used emojis for phatic purposes in both groups. When analysed contrastively, the findings revealed that emojis were other-oriented in solidary interactions, with a preference for neutral tokens. In the non-solidary communications, however, the researcher used other-oriented tokens, but her students balanced between self-oriented and neutral.

König (2019), on her part, pointed out the relationship between emojis and humour. This scholar investigated the different functions of 'laugh' particles (i.e., *haha*, *hehe*, *hihi*) and emojis in humorous sequences. The corpus was made up of 41 German WhatsApp chats (12,847 individual messages), out of which 12 were group chats with groups of up to 9 users. The analysis showed that 'laugh' particles were mostly used in initial position in the corpus, relating to previous comments, to establish or support a humorous joking modality (laughing with). In the case of group chats, they were also used to turn one participant into the target of 'laughter' (laughing at). In both cases, emojis helped to contextualize these different 'laughter' stances. For example, she observed that the emoji 'face with tears of joy' () was employed in "laughing with" contexts, whereas in "laughing at" situations the emoji 'squinting face with tongue' () was preferred.

Two years later, Sampietro (2021) continued analysing the connection between emojis and humour. According to this author, one of the goals of her study was "... to broaden König's (2019) results by considering the use of emojis in all stages of humour performance" (Sampietro, 2021, p. 92). For that purpose, she analysed a corpus of 300 Peninsular Spanish dyadic interactions (3,679 messages) which contained at least one emoji (1,629 emojis in total) and instances of humorous talk (i.e., jokes, puns, teasing, among others).

After the analysis, it could be observed that emojis had an important role in the performance of humour: they indicated the opening and closing of the play frame, as well as graphically reproduced laughter to respond to humour. These functions were also carried out by laughing interjections (i.e., *ja ja ja* in Spanish). Furthermore, the most frequent emojis to show humour in the corpus were the "face with tears of joy" (used both to signal humorous statements and a response to them), followed by other faces with the tongue sticking out.

These results go in line with the findings previously obtained by König (2019) in the case of German WhatsApp interactions.

As Sampietro (2021) mentioned, these findings could be used to be compared in future research with WhatsApp group conversations, in order to look for possible similarities and differences in the performance of humour with emojis. I also feel that more languages should be taken into consideration to check if these tendencies found both by Sampietro (2021) and König (2019) in Spanish and German, respectively, are observed in other languages.

Apart from emojis, other significant multimodal elements in WhatsApp interactions are memes, as we will see in the following section.

2.3.2 Memes

As Shifman (2014, p. 17) rightly points out, despite the fact that the term “meme” was created long before the emergence of Internet, it is in the digital era that it has become part of everyday language. The author defines a meme as “a group of digital items sharing common characteristics of content, form, and/or stance, which were created with awareness of each other, and were circulated, imitated, and/or transformed via the internet by many users” (Shifman, 2014, p. 14).

This daily presence of memes has aroused academic interest (Börzsei, 2013; Milner, 2016; Shifman, 2014; Vasquez & Aslan, 2021; Willmore & Hocking, 2017; Yus 2019, 2021, among many others). The use of memes in WhatsApp, however, seems to be an unexplored line of research: when searching the subject for this literature review, only three related studies were found. One was that of Al Zidjaly (2017), who explored how political dissent was linguistically realised and mitigated through WhatsApp memes in Oman. The data, composed of 519 memes gathered in 2015, was a representative set included within a broader ethnographic project on social media and Arab identity. Al Zidjaly (2017) advanced that memes were used as cultural tools, taking the form of ‘reasonably hostile’ lament-narratives, which allowed Omani WhatsApp users to take part in democracy while saving face. To do so, participants used different linguistic strategies: repetition, code choice, hashtags and juxtaposition of emojis with text, among others. In sum, the author demonstrated how political dissent was negotiated and mitigated through memes.

Nevertheless, most studies on memes focus on their humoristic function. For instance, Ballesteros Doncel (2016) analysed 491 memes collected over six months from a WhatsApp group of 29 Spanish working women aged between 50 and 55 years. After providing a description of prototypical memes, the author examined the different topics and sources of humour. The findings seemed to indicate that the humour displayed by this group of mature and economically independent women could be interpreted from a gender perspective. On the

one hand, the meme contents they shared related to stereotypical characterisations of women and men, as well as to their interpersonal relationships as couples. On the other, some disruptions of traditional roles and assumptions were also found (i.e., explicitly admitting sexual desire). These were interpreted by the author as a manifestation of the social change experienced by women in recent decades. All in all, Ballesteros Doncel (2016) linked meme production and dissemination to a specific socio-cultural context.

Rivas Carmona and Calero Vaquera (2020) also explored the relationship between memes in Spanish and humour. The authors carried out a qualitative analysis of a corpus of 794 Spanish memes, that circulated on WhatsApp in Spain during the state of alarm decreed by the government from 14 March to 21 June 2020. A convenience sample was selected from a total of 1,500 memes received by 50 WhatsApp users of different sex, ages and sociocultural backgrounds. The analysis was performed in accordance with *Relevance theory* (Sperber & Wilson, 1995), and only memes containing text and/or image were taken into consideration, audio-visual memes being discarded.

The analysis of the iconic or textual characteristics of these multimodal texts led to a description of the cognitive effects intended through the common vehicle of humour. Based on this cognitive-pragmatic analysis, four main meme groups were identified: “vindicatory and critical” (political or social criticism, depending on ideology), “emotional” (motivated by gratitude, solidarity, empathy, etc.), “ludic” (mostly aimed at amusing the addressee), and “deceiving/undeceiving” (hoax and anti-hoax messages). The authors concluded that despite a decrease in the frequency of distribution of memes (especially the emotional ones) as the state of alarm was ending and presential social relationships returned, the deceiving messages were maintained all the time.

Finally, I would like to include the study of Cruz-Moya and Sánchez-Moya (2021) in this subsection, even though the authors did not focus solely on memes. As in the two previous works reviewed, they explored the expression of humour in a Peninsular Spanish WhatsApp group. The interesting fact here is that the participants included up to 22 interlocutors aged over 65 years, i.e., a cohort that has been scarcely addressed in research on digital discourse. More specifically, their objective was to analyse whether the interlocutors expressed humour by means of linguistic, multimodal or contextual elements (Yus, 2011), taking into consideration the age variable. The corpus analysed in this paper covered a one-year time span. A total of 181 text files, 326 video files, 469 audio messages, 4 pdf files and 3,667 images were obtained. The authors decided to limit the analysis of humour in this case to images files only. Thus, 962 images with a humorous intention were identified.

Following a qualitative and quantitative approach, the multimodal expressions of humour in the corpus were classified according to the taxonomy used

in Sánchez-Moya and Cruz-Moya (2015b), mentioned earlier in subsection 2.2: (i) purely verbal, (ii) purely iconic, and (iii) hybrid. The findings revealed that there was a preference for hybrid files (78.1%) that combine textual and visual elements, and most of them were independent from schedule events in the participants' offline contexts. Regarding the kind of elements employed to convey humour, the display of unusual or absurd pictures were the most frequent (365), followed by cartoons from newspapers and magazines (188). The third category was plays on words or puns (162), closely followed by files with ironic statements (156). Less frequent were memes (54), standard jokes (34) or self-made humour (3).

Though these results are highly revealing, the fact that a single WhatsApp group was analysed limits their generalisation. As the authors acknowledge in their conclusions, it would be necessary to replicate the taxonomy obtained in similar digital contexts to ascertain whether the expression of multimodal humour in senior WhatsApp users can be generalised. On the whole, I consider this study as a very good starting point to keep on exploring humour in WhatsApp because it sets out a thorough taxonomy that can be applied to other groups.

2.4 *WhatsApp Language Variations*

As we saw in subsection 2.1., one of the characteristics of WhatsApp interactions is the use of language variations (Alcántara Plá 2014; Gómez-del-Castillo, 2017; Vaquera, 2014; Vázquez-Cano et al., 2015, among others). Sánchez-Moya and Cruz-Moya (2015a, p. 301) referred to these variations as textese which they described “as a language variety in WhatsApp [which] shares most of its linguistic and discourse features with electronically mediated language. Despite being transmitted through writing, it can be claimed that textese is closer to speech”.

The authors stated that as with other kinds of online writing, textese provoked some kind of “moral panic”, as it may be seen to reduce young people's ability to use the standard variety of a language. On the contrary, Sánchez-Moya and Cruz-Moya (2015a) showed that this is not always the case: they provide evidence suggesting that using textese and failing to communicate using the standard variety of a language cannot always be linked to teenagers. They analysed a corpus of 30 interactions obtained from two different Peninsular Spanish WhatsApp groups: one with 15 teenagers aged between 13 and 18, and another with 15 adults aged between 28 and 33. Subsequently, participants filled an online questionnaire which allowed the researchers to compare the two groups' perceptions.

After the analysis, the authors found that both teenagers and adults wrote in textese, applying a non-conventional use of punctuation and spelling.

However, while adults tended to abbreviate words, teenagers frequently omitted more superficial discursive elements that did not impede understanding. Likewise, teenagers made use of more expressive textese, with more frequent instances of stylised spelling and emoticons. In spite of this, teenagers showed a greater ability to recognise spelling mistakes and seemed to be more aware of the communicative situations adapted to textese than adults.

Another researcher who explored language variations and age in Peninsular Spanish WhatsApp interactions is Pérez-Sabater (2015). The author presented the results of an instructional project (*MobileVar*) in which 20 postgraduate students were introduced to WhatsApp research. More specifically, the students had to contribute to the field of Computer-mediated Communication research by studying language variations in this IM tool. First, the students had to gather authentic WhatsApp interactions from relatives or friends in Catalan and/or Spanish. The project corpus was then completed with interactions of native English speakers.

In order to explore whether the language used in WhatsApp constituted a new language variety, the students analysed interactions in English, Spanish and Catalan (41,000 words) focusing on the following strategies of oralisation developed by Yus (2011): the use of emoticons, lexicalisation of vocal sounds, phonetic orthography, orthographic errors, acronyms and abbreviations, as well as words in other languages. The participants observed that age was a decisive element in the prevalent use of non-standard language. For instance, regarding emoticons, the younger participants made abundant use of them in Catalan, whereas in English, though participants sometimes also employed them, they preferred lexicalising vocal sounds (e.g., *hahaha*). In Spanish, on the other hand, participants made a less frequent use of emoticons to express laughter, preferring the lexicalisation of vocal sounds. Finally, from an educational viewpoint, the students' involvement in this project helped them to acquire research competencies (e.g., data gathering or critical thinking, among others).

With a colleague, Pérez-Sabater pursued that very same year the study of the influence of age on WhatsApp language (Pérez-Sabater & Montero-Fleta, 2015). In this case, the authors conducted a crosslinguistic study to account for age-specific variation adopting a blended-ethnographic approach, combining a linguistic analysis and interviews with participants. With this goal in mind, they analysed naturally-occurring messages from two different generations of English and Spanish WhatsApp users (10,000 words). There were 24 participants in total: 6 English and 6 Spanish teenagers, 6 English and 6 Spanish adults aged around 40 years. They focused on the same oralisation strategies developed by Yus (2011) mentioned in the previous study. The analysis was followed by interviews with two randomly selected participants from each category to determine the factors that might cause language variation

in the messages. The findings were in line with those obtained from the prior study: there was a constant deviation from standard language of English and Spanish teenagers. For example, they wrote shorter messages, made a more frequent use of emoticons, used non-standard spelling and there was an absence of capitalisation, among others. Furthermore, the study showed a higher incidence of conversational style in Spanish than in English. I believe this result is of great interest and it corroborates the need to conduct more cross-cultural studies, as mentioned previously.

Hafner et al. (2015), on their part, analysed the role of translanguaging on collaborative project-based learning. For this purpose, the authors tracked the out-of-class activities of 16 students (four project groups) at an English-medium university in Hong Kong for two semesters. The qualitative and quantitative analysis of the students' Facebook, WhatsApp and e-mail interactions revealed that the exchanges were plurilingual, with students mixing English and Chinese when doing their project work. Hafner et al. (2015) also uncovered how these two languages were used strategically: English was used more to discuss the final project whereas Chinese was used more to develop group cohesion.

Finally, Androutsopoulos and Busch (2020) explored punctuation in a corpus of 47 WhatsApp threads by German adolescents (151,970 words). The authors compared the use of punctuation in these digital interactions and in 23 text portfolios including 77 school texts, mainly essays from German literature classes (22,920 words). The information was completed with semi-structured interviews of 16 adolescents to discuss their awareness of specific practices such as their use of emojis, letter repetition, phonetic spellings, and non-standard punctuation. More specifically, they focused on the period, taking into consideration its frequency of use, its placement in the message, the illocutionary force of messages with a period, and their sequential placement in digital interaction. The quantitative analysis revealed that the period was the most frequent sign in school texts: they found 72.1 periods per 1,000 words in them, whereas only 3.7 periods per 1,000 words in WhatsApp interactions. In fact, only 11 out of the 23 participants used periods, most of them in message-internal position. The use of a period to indicate the end of a sentence was rarely found in the IM messages, but when it was present, participants used them in socio-pragmatically relevant ways: "We find that a message-final period may index a writer's insistence on their viewpoint, their unwillingness to further negotiation on a subject matter, or their annoyance with the interlocutor or the referent" (Androutsopoulos & Busch, 2020, p. 8). Thus, the qualitative analysis revealed that this punctuation sign seemed to have gained pragmatic functions (at the expense of syntactic ones) in the WhatsApp interactions under study. Furthermore, the interviews with the participants showed that their metapragmatic awareness of period use was

related to its classification as a sign of communicative distance, that is, as a part of adult and professional linguistic registers.

Using the same corpora, Busch (2021) widened the study's scope by analysing the use of <.>, <:>, <!>, <?>, and <...> in depth. Once again, a contrast was established between formal, non-interactional writing at school on the one hand, and informal, interactional writing using WhatsApp, on the other. The quantitative analysis revealed that the most common signs in formal writing were the period and comma. The latter, however, played a minor role in WhatsApp chats, where question marks, apostrophes, and ellipsis dots were used more frequently. The qualitative analysis showed that punctuation signs classified in descriptive and prescriptive grammars according to pure syntactic criteria were used towards interactional goals in the case of digital interactions. The author thus concluded that punctuation in these WhatsApp conversations helped collaborative interactional management and social contextualisation.

In my opinion, one of the most interesting results of this study is the fact "that a semiotic repertoire of interactionally relevant message-final forms can be assumed, in which not only certain punctuation signs but also emojis, as well as emoticons, are included" (Busch, 2021, p. 8). This conclusion is in line with previous findings from studies on emojis and emoticons and their relationship with punctuation (cf. Dresner & Herring, 2010, p. 264; Provine et al., 2007; Sampietro, 2016a). Therefore, the result supports the need to analyse WhatsApp interactions adopting a multimodal approach, as mentioned earlier.

2.5 *WhatsApp and Conflict*

García-Gómez (2018, 2020a) explored WhatsApp from a pragmatic viewpoint. More specifically, he focused on conflict talk based on a language-in-interaction perspective. In 2018, the author compared two different corpora of six WhatsApp groups of British families arguing (51 relatives), and six WhatsApp groups of Spanish families arguing (45 relatives). García-Gómez (2018) paid special attention to the linguistic strategies used by the participants when expressing opposing views on a given issue. With this goal in mind, the author conducted a content analysis of all the interactions and selected those that met the following criteria:

- (a) one of the family members first placed himself/herself in verbal opposition to his/her family WhatsApp group and addressed at least one family member in that group directly; (b) a second family member answered and overtly disagreed with some of the claims made by the family member who triggered the conflict; and, (c) the length of the family dispute

allowed me to identify how each party negotiated her or his opposing points of view and to see how the episode was brought to an end.

GARCÍA-GÓMEZ, 2018, p. 323

A total of 15 conflictual episodes were found: 1,502 texts in Peninsular Spanish (29,375 words) and 1,305 texts in British English (26,134 words). After the discourse analysis, the author identified three main functions of utterances as initiating head moves: elicitation (e.g., “What did you tell your mom about me?”), directive (e.g., “Shut up!”) and informative (e.g., “You know I was always there for you when nobody else was”). These moves were followed by a response or challenging act.

In both corpora, the disputes revolved around two actions: conflict maintenance or relationship development/dissolution. However, the contrastive analysis showed linguistic differences in the way participants managed conflict. The Spanish participants tended to communicate more aggressively without mitigating the conflict, and after a heated argument, they left the conversations without reaching an agreement. British participants, on the other hand, adopted a conflict avoidance style that allowed them to terminate the conflict. From my viewpoint, these findings corroborate the need to pursue cross-cultural digital studies.

In García-Gómez (2020a), the author continued analysing how conflict was managed in WhatsApp but in this case, the participants were British and Spanish university students. The corpora were made up of ten WhatsApp groups with a total of 19 British Erasmus students and 59 Spanish university students. All of them were enrolled in a course entitled “Emotional Intelligence and Creativity applied to the teaching of English as a Foreign Language” in which they had to accomplish two group tasks. At the beginning of the course, García-Gómez (2020a) suggested his students create a WhatsApp group to communicate more easily during the tasks. Despite being free to choose their group members, each group was required to include at least one Erasmus student to ensure an intercultural learning environment.

These interactions were pragmatically analysed both quantitatively and qualitatively. First, a content analysis of the conversations in search of hostile interactions was performed. A total of 44 hostile episodes were found and all presented a consistent move structure (i.e., initiation, challenge and follow-up moves) as well as a large number of initiating acts (i.e., elicitations, directives and informatives).

The detailed analysis revealed a difference among the native and the EFL participants: Spanish students produced more challenging moves whereas

British students used more topic-discord contributors to mitigate the conflict. This finding is in line with the results mentioned in the previous study. In García-Gómez (2020a, p. 46) words,

the British participants in the study try to avoid fueling the conflict by focusing on the realization of the task exclusively. As the extracts show, topic-discord contributors do not criticize or challenge the opponents' feelings, but revolve around informational and emotional support. However, they fail to fulfil the speaker's intended meaning and the opponent gets angrier and angrier and as a result the conversation is usually broken off.

As can be seen, the findings revealed different participant strategies when managing conflicts, ending in pragmatic failures, i.e., they did not understand each other's intended meaning. That is why I believe these types of studies are paramount: they help ESL and EFL students gain awareness of possible differences in conversational styles. A limitation of this study, however, is the reduced number of British participants (one-third of the sample), as acknowledged in fact by the author. I thus hope that in the future, a greater quantity of data will be examined in order to confirm the results obtained.

I also explored conflict in the WhatsApp interactions of a Spanish family on International Women's Day in 2018 (Fernández-Amaya, 2020). Applying both the analytical framework proposed by Bou-Franch and Garcés-Conejos Blitvich (2014) and a multimodal analysis, I took into consideration the participants' linguistic strategies to express their opinions about feminism, as well as their use of multimedia elements and emojis. More specifically, the WhatsApp conversation analysed was made up of 687 contributions, with circa 9,900 words in Peninsular Spanish. The participants were 11 family members from a middle-class family in the South of Spain, aged between 26 and 60 years.

The analysis showed that most contributions were text-only, despite the availability of several emojis to emphasise feelings of anger. To my mind, "a possible explanation could be that the conflict is so heated that participants want to make their point of view very clear, and that is why their use of emojis is marginal" (Fernández-Amaya, 2020, p. 96). Nevertheless, multimodal elements such as photos, memes or videos, among others, played a significant role: they had different functions such as originating conflict themselves, showing disapproval of others, displaying emotion or attempting to mitigate face-threat.

Regarding the kind of language used, I found instances of unconventional spelling, letter repetition, and/or punctuation and abbreviations. Family members seemed to employ them to compensate the effects of verbal communication, as we previously saw in 2.1. and 2.4. Furthermore, conflict was found

to build up over several turns when some participants' pro-feminist opinions were negatively regarded by others. The latter resulted in feminism becoming a source of conflict for the family members. This conflict did not progress in a linear way, as in dyadic interactions, but in a networked manner: there were several turns from various members – who were even writing at the same time – with side sequences that inserted a conflict within another. Consequently, I believe that it is very important to analyse conflict in these kinds of digital group interactions, from both a synchronic and a diachronic perspective.

2.6 *WhatsApp Group Communication in Different Communities of Practice*

WhatsApp's group-creation affordances have contributed to the app's popularity thanks to its user-friendly format. A group is formed by an administrator who sends invitations to other contacts. All group members have access to the group conversation and may leave the group whenever they like, but only the administrator has the possibility to add or remove other people.

These WhatsApp groups can be created for different purposes and can include friends, colleagues, or family members, among others. Although a number of the above-mentioned studies obtain their data from WhatsApp groups, this section centres on the works that analysed the general communicative strategies constrained by specific communities of practice (CoP). The concept was originally created by Lave and Wenger (1991) and was later developed by Wenger (1998), to refer to the set of relationships among people who are involved in a task and share a repertoire of linguistic resources to achieve it. According to Jones (2016, p. 174), “[t]he important thing about communities of practice is that they involve people *doing things together*, and those involved are able to think of themselves (and talk about themselves) as belonging to a group that is doing these things.”

An example of these CoPs would be WhatsApp parent groups, created by parents whose children are classmates. Ersöz (2019) expected to find differences between offline and online informal groups, such as the number of participants (usually higher online) and the possibility of asynchronous digital communication. For this reason, in this study, the author took into consideration not only the 6,578 messages sent over the WhatsApp chat between 1 October 2017 and 30 April 2018, but also offline casual conversation with the group members and direct observation when they gathered for special occasions (i.e., birthday parties or school shows). The participants were 23 mothers, and the main purpose of the group was to share information about their children's school activities and homework.

After conducting a content analysis in search of specific communicative patterns, the author identified homework as the main topic of conversation, as

expected. Another interesting finding is the fact that, as in the case of offline communication, communicative strategies to maintain social relationships were frequently used (such as “get well soon”, “happy birthday”, etc.). The latter raises the question as to whether, considering the results obtained by Maíz-Arévalo (2018) and Pérez-Sabater (2019) described in sections 2.2. and 2.3.1, respectively, these expressions would have been regularly found in a mixed group or in a group of male-only parents.

Regarding the members’ participation, not all took part with the same frequency. According to Ersöz (2019), this was due to the offline acquaintance of some of them: if the participants also communicated offline, their WhatsApp interactions were more frequent. In terms of the kinds of messages sent out, the results showed that most messages were questions, followed by compliments and expressions of appreciation. Due to the fact that many interactions were asynchronous, greetings and salutations were not commonly found, confirming previous findings (see Calero Vaquera, 2014, in section 2.1.).

To my mind, the author should have provided more information about the participants. Indeed, we do not know where they are from, nor the language used in this chat. The fact that all participants were women was not addressed either; the author does not set out the question as to whether there could have been any communicative differences in the results obtained if the corpus had been obtained from a mixed parents’ group. This point is relevant. It would allow verifying the existence of any specific characteristics that could be associated with this CoP or whether other variables such as culture or gender play a role in these kinds of WhatsApp group interactions.

Cassany et al. (2019) examined 5 WhatsApp groups of students (132,000 words), attending two bilingual secondary schools in Spain (in Navarre and Catalonia). Following both a qualitative and quantitative approach, the authors answered three research questions: the exchanges’ discursive features, how the learners were using them, and whether they had learning sequences of curricular contents.

Regarding the first research question, Cassany et al. (2019) classified the different discursive features identified into 7 categories:

- 1) Participation. All the members participated in the conversations, albeit unevenly. The interventions were usually short (5 words or less), but some explicative turns included 10–20 words. Long explanations were sent in several short consecutive messages. Longer messages in a single intervention seemed to be copied and pasted from another source.
- 2) Multimodality. The messages were mainly composed of written texts though there were also numerous photos (notes, coursebook pages, exercises), videos, contacts and links.

- 3) Languages. Several languages were used in all the conversations, depending on the interlocutor, the topic and the context. There were linguistic interferences, code-switching and translanguaging, generally.
- 4) Register. Normal dialogue predominated with question-and-answer adjacency pairs, interrogative pronouns, answering adverbs, ellipsis, orality traits (*Oyee*), diminutives (*majicos*), colloquial expressions (*guay*), vulgar language (*joder*) and some politeness strategies (*Graciass majo*), humour and irony.
- 5) Violation of orthographical rules. Almost complete absence of written accents, of the initial h (*abla*), of initial capital letters in proper nouns or of opening interrogative and exclamative marks, among others.
- 6) Simplification. There were numerous elisions (*sobrao*), contractions (*pal martes*), truncations (*perff*), linked expressions (*porsiaka*) or abbreviations (*finde*).
- 7) Emoticons, emojis and other resources to express subjectivity, such as vowel lengthening (*enormeeee*), repetitions (*jajaja*) or capital letters (*YO TE MATO*).

In relation to the second research question, the authors found three thematic areas that fulfilled eight different functions: the class (practical information, managing teamwork, learning sequences), life at school (comments about the school, extracurricular activities organisation) and social life (society and social awareness, humour, WhatsApp management and politeness).

As regards the third research question, Cassany et al. (2019) identified the following structure in the learning sequences:

- 1) Request: a student asks a question. It is short and concrete, about an imminent class task.
- 2) Response: one or several students answer back. This is a quick answer over several turns, contrasting or confirming opinions.
- 3) Comments: the students comment or reformulate their interventions to make them clearer.
- 4) Thanks: the person who asked the question thanks their mates, usually praising them.

In my opinion, this in depth-analysis proves that WhatsApp group interactions present discursive characteristics of their own that are worth exploring.

The discourse-ethnographic study of WhatsApp interactions conducted by Lyons (2020) included new mums affiliated to the *National Childbirth Trust* in London as participants. More specifically, the author focused on the way these mothers were involved “in the process of constructing and de-constructing medical expertise through digital closed-group communication” (Lyons, 2020, p. 1).

The data was made up of over 600 screenshots gathered over a 13-month period and completed by semi-formal interviews. Participants in these WhatsApp groups were five new mothers who did not know each other but who shared the experience of pregnancy or childbirth. The analysis consisted of identifying the discursive strategies used by these mothers to position themselves with regard to health care professionals.

The author provided several examples to illustrate the different participant roles. All of them shared information based on their own experience, giving advice by means of different linguistic strategies, ranging from modal verbs (“you should go”) to imperatives (“persevere with breastfeeding”). The analysis also revealed that these mothers mixed experiential knowledge with expert or factual knowledge. Thus, they did not immediately believe or deny the specialist medical information. Instead, they submitted this knowledge to the group for assessment. A major conclusion of this study is the IM tool’s influence on these mothers’ communicative behaviours:

both the modality affordances, including the “always on” character of WhatsApp exchanges, their potential for media sharing and easy access to networked resources, as well as the group constitution, played a part in establishing this form of interactions as particularly fruitful in pooling knowledge from a variety of unrelated sources and facilitating group evaluation of such knowledge.

LYONS, 2020, p. 11

To my mind, this study is very interesting. It shows how language is mediated by the specific IM tool. The only shortcoming I observed was that the author should have mentioned the limitations of case-study research. Implications for future studies could also have been presented.

Another digital ethnography study was performed by Colom (2021) with 10 young activists in Western Kenya. The article focused on a thematic analysis of the participants’ opinions regarding WhatsApp use, together with a discourse analysis of the group discussion. To do that, Colom (2021) informed the activists that the group would close down after 24 hours from the beginning of the discussion and she spread seven main topics along the day. The author admitted that synchronous interactions were not easy to manage. Although WhatsApp has the possibility of clicking on the comment you are responding to, not all participants used this function. Moreover, this function is lost when the conversation is exported into a text file. Consequently, I agree with the author that analysing these types of interactions when several people are participating at the same time is not an easy task.

Another characteristic of these kinds of synchronous interactions was that the turn-taking was fast-paced and answers were short. On the other hand, when participants responded non-synchronously, the answers were longer and even contained subordinate clauses. Furthermore, the multimodal analysis of emojis revealed that the participants used them for different purposes, such as showing agreement, softening potentially uncomfortable interventions, or showing disapproval.

The study also revealed that WhatsApp provided opportunities for creating more inclusive group discussions, and was described as a practical and convenient IM tool. Following the discourse analysis of the WhatsApp group interactions, the author was able to observe that the participants used “we” to refer to their identity as part of the activist group, but “I” when expressing a personal thought. Furthermore, Colom (2021) found that this familiarity and inclusivity also allowed group deliberations. It is a shame that the author did not analyse the use of voice messages or other types of multimedia. One can assume that they play an important role in these group discussions and would benefit from further research.

In 2021, as part of ongoing research on formality/informality in online discourse and language mixing, Pérez-Sabater explored the relationship between linguistic style and communicative intention when WhatsApp group members are affected by extraordinary external events. In this case, the CoP was formed by transnational colleagues (10 women and 2 men) who were partners in a project. They were native speakers of English, Finnish, German, Polish, Portuguese and Spanish. The corpus was made up of 402 text messages (4,732 words).

In line with Androutsopoulos (2014), the author focused on moments of sharing and analysed the style of these interactions. In general terms, Pérez-Sabater encountered the sort of multimodal language that was expected in these kinds of synchronous exchanges with emojis or picture elements. Another interesting result was that most communication was conducted in English only, while code-switching was found in the following situations: to send season's greetings; to address a specific person in the group; or to reinforce the ludic atmosphere.

However, among the 14 moments analysed, 3 were especially significant for the group: one after the May 2017 terrorist attack in Manchester; one after the August 2017 Turku killings; and the messages sent as the Covid-19 pandemic began in Europe in March 2020. Pérez-Sabater observed that in these special moments, the style changed completely: there was an absence of emoji or pictures; the participants included salutations and sign-offs (which were lacking in this WhatsApp group's normal communication); the texts were divided into paragraphs; and the textual deformation usually found in digital discourse was

avoided. It seems that the group members felt the need to express the seriousness of these moments in their writing style.

For its part, code-switching was minimal, since English was the only language shared in this WhatsApp group. In any event, when it was used, it seemed to express solidarity (i.e., good wishes) towards some participants and towards the whole group in the case of the three exceptional moments studied. In Pérez-Sabater's words (2021: 280), "The novelty of this article stems from the nature of the community: transnational partners, who do not share any other language in addition to English, and whose desire to indicate alignment and in-group solidarity takes them to include terms in a language other than English, regardless of their fluency in said language."

2.7 *Exploring Speech Acts in WhatsApp Interactions*

Several researchers have investigated WhatsApp interactions focusing on the realisation of specific speech acts. Lacanna (2018) thus carried out a case study with young Argentinian adults (between 25–38 years old) – whose relationship was not hierarchical – in order to analyse how they communicated invitations or proposals over three WhatsApp groups. The data were qualitatively analysed from an interactional, functional, strategic and multimodal perspective. The author acknowledged that the work was in progress. She selected only some ad hoc examples in the paper to illustrate her main argument, i.e., indirectness was present in all the participants' discourse strategies. Based on the given examples, Lacanna (2018) concluded that there were three degrees of indirectness in invitations or proposals (0, 1 and 2). They depended on one's own face-saving, a dispreferred response, and the reaffirmation of the relationship with other group members. As recognised by the author, the case study being of a reduced size, these conclusions cannot be considered definitive. However, I believe that it is a good starting point to keep on analysing indirectness in WhatsApp using a larger corpus. For instance, it would be very interesting to compare it with a Peninsular Spanish corpus. Indeed, the Peninsular Spanish language is traditionally considered to be more oriented towards involvement (Scollon and Scollon, 2001) and positive politeness (Brown & Levinson, 1987), and predisposed towards more direct and open expression (Fernández-Amaya, 2019; García-Gómez, 2018, among many others).

Indirectness was also addressed by Flores-Salgado and Castineira-Benitez (2018). Adopting a pragmatic viewpoint, they explored the language used in WhatsApp in Mexican Spanish. More precisely, their study focused on 82 WhatsApp exchanges among 60 Mexican Spanish speakers who were members of two different groups. A total of 190 requests were found, representing

the most common speech act in the corpus under examination. The authors paid attention to the communicative strategies used by the participants to express politeness in the forms of address, opening and closing formulae, the degree of directness, and the amount of syntactic, lexical/phrasal and external modification. The findings showed that participants used conventionally indirect strategies and syntactic modification to carry out their requests, and were more oriented towards independence than involvement (Scollon and Scollon, 2001). The authors underlined that these results seem to contradict previous research:

These findings appear to contradict previous studies that have characterized the Mexican pragmatic system as founded on a positive face-based tendency that has, as a main function, the satisfying of the hearer's need for belonging and common ground. The cause of this contradiction can be explained by the technological factors of this online medium of communication (WhatsApp), the nature of the written asynchronous conversations in which participants are engaged, and the characteristics of the users and groups examined in this study as compared to those featured in previous research.

FLORES-SALGADO AND CASTINEIRA-BENITEZ, 2018, p. 90

Furthermore, opening and closing sequences were found in all the interactions analysed. This finding is significant because an absence of these sequences was identified by other authors as a trait of WhatsApp communication (Calero Vaquera, 2014 or Ersöz, 2019, among others). In my opinion, these different findings justify the need to continue exploring the kind of language used in WhatsApp by participants of different nationalities, age, gender and relationship, who use this IM tool for diverse purposes.

Magraner Mifsud (2019), on her part, assessed students' pragmatic competence via WhatsApp. More specifically, the author focused on pragmatic mitigation when an invitation was rejected. She compiled and analysed a corpus of role-play samples written by 44 high school students (23 female, 21 male) from Valencia (Spain). The results showed that the participants felt the need to justify themselves when performing a refusal speech act, using different types of mitigation procedures (i.e., forms of address, excuses, apologies). Most students (70%) knew how to adapt to the communicative situation, reflecting their own good pragmatic competence. Worthy of note, however, is that if we consider the gender variable, female students were pragmatically adequate to the situation in 82.60% of the occasions, whereas male students only in 57.14%

of the cases. In my opinion, this result is of great interest and deserves further exploration using a larger corpus of data.

To conclude this subsection dedicated to speech acts, I wish to mention two of my studies on expression of disagreement in WhatsApp (Fernández-Amaya, 2019, 2021). In the first paper, using the corpus previously described in section 2.5 (Fernández-Amaya 2020), I analysed not only the participants' linguistic strategies for expressing disagreement, but also the role played by multimedia elements and emojis. Furthermore, this analysis was complemented by an interview to better understand the participants' communicative intentions regarding disagreements, and their possible relation to (im)politeness.

The analysis showed 427 instances of disagreement. The most common strategies consisted in giving opposite opinions and emotional or personal reasons. In my view, this result was unsurprising. Indeed, the WhatsApp group members were divided into detractors and supporters of feminism, who defended these opposite viewpoints with examples from their own life experience. Regarding the participants' opinions after the interview, the most noteworthy finding was the fact that although disagreement may lead to impoliteness in other contexts (Langlotz and Locher, 2012; Sifianou, 2012; Shum and Lee 2013), they did not consider it to be impolite in this case. It was even assessed in positive terms by some family members. Therefore, "the findings of this study are in line with the contemporary consensus that disagreement is not a priori a negative speech act (Angouri and Locher 2012). Thus, disagreement is not an inherently impolite act that should always be avoided or mitigated" (Fernández-Amaya, 2019, p. 1082).

In 2021, I compared the disagreement among the WhatsApp group members of the same family with another WhatsApp group of work colleagues. These interactions were considered as convenient to explore disagreement, since both dealt with a moral conflict: feminism in the case of the family members, and politics in the case of the work colleagues. As we saw before, the disagreements analysed in the family corpus followed a consecutive thread. In contrast, the work colleagues' chat content had to be searched for a whole year to find a significant number of disagreement instances (161), all of them revolving around politics.

After the analysis, the most common strategy in both corpora was "Giving opposite opinions". However, the rest of the findings showed several differences, such as the greater presence of disagreement in the family WhatsApp group. This greater tolerance for disagreement was also reinforced by the choice of linguistic strategies made by the different participants. Thus, the family members usually gave emotional or personal reasons, together with negative comments on the topic, whereas work colleagues preferred to mitigate their

disagreement using hedges and token agreement. Therefore, the expression of disagreement seemed to be less face-threatening for family members than for work colleagues in these corpora.

2.8 *Conversation Analysis of WhatsApp Interactions*

Some researchers have used conversation analysis to approach WhatsApp interactions. For instance, Petitjean and Morel (2017) explored how texters mobilised “transcribed” laughter (i.e., hahaha), and examined to what extent this was used to manage possible interactional incidents deriving from the asynchronous nature of these conversations. The corpus under examination was made up of 43 WhatsApp conversations of 53 participants aged between 16 and 35 years, who lived in the French-speaking part of Switzerland. A total of 4,259 messages were quantitatively analysed, identifying all instances of laughter, and seeking to identify any recurrent patterns. The authors paid special attention to the position of laughter in a message and sequence, as well as how turn allocation was managed before and after a message with laugh particles.

The findings revealed two interlocutor patterns of action, depending on the placement of the laughter:

- 1) standalone unilateral laughter (i.e., made of laugh particles only), followed by another message by the same person, with an assessment and leading to the closing of the sequence and topic termination.
- 2) laughter in turn-initial position before an assessment in the same message. The interlocutor produces the following message, allowing him/her to continue with the same topic.

Petitjean and Morel (2017, p. 17) thus concluded that laughter presented specific characteristics in these kinds of digital interactions:

laughter is not only a way of initiating or responding to humorous talk, but also a resource that participants systematically and locally produce to share a mutual understanding of what they are doing moment by moment in the ongoing exchange. Laughter in WhatsApp conversations is all the more relevant as it supports the management of interactional moments that are particularly delicate in asynchronous interactions: turn allocation, sequence closing and topic management.

Pihlaja (2020), on his part, analysed two WhatsApp intercultural exchanges among workers in binational manufacturing sister companies: one exchange between one of the participants and his customer, and another between the participant and an employee. The study focused on analysing how asynchronous digital communication (typical of this IM tool, as we previously saw)

created complex “silences” when an answer was missing or delayed. After analysing the conversations and based on the researcher’s observations and interviews with participants, two main possibilities to fill those silences arose: the interlocutors invented “an explanation of either a potential cultural other [...] or one whose cultural distance is perceptibly closer to one’s own” (Pihlaja, 2020, p. 268).

Other researchers have focused on the use of discourse markers, such as Marmorstein (2021), who analysed the use of “EHM” in Hebrew WhatsApp dialogues. The data were taken from the Corpus of Hebrew WhatsApp Dialogues (HebWA), which amounted to 168,356 messages, from 92 dyadic and group chats among university students, their friends and their relatives (aged 20 to 30 years). A total of 85 “EHM” instances were found in the corpus produced by 185 interactants. These were analysed according to the position of the discourse marker in the message.

The author also considered the co-occurrence of “EHM” with other elements that helped to contextualise the message’s propositional content (i.e., punctuation, emojis, etc.). The analysis showed that although this discourse marker is used in oral conversation as a facilitator or indicator of thinking and planning, the marker’s function varied in WhatsApp, depending on its sequential placement:

In launching a sequence, EHM is used to attenuate a request or preface an appeal for collaborative consideration. In response position, EHM assumes a range of readings. Standalone EHM and certain message-initial bounded EHM indicate that the initiated project is under consideration even if a response cannot be immediately provided. Message-initial integrated EHM, on the other hand, either flags a difficulty to align with the initiated activity or serves to attenuate a disalignment. EHM thus indicates that an ‘easy’ straightforward (type-conforming) response cannot be given and that the matter at issue and the persons involved require consideration. In follow-up position, EHM marks the extended consideration needed to digest a non-favored response. In sequence expansions, EHM indicates that further thought has been invested in order to come up with a better response.

MARMORSTEIN, 2021, p. 8

Furthermore, the findings revealed that the relational task of “EHM” diverged from its stereotypical and often ironic use in monologic writing. For the author, this proves that vocalisations are adaptable to specific forms of communication.

König (2021) also carried out an analysis of the functions of the “HM” and “EHM” markers in WhatsApp interactions (dyadic and group chats) but in this case, in German. The data for this study were obtained from three different corpora: the “SMS database” of the *Centrum Sprache und Interaktion* at the University of Münster, and the “Mobile Communication Database” (versions 1 and 2 [Beißwenger et al., 2019]). In the quantitative analysis of 4,991 dialogues that encompassed 64,416 postings, a total of 284 hesitation markers were found. The qualitative analysis showed that although both were used to display a process of deliberation, they manifested different discourse relations and stances. Thus, responsive “HM” was used to show an alignment with the existing course of action: “Framing the following utterance as the result of a prior deliberation process displays the texters’ willingness to engage in the matter at hand even if they cannot offer a straightforward or sufficient reply. Also, the postings often invite other users to engage in a collaborative deliberation process” (König 2021: 9). On the other hand, “EHM” appeared in displaced postings and, therefore, was unaligned with the projected course of action.

König’ research (2021) thus contradicts studies that have emphasised the conversational nature of WhatsApp interactions (Alcántara Plá, 2014 or Calero Vaquera, 2014, among others). Indeed, her analysis showed that participants made use of different levels of incrementality. In general terms, WhatsApp users deployed “HM” and “EHM” as initial elements in longer postings, suspending an incremental development of messages.

Meiler (2021) also used German WhatsApp interactions retrieved from the “Mobile Communication Database” for his corpus. In this case, the objective was to analyse the interactional techniques to sequence a story. This corpus comprised 40 storytelling instances of different lengths, told by 20 different interlocutors between 2011 and 2019. After a qualitative analysis, the findings revealed techniques also used in face-to-face interactions (i.e., eliciting reactions from the story-reader) together with techniques that exploited the affordances of IM. Among the latter, the author highlighted the following:

- The fact that the story is kept in a message history can lead to delegating the storyteller’s explicit role or even to substituting it.
- Multimodal resources can be a substitute for story introductions.
- The role of the involved recipient does not have to be performed continuously.
- The absence of turn-taking delegates the ratification of possible co-tellers.
- Sequential overlaps and parallel activities show that a story’s interactional relevant moment can be created by interlocutors on their own, by transmitting narrative transitional units.

It is important to mention here that Meiler (2021) did not intend the narratives to represent specific and typical ways of telling stories in IM. The corpus

was indeed too heterogeneous to make such generalisations. Nevertheless, these results can be understood “as examples of the current spectrum of possibilities that outline how, currently, stories can be told sequentially without turn-taking. It has to be investigated elsewhere which techniques of this repertoire may be typical for what configuration of different circumstantial factors” (Meiler 2021: 6).

2.9 *Other Linguistic Studies of WhatsApp*

In this last section, I wish to address the studies that have analysed WhatsApp language use from different perspectives, but do not fit in any of the subsections seen so far. Some of them have adopted a pragmatic stance. For instance, Ekah and Akpan (2018) analysed how the Gricean maxims of the cooperative principle were unobserved in Facebook and WhatsApp interactions. Although the subject may not be very up to date and the research question not very novel, I began reading this paper with interest due to the fact that they researched digital corpora from a pragmatic viewpoint. However, the quality of the paper was highly disappointing. To begin with, the article's different sections did not follow a logical structure and the literature review was extremely poor. Furthermore, the authors did not provide any information about the methodological procedures they followed: all we know is that they randomly selected seven chats. Thus, information is lacking regarding participant demographic specifications; what the initials in the examples stand for; the interaction topics; their reasons for selecting these seven conversations and no others; how and when they were collected; and the type of analysis carried out, among many others.

After reading the analysis, we eventually understand why the authors selected these seven conversations: they were chosen to show how speakers flouted different maxims. The results obtained were thus foreseeable: Gricean maxims were mostly flouted. They also showed that generally, participants deviated from the topic of conversation, which, according to Ekah and Akpan (2018, p. 201), “implies that in human communication, interlocutors mostly opt out of the relation maxim.” It goes without saying that this general assertion is out of place given the limited amount of data analysed.

Yus, on his part, has been analysing different types of digital discourse from the perspective of *Relevance theory* (Sperber & Wilson, 1995) for several years (2011, 2017, among many others). In the case of WhatsApp, he argued in a 2017 paper that we are exchanging a huge number of messages of little relevance but with an immense influence on the users' sense of sociability, connectivity or group membership. This is what the author called “the phatic Internet”. In this sense, “propositional phatic interpretations are typically defined as the ones arising from an intention to create and maintain ties and social bonds,

to exhibit sociability toward others, rather than to transfer information” (Yus, 2017, p. 72).

According to the author, WhatsApp is a highly phatic technology, because it was designed for continuous interactions. In this work, he explored the constraints and non-propositional effects that determined the relevance or lack of relevance of WhatsApp interactions. He distinguished between constraints deriving from the interface on the one hand, from constraints relating to the users’ communication on the other. Among the first, the small size of mobile phones screens and the need for a certain “cyber-literacy” to understand emojis were found to perhaps negatively constrain the interactions. Nevertheless, WhatsApp also offers positive rewards to its users in the sense that it can be used any time, without the possible negative effects of a phone call (intrusion, for instance). It also provides multimedia communication and group interaction: exchanging multimedia content is regarded as a phatic strategy since its function is to foster or maintain interactions.

Among the interface-related non-propositional effects, the author mentions those associated with the user’s feelings of frustration or satisfaction, the latter being more common because WhatsApp is rather intuitive. Undesired non-propositional effects can also be found, stemming from misunderstandings relating to time management between turns. This is due to two WhatsApp interface characteristics: 1) the “last time accessed” option, which informs of the last time the user was active, and 2), the double tick that notifies that the user has received the message or read it, if the double tick takes a blue colour. Thus, some users may get angry if, after checking these two features, they do not receive an immediate reply from the recipient.

Regarding user-related constraints, personality and feelings may influence the quantity, frequency and content of the messages sent through WhatsApp. Another important constraint is the users’ culture, which may also influence the information transmitted. Among the non-propositional effects related to the user, Yus (2017) mentioned the following feelings: connectedness, group membership and social capital, increased social presence, reduced distance between the virtual and the physical, higher self-esteem and self-concept, peer pressure, and emotional involvement. All in all, Yus (2017) offers a very thorough pragmatic explanation for the linguistic decisions usually taken by interactants in WhatsApp conversations.

Another pragmatic analysis of WhatsApp interactions can be found in Mulyono et al. (2019). They explored the politeness strategies used by Indonesian EFL secondary school teachers and students when using this IM tool. The participants were 100 students – 50 were aged 13–14 years and 50 were aged 16–17 years – and 10 teachers. More specifically, the authors sought to verify any differences between them in the use of politeness strategies when

sending WhatsApp messages to each other. Following Brown and Levinson's (1987) politeness theory, they analysed a total of 200 WhatsApp messages: 100 messages between lower secondary school teachers and students, and 100 messages between upper secondary school teachers and students. The results showed that students made use of a greater number of politeness strategies than their teachers. Mulyono et al. (2019) explain this by the fact that these Indonesian EFL learners considered teachers to be of a higher social rank and status and, consequently, showed respect towards them.

I do not believe that this study advances scientific research. To begin with, despite the undeniable importance of Brown and Levinson's (1987) seminal work, over the last three decades, numerous politeness studies have proved that being polite means much more than using a given number of communicative strategies. This postmodern or discursive approach to politeness (Eelen, 2001; Locher, 2004, 2006; Watts, 2003, 2005, among many others) has directed its analysis towards long stretches of discourse, establishing a distinction between *first-order politeness* (based on participants' perceptions) and *second-order politeness* (based on pragmatics researchers' interpretations). Mulyono et al. (2019) failed to mention and apply these studies as well as their contributions, making their study totally outdated. Moreover, even though they referred to impoliteness studies in their literature review, they did not apply them in their analysis. And to finish, their main conclusion (i.e., that learners showed respect towards their teachers due to social distance) confirms what would be expected based on face theory assumptions. The study does not, therefore, present any originality. Finally, although the corpus was made up of messages in Indonesian (59) and English (141), the analysis of politeness strategies was conducted indiscriminately, despite the fact that students used their native language at times and a foreign language at others. In my opinion, this invalidates the results obtained. In fact, the authors mention this as a study limitation: "In language learning classroom contexts, pragmatic competence of foreign language learners may vary which thus would affect their L1 and L2 pragmatic choices to express their thoughts during communication in WhatsApp" (Mulyono et al., 2019, p. 315).

To conclude, I consider that the researchers' initial idea was interesting. The study's quality, however, was negatively affected by a non-updated literature review, a lack of rigour in the methodology, and the absence of an analysis of multimedia elements.

A year later, Jakaza (2020) adopted an appraisal linguistic discourse approach to account for the identity construction or obfuscation patterns of Facebook and WhatsApp users. Unfortunately, interesting as this topic may

seem for this literature review, the paper did not meet its initial expectations. First, the paper would have benefitted from a native speaker's stylistic revision. Second, Jakaza (2020) failed to specify the number of participants or interactions analysed, despite having indicated he would follow a qualitative approach to analyse the data (which was collected through participatory observation and group discussions). Furthermore, the analysis was basically descriptive with many subjective statements that were ill-suited to a scientific paper, e.g., "Human beings are religious in nature" (Jakaza, 2020, p. 10). The conclusions obtained appear exceedingly general and it is a pity that having raised such an interesting topic, the author did not follow a more accurate methodology.

The last work I will review in this first chapter is that of Igwebuiké and Chimuanya (2021). The authors performed a captivating study in which they analysed fake news posted on WhatsApp, Facebook and Twitter. The term "fake news" became popular during Donald Trump's campaign, in which he employed it repeatedly and its use circulated worldwide. In this case, the authors' main objectives were the following: to identify the legitimisation strategies that had been used on these three digital platforms during the 2019 general elections in Nigeria; to analyse the linguistic features present in the fake news; and to discuss their social and political repercussions. The authors performed a discursive analysis of 120 sampled fake news posts (40 from WhatsApp, 40 from Facebook and 40 from Twitter), adopting both a qualitative and quantitative approach. They applied van Leeuwen's Discourse Legitimation model, which presents the following strategies to (de)legitimate information:

- authorisation: reference to authority (i.e., government).
- rationalisation: what is generally considered as rational.
- moralisation: reference to moral values.
- mythopoesis: narratives in which there is a reward for goodness and a punishment for badness.

The results showed that WhatsApp presented the highest number of legitimisation strategies, followed by Facebook. Regarding the specific strategies, authorisation was the most recurrent legitimisation strategy (46.6%), in which expert and role model authority were deployed to validate fake news. These were followed in number of occurrences by moralisation (27%) and rationalisation (26.4%). There was no instance of mythopoesis in the data analysed. According to the authors, "the strategies are viable persuasive tools owing to their use of discourse markers like make-believe images, emotive language and coercive verbs" (Igwebuiké & Chimuanya, 2021, p. 56). In my opinion, it would be highly relevant to replicate this study in other countries/languages since fake news is now omnipresent in our digital communications.

3 WhatsApp as a Language Learning Tool for EFL/ESL

New technologies are now widely used in language learning. This adoption accelerated during the COVID-19 pandemic, as online teaching was imposed worldwide. Consequently, social media, including the WhatsApp tool, have been incorporated into different teaching methodologies. It comes as no surprise, therefore, that numerous studies have explored the effects of using WhatsApp on EFL/ESL acquisition. Most of these works present the following common characteristics:

- 1) Their main objective is to demonstrate that using this IM tool improves a given linguistic skill.
- 2) Their methodological procedures usually follow a pre-test/post-test design.
- 3) Some of them also investigate students' opinions regarding the use of WhatsApp to learn English.

As in the previous chapter, a table summarising these studies is included in an annex (Appendix 2) to facilitate their identification. For each study, the table specifies the author(s), the year of publication in chronological order, the study participants, the type of research, the object of analysis and the main findings obtained. In the following subsections I discuss these references in depth according to the learning aspect addressed in each.

3.1 *WhatsApp for Writing and/or Reading*

Three different types of participants were found in these publications: university students, primary or secondary school students, and private language institute students. Alsaleem (2013) and Hani (2014) were the first researchers to focus on whether using WhatsApp had any effect on the writing skills of EFL university students. Both collected data and followed a pre-test/post-test design. In the case of Alsaleem (2013), participants were 30 Saudi students who conducted digital journaling exercises. In the case of Hani (2014), 20 Jordanian students sent their reflections regarding different topics to their WhatsApp group for three weeks. After comparing the writing scores of the students' pre-tests and post-tests, a significant difference was found in both cases: they showed improvements in their choice of vocabulary and voice.

Allagui (2014) performed a similar study which also explored the effectiveness of WhatsApp to learn EFL writing in university students. A group of 50 students used this IM tool to write an assignment and send text messages to each other. The difference with the previous studies is that, in this case, participants also had to fill out an opinion questionnaire. The results showed that despite the fact that students' scores were still low, the spell checker helped

them to improve their spelling and vocabulary. Furthermore, WhatsApp increased students' motivation to write.

Almost identical results have been obtained by other researchers (Ahmed, 2019; Al Abiky, 2021; Al-Ahdal and Hussein, 2020; Andujar⁶ and Salaberri-Ramiro, 2021 and Awada, 2016). Ahmed (2019, p. 66) summarised them in the following terms:

When comparing their learning through WhatsApp group and their traditional classroom learning, participants emphasized that such chats, discussions and tasks given to them via the WhatsApp group during these two months were more effective in developing their reading and writing skills than classroom courses that they attended for a four-month semester. They added that such a WhatsApp group provided them more time to practice reading, writing and communicating in English as compared to their traditional classroom learning in which their teacher and few students participated in the practices while the majority of the students were just passive listeners.

In this vein, Awada (2016) tested WhatsApp's effectiveness regarding the development of EFL students' writing performance and their motivation to learn. The participants were 52 native Arabic speakers (27 in the control group and 25 in the experimental group), with an average level of English who were enrolled in two writing courses at university. The courses lasted for four weeks, with five hours of class per week. Learners were asked to write a critique essay respecting the following structure: introduction, summary, assessment, personal response and conclusion. The methodology was based on a mixed methods pre-test and post-test design: WhatsApp was used in the experimental group class, while participants in the control group received traditional instruction. Furthermore, the author gathered data through 2 questionnaires, using statistics tests to perform a quantitative analysis of the data. The findings revealed that WhatsApp proved to be more effective than regular instruction because the participants' writing performance improved and their motivation increased.

Other researchers have focused on analysing university students' writing performance, but establishing a comparison between two specific elements. This was the case of Al-Ahdal and Hussein (2020) and, later, Andujar and Salaberri-Ramiro (2021). Andujar and Salaberri-Ramiro (2021) compared the

⁶ This author has changed the way in which he signs his papers from Andújar-Vaca in 2017 to Andujar in 2020 and 2021.

use of WhatsApp and Facebook in EFL teaching to analyse differences and similarities between computer-mediated and mobile-mediated communication. The participants were 64 EFL Spanish university students (32 in each group) who put into practice their writing and reading skills. The authors followed a mixed methods approach: a longitudinal scale to examine the data quantitatively (students' behavioural, emotional and cognitive engagement); an end-of-course survey to analyse students' perceptions of both environments (WhatsApp and Facebook); a statistical analysis to compare differences; and lastly, a qualitative analysis of the interactions.

Regarding engagement, the results showed significant differences in favour of WhatsApp in terms of interest and excitement (emotion), but the computer environment promoted more focused learners (cognitive). Behavioural engagement was similar in both groups though. The findings also revealed a difference between the number of messages and words in the groups, which meant that students made more use of WhatsApp to practice EFL than Facebook. Nevertheless, the average length of words and messages showed that students wrote more correctly and longer messages when using a keyboard. Another significant difference was that in the Facebook group, answers tended to present a 20 to 30-minute delay, whereas in the WhatsApp group, both synchronous and asynchronous messages were found, and in this latter case, the time interval between replies was shorter. Due to this fact, overlapping was much more common in WhatsApp. Furthermore, voice messages and video-sharing occurred only in WhatsApp and no significant difference was encountered regarding image-sharing and coherence. Finally, the frequency of use of emojis was slightly higher in WhatsApp. The authors concluded that understanding these differences could help language teachers to adapt their methodologies to the e-learning environment in an appropriate way.

To my mind, this is one of the most complete and significant studies on the use of WhatsApp for EFL learning. The main reason is that unlike the other studies in this section, the authors did not limit their analysis to linguistic elements, but also focused on multimedia components which have shown to play a vital role in these kinds of digital interactions. Furthermore, they took into account the influence of the mobile interface, i.e., that students may consider it a disadvantage to write long compositions on a mobile phone.

Al-Ahdal and Hussein (2020) also performed a contrastive study, in this case, comparing data from two different universities. For four weeks, the students (12 from each university) had to provide an interesting language component on WhatsApp every day, such as an idiom or a quote, and had to write a report at the end of the week. As in the previous studies, the results showed that all participants' writing skills greatly improved by the middle of the second week.

The study by Al Abiky (2021) is one of the most recent experiments with university students. The author investigated the effectiveness of WhatsApp regarding the teaching and learning of English writing during the suspension of face-to-face university classes in Saudi Arabia due to the COVID-19 pandemic. The participants' writing skills were measured twice: first, after receiving face-to-face instruction, and second, after receiving instruction via WhatsApp. In this second period, students used the IM tool both to send written messages and to perform their tasks (short essays). To carry out this research, and in line with previous studies, Al Abiky (2021) used mixed methods: a pre-test and post-test together with semi-structured interviews. Once again, the results showed that students improved their writing competence more by using WhatsApp than through traditional instruction.

Among the works that focused on university student reading skills is the study by Gutiérrez-Colon Plana et al. (2015) on a sample of 95 Spanish university students. The authors analysed the advantages and disadvantages of using WhatsApp by conducting different reading activities using this IM tool for 15 weeks. Students received a link to *SurveyMonkey* where they found both the text and comprehension questions. Moreover, students could check whether their answers were correct. Before beginning the study, the participants completed a questionnaire on their reading habits in English. An additional survey, at the end of the experiment, explored their satisfaction with these kinds of reading exercises using WhatsApp. The results showed that despite mentioning some drawbacks (such as their mobile connection being slow), the majority of students were highly satisfied and manifested that their willingness to read in English had increased.

As I mentioned earlier, other researchers have centred on primary and secondary school students regarding the benefits of WhatsApp for EFL. This was the case of Bataineh, Al-Hamad and Al-Jamal (2018). The novelty of this work lies in the special attention they paid to possible gender differences. Participants (98 Jordanian eleventh-grade students) were divided into two groups: one male and one female. They received WhatsApp-based instruction to develop their writing performance (content, organisation of ideas, vocabulary and language use). As in the studies mentioned above, the data was collected through a pre-test and post-test. In this case, the findings showed that female participants improved their writing skills much more than their male counterparts. To my mind, this is an interesting result, and it deserves further exploration using samples of students from other cultures, thus combining gender studies, intercultural studies and digital discourse analysis.

Bataineh also participated in a similar study in 2018 with two different colleagues (Bataineh, Baniabdelrahman & Khalaf, 2018), but in this case, they

compared the influence of e-mail and WhatsApp instruction on EFL learners' summarising and paraphrasing skills. The participants were 60 Jordanian tenth-grade students divided into three experimental groups and a control group, each composed of 15 students. The authors used a pre-test, post-test and semi-structured interviews to gather their data. Between the two tests, students carried out 18 summarising and paraphrasing exercises on nine reading texts for eight weeks, with four 40-minute sessions per week. The control group received traditional instruction using the class book, while the researchers employed WhatsApp in the first experimental group, e-mail in the second, and a combination of both WhatsApp and e-mail in the third.

The authors found statistically significant variations in the participants' results in the post-test in favour of the WhatsApp group, combined e-mail and WhatsApp group, and e-mail group, in that order. According to Bataneh, Baniabdelrahman and Khalaf (2018, p. 142) a possible explanation for these findings could be that "[u]nlike reading a print text, which is usually a linear event per the organization of the text, the multimodal feature of screen-based texts offers the reader new potentials for engagement." In this sense, the study confirms what Andujar and Salaberri-Ramiro (2021) had also detected: the specific characteristics of the WhatsApp interface positively affects students' willingness to use that IM tool for learning purposes.

Furthermore, the results revealed that instruction had a greater effect on paraphrasing than on summarising. Bataneh, Baniabdelrahman and Khalaf (2018) end their paper by acknowledging the study's limitations (i.e., different results might be obtained with learners from different grade levels, schools or regions) and by offering some pedagogical recommendations to incorporate these less conventional teaching methods.

Suhaimi et al. (2019) also focused on primary school students (Grade 6) in a study in which they analysed how WhatsApp influenced the teaching of writing, paying special attention to vocabulary and grammar. In this case study, the authors selected 8 learners from a primary school in Malaysia who participated in a four-week experiment: during the first week, they were informed about the project and were administered a pre-test; over the two following weeks, an intervention on WhatsApp was conducted; and in the last week, they took the post-test. The data was collected from document analysis (students' written scripts and WhatsApp conversations), interviews and field notes. The results of the qualitative analysis showed that 75% of the participants had improved their vocabulary, while no significant progress in grammar could be found. As in the other studies reviewed so far, the interviews revealed that participants considered that WhatsApp was helpful to improve their vocabulary and construct their sentences.

Based on these findings, Suhaimi et al. (2019, p. 599) concluded that “this study proved that WhatsApp could enhance the vocabulary of the pupils’ narrative writing while more time is needed for the grammar aspect to improve as the pupils are still primary school learners and they are yet to grasp the basic form of grammar.” I believe this generalisation is unjustified, given the reduced size of the sample: it included only 8 primary school students from a specific culture (Malaysia). We do not know whether the same results would have been obtained with a greater number of participants from a different culture and/or age group. These limitations are in fact acknowledged by the authors as they indicate future research paths.

Not all the studies present in this subsection focus on the possible benefits of WhatsApp to learn to write in English. Thus, Songxaba and Sincuba (2019) for example, reported on the spelling mistakes made by ESL Grade 10 students in their essay writing due to WhatsApp. The 180 participants were randomly selected from three South African high schools. The students had to choose among five topics and write an essay that was submitted via WhatsApp. The researchers then identified and quantified spelling mistakes in these essays. The findings showed the use of abbreviations (i.e., “slp” instead of “sleep”) and numbers in place of full word forms (i.e., “2 dy” instead of “today”). According to Songxaba and Sincuba (2019, p. 5), “[a]s they communicate in an informal manner on these platforms, the language used on WhatsApp is then internalised and reproduced by the respondents in their academic essays.” To conclude, the authors made recommendations on how teachers could help students to avoid these mistakes. However, as we saw in Chapter 2, textese is a characteristic of WhatsApp language. For this reason, it is unclear to what extent these forms can be considered mistakes or simply students’ adaptation to the kind of linguistic register expected in this medium.

The participants in the study of Tümen Akyildiz and Çelik (2021) were also primary school pupils, but in this case, the aim was to explore the influence of reading tasks administered through WhatsApp on the pupils’ performance in EFL reading comprehension. They also analysed the children’s opinions on the use of this IM tool for this purpose. The participants were 54 Turkish primary school students (7th grade), divided into experimental and control groups. The experimental group received reading texts with comprehension questions via WhatsApp and had to use the app to send their answers. The control group, for their part, carried out the same reading activities in the classroom. After analysing the data both quantitatively and qualitatively, the authors found that the experimental group obtained better results. Regarding students’ opinions, the participants expressed positive views about the use of WhatsApp to enhance their reading comprehension skills. As can be

observed, these results are in line with the findings of all the studies previously mentioned.

Finally, some researchers analysed the influence of mobile-based dynamic assessment on the writing skills of learners enrolled in a private language school, among which Ebadi and Bashir (2021). The participants were 30 Iranian EFL students who were divided into three groups (10 students each): two experimental groups and one control group. They were administered two DIALANG online tests to evaluate their writing performance, before and after the instruction. The Google Docs mobile app was necessary to carry out several writing tasks. The teacher then provided feedback to the experimental groups through written and voice messages on Google Docs and WhatsApp. To finish, the authors interviewed the students in the experimental groups to collect their opinions. The data were quantitatively and qualitatively analysed using T-test and ANOVA, on the one hand, and thematic analysis, on the other. The general findings revealed that WhatsApp exerted a positive influence on the students' written proficiency, resulting from the instructor's mediation and the collaborations between the participants. However, unlike previous studies, the thematic data analysis showed that not all learners were satisfied with this mediation:

Exploring learners' perspectives showed that EFL learners held both positive and negative perspectives towards the two mediation types. Both groups revealed their satisfaction with the mediation types in terms of being efficient, convenient, and causing less social pressure. [...] The negative points were either student or mediation-type-related and showed the participants' discomfort with time limitations and their preference for other modalities of mediation and response provision.

EBADI AND BASHIR, 2021, p. 2011

Khodabandeh and Naseri (2020) also studied a sample of language school students. More specifically, the participants were 68 Iranian intermediate EFL students from different language institutes. They were administered the *Oxford Placement Test* to be homogenised. The authors then placed them into two experimental WhatsApp groups randomly (34 learners in each group): one in which participants could interact and another in which they could not. Participants performed a paragraph writing pre-test, after which both groups received the same type of instruction. Upon completion, they took a post-test. In line with previous studies, the results showed that students in the WhatsApp group having conducted online interactions outperformed the students in the restricted group.

Finally, the most recent study on private language institute students is that of Pourdana et al. (2021, p. 9). These authors analysed the influence of metalinguistic written corrective feedback on discourse markers on the writing performance of 42 Iranian EFL students: “Eight writing elicitation tasks were introduced to the participants in terms of provoking writing topics illustrated with some pictorial cues. The students were required to write a 150–200-word paragraph about every topic in a weekly schedule for an 8-week period.” They were then given feedback on WhatsApp as well and were required to work on it, avoiding the discourse marker mistakes found. After collecting the scripts, the authors thematically analysed the content using *NVivo 21 Software*. This qualitative analysis revealed a greater presence of additive discourse markers. The quantitative analysis of the frequency count data showed no substantial improvement in students’ discourse marker accuracy after having received the metalinguistic written corrective feedback.

I would like to close this subsection with the studies performed by Arifani (2019a, 2019b). The reason for leaving these two works for last is that the author did not provide any information about the participants. The main goal of Arifani’s (2019a, 2019b) studies was to explore how using a WhatsApp group and individual flipped instructional design influenced students’ writing performance. With that purpose in mind, two groups of 25 students each were created: one in which learners received group flipped instruction and another in which they received individual flipped instruction. As I mentioned earlier, the author did not specify the students’ nationality, their level of English, nor if they were university, secondary, or primary school students. Another major drawback is the lack of information on the duration of the instruction. In sum, I consider that the methodological procedures should have been developed further.

In order to assess the possible differences between the groups, a pre-test and post-test were administered, and a questionnaire was also distributed to assess students’ attitudes. In line with previous studies, “the results also demonstrated that learners who were taught using small group flipped model with WhatsApp performed better than those learners who were trained using individual flipped model with WhatsApp” (Arifani, 2019b, p. 11). In addition, students viewed the small group flipped instruction through WhatsApp more positively than individual activities.

After reviewing the publications on the use of WhatsApp for reading and/or writing, the following subsection focuses on studies that have addressed speaking and/or listening skills.

3.2 *WhatsApp for Speaking and/or Listening*

Han and Keskin (2016) defended that using an IM tool that students were familiar with, such as WhatsApp, would help them to reduce their speaking anxiety in the EFL classroom. To test their hypothesis, they performed a study on 39 Turkish university students who were attending EFL four-week speaking courses. First, the students wrote short dialogues in pairs. After a quick revision by the teacher, they practiced and recorded them within their WhatsApp group. They then listened to their own dialogues and that of their classmates. A test was administered at the beginning and end of the study and the students' opinions about the WhatsApp activities were also examined through face-to-face interviews. After analysing the data both quantitatively and qualitatively, the results obtained revealed that WhatsApp activities had a significant impact on the reduction of the students' EFL speaking anxiety: "the students in this study reported that the WhatsApp experience offered them a chance to listen to their voice-recordings themselves and be evaluated by an audience. This made them feel good" (Han & Keskin, 2016, p. 42).

The participants in Ahmed Elsayy's (2021) study expressed similar positive opinions. They reported that their exposure to listening improved their speaking ability (especially fluency and pronunciation) and they also gained self-confidence. The idea that WhatsApp helps students gain confidence in themselves has also been highlighted by other authors such as Gutiérrez-Colon Plana et al. (2015) or Aktaş and Can (2019). In my view, this IM tool offers a very good opportunity not only to reduce students' anxiety, but also to improve their pronunciation. By listening to their own performances in English, they can identify their mistakes and progress in their elocution.

Andújar-Vaca and Cruz-Martínez (2017), on their part, analysed the possible benefits of WhatsApp to develop the speaking skills of 80 Spanish students taking a B1 English course at the University of Almería. The authors divided the participants into two groups: an experimental group, who took part in a WhatsApp group for 6 months, and a control group. Andújar-Vaca and Cruz-Martínez (2017) gathered samples from the IM tool together with a speaking test in order to assess the students' degree of oral development. They then applied a temporal axis to measure the differences between both groups. In line with the results of studies mentioned in the previous subsection (on writing and reading skills), the new findings showed significant speaking improvements in the experimental group.

As one can observe, the present subsection is much shorter than the previous one. This is because far too little attention has been paid to the possible benefits of using WhatsApp to improve speaking and/or listening skills. I believe this subject deserves further research, considering that WhatsApp

offers the possibility of sharing different multimedia elements, such as videos or songs to practice listening. In addition, students can record their own performances to practice speaking. All in all, taking part in a WhatsApp group allows students to continue practising their English outside the classroom as well as to assess their classmates' performances.

The next subsection is dedicated to studies that have focused on the use of WhatsApp to learn vocabulary.

3.3 *WhatsApp for Vocabulary Acquisition*

Lai (2016, p. 278) carried out a three-month experimental study to address the following research question: "Does mobile immersion significantly improve the learning of high-frequency English verbs by second-language learners?" The author divided a group of 45 (7th grade) Hong Kong students into an experimental group, which used WhatsApp (24 students), and a control group (21 students). The learners underwent vocabulary tests before and after the experiment. After the analysis, no significant difference was found between the two groups' means. Nevertheless, there was a substantial correlation between an individual's chat frequency and vocabulary gain in the group that used WhatsApp. Moreover, the students' interactions showed that the effectiveness of mobile immersion may depend on the learners' attitudes towards this interactive learning environment.

In this vein, Ashiyan and Salehi (2016) and, later, Dehghan et al. (2017) analysed the possible benefits of using WhatsApp to learn new vocabulary in EFL students. In both cases, the participants were Iranian learners attending a language school, who were divided into an experimental and control group. Ashiyan and Salehi (2016) focused on collocations and administered the 60 participants a pre-test to assess their collocation knowledge. The experimental group then used WhatsApp to learn and practise new collocations, whereas the control group did not. Finally, both groups took a post-test. After statistically evaluating the results, the experimental group significantly outperformed the control group.

Likewise, Dehghan et al. (2017) also administered the 32 participants a pre-test and a post-test after 9 sessions. Surprisingly, neither of these tests showed significant differences between both groups. This finding contradicts previous studies mentioned in this literature review. The fact that students were taught only 18 words and that the duration of instruction was very short may have influenced the results.

Mellati et al. (2018) conducted a much more solid study. In this case, the participants were 90 Iranian EFL learners (45 in the experimental group and 45 in the control group) who were attending an online language course via their

mobile phones. The authors designed a course for the experimental group in which students were taught vocabulary via WhatsApp for one month. This group also used another mobile application to learn vocabulary (GRE).

To collect the data, the researchers administered a vocabulary pre-test and post-test, which included 30 multiple choice questions each, covering the content seen in their coursebook. This was followed by a semi-structured interview with 10 randomly selected students. The main goal of the interview was to collect the learners' opinions on the use of social networks to learn vocabulary.

Once again, the main conclusion derived from the quantitative analysis was that the experimental group outperformed the control group. After analysing the data qualitatively, the authors concluded that the study proved the usefulness of WhatsApp because it enabled the creation of learning groups that could easily construct and share knowledge with other participants.

Çetinkaya and Sütçü (2018), for their part, compared the effects of using Facebook and WhatsApp on EFL learners' vocabulary acquisition. The researchers also sought to understand students' opinions on the use of these digital tools for educational purposes. As we saw in the subsection dedicated to reading and writing skills, Andujar and Salaberri-Ramiro (2021) carried out a similar study with Spanish university students. In this case, the participants were 123 Turkish secondary education (9th grade) students who were administered a pre-test and post-test. The authors used a mixed methodology, combining a quantitative and qualitative data analysis. The results revealed significant differences depending on the learning environment, WhatsApp having a more effective influence on the improvement of the students' vocabulary. Furthermore, the researchers obtained generally positive learner opinions about this type of instruction.

Çetinkaya and Sütçü (2019) also sought to collect students' opinions on the use of this IM tool for educational purposes. However, the experiment's main innovation lay in the fact that unlike other researchers, they analysed the effects of multimedia annotations sent through WhatsApp on EFL learners' vocabulary acquisition. The participants were 112 Turkish secondary education 9th grade students (59 girls and 53 boys) who were administered a pre-test and a post-test. The methodology followed and the results obtained did not differ from the studies reviewed so far. Thus, the quantitative data analysis revealed that the multimedia annotations increased the learners' vocabulary acquisition, especially 'Text+Picture+Audio' and 'Text+Picture' multimedia annotations. Based on the qualitative data analysis, the researchers obtained generally positive learner opinions on this type of instruction.

Finally, the most recent work exploring the potential of WhatsApp for EFL vocabulary acquisition is that of Andujar (2020). This study involved two

groups of 30 EFL Spanish students each (a control group and an experimental group), who were taking a B1 EFL course at the university. Both groups performed a grammar and vocabulary test, before and after receiving the same content and tuition. The difference was that the experimental group used WhatsApp to participate in a daily conversation for five months. The teacher designed an inventory of prompts that he used to provide negative feedback if needed, ranging from the most implicit to the most explicit. The findings revealed that students' prompts gradually decreased as they required less feedback, implying improvements in their linguistic skills.

After having reviewed the studies on the use of WhatsApp to develop writing, reading, listening, speaking and vocabulary skills, the following subsection centres on studies that explored the use of this IM tool for EFL teaching and learning, without focusing on any specific skill.

3.4 *WhatsApp for Other Learning Purposes*

Avci and Adiguzel (2017) analysed how WhatsApp influenced the general language proficiency of 85 B2 level EFL students. The participants were from a university in Istanbul and were divided into 22 WhatsApp groups. They participated in a seven-week work project in which they had to create a magazine. Avci and Adiguzel (2017, p. 48) explained that students were expected to carry out the following tasks:

- (a) choose particular theme-based topics from the real-life issues;
- (b) determine their content, genre, and target audience;
- (c) use written and visual materials (e.g., short articles, anecdotes, interviews, illustrations, images, etc.);
- (d) gather information for each topic area;
- (e) design layout using Microsoft Word/Publisher or other programs;
- (f) form 20–40 pages with a cover illustration; and
- (g) lastly, print their magazine.

The authors collected their data from interviews and group discussions as well as evaluations of group work or WhatsApp interactions. The interviews' qualitative analysis led to classifying the students' answers into eight main topics: organisation of the project work; strengthening of different skills; influence on interpersonal learning; cooperation in formal and informal situations; the search for goal-oriented strategies; ease of communication via WhatsApp; the positive effects of instant feedback; and engagement in language activities. The quantitative results from the self- and peer ratings showed high and weak correlations between both of them. The general findings indicated that the students were able to practice English in an authentic group project in which they had the opportunity to improve their communication skills and vocabulary

knowledge. Moreover, learners distinguished between informal and formal English as they were creating their magazines. Finally, the students' commented that the most remarkable benefit of using WhatsApp for EFL learning was time management: the fact that they could communicate anywhere and anytime was an advantage to carry out group work.

With a similar purpose in mind, Keogh (2017) explored how a group of 18 Colombian International Relations students used a WhatsApp group throughout their English class for a semester. This group was thought of as a shared space where students could put into practice new phrases or vocabulary learned in class. In the author's words, "the implementation was intended as creating a space where the learners could seize the initiative, demonstrate their capability and gain true experience of interacting in English on topics of immediate interest" (Keogh, 2017, p. 83). The study's data consisted of interactions relating to several tasks within the WhatsApp group for four months, students' reflections on the IM tool's usefulness at the end of the semester, and face-to-face interviews with 5 of the students. The interactions within the group were qualitatively analysed in order to verify whether the group supported and encouraged learners' inter-communication and whether they considered it beneficial. The main conclusion was that the WhatsApp group led to successful scaffolding, increased students' participation, and created a useful community of learners.

Bozoglan and Gok (2017), for their part, explored the influence of WhatsApp in a dialect awareness programme with 58 primary school English language teachers studying at a Turkish university. As usual in these works, they divided the participants into two groups: the experimental group, who were trained on dialect awareness through WhatsApp for 14 weeks, and the control group, who did not receive any instruction. The authors then gathered the data using a pre-test and post-test that assessed the participants' attitudes towards different English dialects. The results revealed that "the dialect awareness raising sessions as in the present study, which include certain patterns in the chosen dialects contrasted with standardised dialects, introduction of specific terms such as 'English as a Lingua Franca', 'English as an International Language', 'World Englishes' and discussions language input are likely to raise the participants' language awareness and change their convictions about standardness and ownership of English" (2017, p. 783).

Language assessment was the focus of Samaie et al.'s (2018) study. A total of 30 Iranian EFL students from a language institute conducted self- and peer-assessments on WhatsApp. First, the participants received information about mobile-assisted assessments. They then carried out several tasks that involved both types of evaluation together with think-aloud protocols. The participants also completed four attitude questionnaires, before and after

the experiment, and were interviewed to understand the reasons for changes in attitude. After the analysis, the findings revealed that despite the fact that students gave higher marks to their peers, there was no significant procedural distinction. The gathered opinions reflected negative attitudes towards mobile-assisted evaluations generally, reflecting a preference for face-to-face interactions. This is an interesting result because as we have seen in the literature reviewed so far, students generally prefer to use WhatsApp to learn English. In my opinion, it would seem that in the case of assessments, students prefer not to take any risks regarding the use of technologies.

Aktaş and Can (2019) also collected students' opinions, this time to verify whether the use of WhatsApp in English outside the school had any influence on their attitudes and self-efficacy beliefs. For this purpose, the authors collected quantitative data from a WhatsApp group of 20 EFL Turkish high-school students for eight weeks. They administered these participants both pre-test and post-test and held meetings with them twice a week to assess their progress. The "English Self-Efficacy Scale" and the "Attitude toward English Scale" were applied before and after the experiment. Furthermore, the authors used a semi-structured opinion questionnaire at the end of the experiment. The findings showed that the use of WhatsApp outside the class led to a noteworthy differentiation in the students' self-efficacy beliefs regarding both reading and listening skills.

Berth et al. (2020), for their part, performed a theoretical study and proposed the following WhatsApp activities in order to teach and learn English at different levels: posting pictures or objects for teaching basic vocabulary; writing descriptive essays or as pre-reading activities; brainstorming ideas to teach writing; translation; posting jumbled letters or words to improve vocabulary; spelling and punctuation exercises; posting incomplete phrasal verbs; posting synonyms and/or antonyms to expand vocabulary knowledge; posting audio and/or video files such as stories, news broadcasts or lectures in order to carry out listening comprehension, vocabulary, speaking and writing activities; essay writing; speaking using video call; posting web words to practice relating vocabulary; posting a reading passage with comprehension questions; working out puzzles or riddles; working with word definitions; posting different course materials so that students can access them anytime anywhere; posting quizzes; paraphrasing sentences and posting links to different relevant sites.

Despite the fact that, as we have been reading in this volume, academic researchers have long advocated the benefits of WhatsApp for EFL teaching and learning, these activities were not implemented and, for this reason, I agree with the authors when they recognise that "it is crucial that they be tested empirically in the field to see how valuable they are, especially from the standpoint of the learners" (Berth et al., 2020, p. 272).

A research gap I identified while performing this review was the scarcity of cross-cultural studies. The reason is probably the difficulty in gathering this kind of personal data from participants in different countries. One exception is García-Gómez (2020b) who analysed the impact of WhatsApp on British and Spanish university students' pragmatic competence and interpersonal relationships. The author compared the students' personal beliefs with their WhatsApp conversations. More specifically, the corpora were made up of ten WhatsApp groups with a total of 19 British Erasmus students and 59 Spanish university students. As in García-Gómez (2020a), all of them were enrolled in a course entitled "Emotional Intelligence and Creativity applied to the teaching of English as a Foreign Language" in which they had to perform two group tasks.

As we explained earlier in subsection 2.5, the author recommended, at the beginning of the course, that his students create a WhatsApp group to communicate more easily when performing the tasks. They were free to choose their group members, but each group had to include at least one Erasmus student to ensure an intercultural learning environment.

The analysis involved several steps. First, the author performed an initial pragmatic analysis, obtaining 62,032 utterances. This analysis emphasised the presence of conflictive conversations among participants when discussing how or when a task had to be done. Second, after a content analysis of these corpora, García-Gómez (2020b) identified four hostile interactions (46,796 utterances). Third, the author incorporated the voices of all participants and, following a qualitative method, analysed their perceptions about the usefulness of WhatsApp in their learning process. Finally, participants were shown some extracts from their conversations and they explained how they felt about these conflicts.

In García-Gómez's (2020b, p. 7) words, these are the results obtained:

During the small focus group discussions, the participants in the study assessed negatively the use of WhatsApp to complete group tasks outside the classroom. Such negative overall assessment revolved around three key issues: the first one had to do with the Spanish students' insecurities when using English as a means of communication; the second one had to do with students' inability to manage time effectively; while the third one had to do with excessive or inappropriate use of colloquial language and slang.

In general terms, this study revealed that the students' lack of pragmatic competence made it impossible for them to communicate effectively. Furthermore,

these pragmatic failures not only had a negative impact on their interpersonal relationships, but also led to negative opinions on the use of WhatsApp as a learning tool. As can be observed, this result contrasts with the general literature reviewed so far, which has argued in favour of WhatsApp for learning purposes. As we saw in Samaie et al. (2018) commented above, the fact that students were being assessed in these tasks seems to have significantly influenced their view of this IM tool.

Finally, one of the most recent studies is that of Tragant et al. (2021), who explored the use of WhatsApp to expand language learning beyond the classroom. In this case, 23 Spanish EFL students were regularly sent optional tasks via WhatsApp during a five-week summer course. A total of 764 messages were ultimately produced, which were analysed qualitatively, putting a special emphasis on changes of participation over time.

Most messages were students' answers to teacher-initiated tasks. Through these tasks, not only did they have the opportunity to practice English, but they were also able to engage in real interactions. Thus, the students became accustomed to reinterpreting these tasks in personal ways, elaborating and producing pragmatically adequate answers. However, the students' participation tended to decrease over time. The authors provided two reasons to account for this: the task's linguistic demands or their fatigue as the course advanced. There were also some instances of informal student-teacher communication in this WhatsApp group (a total of 289 messages unrelated to the task). Contrary to task-related messages, the latter increased over time. Furthermore, the conversations became more natural and symmetrical, showing a greater presence of textese.

Since participation in this group was not compulsory, the interactions unfolded without any sort of conflict. This result contrasts with that of García-Gómez (2020a, 2020b) who found conflictual talk in a group in which tasks were obligatory, as seen above. Despite an almost complete absence of negotiation of form or content, both types of messages seemed to be similarly effective at encouraging students to communicate in English.

As we have seen, most of the studies reviewed above have found that the use of WhatsApp generates positive results for language learning and teaching. It seems that students are generally enthusiastic about using this IM tool as a learning instrument, except in the case of assessments. In this latter case, opposite results were obtained. Consequently, researchers encourage EFL and ESL teachers to use WhatsApp as a pedagogical tool, an opinion I agree with, based on the findings of this literature review. In my estimation, WhatsApp should not replace traditional instruction, but it does represent a beneficial instrument to complement teaching and learning processes.

4 Conclusion

The technological tools that have emerged at the turn of this century have influenced the way we use mobile phones today. Thus, the inclusion of Internet services has increased the frequency of use of mobiles, as well as their usages. Among them, WhatsApp, as a new form of communication, has had a remarkable influence. It has thus triggered research studies on the distinctive language that is being used over this IM tool.

As stated in the introduction, the main objective of this volume was to provide a comprehensive literature review of the linguistic studies that have addressed WhatsApp and to thus understand the state of the art in the field. With this goal in mind, different types of sources were evaluated to identify the relevant works on the subject. As we have seen, WhatsApp corpus-based research has performed quantitative and/or qualitative analyses of language use in naturally-occurring interactions. These studies have not only answered different research questions but have also found specific linguistic patterns. For this reason, I decided to classify the retrieved documents into two main thematic categories: references describing WhatsApp linguistic characteristics on the one hand, and references addressing the use of WhatsApp for EFL or ESL on the other.

In the first section, we saw how a number of researchers have described general linguistic characteristics of WhatsApp (2.1), while others have focused on specific aspects such as information contained in profile statuses (2.2); the use of multimodal elements, e.g., emojis or memes (2.3); the main language variations (2.4); or conflict management (2.5), among others. These studies have adopted different methodological approaches, and sometimes, a combination of approaches. Perspectives have ranged from digital ethnography (2.6), to speech act theory (2.7), conversation analysis (2.8), and pragmatics (2.9).

Based on this review of previous works, it was possible to detect relevant future lines of research. WhatsApp is constantly updating its affordances and this is a major issue. Its sets of available emojis, memes, gifs or stickers are continuously growing and changing. Such updates can affect early research results, perhaps even to the extent of invalidating them. Therefore, it is important to constantly renew research on WhatsApp communication so as to keep the findings up to date. For instance, no studies on WhatsApp gifs or stickers in English or Spanish have been found so far. In addition, WhatsApp audio files appear to be increasingly used, yet far too little attention has been paid to them.

Furthermore, cross-cultural studies are scarce. A possible explanation is the fact that, unlike other types of digital discourse which are openly

available (online reviews on Blablacar, Airbnb or Tripadvisor, or chats on Twitter, Instagram or YouTube, to name but a few), collecting this kind of private language corpora is a challenge in itself. By and large, WhatsApp researchers used convenient data, taken from a group of people who were easy to reach, such as their list of contacts or their students. This is because owing to ethical considerations, it is particularly hard to obtain a representative corpus of group interactions. The main problem is that all participants must give their consent: it only takes the lack of consent of a single WhatsApp group member to invalidate the use of the chat information. Another ethical issue to consider is the duration of this consent. Some WhatsApp groups can last indefinitely. In such cases, if the members give their consent for a given project, do researchers have the right to use their conversations indefinitely too?

Despite these difficulties, I believe that these contrastive studies are necessary to check whether any general WhatsApp-mediated communication characteristics are independent of specific cultural constraints. For instance, during a personal conversation, a colleague told me of one of her British Erasmus students on a visit to Spain. The student was shocked at having been included in so many WhatsApp groups without giving her permission. She was also overwhelmed by the frequency and quantity of the Spanish conversations in these groups, as she did not have time to keep up to date with all the information. As far as this student was concerned, this communicative behaviour was different from what she was used to in Great Britain, and needed time to adjust to it.⁷

Furthermore, there is evidence to suggest that emojis carry out specific linguistic functions (Aull, 2019). It would therefore be interesting to explore whether emojis fulfil the same purposes in different languages and whether they are interpreted in the same way by people with different cultural backgrounds. The same would apply to memes, for instance, whose use or interpretation may differ depending on the given culture, the messaging app, but also on whether they are sent to a single addressee, a group or a mass audience (Yus, 2021). Moreover, it has been confirmed that variables such as age and gender (Maíz-Arévalo, 2021b) affect the language used in WhatsApp. It is also necessary, therefore, to extend the number of studies that analyse these variables across different cultures.

Another niche that is worth investigating is the comparison of the communicative strategies used in specific face-to-face and WhatsApp speech events,

⁷ A similar cultural shock has been experienced by some American and Australian instagrammers, who consider Spaniards' WhatsApp communication too intrusive (https://www.elconfidencial.com/espana/2022-02-07/americanas-viven-espana-explican-pais_3369487/).

such as the language used for service encounters or political campaigns, for example. These have largely been explored in face-to-face communication, but no research has been performed on the language used on WhatsApp for these purposes. The unavoidable increase in the use of mobile phones generally, and WhatsApp in particular, justifies the relevance of this kind of future digital research.

The second part of this volume was dedicated to studies having adopted a WhatsApp corpus-based approach to EFL or ESL, which have mushroomed over the last decade. Following a pre-test/post-test design, these studies have focused on understanding whether this IM tool improved a specific linguistic skill. Some have also examined student opinions on the use of WhatsApp to learn English. It could be argued that due to the limitations of their study designs – in which they used small, non-random samples of participants –, and their reliance on single cases, their results cannot be generalised (i.e., there is a non-representativeness of the sample). However, a major conclusion could, in fact, be drawn from the literature review: the works provide substantial evidence that WhatsApp offers numerous benefits for EFL/ESL. As stated in the previous chapter, not only does WhatsApp communication increase students' motivation to learn, it also enables them to improve various skills. Consequently, I agree with the researchers that WhatsApp could be a good instrument to complement and update traditional instruction – which appears to be on the decline. Nevertheless, one also has to recognise that the use of WhatsApp to learn English in class may present day-to-day difficulties in the case of primary and secondary school pupils: some schools forbid the use of mobile phones.

A major justification advanced by researchers in WhatsApp's pedagogical usefulness is the fact that students are put into contact with real language. However, as we saw in Chapter 2, WhatsApp communication is characterised, among others, by the frequent use of emojis, memes, gifs, and other multimedia elements that are not considered in these EFL/ESL studies. In fact, some authors deliberately exclude these elements from their corpora analysis. According to Lai (2016: 281), for example, "all chat logs were exported from the WhatsApp servers to a spreadsheet. Inputs with only 'emojis' or graphical icons were treated as invalid inputs and counted out." Therefore, one may question the extent to which the analysed corpora actually represented real English.

To conclude, as is widely known, it is essential to understand a field's state of the art before engaging in any type of research work. Therefore, I hope the information contained in this volume will duly support scholars in their future studies on WhatsApp-based digital communication.

Appendix 1: Studies on WhatsApp Linguistic Traits

Author	Year	Type of study	Data	Focus of study
Alcántara Plá	2014	Empirical: qualitative corpus-based	32 Spanish WhatsApp interactions with 106 participants (176,000 words)	WhatsApp discourse (compared to traditional discourse)
Calero Vaquera	2014	Theoretical		WhatsApp discourse (compared to Messenger & SMS)
Pérez-Sabater	2015	Empirical: qualitative/quantitative corpus-based	WhatsApp text messages in Catalan, English & Peninsular Spanish (41,000 words)	Language variations
Pérez-Sabater & Montero-Fleta	2015	Empirical: qualitative/quantitative corpus-based	WhatsApp text messages in English & Spanish (10,000 words)	Language variations
Sánchez-Moya & Cruz-Moya	2015a	Empirical: qualitative/quantitative corpus-based	30 interactions from 2 Peninsular Spanish WhatsApp groups	Textese
Sánchez-Moya & Cruz-Moya	2015b	Empirical: quantitative corpus-based	420 WhatsApp profile statuses (mainly from Spanish speakers)	Profile statuses
Vázquez-Cano et al.	2015	Empirical: quantitative corpus-based	417 Peninsular Spanish WhatsApp chats (101,401 words)	Linguistic traits
Al-Khawaldeh et al.	2016	Empirical: qualitative corpus-based	200 WhatsApp profile status	Profile statuses

(cont.)

Author	Year	Type of study	Data	Focus of study
Ballesteros Doncel	2016	Empirical: qualitative/quantitative corpus-based	491 memes	Memes
Sampietro	2016a	Empirical: qualitative/quantitative corpus-based	3,151 Peninsular Spanish WhatsApp messages (303 exchanges between around 120 users)	Emojis & punctuation
Sampietro	2016b	Empirical: qualitative/quantitative corpus-based	3,128 Peninsular Spanish WhatsApp messages from 259 exchanges	Thumbs-up emojis
Al Zidjaly	2017	Empirical: qualitative corpus-based	519 Omani memes	Political dissent in memes
Dhanalakshmi & Subramanian	2017	Empirical: corpus-based	Facebook, Twitter & WhatsApp (no specific number provided)	Facebook, Twitter & WhatsApp linguistic traits
Petitjean & Morel	2017	Empirical: quantitative corpus-based	43 French WhatsApp conversations by 53 participants (4,259 messages)	Laughter
Al Rashdi	2018	Empirical: qualitative corpus-based	2 Omani WhatsApp groups (42,037 words & 7,519 emojis)	Emojis
Ekah & Akpan	2018	Empirical: qualitative corpus-based	7 WhatsApp & Facebook short interactions	Gricean maxims
Lacanna	2018	Empirical: qualitative corpus-based	3 Argentinian Spanish WhatsApp groups	Indirectness in invitations or proposals

(cont.)

Author	Year	Type of study	Data	Focus of study
Gómez-del-Castillo	2017	Empirical: qualitative/quantitative corpus-based	529 Peninsular Spanish conversations (3,872 messages & 20,404 words)	Linguistic traits
Hafner et al.	2017	Empirical: qualitative/quantitative corpus-based	Facebook, WhatsApp & e-mail interactions of 4 groups of students	Translanguaging
Yus	2017	Theoretical		Contextual constraints and non-propositional effects
Flores-Salgado & Castineira-Benitez	2018	Empirical: qualitative/quantitative corpus-based	82 Spanish WhatsApp exchanges between 60 members of two groups	Requests
Maíz-Arévalo	2018	Empirical: qualitative/quantitative corpus-based	206 Peninsular Spanish WhatsApp profile statuses	Emotional self-presentation
Aull	2019	Empirical: qualitative/quantitative corpus-based	26 one-on-one WhatsApp chats	Emojis
Cantamutto & Vela Delfa	2019	Empirical	Surveys of 70 Spanish WhatsApp users	Emojis
Cassany et al.	2019	Empirical: qualitative/quantitative corpus-based	5 Spanish WhatsApp group conversations (132,000 words)	Discursive features

(cont.)

Author	Year	Type of study	Data	Focus of study
Fernández-Amaya	2019	Empirical: qualitative/quantitative corpus-based	A Peninsular Spanish WhatsApp group's interactions (687 contributions, circa 9,999 words) & interviews with participants	Disagreement and (im)politeness
Ersöz	2019	Empirical	6,578 WhatsApp group messages, offline casual conversations with the group members & direct observation	WhatsApp parent group communication
König	2019	Empirical: qualitative corpus-based	41 German WhatsApp chats (12,847 individual messages)	Laughter particles & emojis
Magraner Mifsud	2019	Empirical: qualitative/quantitative corpus-based	44 WhatsApp role-play messages	Pragmatic mitigation
Mulyono et al.	2019	Empirical: qualitative/quantitative corpus-based	200 WhatsApp messages from EFL teachers & students (59 in Indonesian & 141 in English)	Politeness strategies
Pérez-Sabater	2019	Empirical: qualitative/quantitative corpus-based	400 questionnaires, 2,087 messages from 8 Spanish chat threads & 23 interviews	Gender differences in emoji use

(cont.)

Author	Year	Type of study	Data	Focus of study
Sampietro	2019a	Empirical: qualitative corpus-based	Spanish dyadic interactions (3,679 messages)	Emojis
Sampietro	2019b	Empirical: qualitative corpus-based	Spanish dyadic interactions (274,410 words & 1,077 emojis)	Emojis
Siever	2019	Theoretical		Emojis
Anber & Jameel	2020	Empirical: quantitative	A test was used to measure participants' knowledge of the meaning of emojis & a Likert-scale questionnaire to assess their use. Participants were 63 Iraqi EFL university students	Emojis
Androutsopoulos & Busch	2020	Empirical: qualitative/quantitative corpus-driven & corpus-based	47 German WhatsApp threads (151,970 words), 23 text portfolios with 77 school texts (22,920 words) & semi-structured interviews	Period punctuation sign
Ehondor	2020	Theoretical		Plagiarism
Fernández-Amaya	2020	Empirical: qualitative/quantitative corpus-based	A Spanish WhatsApp group's interactions (687 contributions, circa 9,999 words)	Conflict management

(cont.)

Author	Year	Type of study	Data	Focus of study
García-Gómez	2020a	Empirical: qualitative/quantitative corpus-based	10 WhatsApp groups of 19 British Erasmus students & 59 Spanish university students	Conflict management
Jakaza	2020	Empirical: qualitative corpus-based	WhatsApp & Facebook (no specific number provided)	Users' identities
Lyons	2020	Empirical: qualitative corpus-based	Over 600 screenshots	Discourse-ethnographic study of WhatsApp interactions between new mothers affiliated with the National Childbirth Trust in London
Molina García	2020	Empirical: quantitative corpus-based	342 Spanish WhatsApp conversations among 114 university students & a questionnaire	WhatsApp linguistic characteristics & gender differences
Pihlaja	2020	Empirical: qualitative corpus-based	2 intercultural WhatsApp conversations & interviews with participants	Silences
Rivas Carmona & Calero Vaquera	2020	Empirical: qualitative corpus-based	794 Spanish memes	Memes
Busch	2021	Empirical: qualitative/quantitative corpus-driven & corpus-based	47 German WhatsApp threads (151,970 words), 23 text portfolios with	Punctuation

(cont.)

Author	Year	Type of study	Data	Focus of study
Colom	2021	Empirical: qualitative corpus-based	77 school texts (22,920 words) & semi-structured interviews A 24-hour conversation from a group chat with 10 participants	Digital ethnography
Cruz-Moya & Sánchez-Moya	2021	Empirical: qualitative/quantitative corpus-based	A total of 962 images from a Spanish WhatsApp group made up of users aged over 65	Humour
Fernández-Amaya	2021	Empirical: qualitative/quantitative corpus-based	2 Spanish WhatsApp group interactions: one with 687 contributions (circa 9,999 words) & another with 355 contributions (7,393 words).	Disagreement
Igwebuike & Chimuanya	2021	Empirical: qualitative/quantitative corpus-based	120 news posts (40 from WhatsApp, 40 from Facebook & 40 from Twitter)	Fake news
König	2021	Empirical: qualitative/quantitative corpus-driven	4,991 German WhatsApp dialogues with 64,416 postings	Discourse markers (EHM, HM)
Maíz-Arévalo	2021a	Empirical: qualitative/quantitative corpus-based	206 Peninsular Spanish WhatsApp profile statuses	Humour

(cont.)

Author	Year	Type of study	Data	Focus of study
Maíz-Arévalo	2021b	Empirical: qualitative/quantitative corpus-based	142 responses to an online survey	Humour interpretation
Mangeya & Ngoshi	2021	Empirical: qualitative corpus-based	9 temporal WhatsApp statuses	Black identity
Marmorstein	2021	Empirical: qualitative/quantitative corpus-driven	168,356 Hebrew WhatsApp messages from 92 dyadic & group chats	Discourse markers (EHM)
Meiler	2021	Empirical: qualitative corpus-based	40 instances of storytelling told by 20 different interlocutors	Storytelling
Pérez-Sabater	2021	Empirical: qualitative corpus-based	402 text messages (4,732 words)	Language style in moments of sharing
Sampietro	2021	Empirical: qualitative corpus-based	300 Spanish dyadic interactions (3,679 messages, 1,629 emojis)	Emojis & humour

Appendix 2: EFL/ESL Studies

Author	Year	Participants	Type of study	Learning analysed	Findings
Alsaleem	2013	30 Saudi university students	Experimental (pre-test & post-test)	Writing	Students' vocabulary choice and voice improved.
Allagui	2014	50 university students	Experimental (test & opinion questionnaire)	Writing	Students' scores remained low, but they improved their spelling and vocabulary. In addition, WhatsApp increased students' motivation to write.
Hani	2014	20 Jordanian university students	Experimental (pre-test & post-test)	Writing	Substantial difference between the pre- and post-test writing scores. Furthermore, individual item analysis showed statistically significant improvements in vocabulary choice and voice.
Gutiérrez-Colon Plana et al.	2015	95 Spanish university students	Experimental (opinion questionnaire before & after the study)	Reading	The majority was highly satisfied and manifested that their willingness to read in English had increased.

(cont.)

Author	Year	Participants	Type of study	Learning analysed	Findings
Ashiyani & Salehi	2016	60 Iranian students from a language school (30 control group & 30 experimental group)	Experimental (pre-test & post-test)	Collocations in writing & reading	The students who used WhatsApp significantly outperformed the control group in the collocations post-test.
Awada	2016	52 university students, native speakers of Arabic (27 control group & 25 experimental group)	Experimental (pre-test, post-test, perception reflection logs & 2 questionnaires)	Writing	The use of WhatsApp proved to be more effective than their normal instruction as it improved the participants' critique writing performance as well as their motivation.
Han & Keskin	2016	39 Turkish university students	Experimental (pre-test, post-test & semi-structured interviews)	Reducing speaking anxiety	WhatsApp activities had a significant impact, reducing students' EFL speaking anxiety.
Lai	2016	45 Hong Kong high school students (21 control group & 24 experimental group)	Experimental (pre-test & post-test)	Vocabulary	No relevant differences between the two groups, though there was a substantial correlation between individuals' chat frequency and vocabulary gains in the case of the students using WhatsApp.

(cont.)

Author	Year	Participants	Type of study	Learning analysed	Findings
Andújar-Vaca & Cruz-Martínez	2017	80 Spanish university students (40 control group & 40 experimental group)	Experimental (pre-test, post-test & samples collected in the IM tool)	Speaking	Improvements in the speaking proficiency of the experimental group's students.
Avcı & Adıguzel	2017	85 Turkish university students	Experimental (interviews and group discussions, self- and peer assessments, WhatsApp interactions)	Language proficiency in general	Students had the opportunity to improve their communication skills and vocabulary knowledge. Moreover, learners distinguished between informal and formal English.
Bozoglan & Gök	2017	58 Turkish first-grade English language teachers studying at university	Experimental (pre-test & post-test)	Dialect awareness	Dialect awareness training generated positive attitudes towards all dialects except British which, before the training, had scored the highest regarding solidarity, power and speech quality. Findings seemed to indicate that linguistic variation training might enable teachers to appreciate non-standardised English dialects.

(cont.)

Author	Year	Participants	Type of study	Learning analysed	Findings
Dehghan et al.	2017	32 Iranian teenagers from a language institute (16 control group & 16 experimental group)	Experimental (pre-test & post-test)	Vocabulary	No significant differences were found between both groups.
Keogh	2017	18 Colombian university students	Empirical (qualitative corpus-based: WhatsApp interactions & face-to-face interviews)	Vocabulary	The WhatsApp group led to successful scaffolding, increased student participation, and created a useful community of learners.
Bataineh, Al-Hamad & Al-Jamal	2018	98 Jordanian eleventh-grade students	Experimental (pre-test & post-test)	Writing (gender differences)	Female participants improved their writing skills much more than their male counterparts.
Bataineh, Baniabdelrahman & Khalaf	2018	60 Jordanian tenth-grade students divided into 4 groups of 15 students (3 experimental & 1 control)	Experimental (pre-test, post-test & semi-structured interviews)	Writing (paraphrasing & summarising)	Statistically significant differences in the participants' results in the post-test, favouring the WhatsApp group, the combined e-mail and WhatsApp group, and the e-mail group, in that order.

(cont.)

Author	Year	Participants	Type of study	Learning analysed	Findings
Çetinkaya & Sütçü	2018	123 Turkish secondary education 9th grade students (Facebook, WhatsApp, and control group)	Experimental (pre-test & post-test)	Vocabulary	In addition, the effect of instruction was greater on the paraphrasing than on the summarising. Differences depending on the learning environment, WhatsApp being more effective at improving the students' vocabulary. Moreover, learners had positive opinions regarding this type of instruction.
Mellati et al.	2018	90 Iranian students attending an online language course (45 experimental group & 45 control group)	Experimental (pre-test, post-test & semi-structured interview)	Vocabulary	The participants in the experimental group outperformed those in the control group. The study also demonstrated how WhatsApp was useful to create learning groups that helped participants to easily construct and share knowledge.

(cont.)

Author	Year	Participants	Type of study	Learning analysed	Findings
Samaie et al.	2018	30 Iranian students from a language institute	Experimental (attitude questionnaires, before and after the experiment)	Oral assessment	The participants had negative attitudes towards mobile-assisted assessments in general terms, preferring face-to-face interactions.
Ahmed	2019	43 Yemeni university students	Experimental (pre-test, post-test & opinion questionnaire)	Reading & Writing	Students' motivation improved, as well as their reading and writing skills (vocabulary, grammar, etc.). WhatsApp was positively viewed by students as a tool to learn English.
Aktaş & Can	2019	20 Turkish high school students	Experimental (pre-test, post-test & semi-structure opinion questionnaire)	Reading & Listening	Using WhatsApp outside class led to a noteworthy differentiation regarding the students' beliefs in their self-efficacy for both reading and listening skills.
Arifani	2019a, 2019b	50 (25 group instruction & 25 individual collocation activities)	Experimental (pre-test, post-test & attitude questionnaire)	Writing	Students in the small group obtained better results than those who received individual flipped instruction on WhatsApp.

(cont.)

Author	Year	Participants	Type of study	Learning analysed	Findings
					Moreover, students regarded small-group flipped instruction over WhatsApp more positively than individual activities.
Çetinkaya & Sütçü	2019	112 Turkish high school 9th grade students	Experimental (pre-test & post-test)	Vocabulary	Multimedia annotations increased the learners' vocabulary acquisition and the learners had positive opinions about this type of instruction.
Songxaba & Sincuba	2019	180 South African high school 10th grade students	Empirical (quantitative corpus-based)	Writing	Students used abbreviations (i.e., "slp" instead of "sleep") and numbers instead of the complete word form (i.e., "2 dy" instead of "today").
Al-Ahdal & Hussein	2020	24 Saudi students from 2 different universities	Experimental (qualitative comparative analysis)	Writing	Participants from both universities improved their writing skills.
Alberth et al.	2020		Theoretical	Writing, Reading, Listening & Speaking	Out-of-class WhatsApp activities for language teaching and learning were advanced.

(cont.)

Author	Year	Participants	Type of study	Learning analysed	Findings
Andujar	2020	60 Spanish university students (30 control group & 30 experimental group)	Experimental (pre-test & post-test)	Grammar & vocabulary	The students gradually required less explicit feedback, implying not only an increase in their linguistic competence but also in their degree of reflection on the language employed.
García-Gómez	2020b	19 British Erasmus students & 59 Spanish university students	Empirical (qualitative/quantitative corpus-based)	Pragmatic competence	The students' lack of pragmatic competence made it impossible for them to communicate effectively. Furthermore, these pragmatic failures not only had a negative impact on their interpersonal relationships, but also led to negative opinions on the use of WhatsApp as a learning tool.
Khodabandeh & Naseri	2020	68 Iranian intermediate EFL students from different language institutes	Experimental (pre-test & post-test)	Writing	The students in the WhatsApp group who had interacted online outperformed the students in the restricted group with no interaction.

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Author	Year	Participants	Type of study	Learning analysed	Findings
Ahmed Elsawy	2021	20 Saudi university students	Experimental (pre-test, post-test & opinion questionnaire)	Listening & Speaking	Greater exposure to listening improved not only their speaking ability (especially fluency) but also their pronunciation and self-confidence.
Al Abiky	2021	38 Saudi university students	Experimental (pre-test, post-test & semi-structure interviews)	Writing	Students' writing competence improved more with WhatsApp than with face-to-face instruction.
Andujar & Salaberri-Ramiro	2021	64 Spanish university students (32 Facebook group & 32 WhatsApp group)	Experimental (engagement scale, end-of-course survey & statistical analysis)	Writing & Reading	Significant differences were found between cognitive and emotional engagement, timing, perceived value of the interaction, use and participation in both environments.
Ebadi & Bashir	2021	30 Iranian teenagers attending a private English language school (2 experimental groups and 1 control)	Experimental (pre-test, post-test & follow-up interviews)	Writing	WhatsApp exerted a positive influence on the students' writing proficiency, resulting from learner-instructor collaborations using text and voice-based

(cont.)

Author	Year	Participants	Type of study	Learning analysed	Findings
					mediation. The thematic data analysis showed that some learners were satisfied with this mediation.
Pourdana et al.	2021	42 Iranian students from a language institute	Empirical (qualitative/quantitative corpus-based)	Writing (discourse markers)	No substantial improvement in the students' discourse marker accuracy.
Tragant et al.	2021	23 Spanish students	Empirical (qualitative/quantitative corpus-based)	Language use in general	Both on-task and off-task messages seemed to be equally effective at engaging students so they communicate in English beyond the classroom.
Tümen Akyildiz & Celik	2021	54 Turkish primary school (7th grade) students	Experimental (pre-test, post-test & semi-structure interviews)	Reading	The experimental group obtained better results. They also expressed positive views towards using WhatsApp to enhance their reading comprehension skills.

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