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Abstract

In informal digital communication (IDC), subtle pragmatic markers, or illocutionary markers, are used to compensate for a lack of pragmatic tools available in face-to-face conversations, such as intonation and facial expressions. This thesis explores how L2 English speakers in Dutch secondary schools interpret three types of illocutionary markers in WhatsApp messages: full stops, ellipsis, and the discourse markers “lol” and “haha”. Using a mixed-methods survey design, this study examines to what extent Dutch L2 English learners recognize illocutionary markers in English WhatsApp messages and use them to interpret tone and intent. Furthermore, it examines whether English proficiency and digital communication habits affect interpretation confidence and ambiguity recognition in these messages. The results show that these three markers significantly affect interpretation. Full stops were frequently considered formal or emotionally distant, ellipsis often expressed doubt or unwillingness, and “lol” and “haha” conveyed a generally positive or friendly tone, while also sometimes interpreted as sarcastic. However, interpretation of all these markers depended heavily on the sender and social context of the conversation, and meanings were often considered ambiguous, leading to varying interpretations. Interpretation confidence was generally high, and only weakly correlated with L2 proficiency, suggesting that sociopragmatic competence may be more relevant than general language proficiency for interpreting illocutionary information in IDC. The findings highlight the importance of pragmatic competence in IDC, which would be relevant to incorporate into English language education to prepare learners for English interaction in a digitally-mediated world.

Key words: informal digital communication, pragmatic competence, illocutionary markers, second language acquisition, ambiguity recognition, digital literacy, sociopragmatics, Speech Act Theory

Contents

1. Introduction

In recent years, informal digital communication (IDC) has become one of the most commonly used forms of interaction in people's daily lives. This is seen in the popularity of messaging apps like WhatsApp. In a large-scale study tracking smartphone usage among Germans, Montag et al. (2015) found that, on average, people used WhatsApp for 32 minutes per day, with younger users using the app significantly more than older users. From this popularity, it can be assumed that messaging apps like WhatsApp play a fundamental role in today's society when it comes to maintaining social relationships.

Communicating digitally comes with its own unique set of linguistic challenges. As a written form of interpersonal interaction, IDC is a linguistic register that shares similarities with both face-to-face interactions and written language. In face-to-face conversation, speakers can clarify the intention of their utterances, also called the illocutionary force, by using a variety of tools other than their words to communicate intent, such as intonation, body language, and facial expressions. In writing, however, none of these things are possible and readers rely solely on the contents of a message to interpret its meaning. To still communicate subtleties in tone and intent, information that is otherwise communicated through the means listed above, senders can include illocutionary markers in their messages, subtle cues that signal meaning. These include items like emoji, punctuation, discourse particles, and interjections. While previous studies have focused on how pragmatic information is encoded in IDC, the receptive side of text messaging, or how receivers of messages interpret these cues, has received little academic attention.

While interpretation challenges might arise for all who engage in IDC, interpretation may be even more difficult for those communicating in a second language (L2). Interpreting subtleties in tone and intent adds another layer of complexity on top of understanding the literal contents of a message, making effective communication more challenging, in particular for L2 speakers with lower proficiency levels. Since English has undergone a shift from being a national language to a lingua franca, communicating in English has become practically unavoidable for most individuals in western

countries, meaning that effectively communicating in English should be at the centre of language education (Rindall, 2014). Given the central role of IDC in young people's daily lives, and the challenges that come with it for L2 speakers, understanding how they interpret illocutionary markers not only contributes to the study of pragmatics, but also benefits language education.

This study addresses how L2 speakers, specifically Dutch secondary school students, interpret WhatsApp messages containing three specific types of illocutionary markers placed at the end of these messages: ellipses, full stops, and the discourse markers "lol" and "haha". Their interpretations of these markers are used to answer the question to what extent L2 English speakers in Dutch secondary schools recognize and interpret illocutionary markers in IDC. To address this question, this study considers four sub-questions:

1. How do different pragmatic markers influence L2 speakers' interpretation of illocutionary force in WhatsApp messages?
2. How does English proficiency among L2 speakers relate to confidence in interpreting illocutionary information?
3. To what extent do L2 speakers recognize ambiguity in illocutionary force, and how does this compare across proficiency levels?
4. How do digital communication habits affect interpretations of illocutionary force?

These questions are answered using data gathered through a mixed-methods survey among Dutch secondary school students, combining qualitative and quantitative analysis. Exploring how L2 speakers interpret illocutionary markers not only shows the importance of these markers for conveying pragmatic information, but also the interplay between proficiency and pragmatic competence in navigating digital environments as an L2 learner.

2. Literature Review

The first part of this chapter focuses on two linguistic theories that will help understand the relevance of illocutionary markers in informal digital communication (IDC): Speech Act Theory and Relevance Theory. The second part focuses on the register of IDC and its characteristics. The third section elaborates on interpretation and ambiguity in this register. The last part of the chapter focuses on L2 speakers' pragmatic confidence and their interpretation of illocutionary information in IDC.

2.1. Illocutionary Force and Pragmatic Markers

The concept of illocutionary force has its roots in Speech Act Theory, which states that when communicating, people do not rely solely on the literal meaning of words to convey meaning, but also on the intention of the speaker and the effects the communication has on the listener (Austin, 1962; Searle, 1969). According to Austin, when a speaker says something, they are not only stating information, but simultaneously performing an action, which is referred to as the illocutionary act. This illocutionary act is carried out by conveying illocutionary force, the speaker's intended effect on the listener, so that the listener can recognize the illocutionary act the speaker is trying to perform, such as making a promise, requesting something, or signalling approval (Searle, p.23). A concrete example of the literal meaning, or locutionary content, and illocutionary act not necessarily overlapping is the phrase "Can you open the window?". In this phrase, the literal meaning of the words refers to the listener's ability to open said window, while the illocutionary act is a request to the listener to actually open the window. This example illustrates that meaning is not only encoded in the lexical and syntactic form of an utterance, but also depends on other factors. To determine what type of illocutionary act is being performed, listeners depend on linguistic cues, context, and language conventions (p.38-40).

To signify illocutionary force in utterances, speakers use pragmatic markers to convey their intended meaning. While there is no universally accepted definition for pragmatic markers, Brinton (2017) provides a list of characteristics of these markers that various linguists seem to agree on.

Summarizing these, pragmatic markers can broadly be defined as optional items in discourse that usually do not have propositional meaning, but serve practical functions, such as signalling the speaker's attitude, marking discourse structure, or managing interpersonal relations (pp.3-9). In other words, pragmatic markers inform a listener how a certain utterance should be understood. Examples of pragmatic markers are discourse particles, such as "like" or "well", or interjections such as "wow" or "ah". In addition, Brinton points out that while pragmatic markers are predominantly a feature of informal, spoken, registers, they also occur in informal written registers, such as digital communication (p.4).

For the purpose of this study, discourse markers, such as "lol" and "haha", and punctuation marks are both included in the definition of illocutionary markers. While Brinton does not explicitly include punctuation in her discussion of pragmatic markers, punctuation elements can also fulfil similar functions in written registers. Full stops, ellipses, and exclamation marks, for example, are also optional linguistic elements that can serve practical functions, such as expressing a speaker's attitude, and thus clarifying the illocutionary force of a sentence. For the purposes of the present study, discourse markers as described by Brinton and pragmatic uses of punctuation will together be referred to as illocutionary markers.

The degree to which hearers and readers pick up and interpret illocutionary markers can be understood through the lens of Relevance Theory (Wilson & Sperber, 2012). This theory is centred around two principles. Firstly, the Cognitive Principle of Relevance states that people's minds are optimized to pick up on the information that offer the most useful information for the least effort. Secondly, the Communicative Principle of Relevance states that speakers provide enough useful information in their utterances to justify the effort of interpreting it (p.6). Using these principles, Relevance Theory states that communication does not merely rely on the constant coding and decoding of information, but rather that the mind searches for minimal evidence of something that is already expected based on the context, since this reduces cognitive load on the side of the speaker as well as the listener (pp.275-278). In the context of Speech Acts, Relevance Theory can explain how

illocutionary markers contribute to illocutionary force. While illocutionary markers have a minimal to no semantic meaning, listeners or readers use these minimal cues to determine how information should be interpreted, as in many instances, they can be effective cues for interpretation.

While illocutionary markers contribute to understanding meaning in all registers, they are crucial in written registers, since these lack prosodic information, such as intonation, a key element used to perform illocutionary acts in spoken registers. As Cresti & Moneglia (2018) have shown through a corpus analysis of spoken interactions in English, Italian, Portuguese, and Spanish, every utterance is centred around an illocutionary act. They found that the illocutionary force in speech is mostly prosodically encoded in intonation patterns and speech rhythm. An implication of this is that in written registers, where prosody is absent, other linguistic elements must compensate if illocutionary force is to be maintained. The illocutionary information must come from other sources, such as illocutionary markers.

Digital communication is one of the registers in which prosody is absent, and that therefore relies more heavily on illocutionary markers. The section below focuses on the written register of IDC and explains how illocutionary markers play a crucial role in clarifying illocutionary force in informal digital contexts.

2.2. Illocutionary Force in Informal Digital Communication

Digital communication is the exchange of information using digital platforms such as email, text messaging and social media. The emergence of digital communication as its own specific type of communication is a result of technological advancements, which created an environment for new types of interpersonal interaction with features of both written and spoken language. Text messaging, for example, has characteristics of spoken language, like contractions and informal language, but also of written language, like capitalization and punctuation. Also, like written language, it lacks prosodic cues like intonation. It can therefore be seen as “not simply spoken language that is written, but a social and conversational language form performed in writing”

(McSweeney, 2018, p.6). Because of these characteristics, IDC should be considered its own specific register (McSweeney, 2018; Strauss, 2024).

In linguistics, the term register refers to a language variety that is used in a specific situation and has three components: "the situational context, the linguistic features, and the functional relationships between the first two components" (Biber & Conrad, 2009, p.6). IDC shares situational characteristics with both spoken and written communication. Like spoken conversations between friends, it is informal, consists of turn-taking, and happens rapidly. It can occur over long distances, without many temporal limitations, which makes the interactions semi-synchronous (Strauss, 2024). Like spoken conversation, IDC largely consists of social messages, and does not have the transfer of content-related information as its main goal, but is used primarily to maintain relationships (McSweeney, 2018, pp.1-6). Linguistic features of IDC that are related to the interpretation of tone and intent, and their relation to the situational characteristics of this register will be illustrated in more detail below.

In *The Pragmatics of Text Messaging,* McSweeney (2018) explores how bilingual Spanish-English speakers in New York use text messaging to perform social and pragmatic acts. Through corpus analysis of this group's text messages, she shows that senders rely on markers such as emoji, abbreviations, punctuation, and discourse markers like "lol" to compensate for the lack of facial expressions, gestures, and prosody in expressing closeness and politeness (pp.46-72). McSweeney concludes her chapter on politeness by arguing that IDC as a register has developed its own register-exclusive norms of politeness and expressing emotional information for maintaining social relationships (p.72).

This thesis only focuses on three of the illocutionary markers McSweeney discussed, namely ellipsis, full stops, and discourse markers associated with laughter, specifically "lol" and "haha". Not only are these markers used to encode pragmatic information, but they are also all used in a sentence-final position (p.106). Their shared placement within a sentence allows for controlled

comparison of their pragmatic effects in an experimental setting, as explained in more detail in Section 3.1.

Firstly, ellipsis, written by using three dots, is used mostly in formal writing to indicate that information is omitted. In text messaging, it can also be used to indicate omission, but in this case, it rather signifies not an omission of content-related information, but of illocutionary information. For example, it can be used when flirting digitally, with the ellipsis at the end of a message implying that the receiver of the message should read between the lines for more information, thus pointing out that the message contains illocutionary force beyond its semantic meaning (McSweeney, 2018, p.102). In addition, in the middle of a sentence it can be used to indicate a pause, and can therefore function similarly to pauses or moments of silence in spoken conversation (p.103).

Secondly, this research will regard the interpretation of the full stop at the end of short messages. Traditionally, this form of punctuation does not carry any pragmatic meaning and is used to signal the end of a sentence. In IDC however, the sentence-final full stop has become redundant, as on digital platforms such as WhatsApp, the end of the message is clearly marked by the design of the interface, and it has become available to speakers as a marker of other information. As an illocutionary marker, different senders can use the full stop for different purposes. They can express a negative emotional state, such as annoyance or anger, but also a degree of finality, such as sincerity or commitment (McSweeney, 2018, pp.94-95). These two very distinct types of illocutionary force expressed by the full stop illustrate that the same marker can be used for a variety of pragmatic functions, depending on the individual.

According to the *Oxford English Dictionary*, “lol” is an interjection, mainly in computer-mediated communication, “used to draw attention to a joke or humorous statement, or to express amusement” (Oxford University Press, n.d.). While this might be traditional dictionary definition of the word “lol”, the word has evolved beyond this meaning and serves more often as a discourse marker used for a variety of functions (McSweeney, 2018, p.86). For example, the tone of an otherwise harsh message can be softened by adding “lol” at the end, indicating that a message

should be taken more lightly, and not, as would be the likely interpretation without this marker, as direct criticism (p.91). Since “lol” is almost exclusively found at the beginning or end of clauses, its position suggests that it modulates the tone of entire clauses in text messages, which makes it functionally similar to punctuation markers like ellipses and exclamation points (p.88). Because of this similarity, usage of the discourse marker “lol” will in the present study be examined in the same way as the use of ellipses and full stops. In addition, the marker “haha”, which is also originally used to express laughter, will be examined to find out whether this marker is interpreted in a similar fashion as “lol”.

Together, these three types of illocutionary markers can be used in IDC to perform a variety of pragmatic functions, such as expressions of emotion or maintaining social relationships. The next section, like the present research, will focus on the receptive side of IDC and look at the interpretation of these markers and their ability to increase or decrease ambiguity.

2.3. Interpretation and Ambiguity in Digital Contexts

Following the discussion of illocutionary markers like ellipses, full stops and “lol” to encode illocutionary force in text messaging, this section will consider the reception and decoding of illocutionary markers in IDC. As mentioned earlier, the situational characteristics of IDC make it more difficult to convey pragmatic information effectively than in informal face-to-face interactions due to a significant lack of possibilities to express nonverbal cues, such as facial expressions and prosody (Fimpel, 2023; Strauss, 2024, p.25). Because of this, receivers have to rely on alternative illocutionary markers. Additionally, there is speaker variation in how nonverbal cues in digital communication are interpreted, which can lead to misunderstandings among individuals, as older individuals, for instance, might interpret capitalization of a word or phrase in text messaging simply as emphasis, while younger individuals may perceive it as the digital form of shouting (Strauss, 2024, p.25). Interpretation can also depend on characteristics of the sender of a message, like gender. In an experimental study by Butterworth et al. (2019), participants rated messages with certain emojis as illocutionary markers as more appropriate and likeable when sent by female senders than when

these same messages were sent by men. These examples show that both the intention and interpretation of illocutionary markers are subject to social expectations and contexts. Because of this variety in use and interpretation, ambiguity might arise, even if senders believe the intention of their message is clear.

Issues regarding the interpretation of illocutionary markers and resulting possibility of ambiguous reception of illocutionary force can be expected with the use of the three markers this study focuses on. Firstly, despite its frequent use in IDC, empirical studies on the interpretation of ellipsis in this register were not found, even though it has been a popular subject of recent online discussions and articles by amateur linguists (Glover, 2025; Sharma, 2024). Dubbed the "Boomer ellipsis", these authors suggest that mostly older generations use this form of punctuation in digital communication, and that to younger speakers, this usage often comes across as ominous, insincere, or passive aggressive. While articles mentioning these interpretation differences remain anecdotal, they show that as an illocutionary marker, ellipsis can carry different meanings, and that age can be a deciding factor in the interpretation of illocutionary force.

In a study taken among 126 L1 speakers of English, Gunraj et al. (2016) investigated how the inclusion of full stops at the end of short messages affected the interpretation of these messages. They found that messages ending with a period were rated less sincere than those without the marker. Interestingly, this difference was not present when participants rated the sincerity of handwritten notes with the same messages. This suggests that the full stop has a distinct illocutionary meaning that is only present in IDC, which is additional support for the view that IDC should be considered its own specific register and that traditionally neutral markers can be distinctive carriers of illocutionary force in digital environments.

While the discussion on illocutionary markers above shows a diverse range of functions for the discourse marker "lol", corpus analysis shows that "lol" can actually be used to avoid ambiguity in digital contexts. For example, in the phrase "sorry lol", "lol" functions in the same way a smile, wink, or other facial expression does in spoken conversation (McSweeney, 2018, p.89). It modulates the

illocutionary force of the phrase and indicates that “sorry” should not be meant as a genuine apology, but more likely as an indicator of sarcasm.

This research focuses specifically on the interpretation of the illocutionary markers in IDC by L2 English speaking secondary school students in the Netherlands. It investigates whether their interpretations of the illocutionary markers ellipsis, full stop, “lol”, and “haha” align with the sender intentions and interpretations of these markers in existing research. In addition, this study will analyse their responses to these markers to explore whether ambiguity arises for messages containing them.

2.4. L2 Pragmatic Competence

While the above discussion focuses on the role of illocutionary markers in conveying illocutionary force, this section will consider what effect L2 pragmatic competence has on marker interpretation and recognizing ambiguity.

Pragmatic competence in a second language relies heavily on a learner’s ability to identify speaker intent, and thus on their ability to recognize illocutionary markers. A literature analysis on L2 pragmatics by Ren (2022) suggests that L2 speakers rely more heavily on literal meanings and often miss subtle pragmatic cues, conveyed through tone, intent, or social context (pp.18-19). According to Ren, even when they have explicit contextual knowledge, L2 speakers may struggle more than L1 speakers when combining contextual cues with other pragmatic cues, such as prosody, to effectively determine the illocutionary force of utterances.

By synthesizing 28 studies on the effect of L2 proficiency on pragmatic competence in a learner’s target language, Xiao (2015) concluded that, in general, higher L2 proficiency is a predictive factor for accuracy in pragmatic interpretation. However, while this effect is strong for pragmalinguistic competence, that is knowing how to use appropriate linguistic forms, it has a weaker effect on sociopragmatic competence, the ability to perceive what linguistic behaviour is appropriate in a certain social context. The literature synthesized by Xiao seems to suggest that once L2 speakers reach the minimum level of language proficiency needed to grasp the general meaning

of an utterance, awareness of cultural norms and social relationships plays a larger role than general L2 proficiency when it comes to interpreting subtle sociopragmatic cues, such as sarcasm or politeness.

The combination of the importance of both L2 proficiency and awareness of subtle linguistic and contextual cues on pragmatic competence, is illustrated by a study by Garcia (2004). By comparing native speakers with L2 English speakers of varying proficiency levels, Garcia found that higher proficiency L2 speakers outperformed lower proficiency L2 speakers. This effect was most evident when pragmatic information was encoded primarily through explicit lexical cues. When pragmatic information was conveyed more subtly, higher proficiency L2 speakers also showed more difficulty in interpreting pragmatic meaning.

While existing studies have examined the influence of L2 proficiency on pragmatic competence across a variety of spoken and written registers, studies considered the role of L2 on pragmatic competence in IDC were not found. However, pragmatic competence in digital communication is essential to the daily lives of many L2 speakers. As it turns out, analysis of texting attitudes among L2 English speaking young adults in New York revealed that they generally feel more comfortable and capable of expressing themselves in English in a digitally mediated professional environment than in face-to-face professional settings. For instance, in face-to-face contexts they more frequently reported feelings of anxiety (McSweeney, 2018, p.139). According to McSweeney, it can be concluded that today's teenagers and young adults are better equipped to express "social, professional, academic, and other identities in a digitally mediated environment rather than a physical one" (p.139). This underpins the importance of digital literacy skills in the English language among bilingual speakers.

2.5. Conclusion and Link to Present Study

While previous studies on digital communication have focused mainly on the productive side of communication, research on the interpretation of messages by receivers of digital communication has been much scarcer (Strauss, 2024). The interpretation of illocutionary markers in IDC by receivers

of messages has not received much attention. In addition, existing studies on L2 pragmatic competence focus mostly on traditional spoken or written registers. The present study addresses these gaps by examining how L2 English-speaking secondary school students in the Netherlands interpret messages with varying pragmatic markers differently and how these interpretations relate to ambiguity and English proficiency.

3. Methods

This chapter outlines the methodology of this study. The following sections describe the design of the mixed-methods study, the materials used, its participants, and the means of data analysis. The chapter concludes with ethical consideration of this study.

3.1. Research Design

For this study, a mixed methods approach was taken, combining both quantitative and qualitative methods, and combining the findings of both types of analyses for greater insight into the interpretation of illocutionary markers in WhatsApp messages (Creswell, 2009, p.3). A survey was used to determine (1) the influence of pragmatic markers on interpretation, (2) the link between proficiency and confidence in interpretation, (3) recognition of ambiguity in meaning, and (4) the role of digital communication habits in interpreting illocutionary information. In the survey, participants were presented with different versions of screenshots of three fictional WhatsApp conversations, similar to the ones Butterworth et al. (2019) designed to study differences in the perception of emoji use by male and female speakers, and the ones used by Gunraj et al. (2016) on the interpretation of full stops at the end of text messages. For each conversation, participants viewed one of three message variants, which only differed in the inclusion of an illocutionary marker in sentence-final position. In all other aspects, the lexical content and structure of the messages were identical. The markers included were full stops (Conversation 1 and 3), ellipsis (Conversation 1 and 2) and the discourse markers “lol” and “haha” (Conversation 2 and 3 respectively). These specific markers were selected based on their relevance in IDC and potential different meanings as described in existing research, and their similar distribution in sentence-final position (as described in Section 2.2). In addition, some participants were presented with neutral variants of the messages that did not contain punctuation or discourse markers. Conversation 1, for example, contained “okay.”, “okay…”, or “okay” as its last message. All variants of the screenshots presented in the survey can be found in Appendix B. The variations of the messages were assigned randomly but evenly to respondents. Since participants could not be pre-tested, and true randomization of participants into experiment

and control groups was not possible in the setting of this research, this study follows a quasi-experimental design (Rogers & Révész, 2020).

The dependent variables in this research design are the perceived tone of messages, the perceived intent of the speaker, the confidence participants have in their responses, and participants' ability to recognize ambiguity in messages. Independent variables used in the analysis were the varying illocutionary markers used, respondents' L2 proficiency, and digital communication habits.

For data collection, this study uses a questionnaire, as questionnaires are efficient, allow for strict control over the experiment conditions and ensure participant anonymity (Iwaniec, 2020). The majority of this questionnaire is quantitative, using Likert-scale questions to measure trends in perceived tone and participants' confidence and multiple-choice questions to categorize perceived speaker intent. For each conversation, participants answer Likert scale questions about emotion and intent and messages are assigned categories, such as "neutral", "rude" or "impolite". Qualitative aspects are also included in the form of open-ended questions to gain a detailed insight into the views from participants (Creswell, 2009, p.18). One the one hand, these open-ended questions regarded the interpretation of individual message variants, and on the other hand, participants' view of specific illocutionary markers in general, by explicitly asking them in the last section of the survey what they thought about the use of full stops, ellipsis, and discourse markers "lol" and "haha" at the end of WhatsApp messages. The complete survey can be found in Appendix A.

While different variations of WhatsApp conversations were presented in this questionnaire, participants saw only one version of each message. This prevented participants from comparing different versions of the same message, which could otherwise have led to carryover effects between questions, and could therefore threaten the internal validity of the study (Rogers & Révész, 2020). Bias was also reduced by providing Dutch translations of questions, giving respondents the option to read questions in their native language, preventing potential language barriers in question comprehension. The WhatsApp conversations themselves were always presented in English. The

survey was taken in-class, using laptops, to ensure a high participation rate and a controlled environment. To prevent response bias, participants were instructed to fill in the survey individually without discussing questions with their peers.

3.2. Participants

The survey was taken by 105 students from six different classes at a Dutch secondary school. Five respondents only completed the first few questions, making their responses unusable, which is why they were excluded from the data analysis. The respondents that were included in the data analysis were aged 14 to 18 years (*M* = 15.7, *SD* = 1.0). Thirty-eight respondents identified as male, 59 as female, and 3 as non-binary or a third gender. According to their teachers, all students spoke Dutch fluently, and in the survey 96 students indicated that this was their native language, with the remaining respondents reporting French (n = 2), Arabic, (n = 1) and Moroccan (n = 1) as their native languages.

Since participants' experiences in participating in informal digital communication might affect their ability to interpret illocutionary information in WhatsApp messages, they were asked how often they participated in this type of communication. Including these control variables makes it possible to rule out their influence on the results, ensuring internal validity (Briggs Baffoe-Djan & Smith, 2020; Rogers & Révész, 2020). Digital communication habit items in the questionnaire were used to test whether these habits influence interpretation confidence and ambiguity recognition.

For assessment of the participants' English language proficiency, a modified version of the Bilingual Language Profile (BLP) was used, which was developed by Birdsong et al. (2012). This questionnaire, which has been found both valid and reliable by comparison with other measures of language proficiency (Olson, 2023; Solís-Barroso & Stefanich, 2019) has been developed to produce reliable language profiles for bilingual speakers. The Dutch translation of the survey used in this study contained the Dutch translations of the original questions as translated by the developers of the BLP. Only the first three sections of the BLP were used in this research: language history, language use and self-reported language proficiency. The fourth section, language attitudes, was left out as it was

considered too complex for the age group of the participants, and including it would therefore potentially have led to inconsistent and unreliable results. In addition to questions directly taken from the original BLP, questions about the frequency of English use in digital environments were included in the section about language use. The questions regarding language proficiency can be found in Part 2 of the questionnaire (Appendix A).

As modifications were made to the BLP, the original calculations for the language proficiency scores could not be used, as the equal weight of each section would be lost. To maintain an equal weight between the three sections, like in the original BLP, a new multiplication factor was calculated to set the maximum score for each section to 50 points, giving each participant a total proficiency score between 0 and 150, with a higher score indicating a higher level of proficiency. Multiplication factors used for this study and the maximum number of points for each section are shown in Table 3.1.

Table 3.1

Multiplication Factors for Modified BLP

Section	Max. points per question	Number of questions	Max. points per section	Multiplication factor
1. Language History	20[a]	4	80	0.625
2. Language Use	10[b]	6	60	0.833
3. Language Proficiency	6	4	24	2.083

[a] The score per item is equal to the numerical value of the response for all items in this section except the first. The first item is scored in the reverse: “20” is worth 0, “19” is worth 1, and so on. This inverse scoring is taken directly from the original BLP questionnaire (Birdsong et al., 2012).

[b] Responses to all items in this section are percentages. The scores for each item in this section are calculated by dividing the percentage by 10.

Proficiency scores varied between the three sections of the language proficiency section of the survey. Mean, standard deviation and range for each of the three sections of the language proficiency part of the survey and the total score for proficiency are shown in Table 3.2.

Table 3.2

Mean Proficiency Scores per Subsection

Section	*M*	*SD*	Range
1. Language History	13.3	3.7	5.0 – 33.1
2. Language Use	15.4	5.8	0.8 – 35.8
3. Language Proficiency	37.3	6.6	16.7 – 50.0
Total Score	66.0	12.5	25.6 – 100.7

3.3. Data Analysis

The collected survey responses were analysed using quantitative methods using *SPSS Statistics* and manual coding and analysis of qualitative items. The influence of illocutionary markers on the interpretation of the messages was measured using the Likert-scale questions about tone and intent, the categorization task for each conversation, and the open-ended question "why do you think so". First, the Likert-scale questions and categorization question were analysed quantitatively by looking at the distribution of the answers per message variant and the mean responses. Then, the open-ended questions were inductively coded based on common elements in the responses. The occurrence of these common elements was then compared to the results of the quantitative analysis to find out the underlying reasons for the findings in the quantitative part of the survey.

A qualitative analysis was also carried out for responses to the open-ended questions about the general meaning of full stops, ellipsis, and the discourse markers "lol" and "haha" in IDC at the end of the survey. A systematic process for analysing textual data as described by Creswell (2009) was used, coding the data using mixture of codes emerging from existing literature, for example the various functions each type of illocutionary marker can have, and codes that emerged inductively, by identifying common themes that occurred in the data (pp.186-187). Where insightful, individual responses that clarified analysis were included in the results for clarification.

The relation between language proficiency and the participants' confidence in interpreting tone and intent was then measured by calculating the correlation between the self-reported proficiency based on the BLP, with the Likert-scale question "How confident are you in your answers to these questions" for each of the message variants. This was also done separately for section 3 of the BLP, as this section specifically considers self-reported confidence in English reading, listening,

speaking, and understanding in general. In addition, correlations with digital communication habits with interpretation confidence were calculated to consider its possible effect on confidence.

Lastly, ambiguity recognition was considered for each of the illocutionary markers. First, the different markers were compared per message to see which variants were rated most likely ambiguous by respondents. In addition, the effect of language proficiency on ambiguity recognition was identified by calculating point-biserial correlations. Again, effect of digital communication habits was also considered by calculating correlations between these habits and ambiguity recognition.

3.4. Ethical Considerations

As participants of this study were mostly minors, the design was evaluated using the guidelines on ethical research and date collection among students used by the school and Leiden University. The survey was conducted anonymously, and responses could not be traced back to individual participants. Personally identifiable information such as names or email addresses, or potentially sensitive data were not recorded, and the survey contained no distressing content, as it only included items about digital communication habits, language proficiency and the interpretation of text messages. Before taking the survey, participants received information about the purpose of the survey and their rights as participants. They were explained that by filling in the survey, they agreed to their responses being used for this study's purpose. To reduce pressure and the chance of involuntary participation, participants were informed that taking the survey was voluntary and that their choice to participate or not, or their responses, would not have an effect on their grades at school and results could not be traced back to them.

4. Results

This chapter presents the results of the survey. The first section presents the findings per conversation in the survey, which are used in the second section to triangulate the quantitative and qualitative findings about marker interpretation. The third section contains an analysis of the role of proficiency on interpretation confidence, followed by a final section about ambiguity recognition.

4.1. Comparison of Conversation Variants

4.1.1. Conversation 1

The first conversation presented to participants contained a WhatsApp screenshot with one of three variants of the same last message, which can be found in Appendix B. The first variant included a full stop, the second variant ellipsis, and the third was a neutral variant without illocutionary markers. Three 5-point Likert-scale questions were asked with regards to tone and intent. The distribution of responses per variant for each of these three questions is shown in Table 4.1.

Table 4.1

Responses to Items about Tone and Intent in Conversation 1

Message variant	*M*	*SD*	Response distribution				
			How does Alex's response feel to you?				
			Very Negative	**Somewhat Negative**	**Neutral**	**Somewhat Positive**	**Very Positive**
"Okay." (n = 36)	2.61	0.84	1 (2.8%)	18 (50.0%)	12 (33.3%)	4 (11.1%)	1 (2.8%)
"Okay…" (n = 37)	2.27	0.87	2 (5.4%)	29 (78.4%)	2 (5.4%)	2 (5.4%)	2 (5.4%)
"Okay" (n = 27)	2.89	0.85	1 (3.7%)	7 (25.9%)	14 (51,9%)	4 (14.8%)	1 (3.7%)
			How friendly does Alex sound?				
			Very Unfriendly	**Somewhat Unfriendly**	**Neutral**	**Somewhat Friendly**	**Very Friendly**
"Okay." (n = 36)	3.03	0.81	1 (2.8%)	8 (22.2%)	16 (44.4%)	11 (30.6%)	0 (0.0%)
"Okay…" (n = 37)	2.78	1.11	2 (5.4%)	17 (45.9%)	9 (24.3%)	5 (13.5%)	4 (10.8%)
"Okay" (n = 27)	3.04	0.81	2 (7.4%)	2 (7.4%)	16 (59.3%)	7 (25.9%)	0 (0.0%)
			How sure is Alex that he wants to meet?				
			Very Unsure	**Somewhat Unsure**	**Neutral**	**Somewhat Sure**	**Very Sure**
"Okay." (n = 36)	2.69	0.95	1 (2.8%)	19 (52.8%)	7 (19.4%)	8 (22.2%)	1 (2.8%)
"Okay…" (n = 37)	1.95	0.78	8 (21.6%)	26 (70.3%)	1 (2.7%)	1 (2.7%)	1 (2.7%)
"Okay" (n = 27)	2.48	1.05	3 (11.1%)	15 (55.6%)	3 (11.1%)	5 (18.5%)	1 (3.7%)

For the item regarding positivity, most respondents of the message without illocutionary markers rated the response as "neutral" (51.9%), with a mean tilted slightly towards the negative side (*M* = 2.89, *SD* = 0.85). The tone of the message containing a full stop was rated more negatively with exactly half of the respondents rating it as "somewhat negative" (*M* = 2.61, *SD* = 0.84). The variant containing ellipsis was the most negative with 78.4% of respondents stating the response felt "somewhat negative" (*M* = 2.27, *SD* = 0.87).

For friendliness, again most respondents who saw the variant without illocutionary markers said it sounded "neutral" (*M* = 3.04, *SD* = 0.81). Responses to the full stop gave a similar mean response (*M* = 3.03, *SD* = 0.81). The variant containing ellipsis was considered more unfriendly, with "somewhat unfriendly" being most often selected (*M* = 2.78, *SD* = 1.11). For the third question, the variants without punctuation and with a full stop were again similar (*M* = 2.48, *SD* = 1.05; *M* = 2.69, *SD* = 0.95). The variant with ellipsis was considered more unsure with 70.3% marking this message as "somewhat unsure" and 21.6% as "very unsure" (*M* = 1.95, *SD* = 0.78).

For the question "*What do you think Alex means/thinks?"*, respondents could select one or more given answer options. In addition, they had the option to select "other, namely…" and give their own interpretation. Response frequencies are shown in Table 4.2.

Table 4.2

Responses Frequencies to "What do you think Alex means/thinks?" in Conversation 1

Responses	"Okay." (n = 36)	"Okay…" (n = 37)	"Okay" (n = 27)
"Alex wants to meet"	6 (16.7%)	2 (5.4%)	7 (25.9%)
"Alex tries to be polite"	18 (50.0%)	8 (21.6%)	5 (18.5%)
"Alex is enthusiastic to meet"	3 (8.3%)	1 (2.7%)	3 (11.1%)
"Alex is not sure if he wants to meet"	15 (41.7%)	17 (45.9%)	12 (44.4%)
"Alex doesn't really want to meet"	16 (44.4%)	24 (64.9%)	4 (14.8%)
"Other, namely…"	0 (0.0%)	0 (0.0%)	4 (14.8%)

Note. Respondents could select multiple answers, so percentage totals per message variant can be higher than 100%.

The variant with a full stop was considered an attempt of politeness by half of the respondents (50.0%), while this was not as frequently the case for the other variants (21.6%; 18.5%). For ellipsis, the lowest number of respondents said the sender wanted to meet (5.4%). Uncertainty

about meeting was most often selected by the ellipsis group (45.9%), followed by the group without markers (44.4%) and the full stop group (41.7%). The ellipsis group also selected unwillingness most often (64.9%), followed by the full stop (44.4%) and the variant without punctuation (14.8%).

Open-ended responses were only given for the neutral variant of the message. The following responses were given:

(1) “Alex antwoordt op het eerste bericht” [“Alex is answering the first message”]

(2) “Alex is een man en kan niet appen” [“Alex is a man and cannot use WhatsApp”]

(3) “Alex klinkt onzeker of hij wil afspreken” [“Alex sounds unsure whether he wants to meet”]

(4) “Hij wil opzich [*sic*] afspreken maar is niet heel enthousiast” [“He wants to meet but is not very enthusiastic”]

For the item “Why do you think so?”, responses were coded into categories based on elements or tone of the message that were mentioned by more than one respondent. Response categories and their distributions are shown in Table 4.3.

Table 4.3

Responses to “Why do you think so” in Conversation 1

Response mentions:	“Okay.” (n = 36)	“Okay…” (n = 37)	“Okay” (n = 27)
Illocutionary marker	12 (33.3%)	28 (75.7%)	0 (0.0%)
Vague tone of response	5 (13.9%)	1 (2.7%)	3 (11.1%)
Word choice “okay”	8 (22.2%)	2 (5.4%)	7 (25.9%)
Short length of response	11 (30.6%)	0 (0.0%)	2 (7.4%)
Overall positive attitude	3 (8.3%)	1 (2.7%)	4 (14.8%)
Lack of explicitly positive attitude	9 (25.0%)	1 (2.7%)	9 (33.3%)
Overall negative attitude	0 (0.0%)	1 (2.7%)	1 (3.7%)
Dry tone of response	2 (5.6%)	1 (2.7%)	3 (11.1%)
Time taken to respond	1 (2.8%)	0 (0.0%)	2 (7.4%)

Note. Only elements that were mentioned by more than one respondent are presented in this table.

From the three variants, ellipsis was mentioned by 75.7% of respondents who were presented with this marker as the reason for their interpretation of the message. For the full stop this was 33.3%. For both the full stop and the unmarked response, more respondents mentioned the word choice “okay” in their responses than for the variant containing ellipsis, which was also the case

for the mention of a lack of positive attitude in the message. 30.6% of respondents in the full stop group pointed out the response was very short, as compared to 7.4% in the unmarked group and no respondents in the ellipsis group.

Some respondents gave unique, but very specific answers. One respondent said about the full stop, “Veel jongeren gebruiken dit niet waardoor het lijkt alsof hij kort af [sic] doet wanner [sic] die [sic] de punt toevoegt” [“Not many young people use it so it looks as if he is responding really curtly when he uses the full stop”]. Another respondent mentioned that the full stop makes the response sound more aggressive. Some respondents mentioned their view of the intention behind an ellipsis, and said it could be used to give the other person a hint, to express doubt, or to express overall negativity. One respondent said, “hij laat soort van zien dat er een ongemakkelijke stilte valt” [“he sort of shows that there is an awkward silence”]. Four respondents across the variants mentioned that messages would have sounded more enthusiastic if an exclamation mark had been used.

4.1.2. Conversation 2

Like the first conversation, Conversation 2 had three variants of the last message. For this conversation, the variants included either ellipsis, the discourse marker “lol”, or no illocutionary marker. Results to the Likert-scale questions about tone and intent are shown in Table 4.4.

Table 4.4

Responses to Items about Tone and Intent in Conversation 2

Message variant	*M*	*SD*	Response distribution				
			How polite is Alex?				
			Very Impolite	**Somewhat Impolite**	**Neutral**	**Somewhat Polite**	**Very Polite**
“Yeah sure…” (n = 37)	2.78	0.85	1 (2.7%)	15 (40.5%)	12 (32.4%)	9 (24.3%)	0 (0.0%)
“Yeah sure” (n = 28)	3.61	0.92	1 (3.6%)	2 (7.1%)	7 (25.0%)	15 (53.6%)	3 (10.7%)
“Yeah sure lol” (n = 35)	3.31	0.93	1 (2.9%)	6 (17.1%)	11 (31.4%)	15 (42.9%)	2 (5.7%)
			How does Alex feel about helping you with your homework?				
			Very Negative	**Somewhat Negative**	**Neutral**	**Somewhat Positive**	**Very Positive**
“Yeah sure…” (n = 37)	2.16	0.80	5 (13.5%)	25 (67.6%)	3 (8.1%)	4 (10.8%)	0 (0.0%)
“Yeah sure” (n = 28)	3.86	0.85	0 (0.0%)	2 (7.1%)	6 (21.4%)	14 (50.0%)	6 (21.4%)
“Yeah sure lol” (n = 35)	3.89	0.93	0 (0.0%)	4 (11.4%)	5 (14.3%)	17 (48.6%)	9 (25.7%)

For this conversation, respondents presented with the message variant containing ellipsis considered the message to be the least polite (*M* = 2.78, *SD* = 0.85) with 40.5% rating the message as "somewhat impolite". The variant containing "lol" was considered more polite on average (*M* = 3.31, *SD* = 0.93). The neutral variant was considered the most polite (*M* = 3.61, *SD* = 0.92). For the item regarding the sender's attitude towards helping, the ellipsis variant was rated "somewhat negative" by 67.6% of respondents, and "very negative" by 13.5%, resulting in a total of 81.1% of respondents expressing a negative view (*M* = 2.16, *SD* = 0.80). The other variants were rated more positively. For the neutral variant, 50.0% rated the message "somewhat positive" and 21.4% as "very positive" (*M* = 3.86, *SD* = 0.84). For the variant containing lol, these percentages were 48.6% and 25.7% respectively (*M* = 3.89, *SD* = 0.93).

For this second conversation, respondents again had to categorize the speaker's intent from a set of given answer options with the optional addition of an open-ended response. Frequencies are shown in Table 4.5.

Table 4.5

Response Frequencies to "What do you think Alex means/thinks?" in Conversation 2

Responses	"Yeah sure…" (n = 37)	"Yeah sure" (n = 28)	"Yeah sure lol" (n = 35)
"Alex really wants to help"	1 (2.7%)	15 (53.6%)	18 (51.4%)
"Alex is not sure he wants to help"	11 (29.7%)	3 (10.7%)	5 (14.3%)
"Alex is just being polite"	16 (43.2%)	12 (42.9%)	8 (22.9%)
"Alex feels annoyed but won't say no"	22 (59.5%)	0 (0.0%)	5 (14.3%)
"Alex is being sarcastic"	1 (2.7%)	0 (0.0%)	8 (22.9%)
"Other, namely…"	3 (8.1%)	3 (10.7%)	4 (11.4%)

For both the variant without a marker and the variant containing "lol", a slight majority of respondents concluded that "Alex really wants to help", while this option was only selected by one respondent presented with the variant containing ellipsis. This variant was more often than the other two considered an indicator of uncertainty (29.7%), annoyance (59.5%), or sarcasm (22.9%). The answer "Alex is just being polite" was chosen relatively often by respondents who saw the variant

containing ellipsis (43.2%) and the variant without a marker (42.9%), but less often by those who saw the variant containing "lol" (22.9%).

Three respondents gave open-ended responses for the variant containing ellipsis: "*Alex wil liever niet helpen maar doet beleeft [sic] en hoopt dat die puntjes achter het bericht laten zien dat hij eigenlijk niet wil helpen*" ["*Alex prefers not to help, but is polite and hopes that the three dots in the message show that he does not really want to help"*], "*Eigenlijk wilt* [sic] *hij niet helpen maar omdat het zn* [sic] *vriend is doet hij het wel"* [*"Actually he does not want to help, but he will still do so because he is his friend"*], and "*Hij was zijn huiswerk vergeten te maken dus sure... van ohja"* ["*He forgot to do his homework so he answered "sure…", meaning "ah right""*]. Three respondents gave an open answer for the variant without an illocutionary marker: "*He doesn't have many feelings about it he is fine helping him but he is also fine with not helping", "Hij vindt het prima om te helpen maar het is nou niet dat hij er super veel zin in heeft"* [*"He is fine with helping, but he is not too excited about it"*], and "*Hij wilt* [sic] *helpen en denkt er niet veel meer over"* ["*He wants to help and does not think too much about it"*]. Lastly, four respondents gave open ended responses to the variant containing the discourse marker "lol". They said: "*Alex doet het en vind* [sic] *het niet erg, maar had de vraag niet verwacht*" ["*Alex does it and does not mind, but he did not expect the question*"], "*Hij vind* [sic] *het leuk en gezellig om te helpen*" ["*He thinks it is fun and enjoys helping*"], "*Hij wil gw* [sic] *helpen*" ["*He just wants to help*"], and "*Hij wil je ook wel helpen*" ["*He also wants to help you*"].

The reasons respondents gave for their interpretations of the messages in this Conversation 2 are shown in Table 4.6.

Table 4.6

Responses to "Why do you think so?" in Conversation 2

Response mentions:	"Yeah sure..." (n = 37)	"Yeah sure" (n = 28)	"Yeah sure lol" (n = 35)
Illocutionary marker	27 (73.0%)	0 (0.0%)	16 (45.7%)
Effort to be polite	4 (10.8%)	1 (3.6%)	1 (2.9%)
Word choice "yeah sure"	2 (5.4%)	7 (25.0%)	4 (11.4%)
Expressing doubt	5 (13.5%)	2 (7.1%)	1 (2.9%)

Overall positive attitude	1 (2.7%)	7 (25.0%)	10 (28.6%)
Lack of explicitly positive attitude	1 (2.7%)	5 (17.9%)	1 (2.9%)
Overall negative attitude	7 (18.9%)	0 (0.0%)	0 (0.0%)
Time taken to respond	0 (0.0%)	1 (3.6%)	1 (2.9%)
Weird tone of message	0 (0.0%)	0 (0.0%)	4 (11.4%)
No reason mentioned or unclear	0 (0.0%)	7 (25.0%)	2 (5.7%)

Note. Only elements that were mentioned by more than one respondent are presented in this table.

Like in the first conversation, ellipsis was listed as the reason for interpreting the message a certain way by a majority of respondents (73.0%). "Lol" was explicitly mentioned by less than half of the respondents (45.7%). A negative tone was mentioned relatively often for the message containing ellipsis (18.9%), while a positive tone was listed more often for the variant with "lol" (28.6%) and the one without a marker (25.0%). One respondent presented with the neutral variant mentioned that it sounds like Alex really wants to help because he uses informal language without a full stop. As for Conversation 1, one respondent – not the same one – mentioned that the message would have sounded more enthusiastic if an exclamation mark had been used.

4.1.3. Conversation 3

Conversation 3 contained three variants of a response to the question "What did you think of the movie?". The three variants contained either the discourse marker "haha", no illocutionary marker, or a full stop. Results for the Likert-scale items about tone and intent are shown in Table 4.7.

Table 4.7

Responses to Items about Tone and Intent in Conversation 3

Message variant	*M*	*SD*	Response distribution				
			How serious does Alex sound?				
			Very Unserious	**Somewhat Unserious**	**Neutral**	**Somewhat Serious**	**Very Serious**
"It was nice haha" (n = 27)	3.00	1.04	0 (0.0%)	12 (44.4%)	5 (18.5%)	8 (29.6%)	2 (2.0%)
"It was nice" (n = 29)	3.38	1.27	3 (10.3%)	5 (17.2%)	4 (13.8%)	12 (41.4%)	5 (17.2%)
"It was nice." (n = 32)	3.63	0.87	0 (0.0%)	3 (9.4%)	11 (34.4%)	13 (40.6%)	5 (15.6%)
			How sarcastic does Alex sound?				
			Definitely Not Sarcastic	**Probably Not Sarcastic**	**Neutral**	**Probably Sarcastic**	**Definitely Sarcastic**
"It was nice haha" (n = 27)	2.89	1.05	2 (7.4%)	9 (33.3%)	7 (25.9%)	8 (29.6%)	1 (3.7%)
"It was nice" (n = 29)	2.45	0.95	3 (10.3%)	16 (55.2%)	4 (13.8%)	6 (20.7%)	0 (0.0%)
"It was nice." (n = 32)	2.59	1.01	5 (15.6%)	10 (31.3%)	10 (31.3%)	7 (21.9%)	0 (0.0%)

For the item regarding the seriousness of the tone of the message, the variant containing the discourse marker “haha” had the most respondents rating the message as “somewhat unserious” (44.4%), followed by “somewhat serious” (29.6%), and this variant was rated the least serious on average (*M* = 3.00, *SD* = 1.04). The tone of the neutral variant and the variant with a full stop were both rated more serious, with 58.6% and 56.2% respectively rating it either “somewhat serious” or “very serious”. The mean score for the variant containing a full stop was rated more serious-sounding on average (*M* = 3.63, *SD* = 0.87) than the neutral variant (*M* = 3.38, *SD* = 1,27). The variant containing “haha” was rated the most sarcastic on average (*M* = 2.89, *SD* = 1.05), followed by the variant containing a full stop (*M* = 2.59, *SD* = 1.01) and the neutral variant (*M* = 2.45, *SD* = 0.95).

Frequencies for the categorization questions about meaning for Conversation 3 are shown in Table 4.8.

Table 4.8

Responses Frequencies to “What do you think Alex means/thinks?” in Conversation 3

Responses	“It was nice haha” (n = 27)	“It was nice” (n = 29)	“It was nice.” (n = 32)
“Alex liked the movie”	17 (63.0%)	9 (31.0%)	11 (34.4%)
“Alex is being sarcastic”	6 (22.2%)	4 (13.8%)	6 (18.8%)
“Alex didn’t care much about the movie”	7 (25.9%)	17 (58.6%)	15 (46.9%)
“Alex wants to talk about the movie”	1 (3.7%)	2 (6.9%)	3 (9.4%)
“Alex doesn’t want to talk about the movie”	10 (37.0%)	11 (37.9%)	15 (46.9%)
“Other, namely…”	2 (7.4%)	0 (0.0%)	2 (6.3%)

When comparing the three variants, it seems that respondents considered Alex’s opinion on the movie to be most sincere when his message contained the marker “haha”, as for this variant “Alex liked the movie” was selected most often (63.0%) and “Alex didn’t care much about the movie” least often (25.9%), which suggests that this marker may reinforce or clarify the semantic meaning of this particular message. Sarcasm was rated somewhat higher for both the variant with “haha” (22.2%) and the variant with a full stop (18.8%) than for the variant without a marker, which is in accordance with the responses to the sarcasm item presented in table 4.7. For the variant containing

full stop, the highest percentage of respondents chose "Alex doesn't want to talk about the movie" (46.9%).

For "other, namely…", the two responses to the variant containing "haha" were "*hij vindt het een rare vraag*" ["*He thinks it is a strange question*"] and "*Was niet zijn soort film of de film was niet heel goed, maar hij vond wel iets in de film leuk*" ["*It was not his type of film or it was not very good, but he still liked something in the film*"]. For the variant containing a full stop, responses were "*Alex vond de film niet per se erg special* [sic]*, maar hij vond hem ook niet bepaald slecht*" [*Alex did not think the film was very special per se, but he also did not consider it bad*"] and "*Kan je op basis van dit antwoord niet zeker weten. Dit ligt aan het* [sic] *person* [sic]" ["*It is not possible to tell on the basis of this response, it depends on the person*"].

The reasons respondents gave for their interpretation of the messages in Conversation 3 are depicted in table 4.9.

Table 4.9

Responses to "Why do you think so?" in Conversation 3

Response mentions:	"It was nice haha" (n = 27)	"It was nice" (n = 28)	"It was nice." (n = 32)
Illocutionary marker	14 (51.9%)	0 (0.0%)	8 (25.0%)
Word choice "It was nice"	6 (22.2%)	10 (35.7%)	11 (34.4%)
Short length of response	1 (3.7%)	2 (7.1%)	7 (21.9%)
Overall positive tone	1 (3.7%)	3 (10.7%)	0 (0.0%)
Lack of explicitly positive tone	0 (0.0%)	9 (32.1%)	6 (18.8%)
Dry tone of response	0 (0.0%)	1 (3.6%)	2 (6.3%)
Lack of illocutionary marker	1 (3.7%)	4 (14.3%)	1 (3.1%)
No reason mentioned or unclear	4 (14.8%)	3 (10.7%)	4 (12.5%)

Note. Only elements that were mentioned by more than one respondent are presented in this table.

Just above half of the respondents presented with the marker "haha" mentioned this marker as their reason for interpretation (51.9%). The full stop was mentioned by 25.5% of respondents. Like with the first message, respondents who saw the message variant containing a full stop mentioned the short length of the message more often (21.9%) than was the case for the other variants. For this conversation, a few respondents mentioned that their interpretation would have been different if other illocutionary markers had been included:

(5) “Omdat hij […] geen interpunctie of emojis gebruikt om duidelijk te maken dat hij het oprecht leuk vond” [“Because he does not use punctuation or emojis to clarify that he really liked it”]

(6) “It was nice zonder enige interpunctie of emojis komt niet heel enthousiast over” [““it was nice” without any punctuation or emoji does not sound very enthusiastic”]

(7) “Geen uitroepteken” [“No exclamation mark”]

These answers illustrate that the absence of illocutionary markers may weaken the perceived sincerity of positive messages, which might mean that in certain contexts, these markers are not only useful to convey illocutionary force, but required to properly express intent.

4.2. Interpretation of Illocutionary Markers

This section synthesizes the findings considering the interpretation of ellipsis, full stop and discourse markers “lol” and “haha” by triangulating participants’ responses to the quantitative and qualitative items as discussed in Section 4.2, while also considering the final open-ended questions of the survey that directly asked respondents what they thought individual markers can mean when placed at the end of messages.

4.2.1. Ellipsis

Ellipsis was mentioned by about three quarters of respondents as a reason for interpreting a message a certain way in both Conversation 1 and 2, making this the most cited reason for interpretation of all the markers in the survey. In Conversation 1, the variant containing ellipsis was rated the most negative (78.4% “somewhat negative”), least friendly (M = 2.78) and most uncertain (M = 1.95). Of the three variants, ellipsis seemed to express the least willingness to meet, and while respondents across all variants found the tone of the message uncertain, those shown the ellipsis variant attributed their interpretation explicitly to this marker. In Conversation 2, 81.1% of respondents answered that the sender felt negatively about helping, and it was rated the least polite variant (*M* = 3.31). In the categorization item, ellipsis seemed to express unwillingness the strongest,

with only 5.4% stating that Alex wanted to meet, and 59.5% of respondents selecting “Alex feels annoyed but won’t say no”.

These findings are in line with respondent’s ideas about ellipsis as an illocutionary marker in general. Table 4.10 shows the responses to the open-ended question about the possible meanings of ellipsis at the end of WhatsApp messages.

Table 4.10

Meaning of Ellipsis According to Participants (n = 54)

According to responses, ellipsis at the end of a message:	Frequency
Has a meaning that depends on the context	7 (13.0%)
Means that there is more to be said	11 (20.4%)
Depicts a silence	3 (5.6%)
Conveys a certain tone or emotion	47 (87.0%)
Uncertainty/doubt	24 (44.4%)
Expectation of a response	6 (11.1%)
Hesitation	6 (11.1%)
Sarcasm	6 (11.1%)
Disinterest	5 (9.3%)
Disappointment	2 (3.7%)
Meanness	2 (3.7%)
Mysteriousness	2 (3.7%)
Sadness	2 (3.7%)
Suspense	2 (3.7%)

Note. Only categories of responses that were mentioned by more than one respondent are presented in this table.

The majority stated ellipsis conveyed a certain tone or emotion (87.0%), with uncertainty or doubt being most frequently mentioned (44.4%), followed by the expectation of a response, hesitation, and sarcasm (11.1% each). One respondent mentioned a specific illocutionary act in her response, namely flirting, and said: “*Heel veel dingen bijv. Onduidelijkheid of flirten etc.*” [“*Many different things, for example uncertainty or flirting etc.*”]. Looking at the response categories, it seems that ellipsis can be used as a marker of silence or anticipation that more is coming, supported by answers categories like “means that there is more to be said”, “expectation of a response”, “hesitation”, “mysteriousness”, and “suspense”. The following response illustrates this nicely: “*dat die persoon iets wilt zeggen of dat er iets aan de hand is maar het niet durft*” [“*That this person wants to say that something is going on, but doesn’t dare to say it*”].

Taken together, these findings suggest that as an illocutionary marker, ellipsis is considered to carry a negative tone, with a variety of possible meanings, most often related to hesitation or unwillingness. It should be noted that while the open-ended responses did not necessarily point to this, ellipsis was considered impolite and unfriendly in the quantitative items. This suggests that in IDC, ellipsis is an effective marker of illocutionary force, but should be used with care when aiming for clarity, politeness, or friendliness.

4.2.2. Full Stop

In both Conversation 1 and 3, a full stop seemed to add a negative tone to the messages. While the variant containing a full stop in Conversation 1 was rated less negative than ellipsis, 50.0% of respondents rated the message as "somewhat negative" (*M* = 2.61), making the variant notably more negative than the neutral variant. In Conversation 3, the full stop was considered to give the message a serious tone by 56.2% of respondents, but 21.9% also found the tone "somewhat sarcastic", hinting at an ambiguous meaning of this marker that depends on context. In the categorization questions for Conversation 1 and 3, a full stop was mentioned less frequently than ellipsis or "haha", with 33.3% and 25.0% mentioning this marker respectively. When a full stop was used in Conversation 1, half of the respondents saw the response as an attempt of politeness, but also, though less frequently than for ellipsis, it was seen as an expression of unwillingness (44.4%). In Conversation 3, a full stop led to almost half of respondents saying "Alex doesn't want to talk about the movie". For both conversations, respondents rated the short length of the response more frequently when a full stop was included. These results seem to indicate that a full stop can carry a somewhat negative tone relating to sarcasm or unwillingness, but also a degree of politeness or seriousness.

Table 4.11 shows the responses to the open-ended item regarding respondent's ideas about the meaning of a full stop at the end of WhatsApp messages.

Table 4.11

Meaning of a Full Stop According to Participants (n = 58)

According to responses, a full stop at the end of a message…	Frequency
Has no effect on meaning	10 (17.2%)
Has a meaning that depends on the context	7 (12.1%)
Has a meaning that depends on the age of the sender	5 (8.6%)
Conveys a certain tone or emotion	44 (75.9%)
Formality	13 (22.4%)
Anger	12 (20.7%)
Assertiveness/firmness	12 (20.7%)
Seriousness	5 (8.6%)
Politeness	4 (6.9%)
Passive-aggressiveness	3 (5.2%)
Sarcasm	3 (5.2%)
Curtness	2 (3.4%)
Dryness	2 (3.4%)
Impoliteness	2 (3.4%)
Unfriendliness	2 (3.4%)

Note. Only categories of responses that were mentioned by more than one respondent are presented in this table.

Three quarters (75.9%) stated that a full stop conveys a certain tone or emotion, mostly formality (22.4%), anger (20.7%), or assertiveness/firmness (20.7%). These align somewhat with the earlier findings, as formality is in line with the more polite or serious tone of messages, anger is reflected in the negative connotations, and assertiveness or firmness is somewhat in line with the often mentioned interpretation that Alex doesn't want to talk further, which can be illustrated by the following responses: "*Ik vind dat de punt het minder uitnodigend maakt om te praten*" ["*I think the full stop makes it less inviting to talk*"], and "*Het lijkt een soort afsluiting, alsof je er niet op verder wil gaan*" ["*It seems like a kind of ending, like you do not want to continue on the topic*"]. Lastly, some respondents also highlighted the role of age in full stop use, as in this response: "*Een punt laat het bozer lijken, maar voor andere leeftijdsgroepen juist beleefder*" ["*A full stop makes it seem angrier, but for other age groups it is more polite*"].

All in all, though not always consistently interpreted, a full stop was often considered a cue for either formality or negative feelings like anger or irritation. Variation in interpretation based on

context or age norms shows that the full stop may be perceived as emotionally distant when used in IDC.

4.2.3. "Lol" and "Haha"

Unlike ellipsis and full stops, which were often considered negative, the results for "lol" and "haha" suggest that these markers are interpreted more positively, though there still is a degree of variation. In Conversation 2, "lol" was rated less polite than the neutral variant, but more polite than the variant containing ellipsis. Willingness to help was rated similarly to the neutral variant. This was reflected in the categorization question, where 51.4% said Alex wanted to help, close to the neutral variant (53.6%), but higher than ellipsis (2.7%). Still, 22.9% interpreted the message as sarcastic, showing that while it was often interpreted positively, there is still a risk of ambiguity or insincerity.

In Conversation 3, "haha" was rated the least serious (M = 3.00), and most sarcastic (M = 2.89) of the variants, but simultaneously, the highest percentage of respondents concluded that Alex genuinely liked the movie (63.0%) and the lowest percentage that he did not care much about the movie (25.9%). Like "lol", "haha" appears similarly ambiguous and context-sensitive. More than half of respondents explicitly cited the marker "haha" as the reason for their interpretation (51.9%), and 45.7% cited "lol", meaning it is often used for interpretation, but not as often as ellipsis (73.0% in Conversation 2).

Table 4.12 shows responses to the open-ended item regarding the discourse markers "lol" and "haha".

Table 4.12

Meaning of "Lol" and "Haha" According to Participants (n = 55)

According to responses, ellipsis at the end of a message:	Frequency
Has no substantial meaning	6 (10.9%)
Has a meaning that depends on the context	2 (3.6%)
Conveys a certain tone or emotion	53 (96.4%)
Humor/laughing	39 (70.9%)
Sarcasm	11 (20.0%)
Pleasantness (liking the situation)	9 (16.4%)
Kindness (liking the other person)	6 (10.9%)
Politeness	2 (3.6%)

Note. Only categories of responses that were mentioned by more than one respondent are presented in this table.

Almost all respondents noted the tone of the message (96.4%), with 70.9% associating the markers with humor or laughter, even though the conversations did not consist of jokes or other humorous content. It might be that these markers trigger the positive association related to laughter and apply it to the messages containing them. Twenty percent said these markers can indicate sarcasm, showing that this laughter effect can also signal criticism. Other responses regarding tone and emotion were positive-sounding, with pleasantness, kindness and politeness being mentioned. Some respondents (10.9%) said that "lol" and "haha" do not necessarily have meaning, as in the following examples:

(8) "Een beetje het antwoord proberen op te leuken" ["Decorating the answer a little"]

(9) "Als ze niet goed weten hoe ze het berichtje af moeten sluiten" ["If they do not know a good way to end their message"]

(10) "Als ze het gesprek leuk vinden. Of als ze niks kunnen bedenken" ["If they like the conversation. Or if they cannot think of anything"]

This lack of meaning could explain why less than half of respondents mentioned "lol" in their reasoning behind interpretation in Conversation 2. If "lol" can indeed be devoid of real meaning and can just be used for embellishment, this may indicate that some respondents look beyond this marker for more overt signs of illocutionary intent.

4.3. Proficiency and Interpretation Confidence

This section explores the influence of participants' language proficiency on their confidence in interpreting the messages. Table 4.13 shows the average self-reported confidence per message variant, and their correlations with two proficiency scores: their overall language proficiency score on the questionnaire, and their score on Section 3 of the questionnaire, which considered general communicative confidence.

Table 4.13

Interpretation confidence per illocutionary marker per message

Conversation	Mean	Correlation Language Proficiency Section 3	Correlation Language Proficiency
No marker C1 (n = 27)	3.70	.191	.151
No marker C2 (n = 28)	4.14	.105	.109
No marker C3 (n = 29)	3.66	-.119	-.070
No marker total (n = 60)[a]	3.81	.153	.131
Full stop C1 (n = 36)	3.61	.248	**.346***
Full stop C3 (n = 32)	3.81	**.427***	.238
Full stop total (n = 58)[a]	3.75	**.313***	**.319***
Ellipsis C1 (n = 37)	3.78	-.036	-.118
Ellipsis C2 (n = 37)	3.78	.028	.021
Ellipsis total (n = 56)[a]	3.81	-.073	-.094
"Lol" C2 (n = 35)	3.83	-.066	-.071
"Haha" C3 (n = 27)	3.81	.003	.100

[a] Some respondents saw the same marker in multiple conversations, therefore the total amount for the combined values is not the same as the sum of the individual variants. For respondents who answered more than one item for the marker in question, the average of their answers was used.

*Correlation is significant ($p < .05$)

Across all variants, average confidence ratings were high, falling between 3.6 and 4.2 on a 5-point Likert scale, with 4 being "somewhat confident", meaning most respondents were quite sure of their interpretations. Upon interpreting correlations, two significant correlations could be found. First, there was a moderate positive correlation between confidence and Section 3 of the proficiency questionnaire for the full stop variant in Conversation 3 ($r = .43$, $p = .015$). Second, the total language proficiency score showed a significant positive correlation and confidence for the full stop variant in Conversation 1 ($r = .35$, $p = .034$). When full stop variants were grouped together, both correlation

coefficients were statistically significant (r = .31, p = .017; r = 32, p = .015). For the variants containing ellipsis, “lol” and “haha”, no significant correlations were found. Even among respondents who used English frequently or who reported high proficiency, there was no meaningful effect on confidence ratings for these markers.

These findings suggest that while interpretation confidence was overall rated high, language proficiency only significantly influenced confidence when interpreting messages containing full stops. A possible explanation is that the full stop carries more subtle pragmatic meaning than the other markers. As discussed in Section 4.2.2, the pragmatic meaning of a full stop can range from politeness and formality to emotional distance or anger and depends on factors like context and sender age. Interpretation of full stops may require higher levels of pragmatic competence, which explains why higher proficiency was associated with interpretation confidence.

By contrast, “lol”, “haha”, and ellipsis might be more easily understood by all speakers, regardless of language background. For these markers, interpretation confidence was high across proficiency levels and no significant correlations were found.

The relationship between interpretation confidence and communication habits was also explored. Correlations were calculated between confidence ratings and four variables: the number of hours per day respondents used chatting apps, and the percentage of time they spent reading, watching, and chatting in English online. These correlations are shown in Table 4.14.

Table 4.14

Correlations Between Interpretation Confidence and Digital Communication Habits

Conversation	Hours spent chatting	% English Reading Online	% English Watching Online	% English Chatting Online
No marker C1 (n = 27)	.022	.224	.286	-.057
No marker C2 (n = 28)	-.044	-.026	.028	.015
No marker C3 (n = 29)	-.105	-.165	-.068	-.230
No marker total (n = 60)[a]	-.041	.071	.104	-.029
Full stop C1 (n = 36)	-.026	.231	**.374***	.203
Full stop C3 (n = 32)	-.094	-.065	.059	-.235
Full stop total (n = 58)[a]	.022	.158	.243	.054
Ellipsis C1 (n = 37)	.060	-.029	-.058	**-.481****
Ellipsis C2 (n = 37)	-.152	.141	.126	-.309

Ellipsis total (n = 56)[a]	.007	-.004	.035	**-.356****
"Lol" C2 (n = 35)	.062	.052	.073	-.237
"Haha" C3 (n = 27)	.071	.215	.153	-.036

[a] Some respondents saw the same marker in multiple conversations, therefore the total amount is not the same as the sum of the individual variants. For respondents who answered more than one item for the marker in question, the average of their answers was used.

*Correlation is significant ($p < .05$)

** Correlation is significant ($p < .01$)

Most correlations were not statistically significant, which suggests digital communication habits do not necessarily predict interpretation confidence. Exceptions were the correlation between the percentage of time respondents watched videos in English and interpretation of the full stop in Conversation 1 ($r = .374$, $p = .025$), which also resulted in the correlation of the full stops taken together being almost significant ($r = .243$, $p = .067$).

Notably, interpretation confidence between interpreting ellipsis and chatting online was correlated negatively, with a significant correlation of -.481 ($p = .003$) in Conversation 1, and -.356 ($p = .007$) for both ellipsis variants together. Correlation with ellipsis in Conversation 2 was almost significant ($r = -.309$, $p = .063$). This could mean that respondents who chatted more frequently in English were more aware of possible ambiguity, leading to lower confidence in their interpretations of this marker.

4.4. Ambiguity Recognition

In addition to interpretation confidence, ambiguity recognition among respondents was also examined. Table 4.15 shows the distribution of responses to the item "Could someone else send the same reaction but mean something different?" for each of the message variants.

Table 4.15

Percentage of Respondents Who Judged a Message Variant as Potentially Ambiguous

Conversation	Number of respondents
C1 full stop (n = 36)	29 (80.6%)
C1 ellipsis (n = 37)	22 (59.5%)
C1 no marker (n = 27)	16 (59.3%)

C2 ellipsis (n = 37)	13 (35.1%)
C2 no marker (n = 28)	14 (50.0%)
C2 “lol” (n = 34)	15 (44.1%)
C3 “haha” (n = 27)	6 (22.2%)
C3 no marker (n = 29)	14 (48.3%)
C3 full stop (n = 32)	18 (56.3%)

For both Conversation 1 and 3, the potential for ambiguity was most often recognized in the message variant containing a full stop (80.6% and 56.3%). This is in line with earlier findings that suggested a full stop can signal a variety of tones, like formality or anger. In Conversation 1, ellipsis did not have a large effect on ambiguity recognition, as this was similar to the variant without a marker. In Conversation 2, the variant without a marker was rated the most ambiguous of the three, with 50% rating it as possibly ambiguous, which suggests ellipsis and “lol” reduce ambiguity in this case. In Conversation 3, “haha” was rated less ambiguous (22.2%) than the neutral variant (48.3%), and the full stop more ambiguous (56.3%). Analysis of these conversations suggests that full stops may increase ambiguity, “lol” and “haha” may decrease it, and that the effect of ellipsis varies.

To examine whether proficiency influenced ambiguity recognition, point-biserial correlations were calculated between language proficiency scores, both total and for each section of the questionnaire, and responses to the ambiguity recognition item for all message variants. None of the correlations were statistically significant ($p > .10$ in all cases), which suggests that a higher proficiency score does not interpretation confidence among L2 speakers in the context of this study.

In addition to language proficiency, correlations were calculated between ambiguity recognition and several items regarding digital communication habits: the number of hours spent chatting via apps per day and the percentage of time respondents spent reading, watching, and chatting in English. Of all combinations, the only statistically significant correlation was found between the percentage of chatting respondents did in English and ambiguity recognition in the unmarked variant of the last message in Conversation 3 ($r = .396$, $p = .033$). This suggests that participants who more frequently chatted in English were better at recognizing ambiguity in

messages, but in this case, ambiguity was not related to the presence of one of the illocutionary markers central to this research.

Only one respondent answered the final, general, question of the questionnaire, and their answer illustrated how ambiguity might cause problems in IDC: "*Appen is best vervelend, je weet nooit hoe iemand het bedoeld [sic] en hoe je het moet opvatten. Bellen is daarom altijd beter dan hoor je de toon!* ["*WhatsApp messaging is somewhat annoying, you never know what intention someone has and how you should interpret it. Calling is therefore always better since you can hear the tone!*"]. This statement nicely underscores that in IDC, signalling tone and intent can be more difficult than in spoken conversations. Even when senders have various illocutionary markers at their disposal, deciding what intent truly lies behind their messages can be a difficult task.

5. Discussion

This chapter discusses the main findings of the present study, which was centred around the question to what extent L2 speakers recognize and interpret illocutionary markers in informal digital communication (IDC). This main research question was divided into four subquestions:

1. How do different pragmatic markers influence L2 speakers' interpretation of illocutionary force in WhatsApp messages?
2. How does English proficiency among L2 speakers relate to confidence in interpreting illocutionary information?
3. To what extent do L2 speakers recognize ambiguity in illocutionary force, and how does this compare across proficiency levels?
4. How do digital communication habits affect interpretations of illocutionary force?

These questions were answered using quantitative and qualitative analysis of data gathered through a questionnaire taken by Dutch secondary school students. In the following section, findings relating to each of these subquestions are summarized and connected to existing literature. The sections thereafter reflect on the theoretical implications of the results, the implications for L2 learners, limitations of the study, and suggestions for further research.

5.1. Interpretation of results

5.1.1. Illocutionary Markers and Interpretation

The first subquestion explored the effect of full stops, ellipsis and "lol" and "haha" on message interpretation. The results showed that inclusion of different markers clearly affected the supposed tone and intent of messages, which indicates these markers can indeed be seen as executing pragmatic functions, making their role in IDC similar to that of other illocutionary markers as described in Speech Act Theory and Relevance Theory.

Firstly, ellipsis was recognized by a majority of respondents as a contributor to the tone and intent of messages. It was consistently interpreted as carrying negative connotations, but also as an expression of uncertainty. Respondents also associated the use of ellipsis as a marker of silence or

hesitation, which aligns with the intent of the ellipsis as the digital version of pauses as discussed by McSweeney (p.103). While online amateur linguistics have described the use of ellipsis as a characteristic of the language of older generations, being interpreted by younger people as ominous or passive-aggressive, this interpretation was not commonly found in the results of this study. Results suggest that while many respondents agreed that an ellipsis indicated that some information was missing, the nature of this information is ambiguous, resulting in varying interpretations of this marker.

Secondly, full stops also contributed significantly to the interpretation of messages. Though not as strongly as ellipsis, full stops were associated with a negative tone, though messages with a full stop were also rated more polite and serious. This might be because they are not needed in IDC, but respondents were familiar with them from more formal registers, thus associating a full stop with formality. Full stops also drew attention to the length of messages, as full stop variants were rated shorter than other variants. The original meaning of the full stop, signalling an end, is loosely reflected here, which also explains why respondents associated it with assertiveness, firmness and finality. While ellipsis might signal an invitation to continue talking, a full stop is more likely to mean the conversation is over.

Thirdly, “Lol” and “haha” were frequently associated with positivity. However, like with the other markers, there is a risk of ambiguity, as these markers might also be interpreted as sarcastic. Despite this possible interpretation, “haha” seemed to make a message sound more sincere, enforcing positive literal meaning of the sentence. However, respondents seemed not necessarily aware that “lol” and “haha” were responsible for this effect, as only half the respondents listed “lol” as a reason for interpretation, and it was noted by some that “lol” and “haha” can be used merely as decoration, devoid of meaning. Relevance Theory might explain why “lol” was not listed often as a reason for interpretation, as according to this theory, individuals only scan for “meaningful” elements of utterances to derive meaning from (Wilson & Sperber, 2012). If “lol” is considered to be likely devoid of meaning, a receiver of a message containing this marker may just ignore it.

5.1.2. Proficiency and Interpretation Confidence

The second subquestion considered interpretation confidence, specifically in relation to L2 proficiency. Overall, interpretation confidence was high across variants, and L2 proficiency only had a significant effect in select cases, namely variants with full stops, which suggests that this marker relies more heavily on L2 proficiency for correct interpretation. The illocutionary meaning of full stops might be more nuanced, needing higher levels of pragmalinguistic competence, which is more dependent on L2 proficiency than sociopragmatic competence (Xiao, 2015).

Since no significant correlations were found for ellipsis, “lol”, and “haha”, the findings suggest these markers are easier to interpret, even for individuals with lower English proficiency levels. Taken together, L2 proficiency may play a role in interpreting specific pragmatic markers, like the full stop, that demand pragmalinguistic competence, which in turn depends on proficiency. For the interpretation of other markers, however, users likely depend more heavily on context and social conventions than on L2 proficiency.

5.1.3. Proficiency and Ambiguity Recognition

The third subquestion focused on the recognition of ambiguity and whether this depends on L2 proficiency. Full stops were most often associated with ambiguity, which aligns with the variety in possible interpretations as mentioned in Section 5.1.1. This is also in line with the discussion in the literature review, where it was pointed out that the full stop has gained various new register-specific functions in IDC, heavily dependent on context. Use of ellipsis, “lol” and “haha” was shown to decrease ambiguity in the messages compared to the unmarked variants, underpinning the notion that these linguistic elements are indeed used as effective illocutionary markers that help modulate tone and to an extent remove uncertainty, even though a degree of ambiguity still remains.

The results show that respondents frequently recognized ambiguity and that there was no significant relationship with L2 proficiency. Awareness that illocutionary markers could be interpreted in multiple ways was therefore not dependent on English proficiency in the context of this research, but like interpretation confidence may rely more heavily on sociopragmatic awareness.

5.1.4. Digital Communciation Habits and Interpretation

The fourth and last subquestion looked at the influence of digital communication habits on interpretation competence and ambiguity recognition. From the results, it seems that L2 proficiency does not predict interpretation confidence or ambiguity recognition, with two exceptions. First, there was a significant correlation between the percentage of time respondents watched video content in English and confidence interpreting a full stop in Conversation 1, suggesting engagement with English digital content may lead to more confidence interpreting this marker, though no other supporting evidence was found for this claim in the rest of the data.

Second, for ellipsis, there was a negative correlation, significant in Conversation 1 and almost significant in Conversation 2, between interpretation confidence and frequency of chatting in English, independent from language proficiency. A possible explanation is that greater exposure ellipsis in IDC makes users more aware of potential ambiguity, and therefore less certain when they had to assign an interpretation to the message.

In sum, while most digital communication habits did not predict confidence levels, the findings suggest that more engagement with English in digital environments may increase ambiguity awareness in specific cases, especially for markers that can have a variety of meanings, like ellipsis.

5.2. Theoretical Implications

The findings of this study relate to the discussion of existing theories discussed in the literature review, namely Speech Act Theory, Relevance Theory, and the idea that IDC should be considered as a unique language register. According to Speech Act Theory, utterances do not only carry semantic content, but are also used for performing actions (Austin, 1962; Searle, 1969). This idea is supported in the study, where the illocutionary markers could carry a meaning beyond or separate from the literal meaning of the words. For example, as seen in Conversation 3, a full stop was often considered a sign that someone did not want to talk further.

The conclusions of this study are also in line with the notion or Relevance Theory, central to which is the idea that minimal linguistic cues are used for an interpretation of expected meaning

based on the context (Wilson & Sperber, 2012). In the otherwise identical message, the inclusion of the cues that are semantically empty resulted in significantly different interpretations, supporting the idea that they confirm expected meanings that lie in the message's context, and is not encoded in the message itself.

The results also support the view that IDC is its own unique register with its own unique linguistic norms, since illocutionary markers carried meaning that they do not carry in other registers. For example, the notion that a full stop can carry finality and can be interpreted as a sign that someone does not want to engage in the conversation further is not found in other written registers. Some individual responses also highlighted the nature of this register, as respondents pointed out ambiguity is more likely in IDC than in face-to-face spoken conversation.

While previous research on IDC has often focused on language production and expression, this study looked at the fewer-studied side of reception and interpretation, which was identified by Strauss (2024) as a clear gap in existing literature. By considering how L2 speakers interpret illocutionary markers, the findings of this study contribute to an understanding of the decoding of illocutionary force.

5.3. Implications for L2 Learners

There are several implications of the findings of this study to the development of pragmatic competence of L2 learners in the register of IDC. Most notably, proficiency alone does not fully explain to what extent L2 speakers can interpret illocutionary force in WhatsApp messages. Competence in IDC may rely more on sociopragmatic competence than on formal language proficiency, except for those cases where subtle variations in meaning are possible, as illustrated by the correlation between proficiency and interpretation confidence for full stops.

These findings highlight the importance of engaging with authentic material when it comes to IDC. For second language learning in general, language didacticians argue that effective language learning should be centred around authentic tasks in the target language, with other skills and knowledge, such as grammar or vocabulary, supporting these tasks (De Jong & Van Beuningen, 2020,

p.56). As IDC becomes an increasingly relevant register in the daily lives of many, language learners could benefit from engaging with authentic tasks involving IDC, for example to help them recognize ambiguity or raise language awareness in interpreting tone and intent.

5.4. Limitations and Directions for Future Research

While this study offers an insight into the interpretation of illocutionary markers in WhatsApp messages by L2 speakers, a few limitations should be acknowledged. As the survey was carried out among Dutch secondary school students, this meant all participants had a relatively similar age, cultural background, and most shared the same L1, Dutch, meaning that the findings are not necessarily generalizable for all L2 speakers. There might be variation in interpretation, interpretation confidence, and ambiguity recognition among different age groups, linguistic backgrounds, or cultural context, which could be valuable directions for future research.

This study used self-reported language proficiency data, gathered using a modified version of the BLP. Proficiency or general pragmatic competence in English was not measured directly. In addition, pragmatic competence and proficiency in participants' L1 were not considered, which might also influence pragmatic competence in their L2. Future studies could investigate the interplay between respondents' L1 and L2 on pragmatic competence in IDC.

Lastly, a possible future approach to studying interpretation accuracy in IDC could be a two-sided research design that incorporates both sender intent and receiver interpretation. As the present study used fictional WhatsApp messages, accuracy of interpretations could not be verified with the intent of an authentic message author. Results have shown valuable insights into the possible interpretation of illocutionary markers, but conclusions regarding accuracy of interpretations cannot be drawn.

6. Conclusion

This thesis studied to what extent L2 speakers recognize and interpret illocutionary markers in Informal Digital Communication (IDC), a register that has become increasingly important in modern everyday social interactions. By quantitatively and qualitatively examining Dutch secondary school students' interpretations of fictional WhatsApp messages containing three types of illocutionary markers, namely ellipsis, the full stop, and the markers "lol" and "haha", their responses provide insight into how complex pragmatic information, such as notions of tone and intent, are decoded from these subtle cues. In addition, this study investigated the relation that L2 proficiency and digital communication habits have on interpretation confidence and ambiguity recognition in short messages.

Underlying this research is the idea that these illocutionary markers fulfil crucial register-specific functions, since IDC lacks communicative tools such as facial expressions, prosody, and body language. As the results have shown, these markers are indeed a fundamental part of L2 speakers' interpretation of messages. This confirms that L2 speakers actively rely on illocutionary markers to interpret tone and intent. Findings are also in line with Speech Act Theory and Relevance Theory, as illocutionary markers help individuals decide what is meant depending on social context, effectively enforcing the action that is performed through speech.

While L2 speakers in this study recognized all three types of illocutionary markers to carry meaning, their interpretations showed variety in possible meanings. Ellipsis was mostly interpreted as carrying a negative tone and expressing uncertainty. While dependent on the context, it most frequently signalled hesitation, doubt, or the notion that more information would follow. Interpretations of full stops, on the other hand, were more diverse. Some participants considered them signs of formality or seriousness, while others found them unfriendly or outright rude. Analyses of these two markers show that punctuation, which is semantically neutral in other registers, carries significant pragmatic meaning in IDC, something that L2 speakers recognize rather easily.

The markers “lol” and “haha”, originally signalling laughter, performed a similar function to punctuation in the text messages interpreted by participants. While some respondents remarked that they are merely included for decorative purposes and do not have actual meaning, quantitative and qualitative analysis of their responses showed that these contribute significantly to meaning, signalling a positive attitude, though also sometimes interpreted as sarcastic or insincere.

Strikingly, participants’ confidence in interpreting these illocutionary markers seemed to not rely primarily on L2 proficiency, since participants of all proficiency levels expressed certainty in their interpretations. Digital communication habits, however, were shown to have a significant effect on the interpretation of some markers, since those respondents that chatted online more frequently in English were less certain in their interpretation of ellipsis. While this sounds counterintuitive, it indicates that L2 speakers might recognize possible ambiguity more easily when they have more experience engaging in IDC.

In conclusion, this thesis underpins the important pragmatic role that illocutionary markers fulfil in IDC. In a world where more and more of our daily communication takes place online, and where more and more worldwide communication occurs in English, pragmatic awareness in digital environments plays a significant role in L2 speakers’ overall communicative competence. This study demonstrates that, while their interpretations varied, L2 speakers are highly aware that illocutionary markers carry meaning and use these markers in various ways to make sense of others’ intentions.

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Appendix A: Survey

This appendix shows questions of the survey presented to the participants. For multiple-choice questions, answer options are shown. All other questions were either open-ended, or a whole number or percentage had to be filled in. All questions were mandatory, except for the open-ended questions in part 6. WhatsApp screenshots used in parts 3-5 of the survey are provided in Appendix B.

Introduction

Welcome to this survey!

In this survey, we will look at how different people understand WhatsApp messages. First we will ask you some things about how often you use the English language. Then you will answer some questions about three different WhatsApp conversations.

All questions are completely **anonymous**. We cannot see who gave which answer. It is important that you give your own opinion and there are no right or wrong answers!

This survey will take approximately **10 minutes**. Click "Next" to go to the first question.

Part 1/6

1.1) What is your age?

1.2) What gender do you identify with?

[ ] Male

[ ] Female

[ ] Non-binary or third gender

[ ] Prefer not to say

1.3) What is your first language?

[ ] English

[ ] Dutch

[ ] German

[ ] French

[ ] Spanish

[ ] Other, namely: _____

Page break

1.4) Do you speak English or are you learning it right now?

[ ] Yes, English is my first language

[ ] Yes, but English is not my first language

[ ] No, I don't know any English

1.5) Have you ever lived in an English-speaking country?

[ ] Yes, I have

[ ] No, I have not

1.6) Do you live with family members you normally speak English with?

[ ] No

[ ] Yes, I speak English with: _____ (open ended)

Page break

1.7) Which of the following apps do you use for chatting with other people online?

[ ] Whatsapp

[ ] Snapchat

[ ] Messenger

[ ] Instagram

[ ] Telegram

[ ] Signal

[ ] Other: _____ (open ended)

[ ] I don't use any of these apps

1.8) On a normal day, for how many hours do you use these apps to chat with others?

Part 2/6

2.1) At what age did you start learning English?

2.2) How many years of classes have you had in English?

2.3) How many years have you lived in an English-speaking country

This question was only presented when 1.5 was answered positively.

2.4) How many years have you lived with family members you only speak English with?

This question was only presented when 1.6 was answered positively.

Page break

2.6) In an average week, what percentage of the time do you speak English with friends?

2.7) In an average week, what percentage of the time do you speak English with family members?

2.8) In an average week, what percentage of the time do you speak English at school/work?

2.9) What percentage of the time do you do the following in English: reading things online?

2.10) What percentage of the time do you do the following in English: watching videos/TikTok/Reels?

2.11) What percentage of the time do you do the following in English: chatting via

WhatsApp/Snapchat/Messenger/DMs?

Page Break

2.12) How well would you rate your own English in the following categories? How well can you…

	Not well at all (1)	(2)	(3)	(4)	(5)	Very well (6)
Speak English	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Understand English	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Read English	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Write English	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

Part 3/6

Pretend you have the following WhatsApp conversation with your friend Alex. Read the conversation and answer the questions below. You can give your opinion, there are no right or wrong answers!

3.1) How does Alex's response feel to you?

[ ] Very negative

[ ] Somewhat negative

[ ] Neutral

[ ] Somewhat positive

[ ] Very positive

3.2) How friendly does Alex sound?

[ ] Very unfriendly

[ ] Somewhat unfriendly

[ ] Neutral

[ ] Somewhat friendly

[ ] Very friendly

3.3) How sure is Alex that he wants to meet?

[ ] Very unsure

[ ] Somewhat unsure

[ ] Neutral

[ ] Somewhat sure

[ ] Very sure

3.4) How confident are you in your answers to these questions?

[ ] Very unconfident

[ ] Somewhat unconfident

[ ] Neutral

[ ] Somewhat confident

[ ] Very confident

Page break

3.5) What do you think Alex means/thinks? (multiple answers possible)

[ ] Alex wants to meet

[ ] Alex tries to be polite

[ ] Alex is enthousiastic to meet

[ ] Alex is not sure if he wants to meet

[ ] Alex doesn't really want to meet

[ ] Other: _____

3.6) Why do you think so?

3.7) Could someone else send the same message but mean something different?

[ ] No, the meaning is very clear.

[ ] Yes, because _____

Part 4/6

Pretend you have the following WhatsApp conversation with your friend Alex. Read the conversation and answer the questions below. You can give your opinion, there are no right or wrong answers!

4.1) How polite is Alex?

[ ] Very impolite

[ ] Somewhat impolite

[ ] Neutral

[ ] Somewhat polite

[ ] Very polite

4.2) How does Alex feel about helping you with your homework?

[ ] Very negative

[ ] Somewhat negative

[ ] Neutral

[ ] Somewhat positive

[ ] Very positive

4.3) How confident are you in your answers to these questions?

[ ] Very unconfident

[ ] Somewhat unconfident

[ ] Neutral

[ ] Somewhat confident

[ ] Very confident

Page break

4.4) What do you think Alex means/thinks? (multiple answers possible)

[ ] Alex really wants to help

[ ] Alex is not sure he wants to help

[ ] Alex is just being polite

[ ] Alex feels annoyed but won't say no

[ ] Alex is being sarcastic

[ ] Other: _____

4.5) Why do you think so?

4.6) Could someone else send the same message but mean something different?

[ ] No, the meaning is very clear.

[ ] Yes, because _____

Part 5/6

Pretend you have the following WhatsApp conversation with your friend Alex. Read the conversation and answer the questions below. You can give your opinion, there are no right or wrong answers!

5.1) How serious does Alex sound?

[ ] Very unserious

[ ] Somewhat unserious

[ ] Neutral

[ ] Somewhat serious

[ ] Very serious

5.2) How sarcastic does Alex sound?

[ ] Definitely not sarcastic

[ ] Probably not sarcastic

[ ] Neutral

[ ] Probably sarcastic

[ ] Definitely sarcastic

5.3) How confident are you in your answers to these questions?

[ ] Very unconfident

[ ] Somewhat unconfident

[ ] Neutral

[ ] Somewhat confident

[ ] Very confident

Page break

5.4) What do you think Alex means/thinks? (multiple answers possible)

[ ] Alex liked the movie

[ ] Alex is being sarcastic

[ ] Alex didn't care much about the movie

[ ] Alex wants to talk about the movie

[ ] Alex doesn't want to talk about the movie

[ ] Other: _____

5.5) Why do you think so?

5.6) Could someone else send the same message but mean something different?

[ ] No, the meaning is very clear.

[ ] Yes, because _____

Part 6/6

6.1) Some people use a full stop (.) at the end of messages. What do you think this can mean?

6.2) Some people use ellipsis (…) at the end of messages. What do you think this can mean?

6.3) Some people type "lol" or "haha" at the end of messages. What do you think this can mean?

6.4) You've arrived at the end of this survey. You've answered questions about the interpretation of WhatsApp messages. Is there anything else you want to share about this topic? This could include experiences from your own life, things that confused you in this survey, or other thoughts.

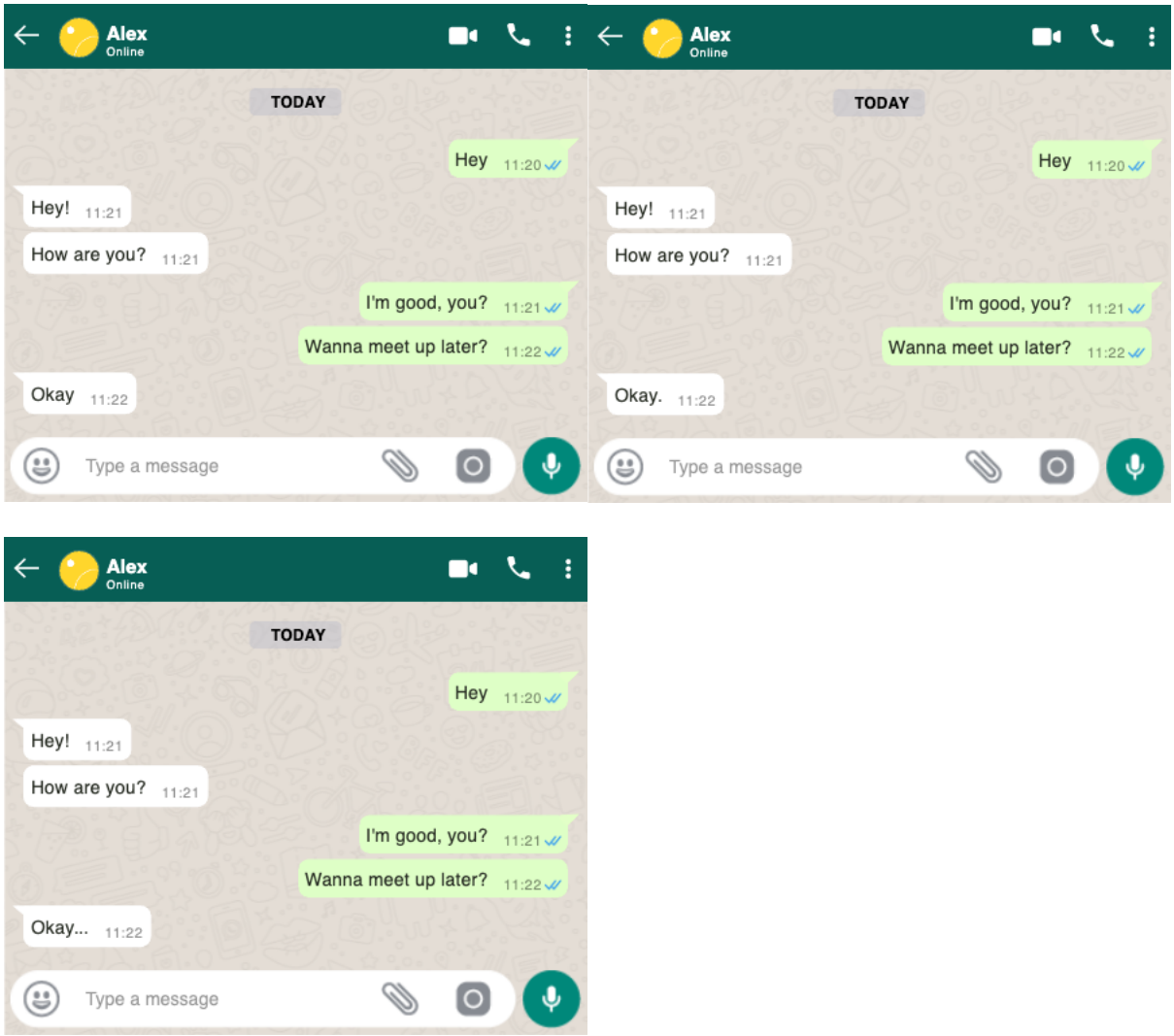
End of survey

Appendix B: Fictional WhatsApp Conversations

This appendix contains the fictional WhatsApp screenshots as presented to respondents in part 3, 4 and 5 of the survey.

Figure B1

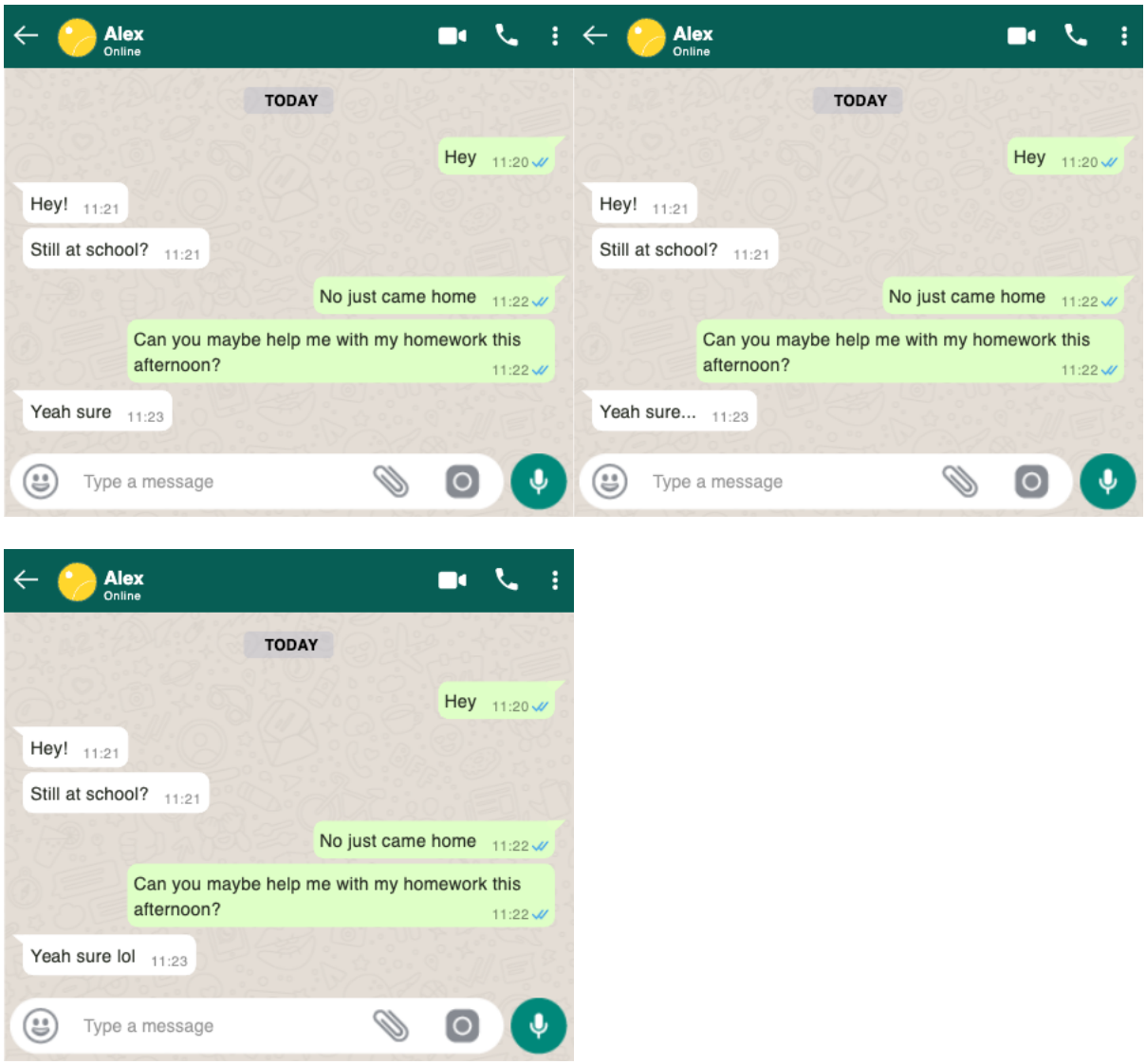
Screenshots Conversation 1



Note. Participants saw one of these three conversation variants, containing either no illocutionary marker, a full stop, or ellipsis in the last message of the conversation.

Figure B2

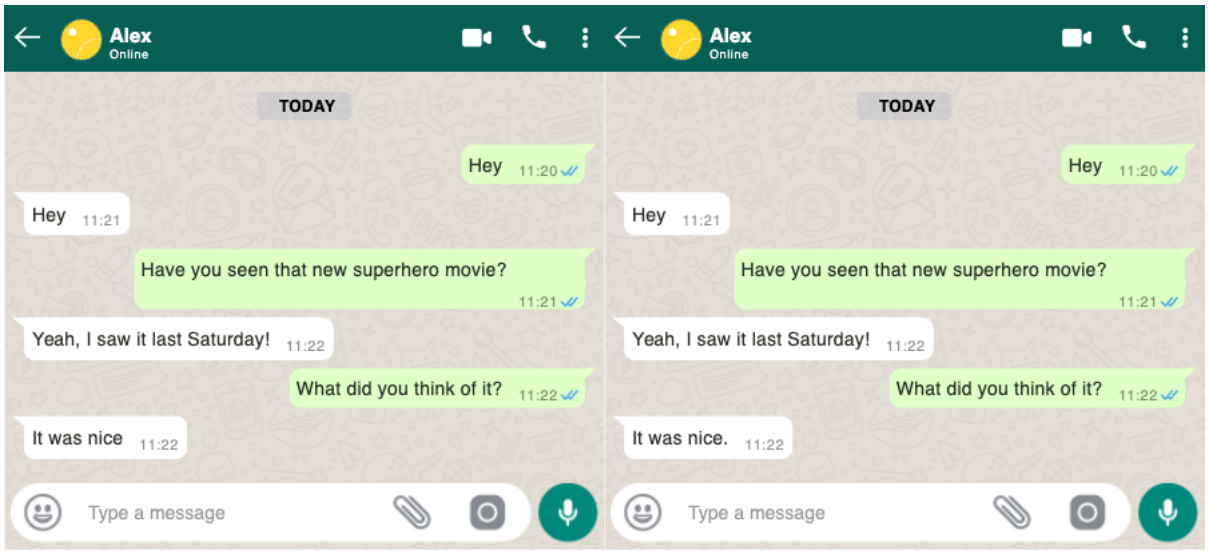
Screenshots Conversation 2

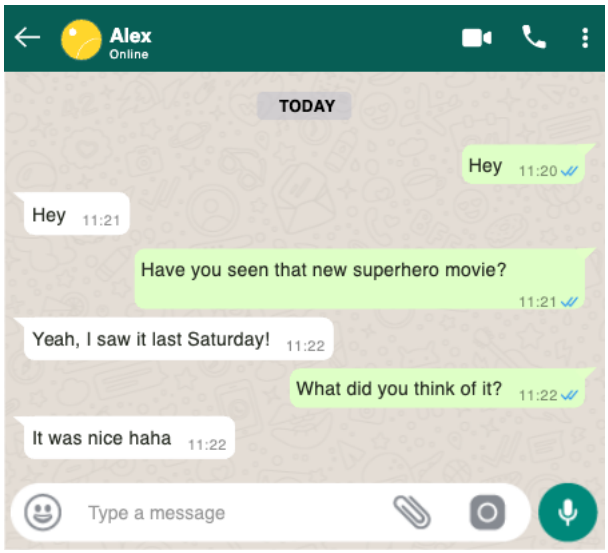


Note. Participants saw one of these three conversation variants, containing either no illocutionary marker, ellipsis, or the discourse marker “lol” in the last message of the conversation.

Figure B3

Screenshots Conversation 3





Note. Participants saw one of these three conversation variants, containing either no illocutionary marker, a full stop, or the discourse marker “haha” in the last message of the conversation.