

# Bachelor's Thesis

English in Zoom Conversations: The Effects of Interlocutor Visibility  
and Linguistic Background on Likeability, Prosocial Behaviour, Task  
Success and Communicative Success in ELF Speakers

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## Abstract

With increased video conversations due to the ongoing COVID-19 pandemic and the rise of English as a lingua franca, the way this affects communication has to be investigated. Previous studies showed that video conversations differ from face-to-face communication regarding less turn-taking and fewer interruptions. Moreover, visibility in online conversation allows interlocutors to see non-verbal communication, and the conversations were shown to be more successful. Sharing a linguistic background has resulted in higher attitudinal evaluations and communicative efficiency. The current study investigated to what extent interlocutor visibility and linguistic background affect communicative success, perceived interlocutor likeability, perceived interlocutor prosocial behaviour, and perceived task success. In an experiment, Dutch and German participants ( $N = 58$ ) conducted a spot-the-difference task pairwise. Based on a shared or mixed linguistic background and either seeing their interlocutor or not, participants evaluated each other on the above factors. Findings suggest that visibility impacts communicative success, showing that participants rated their perceived communicative success higher when they saw each other than when they did not. The study extends existing knowledge in literature by combining visibility and linguistic background in an experiment, and the results can set a starting ground for future investigation. The findings could help managers and communication professionals in multilingual teams further strengthen their virtual communication practices.

*Keywords:* video communication, interlocutor visibility, linguistic background, communicative success, likeability, prosocial behaviour, interactive alignment

## **Introduction**

English as a lingua franca (ELF) has become prevalent in many aspects of people's daily lives due to the evolvement of globalization. Multinational corporations have increasingly installed English as their corporate language (van Mulken & Hendriks, 2015), and there has been a rapid rise of English-medium instruction (EMI) in academia (Baker & Hüttner, 2018). Moreover, around 753 million people worldwide speak English as a second language (Lemon Grad, 2019). This globalized world requires people to communicate in a second language (L2) more commonly, and the effects of language barriers and differences in the success of L2 speakers' communication have to be taken into account. Moreover, the impact a shared or mixed linguistic background between speakers has on communication is a common notion investigated in non-native communication literature. Thus, how communicative efficiency and evaluations of interlocutors differ between linguistic backgrounds are crucial factors to be further investigated.

In addition, the ongoing COVID-19 pandemic has required many people to work or study at home via online platforms. Therefore, a rise in online video communication, using platforms like Zoom or Skype, has occurred, which could have different communicative outcomes. For instance, the platforms enable users to turn off their cameras and prevent visibility, which could affect communication in several ways. This study focuses on the rise of video communication among non-native English speakers. More specifically, the notion of visibility in a video communication context and non-native speakers could impact communicative success, interlocutor's likeability, and prosocial behaviour.

The present study aims to summarize these factors and explore their possible effects on communication in a virtual video environment.

### *Theoretical Background*

#### **ELF Communication and Shared Linguistic Background**

The rise of ELF has been prevalent in many studies in communication literature regarding native and non-native speakers, and much attention has been put on attitudinal evaluations and the effectiveness of communication. More specifically, it has been shown that conversations between speakers in either their first or second language differ tremendously. Several studies have focused on differences in accentedness regarding attitudinal evaluations and comprehensibility and intelligibility ratings of native and non-native speakers (Bayard et

al., 2001; Jensen & Thøgersen, 2017). For instance, stronger non-native accents have been shown to be less comprehensible and intelligible (Hendriks, van Meurs & de Groot, 2017) and are evaluated more negatively in terms of likeability or status (Nejjari et al., 2012). A verbal guise experiment by Hendriks, van Meurs and de Groot (2017) investigated 178 listeners' evaluations of recordings spoken by speakers with either a strong Dutch accent, a slight Dutch accent, and a native English accent and showed that strongly-accented speakers were also found to be less competent. Nejjari et al. (2012) studied the reactions of native English speakers to Dutch-English pronunciation, and their results indicated a native English accent to have more status and to be rated higher on intelligibility and comprehensibility. In Fuertes et al.'s meta-analysis (2012) comparing the effects of standard accents versus non-standard accents on speaker's evaluations, it was uncovered that standard accents were rated higher in terms of status, solidarity, and dynamism.

However, Fuertes et al. (2012) have also shown some instances in which non-standard accents were rated higher than standard accents and hypothesized that if non-native speakers share the same native language (L1) or are familiar with a non-standard accent, they perceive speakers as in-group versus out-group members and may upgrade them for that reason. These hypotheses were supported by Bent and Bradlow (2003), who gave rise to the 'matched interlanguage speech intelligibility benefit'. The authors investigated how the native language background influences speech intelligibility and found strong evidence that non-native speakers were evaluated just as high as native speakers in terms of intelligibility from participants who shared their language background. The studies mentioned above suggest that a shared language background has possible effects on attitudinal evaluations and intelligibility ratings of non-native speakers. More research regarding these notions would be beneficial to further strengthen the knowledge around this topic.

Shared language background has also been shown to affect communicative success. For example, Van Engen et al. (2010) investigated dialogues between native English speakers, non-native English speakers with a shared language background, and non-native English speakers with a mixed language background in terms of communicative efficiency. Their overall findings were that communicative efficiency was higher when the native speakers and non-native speakers shared a language background.

Another factor worth investigating in ELF communication is how interlocutor-likeability and prosocial behaviour is affected. Several studies have shown that likeability is a factor closely related to prosocial behaviour by showing that high likeability ratings correlate with high prosocial behaviour ratings (Lu, Li, Niu, Jin & French, 2017; Valdes, 2018). Thus,

if a person is well-liked, they appear to be a helpful and cooperative person. Prosocial behaviour, defined as helping others without being obligated by an outsider, has also been investigated in a context concerning linguistic background. Somogyi et al. (2020) studied how linguistic group membership influences prosocial behaviours in preschool children and showed that as children age, they become selective about their use of prosocial behaviour. In their study, children were given the opportunity to help or cooperate with an experimenter presented as either a foreigner who did not speak the local language or a native person. The results showed that young children helped the experimenter more when she was a native speaker. In that case, a shared language is a cue for children to behave more prosocially. The selection processes and categorization mechanisms that children use to decide whether they help a person or not, however, evolve as people get older. There has been little to no research investigating the effects of a shared language background on prosocial behaviour regarding adults. Thus, more research is needed to strengthen these findings and find more conclusive evidence.

To summarize, these results shown by studies mentioned above could suggest that communicative success, likeability, and prosocial behaviour would be higher when both speakers speak the same native language. Combining these notions to investigate the impact a shared linguistic background has would be worth researching further.

### Video-mediated Communication

When the world was hit by the COVID-19 pandemic, a sudden rise in virtual online communication has occurred. Since people were prevented from seeing each other in person, video calls and, thus, virtual communication has become more prevalent. A survey conducted in March 2020 showed that 88% of organisations around the globe had encouraged or required their employees to work from home (“Gartner HR Survey Reveals 88% of Organizations Have Encouraged or Required Employees to Work From Home Due to Coronavirus,” 2020). Moreover, Cserhádi (2020) emphasized that these spiking numbers in remote work will have longer-lasting effects in the business and academic environment. Thus, the need to further investigate relevant factors in remote work, like communication regarding virtual video meetings, is greater than ever before. Therefore, an issue worth investigating further is how communication differs in a virtual online context.

Several studies have explored the differences between face-to-face and virtual video communication (Boyle et al., 1994; Cohen, 1982; O’Malley et al., 1994). Virtual conversation occurs in an environment where speakers can turn their camera, as well as their microphone

on or off, which differs tremendously from regular face-to-face conversations. A study by van der Kleij, Schraagen, Werkhoven, and de Dreu (2009) experimented by examining how communication patterns and task performance differ between face-to-face and video-conferencing groups. Their common findings were that video conversations resulted in less turn-taking, longer lengths of turn, and fewer interruptions, as well as video participants appearing more polite because they waited for their interlocutors' turns to be over. Earlier studies have supported these findings. For instance, Doherty-Sneddon et al. (1997) investigated differences between telephone conversations and face-to-face conversations and showed that telephone conversations tend to be more formal and have longer utterances. Video conversations often lead to attenuation of context and non-verbal cues, such as posture and tone of voice, which are present in face-to-face conversations, and can lead to disruption of conversations and difficulties understanding discussions (Straus & McGrath, 1994). When speakers can actively see visual signals like nodding or facial expressions, they can interpret their interlocutor's intention and regulate turn-taking (Bruce, 1996). Visual clues are used to check for mutual understanding, and real-time conversations allow for direct feedback on how people's messages are understood. Although this is present in virtual video conversations, some studies investigated delays in video and audio transmission, which leads to a more asynchronous conversation (O'Conaill et al., 1993).

To summarize, the previous studies could suggest that communicative success is lower when video-mediated communication is used than regular face-to-face conversations. However, in their experiment, van der Kleij, Schraagen, Werkhoven, and de Dreu (2009) did not find significant differences in the performance scores between face-to-face and video-conferencing participants. They measured communication patterns over time, however, and conducted the experiment several times in a row, they hypothesized that the video-conferencing groups adapted their communication patterns to their environment to maintain high performance. Group members effectively incorporated the limitations of video-conferencing technologies and sent more verbal information without being asked for it. This finding was also shown in Adelman, Miller, Henderson, and Schoelles (2003), who explained that participants could accelerate their cognitive processing to achieve high communicative results. Nevertheless, to what extent video-mediated communication affects communicative outcomes has to be further examined.

### Interlocutor Visibility

Another factor worth focusing on is that video communication enables users to turn their cameras on or off. It can be inferred that conversations in which speakers cannot see each other result in fewer visual clues and, thus, less communicative success because the options for checking for mutual understanding are limited and have to be executed verbally. A prominent study in line with these findings stems from Boyle et al. (1994). In an experiment, participants could either see each other or not and were required to solve a mapping task with the use of verbal communication. The results indicated greater communicative efficiency, improved information transfer, and enhanced turn-taking management in the visibility condition. Non-visible conversations, on the other hand, tended to be more formal, and it took more words, as well as a longer time to reach a successful outcome. According to the authors, the ability to view one's interlocutor positively affects the amount of information transfer. Thus, it takes less time to convey information than when visibility is not present. Boyle et al. (1994) inferred that interruptions in non-visible conversations were due to confusion about turn-taking management. Similar findings showed a study by Anderson et al. (1997), in which collaborative problem-solving tasks with various forms of video-mediated communication (VMC) were conducted. Findings showed that speakers who could not see each other completed non-verbal cues verbally, leading to more extended conversations. Other researchers have found contradicting results, showing that turn-taking behaviour and communicative success did not differ between audio-visual and audio-only communication (Rutter et al., 1981; Sellen, 1995). These results, however, could have varied due to a wide range of tasks and technology used, leading to results being hard to interpret. Moreover, most studies investigating this notion are relatively old, and the way video-mediated communication is used nowadays has evolved tremendously. Thus, new studies have to further analyse to what extent a lack of visibility in video communication affects communicative efficiency.

However, more recent literature has focused on the importance of eye contact and gaze in online video conversations. Gaze is defined as "looking at any object, person, or direction", and eye contact can be defined as "gaze directed at another's eyes" (Bohannon et al., 2013). A lack of eye contact between interlocutors in non-visual video communication is a factor potentially inhibiting successful conversations and ratings of likeability. Studies have shown how important it is for speakers to be able to track each other's eye movements to infer the meaning of speech (Bohannon et al., 2013; Kuhn, Tatler, & Cole, 2009), to trust each other (Kraut & Poe, 1980), and to influence perceptions of likeability and attractiveness (Mason,

Tatkow, & Macrae, 2005; Rubin, 1970). In face-to-face conversation, eye contact occurs about 61% of the time, half of which is mutual, and plays an important role when conversing (Argyle & Cook, 1976). This role is also prominent and vital in video conferencing. In a study by McNelley (2001), people overwhelmingly preferred a system that enables eye contact when given the option between a video-conferencing tool allowing eye contact and one that does not. A study by Mason, Tatkow, and Macrae (2005) asked participants to judge pictures of targets either gaze shifting towards the participants or away from them regarding likeability and attractiveness. The results showed that participants rated faces that made a gaze shift towards them more likeable and more attractive than when the eyes looked away.

Doherty-Sneddon et al. (1997) investigated communicative efficiency with regards to eye contact and found unexpected results. In their comparison between people completing a paper and pencil map task, participants were grouped either by only using audio or with video-mediated communication that either enabled eye contact or prevented eye contact. The results suggested that video-mediated conversation with eye contact had more words and turns than when eye contact was stopped and that communicative efficiency was higher without eye contact. These surprising results were explained by people spending more time and attention towards looking at each other's faces, and that increased eye contact may lead to verbal hesitations and a more extensive use of filler words.

To summarize, the studies mentioned above give an overview about to what extent visibility, including gaze and eye contact, affects communicative success and attitudinal evaluations. There is still room to analyse these factors more to find conclusive evidence. Most studies, however, link to a less productive conversation when interlocutors are not visible to each other.

### Interactive Alignment regarding Visibility and Shared Linguistic Background

A common theme in communication literature is the notion of interactive alignment. This phenomenon is a process by which speakers adapt their speech towards their communication partner (Giles, Coupland & Coupland, 1991). More specifically, interactive alignment has been shown to affect attitudinal evaluations, like likeability and prosocial behaviour, between interlocutors and communicative success and has been investigated by researchers who included visibility and shared linguistic background (e.g. Abrahams et al., 2019; Dias & Rosenblum, 2011).

For instance, Dias and Rosenblum (2011) evaluated whether visibility enhances interactive alignment over only hearing an interlocutor. In an interactive search task, speakers

were required to repeatedly utter a series of keywords, and results showed alignment to be higher when participants were visible to each other. These findings are consistent with Miller et al. (2010), who showed that visual speech overall induces alignment.

Schweitzer et al. (2017) ) investigated visibility between interlocutors and ratings of likeability and showed that the tendency of people to accommodate and adjust to others verbally impacted likeability evaluations in an online environment. The results revealed that convergence, which is the notion of adapting the speech towards the interlocutor's speech, was more substantial when interlocutors saw each other and rated each other high in likeability. Miller (2017) found similar results, showing that speakers who were able to see themselves and each other during video conversations increased the use of interactive and social alignment. In addition, the use of socially focused words and inclusive pronouns was more extensive, suggesting likeability ratings to be higher in the visibility condition.

The effects and results of interactive alignment have also been a prominent topic in literature about non-native communication (Garrod & Pickering, 2009; Trofimovich & Kennedy, 2014). There is evidence for more interactive alignment for participants with the same linguistic background. For instance, a study by Kim et al. (2010) explored phonetic convergence, which can be described as the adjustment of speech at the phonetic level, between pairs of speakers with varying language distances. Their results showed that speakers with the same dialect showed greater convergence than the different-dialect speakers and the speakers with a different linguistic background. Thus, it can be inferred that a relationship between phonetic convergence and the language distance of interlocutors exists.

Overall, higher use of interactive alignment can be linked to more communicative efficiency (Pickering & Garrod, 2004; Reitter & Moore, 2014). The Interactive Alignment Model by Pickering and Garrod (2004) suggests that interlocutors can build a shared understanding of a situation and communicate more successfully by linguistically aligning towards another speaker. An explanation for this is that interlocutors do not need to be aware of one another's linguistic individual characteristics. Therefore, Pickering and Garrod (2004) infer greater communicative success when interlocutors mutually align. Higher use of interactive aligning can, in turn, as previously mentioned, be linked to a shared linguistic background. Therefore, it is to be expected that a shared language background can lead to greater communicative efficiency because speakers make use of more interactive alignment as linguistic characteristics of the same L1 speakers tend to be similar. Thus, to what extent these factors interact with each other should be investigated further.

Prosocial behaviour has also been investigated regarding interactive alignment. For example, van Baaren (2003) investigated verbal mimicry of interactions between waiters and customers and found that waiters repeating their customers' orders received higher tips. Thus, the customers that were being mimicked showed higher prosocial behaviour. However, there has yet to be found evidence of whether the same or different language background of L2 speakers also impacts prosocial behaviour with regards to higher use of interactive alignment.

To summarize, interactive alignment has been analysed extensively in communication literature and affects several factors investigated in the present study. Thus, it is a phenomenon worth including to possibly explain some of the results of the present study.

Not only do the studies mentioned above suggest that virtual video communication is crucially different from real-life conversations, but also that visual feedback could impact the success of the conversation as well as the likeability and prosocial behaviour between interlocutors. Moreover, the impact that non-native English speakers with the same or a different language background have on these factors is yet to be examined. Thus, this study aims to investigate these effects further by taking into account L2 speakers with the same or different language background. The present study's objective is to summarize all factors that were discussed above, as no previous research has combined these notions. Therefore, the theoretical discussion leads to the following research question:

**RQ:** To what extent do visibility and the linguistic background of ELF speakers influence communicative success, likeability, and prosocial behaviour in Zoom conversations?

Upon reviewing the theoretical background about the effects of visibility on communication, the following hypotheses can be stated:

*H1: Interlocutor visibility positively affects communicative success.*

*H2: Interlocutor visibility positively affects people's evaluations in regards to likeability and prosocial behaviour.*

Previous literature has suggested that a shared linguistic background can lead to a more successful communicative outcome. Thus, the following hypothesis can be stated:

*H3: A shared linguistic background positively affects communicative success.*

However, there is also a slight possibility that a shared language background causes a conversation to be unnecessarily convoluted when it is held in a second language. Speakers might be uncomfortable speaking a second language with someone who shares their native language, which could hinder a successful communicative outcome.

*H4: Communicative success in a second language conversation will be negatively influenced when speakers share a linguistic background.*

The present study aims to investigate to what extent these predictions are fulfilled.

## **Method**

### *Design*

The study used an experimental 2x2 between-subject design in which the independent variables are visibility (two conditions: visible or not visible) and native language (two conditions: mixed language background or shared language background). The dependent variables are likeability, prosocial behaviour, perceived task success, and communicative success.

The participants took part in an experiment in pairs and attempted to solve a spot-the-difference task in English while they were either visible or not visible to each other. Afterwards, they filled out a questionnaire about their interlocutor regarding likeability, prosocial behaviour, perceived task success, and communicative success.

### *Materials*

#### **Stimuli**

The researchers constructed 4 “spot-the-differences” images as stimulus material, one of which was used to explain the game to the participants, and the other one used as the actual task of the experiment. The images were retrieved from [www.elements.envato.com](http://www.elements.envato.com) and adapted by the researchers involved in the study. In appendix A, the two images used as example images can be found. These pictures show sea animals in the water, a boat and, an

island. Two farm images were used for the actual experiment which depict several animals, two farmers, trees, and a pathway. These pictures, including the differences between them are depicted in the second part of appendix A. The researchers manipulated two versions of the picture, whereas the objects differ regarding their number, location, or colour on the pictures. This manipulation aimed to elicit negotiation between two participants while they try to find the differences between the images.

### Instrumentation

Two questionnaires were prepared in Qualtrics, including one pre-screening questionnaire that asked for background information and available timeslots of participants. In another questionnaire, participants filled out questions perceived success of the task, prosocial behaviour of the partner, and likeability of the partner after the task is completed. Both questionnaires were translated into the participants' native language to avoid misunderstandings. Thus, participants were able to choose to fill out the questionnaire in Dutch or in German. The consent form and ethics statement, however, were included in English.

The pre-screening questionnaire was distributed to all participants to indicate their age, nationality, education level, and self-assess their language proficiency in English. They were also asked to specify their consent to process their name and e-mail address, recording their video and audio, and having their recordings transcribed and saved for scientific purposes. Participants indicated whether they spent some time abroad in an English-speaking country and how the language is used in their daily lives to self-assess their language proficiency. A simplified version of the Language History Questionnaire (LHQ) based on Li et al. (2014) was included to assess the interlocutor's English speaking and understanding proficiency. Moreover, all participants had to indicate whether they have a stable internet connection and a working camera and microphone. Then, a few available times and days were shown, which gave participants the option to pick their preferred time slots they were available to conduct the experiment

Participants were asked to fill out a Qualtrics online questionnaire in their native language after the experiment was conducted. This questionnaire measured the independent variables: the likeability and prosocial behaviour of their interlocutor and communicative success of the pair's conversation. Likeability was measured on an adapted seven-point Likert likeability scale, based on Reysen (2005). It includes 11 statements anchored by 'very

strongly agree – very strongly disagree’ (e.g., ‘This person is friendly.’ Or ‘This person is approachable.’). The reliability of the scale was good ( $\alpha = .85$ ).

Using an adapted version of the sixteen items of the prosocialness for adults, based on Capara et al. (2005), the participants’ perceived prosocial behaviour was measured. The questions were adapted in order to ask them towards the speaker’s interlocutor instead of to themselves (e.g., ‘I think this person shares things with their friends.’ or ‘I think this person is willing to make their knowledge and abilities available to others.’). The reliability of the items was good ( $\alpha = .91$ ). Communicative success was first measured by how many differences the pairs found. Two researchers counted this and independently noted it down in each experiment to ensure that the correct number of differences were found and to ensure intercoder reliability. A found difference was noted when participants mutually agreed on a difference, although it might not have been actually present. Secondly, communicative success was measured by two separate scales in the questionnaire. One scale aimed to measure the task’s perceived success with five items anchored by ‘completely agree – completely disagree’ (e.g. ‘I am generally happy with our collaboration.’ Or ‘I think the results of our collaboration could be better.’). Thus, this scale indirectly measured communicative success. The reliability of the five items on the scale was acceptable ( $\alpha = .78$ ). A second scale directly measured the participant’s perceived communicative success with six items anchored by ‘completely agree – completely disagree’ (e.g. ‘The conversation with this person went smoothly’ or ‘I think this person understood what I was saying.’). The reliability of these items was acceptable ( $\alpha = .73$ ).

The questionnaires, including all scales and items, can be found in appendix B.

### *Subjects*

52 participants took part in the study, 28 of which were Dutch nationals (53.8%) and 24 were Germans (46.2%). As the experiment was conducted in pairs, the total number of mixed language background pairs was 12, and the number of groups with a shared language background was 14. Moreover, six pairs with a mixed language background were visible to their interlocutors, and six pairs were assigned to a non-visible condition. The shared language background pairs were also divided into a visibility and non-visibility group. Thus, seven pairs could see each other, and seven shared language background pairs could not. Table 1 and Table 2 indicate the distribution of background variables among the four groups.

To test whether the characteristics (i.e., gender, educational level, and time spent in an English-speaking country) were distributed equally across the four conditions (i.e., Shared language background & visible; shared language background & non-visible; mixed language background & visible; and mixed language background & non-visible) a chi-square test was conducted. Gender ( $\chi^2(3) = 2.98, p = .395$ ) and educational level ( $\chi^2(15) = 11.94, p = .683$ ) were both evenly distributed across participants groups. Moreover, the number of people spending a longer time in an English-speaking country ( $\chi^2(39) = 42.33, p = .329$ ) was evenly distributed across participant's groups. A one-way ANOVA revealed that age ( $F(3, 48) < 1, p = .892$ ) was evenly distributed across groups. The age when participants started speaking English ( $F(3, 48) = 1.52, p = .222$ ), the number of years they have used English ( $F(3, 48) = 1.04, p = .385$ ), the participant's language learning ability ( $F(3, 48) = .196, p = .899$ ), the level of English speaking ( $F(3, 48) = .794, p = .503$ ) and the level of English understanding ( $F(3, 48) = .289, p = .833$ ) were also all equally distributed among participants groups. Moreover, all participants indicated having a working camera and microphone on their computer and a stable internet connection, as the experiment took place via Zoom in an online environment.

**Table 1.** Distribution of scale characteristics (i.e., Age and English background) between experimental groups

	Shared language background with visibility ( <i>n</i> = 14)	Shared language background without visibility ( <i>n</i> = 14)	Mixed language background with visibility ( <i>n</i> = 12)	Mixed language background without visibility ( <i>n</i> = 12)
	<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )
Age	24.43 (3.52)	23.43 (3.35)	23.92 (3.48)	24.08 (3.37)
Age when participants started learning English	9.36 (4.25)	10.29 (2.34)	10.00 (2.34)	11.75 (1.96)
Number of years English used	14.50 (3.59)	12.64 (4.85)	13.92 (3.15)	12.25 (2.96)
Language learning ability	4.93 (1.21)	4.86 (0.95)	4.38 (0.50)	4.67 (0.78)
English understanding ability	6.07 (0.73)	5.93 (1.14)	6.83 (1.53)	5.75 (0.75)
English speaking ability	5.64 (1.22)	5.07 (1.00)	5.17 (1.19)	5.17 (0.84)

**Table 2.** Distribution of background characteristics (i.e., gender, educational level, spending time abroad) between experimental groups.

		Shared language background with visibility ( <i>n</i> = 14)	Shared language background without visibility ( <i>n</i> = 14)	Mixed language background with visibility ( <i>n</i> = 12)	Mixed language background without visibility ( <i>n</i> = 12)
		Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)
Gender	Male	5 (35.7%)	5 (35.7 %)	2 (16.7 %)	6 (50%)
	Female	9 (64.3%)	9 (64.3%)	10 (83.3%)	6 (50%)
	Diverse	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Educa- tional level	A-Level	4 (28.6%)	5 (35.7%)	3 (25%)	5 (42.7%)
	Bachelor	8 (57.1%)	5 (35.7%)	6 (50%)	4 (33.3%)
	Master	1 (7.1%)	3 (21.4%)	3 (25%)	2 (16.7%)
	Still in secondary education	1 (7.1%)	1 (7.1%)	6 (50%)	1 (8.3%)
	Participants who spent time abroad	11 (78.6%)	9 (64.3%)	6 (50%)	5 (41.7%)

### *Procedure*

Before the experiment in a Zoom call started, the participants were asked to fill out a pre-screening questionnaire on Qualtrics. The researchers paired up each participant couple and confirmation e-mails were sent out, including the time slot the experiment took place and their individual participant number. When participant pairs joined the Zoom call, they were welcomed by two researchers. The participants' microphones were turned off from the

beginning and the cameras of participant pairs in the non-visible condition were turned off as well from to prevent participants from seeing each other. The experimenter then informed participants that they would take part in a spot the difference game with the goal to identify ten differences between one picture only they see and one image only their experiment partner sees. The participants were informed to only communicate in English during the experiment and ask questions for the researchers in the Zoom chat if necessary. The researchers showed two example images in the main room, showing an underwater scene, in which the ten differences are already identified. This was to show participants clearly what they should be looking for. For instance, the differences between pictures were colour changes of objects, location changes of objects, or a different number of objects. Afterwards, both participants were sent to separate rooms, called breakout rooms, in which they had two minutes to study the picture they see, take notes and memorize their image as well as possible. Allowing participants to take notes ensured that the results did not only capture people's memories but that pairs could converse about their pictures. The couple was then brought back into the main rooms, and they were instructed to try to find all ten differences in five minutes. During this time, no picture was shown to the participants. Thus, the aim was to identify ten differences by looking at their notes about the previous pictures and from their memory. This memorized game was conducted so that participants in the visibility condition could look at each other while conversing. That is also the reason for not allowing them to take pictures of their respective images. The researchers turned off their cameras and microphones during the five minutes of conversation to ensure that the participants were not disturbed. After the five minutes were over, the participants were stopped and asked to fill out another Qualtrics questionnaire while still in the Zoom call. This questionnaire included ratings of interlocutor's likeability, their prosocial behaviour, and the perceived success of the task and communication between partners. Finally, the participants were thanked for participating in the experiment and informed that they would be debriefed via e-mail after all data were collected and the results were analysed.

### *Statistical Treatment*

The presented research investigated the effects of visibility and the native linguistic background (L1) on communicative success, prosocial behaviour, and likeability with the means of several two-way analyses of variance (ANOVA). Moreover, Pearson correlations were calculated between the dependent variables, including communicative success,

perceived task success, perceived likeability, and perceived prosocial behaviour.

## Results

**Table 3.** Means and standard deviations (in brackets) and *n* for ratings of likeability, prosocial behaviour, perceived successfulness of task, perceived communicative success, and the number of differences found in function of language condition and visibility condition.

	Shared language background with visibility <i>M (SD)</i>	Shared language background without visibility <i>M (SD)</i>	Mixed language background with visibility <i>M (SD)</i>	Mixed language background without visibility <i>M (SD)</i>
Likeability	3.86 (0.53)	3.83 (0.62)	3.75 (0.42)	3.73 (0.31)
Prosocial Behaviour	3.73 (0.56)	3.79 (0.55)	3.83 (0.37)	3.57 (0.39)
Perceived Task Success	3.81 (0.99)	3.80 (0.77)	3.72 (0.68)	3.60 (0.61)
Perceived Communicative Success	4.54 (0.53)	4.32 (0.42)	4.38 (0.50)	4.07 (0.32)
Differences found	6.57 (1.65)	7.57 (2.59)	6.83 (1.53)	7.00 (2.41)

### **Likeability**

A two-way analysis of variance with language condition and visibility condition as factors showed a non-significant main effect of language condition ( $F(1, 48) = .630, p = .430$ ) and visibility condition ( $F(1, 48) = .041, p = .841$ ) on likeability. The interaction effect between language condition and visibility condition was not statistically significant ( $F(1, 48) < 1$ ).

### **Prosocial Behaviour**

A two-way analysis of variance with language condition and visibility condition as factors showed a non-significant main effect of language condition ( $F(1, 48) = .203, p = .654$ ) and visibility condition ( $F(1, 48) = .546, p = .463$ ) on prosocial behaviour. The interaction effect between language condition and visibility condition was not statistically significant ( $F(1, 48) = 1.460$ ).

### **Perceived Task Success**

A two-way analysis of variance with language condition and visibility condition as factors showed a non-significant main effect of language condition on the perceived successfulness of the task ( $F(1, 48) = .462, p = .50$ ). The visibility condition was not found to have a significant main effect on the perceived successfulness of the task ( $F(1, 48) = .089, p = .765$ ). The interaction effect between language condition and visibility condition was not statistically significant ( $F(1, 48) < 1$ ).

### **Perceived Communicative Success**

A two-way analysis of variance with language condition and visibility condition as factors showed a non-significant main effect of language condition on perceived communicative success ( $F(1, 48) = 2.52, p = .119$ ). On the other hand, the visibility condition was found to have a significant main effect on perceived communicative success ( $F(1, 48) = 4.44, p = .04$ ). Participants who were able to see each other in the experiment ( $M = 4.46, SD = 0.51$ ) evaluated the success of the conversation higher than participants who were not able to see each other ( $M = 4.20, SD = 0.39$ ). The interaction effect between language condition and visibility condition was not statistically significant ( $F(1, 48) < 1$ ).

### **Number of Differences found**

A two-way analysis of variance with language condition and visibility condition as factors showed a non-significant main effect of language condition on the number of differences found ( $F(1, 48) = .070, p = .793$ ). The visibility condition was not found to have a significant main effect on the number of differences found ( $F(1, 48) = .993, p = .324$ ). The interaction effect between language condition and visibility condition was not statistically significant ( $F(1, 48) < 1$ ).

## Correlations

Pearson's correlations were conducted to investigate to what extent the dependent variables interact with each other or what their relation is. A significant correlation was found between likeability and prosocial behaviour ( $r(52) = .59, p < .001$ ). The likeability rating increased when participants evaluated each other higher on the prosocial behaviour scale. A significant positive correlation was found between prosocial behaviour and perceived task success ( $r(52) = .35, p = .011$ ). The task success rating was higher when participants evaluated each other higher on the prosocial behaviour scale. A significant positive correlation was found between prosocial behaviour and perceived communicative success ( $r(52) = .35, p = .012$ ). The communicative success rating increased when participants evaluated each other higher on the prosocial behaviour scale. A significant positive correlation was found between perceived communicative success and perceived successfulness of the task ( $r(52) = .53, p < .001$ ). Perceived task success increased when participants evaluated the communicative success higher. A significant positive correlation was found between differences found and perceived successfulness of the task ( $r(52) = .45, p = .001$ ). The perceived success of the task increased when more differences were found.

**Table 4.** Correlations ( $r$ ) between differences found, likeability, perceived prosocial behaviour, perceived task success, and perceived communicative success ( $N = 52$ )

Variables	1.	2.	3.	4.	5.
1. Differences found					
2. Likeability	-.04				
3. Perceived Prosocial Behaviour	.22	.59**			
4. Perceived Task Success	.45**	.25	.35*		
5. Perceived Communicative Success	.19	.24	.35*	.53**	

\*  $p < .050$  \*\*  $p < .010$

## **Conclusion and Discussion**

The present study set out to assess the effects of visibility and linguistic background on Dutch and German participants regarding likeability, prosocial behaviour, task success, and communicative success in online Zoom conversations in English as an L2. The first expectation that visibility positively influences communicative success (H1) and ratings of likeability and prosocial behaviour (H2) were partially confirmed. The results indicated that interlocutor visibility has an effect on communicative success. More specifically, participants rated the success of the conversation higher when they saw each other than when they did not. These findings are in line with previous literature. For instance, Boyle et al. (1994) showed greater communicative efficiency and information transfer when speakers could see each other. Another study also supported the present findings. Anderson et al. (1997) reported more extended conversations and, thus, less communicative efficiency when speakers were not visible to each other. The results of the present study underline both of these bodies of research. However, Doherty-Sneddon et al. (1997) found contradicting results when investigating communicative efficiency regarding eye contact. The participants using a platform that enabled eye contact took a longer time completing a conversation and used longer pauses and filler words. The present study did not investigate the amount of mutual eye contact participants had, but the findings partially disagree with Doherty-Sneddon et al.'s (1997) results. Thus, further research should analyse whether eye contact was a contributing factor leading to higher perceived communicative success.

Consistent with previous analyses, a possible explanation for these findings could be that interlocutors could regulate turn-taking and receive non-verbal feedback from each other (Bruce, 1996; van der Kleij, Schraagen, Werkhoven, and de Dreu, 2009). Thus, they were able to achieve a more advantageous and effective outcome in their limited time. However, it is essential to note that only significant results were found between perceived communicative success and visibility. More specifically, people only evaluated the success of the conversation higher themselves when they saw each other. Thus, no clear conclusions can be drawn that visibility affects direct communicative efficiency.

No significant results were found supporting or contradicting hypotheses 3 and 4. Previous research has indicated positive connections between a shared language background and higher communicative success, as well as higher ratings of likeability and prosocialness (Bent & Bradlow, 2003; Somogyi et al., 2020; Van Engen et al., 2010). These previous findings can neither be confirmed nor denied with the results of the present study.

A reason for these indefinite findings could be that the sample was relatively small. To find more conclusive results, a much larger sample is needed. Moreover, the linguistic backgrounds analysed were Dutch and German. Dutch, German and English are all languages belonging to the West Germanic branch of Germanic languages. As previous research into linguistic structures has shown, Dutch and German are perceived to be fundamentally close in aspects such as syntax (Gerritsen, 2002). Thus, it can be inferred that the differences between mixed and non-mixed pairs regarding linguistic factors were relatively small. Whether language background affects the factors previously mentioned, future research should analyse more divergent languages. For instance, one could compare a Germanic language, like Dutch, with an unrelated language, like Korean, to broaden the amount of knowledge in the field of linguistic backgrounds.

Several Pearson correlations were found between the measures of the dependent variables of the study. These correlations showed that there are linear relations between those measures.

Firstly, prosocial behaviour ratings were higher when participants rated each other higher on likeability. As explained in the introduction, perceived prosocial behaviour is closely related to likeability. Thus, when people thought their interlocutor was helpful and cooperative towards others, they most likely also evaluated them as friendly and likeable. These findings align with previous studies showing that people liked by others commonly depict more prosocial behaviour (Somogyi et al., 2020).

Perceived prosocial behaviour ratings seemed to be positively correlated with the perceived communicative success and the perceived success of the task. These findings imply that prosocialness might be a prominent factor regarding communicative efficiency in non-native communication. However, to what extent or what exactly causes this relationship remains unclear. Nevertheless, possible explanations for these findings could lie in the theory of communication accommodation. More specifically, previous studies have found that people exposed to verbal mimicry, which is similar to communicative alignment, by their communicative partner showed more extensive prosocial behaviour than participants not exposed to mimicry (Jacob & Guéguen, 2013; van Baaren et al., 2003). Future research should further investigate to what extent this relationship between prosocial behaviour and the success of a non-native conversation exists and what the cause is.

Relations between perceived task success and communicative success were also found. In line with the finding that participants rated their task success higher when they found more differences, these results were not unexpected. The participants were told that there were ten

differences to be found, and they most likely counted the number of differences while they took part in the experiment. Thus, participants perceived the task outcome and the communicative outcome as more successful, the more differences they found.

### *Limitations/Recommendations*

The current study has several limitations. Due to a limited number of participants, concrete implications for an effect of visibility and linguistic background on factors such as likeability, prosocial behaviour, and communicative success are not evident. Thus, the findings can only suggest that an effect of visibility on communicative success might exist. As the four groups were relatively small, further research should investigate a larger sample to find more conclusive evidence. However, the results of the present study can be seen as a new body of knowledge enhancing this particular field of research.

Another limitation is that the participants were asked to answer questions about their interlocutor while they were still in the Zoom call with the other speaker. Findings showed high ratings of likeability and prosocial behaviour across all conditions, and there is a possibility that participants might have felt uncomfortable negatively evaluating the person they are still virtually connected to. If the study were to be replicated, participants should either join another breakout room or leave the meeting altogether to answer the questions truthfully and avoid a societal pressure to behave friendly. Whether this societal pressure exists, however, remains unclear and could be researched further with regards to online video communication.

The study investigated Dutch and German native speakers only. As previously explained, the two languages can be described as relatively similar (Gerritsen, 2002), and the non-significant findings of an effect of linguistic background could have resulted from that. Thus, further research should consider linguistic differences and investigate whether a more significant language distance has more striking effects.

Moreover, cultural aspects were not taken into account in this study. The impact of cultural differences in communication has been a considerable part of literature, and it would be advisable to include them in further studies. For instance, considering Hofstede's cultural dimensions (2001), the Dutch and German cultures are relatively similar regarding several dimensions like individualism, power distance, and uncertainty avoidance. Thus, the language structure and cultural factors being comparable could have resulted in less significant results. Again, investigating cultures and languages that are unlike could have different outcomes. For the sake of clarity, the example of investigating the effects of the Korean language and the

Dutch language will be revisited. According to Hofstede's cultural dimensions (2001), the Dutch and the South-Korean cultures are fundamentally different, and further investigation into unrelated cultures like these two would be beneficial to gain more insight into the overall topic of likeability ratings, prosocial behaviour ratings, and communicative success.

Another limitation of the present study was that the experiment was conducted in pairs. Since much virtual communication today occurs in teams or larger groups, further investigation of the effects of visibility between more than two people on communicative success and social evaluations would be advisable.

The notion of interactive alignment was not investigated directly with the current study. However, as previous literature has shown, interactive alignment has immense effects on attitudinal evaluations, and communicative success, and past studies have emerged visibility and linguistic background regarding interactive alignment (e.g. Abrahams et al., 2019). Whether the results of the present study are connected to a higher use of interactive alignment is unclear but it is certainly possible. Therefore, it would be advisable to investigate further what communicative outcomes interactive alignment results in and what part visibility and a shared language background play.

### *Implications*

In comparison with previous studies about the effects of linguistic background and visibility on several aspects, this study has yielded some additional insights. An innovative aspect of the present study was to combine linguistic background and visibility between speakers to assess whether these factors affect communicative success, ratings of likeability, prosocial behaviour, and task success. From an academic perspective, the results of this study regarding the effects of visibility corroborate previous results on this factor. Thus, the findings strengthen the body of knowledge in this particular field of research.

The results also have several practical implications. It was shown that seeing an interlocutor in a virtual environment compared to not seeing them might lead to higher communicative efficiency. This indirectly highlights the importance of face-to-face interactions in professional environments or technology, which ensures video call members to see each other at all times with no disruption or delays. From a practical perspective, the findings give further insights into the world of virtual video conversations and suggest that possible issues people face in virtual communication are due to a lack of visibility of their interlocutor. As the number of video-mediated calls and virtual meetings will continuously

increase in the business and academic environment, the findings can help managers and communication professionals resolve any communication issues between people in a virtual conversation.

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Appendix

**A. Pictures**

*Example Images*



*Images used in Experiment*



**B. Questionnaire Scales**

*Simplified Language History Questionnaire (LHQ):*

1. Indicate the age at which you started using English and the total number of years you have spent using English in terms of listening and speaking
2. If you have lived or travelled in English-speaking countries for three months or more, then indicate the name of the country, your length of stay (in months), and the frequency of your use of the language, for each country

(7-point Likert Scale (very bad, bad, limited, average, good, very good, exceptional))

3. Rate your language learning skill. In other words, how good do you feel you are at learning new languages relative to your friends or other people you know

4. Rate your current ability in terms of listening and speaking in English

5. Estimate how many hours per day you spend using English in the following activities  
Language, Watching TV, listening to podcasts or radio, reading, using social media and internet, writing

*LHQ (assessing interlocutor's English proficiency): 7-point Likert Scale (very bad, bad, limited, average, good, very good, exceptional)*

1, Rate the current ability of this person in terms of speaking and listening in English

2. Rate the current ability of this person in terms of listening in English

*Likeability scale developed by Reysen (2005): (7-point Likert scale: very strongly disagree, strongly disagree, disagree, neutral, agree, strongly agree, very strongly agree)*

1. This person is friendly
2. This person is likeable
3. This person is warm
4. This person is approachable
5. I would ask this person for advice
6. I would like this person as a co-worker
7. I would like this person as a roommate
8. I would like to be friends with this person
9. This person is physically attractive
10. This person is similar to me
11. This person is knowledgeable

*The sixteen items of the Prosocialness for Adults by Capara et al. (2005):* (directed to the interlocutor) (5-point Likert scale: strongly disagree, disagree, neither agree nor disagree, agree, strongly agree)

1. I think this person is pleased to help their friends/colleagues in their activities.
2. I think this person shares things with their friends.
3. I think this person tries to help others
4. I think this person is available for volunteer activities to help those who are in need
5. I think this person is empathetic with those in need
6. I think this person helps immediately those in need
7. I think this person does what they can to help others avoid getting into trouble
8. I think this person intensely feels what others feel
9. I think this person is willing to make their knowledge and abilities available to others
10. I think this person tries to console those who are sad
11. I think this person easily lends money and other things
12. I think this person easily puts themselves in the shoes of those who are in discomfort
13. I think this person tries to be close to and take care of those in need.
14. I think this person easily shares with friends and any good opportunity that comes to them
15. I think this person spends time with those friends who feel lonely
16. I think this person immediately senses their friends' discomfort even when it is not directly communicated to them

*Perceived Successfulness by Messner (2015):* (6-point Likert scale: strongly disagree, moderately disagree, slightly disagree, slightly agree, moderately agree, strongly agree)

1. I am generally happy with our collaboration
2. We are at least as effective as when I am interacting in my own language
3. We are at least as efficient as when I am interacting in my own language
4. I think the results of our collaboration could be better
5. I think that we could have achieved more

*Perceived Communicative Success:* (5-point Likert scale: strongly disagree, disagree, neither disagree nor agree, agree, strongly agree)

1. The conversation with this person went smoothly
2. Talking to this person was easy

3. I think this person understood what I was saying
4. I understood what this person was saying
5. There were no misunderstandings
6. I was able to help the other person when they were, for instance, stuck

### **C. Ethics Checklist**

#### **Checklist EACH** (version 1.6, november 2020)

*You fill in the questions by clicking on the square next to the chosen answer*

*After clicking, a cross will appear in this square*

1. Is a health care institution involved in the research?

*Explanation: A health care institution is involved if one of the following (A/B/C) is the case:*

A. One or more employees of a health care institution is/are involved in the research as principle or in the carrying out or execution of the research.

B. The research takes place within the walls of the health care institution and should, following the nature of the research, generally not be carried out outside the institution.

C. Patients / clients of the health care institution participate in the research (in the form of treatment).

No → continue with questionnaire

Yes → Did a Dutch Medical Institutional Review Board (MIRB) decide that the Wet Medisch Onderzoek (Medical Research Involving Human Subjects Act) is not applicable?

Yes → continue with questionnaire

No → This application should be reviewed by a Medical Institutional Review Board, for example, the Dutch CMO Regio Arnhem Nijmegen → end of checklist

2. Do grant providers wish the protocol to be assessed by a recognised MIRB?

No → continue with questionnaire

Yes → This application should be reviewed by a Medical Institutional Review Board, for example, the Dutch CMO Regio Arnhem Nijmegen → end of checklist

3. Does the research include medical-scientific research that might carry risks for the participant?  No → continue with questionnaire

Yes → This application should be reviewed by a Medical Institutional Review Board, for example, the Dutch CMO Regio Arnhem Nijmegen → end of checklist

**Standard research method**

4. Does this research fall under one of the stated standard research methods of the Faculty of Arts or the Faculty of Philosophy, Theology and Religious Studies?

Yes → **Standard research into audio and audio-visual recordings of persons (2)** → continue with questionnaire

No → assessment necessary, end of checklist

### **Participants**

5. Is the participant population a healthy one?

Yes → continue with questionnaire

No → assessment necessary, end of checklist → go to assessment procedure

6. Will the research be conducted amongst minors (<16 years of age) or amongst (legally) incapable persons?

Yes → assessment necessary, end of checklist → go to assessment procedure

No → continue with questionnaire

### **Method**

7. Is a method used that makes it possible to produce a coincidental finding that the participant should be informed of?

Yes → assessment necessary, end of checklist → go to assessment procedure

No → continue with questionnaire

8. Will participants undergo treatment or are they asked to perform certain behaviours that can lead to discomfort?

Yes → assessment necessary, end of checklist → go to assessment procedure

No → continue with questionnaire

9. Are the estimated risks connected to the research minimal?

No → assessment necessary, end of checklist → go to assessment procedure

Yes → continue with questionnaire

10. Are the participants offered a different compensation than the usual one?

Yes → assessment necessary, end of checklist → go to assessment procedure

No → continue with questionnaire

11. Should deception take place, does the procedure meet the standard requirements?

No → assessment necessary, end of checklist → go to assessment procedure

Yes → continue with questionnaire

12. Are the standard regulations regarding anonymity and privacy met?

No → assessment necessary, end of checklist → go to assessment procedure

Yes → continue with questionnaire

### **Conducting the research**

13. Will the research be carried out at an external location (such as a school, hospital)?

No → continue with questionnaire

Yes → Do you have/will you receive written permission from this institution?

No → assessment necessary, end of checklist → go to assessment procedure

Yes → continue with questionnaire

14. Is there a contact person to whom participants can turn to with questions regarding the research and are they informed of this?

No → assessment necessary, end of checklist → go to assessment procedure

Yes → continue with questionnaire

15. Is it clear for participants where they can file complaints with regard to participating in the research and how these complaints will be dealt with?

No → assessment necessary, end of checklist → go to assessment procedure

Yes → continue with questionnaire

16. Are the participants free to participate in the research, and to stop at any given point, whenever and for whatever reason they should wish to do so?

No → assessment necessary, end of checklist → go to assessment procedure

Yes → continue with questionnaire

17. Before participating, are participants informed by means of an information document about the aim, nature and risks and objections of the study? (zie explanation on informed consent and sample documents).

No → assessment necessary, end of checklist → go to assessment procedure

Yes → continue with questionnaire

18. Do participants and/or their representatives sign a consent form? (zie explanation on informed consent and sample documents).

No → assessment necessary, end of checklist → go to assessment procedure

Yes → checklist finished

**If you want to record the results of this checklist, please save the completed file.**

**If you need approval from the EACH due to the requirement of a publisher or research grant provider, you will have to follow the formal assessment procedure of the EACH.**

