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Sustaining multimodal language learner interactions online

Abstract

Social presence is considered an important quality in computer-mediated communication as it promotes willingness in learners to take risks through participation in interpersonal exchanges (Kehrwald, 2008) and makes communication more natural (Lowenthal, 2010). While social presence has mostly been investigated through questionnaire data and quantitative content analysis of online interactions based on a set of predefined indicators, in a smaller number of studies the concept has also been investigated through qualitative analysis of interviews (Kehrwald, 2008, 2010). Yet studies that bring together multiple sources of data collection and examine multi-modal language learning contexts are almost non-existent. In this paper, the theory of social presence is employed to explicate language learners' online multimodal communication using a case study approach. Multiple sources of data were collected, including interviews, open-ended and closed post-task questionnaires, stimulated reflection and recordings of video interactions.

The main findings of the study included an innovative social presence framework developed for the analysis of online multimodal language learner interactions (Satar, 2010), which can be used in further qualitative and exploratory research. It also has potential applicability for educators to develop strategies for language learners to guide them in creating and transmitting their social presence. The focus of this article is a cross-case analysis for one of the components of social presence, sustaining interaction, bringing together social presence theory, interactional sociolinguistics and multimodal interaction analysis. Finally, strategies are proposed for language learners on how to sustain their online multimodal interactions.

Keywords: desktop videoconferencing; multimodal interaction; social presence; sustaining interaction

Introduction

Synchronous online multimodal communication has become a natural way of communication in everyday life through tools such as Skype and Face- Time. Likewise, in learning contexts, specifically in online language learning and teaching, learners can now communicate with other learners not only in writing, but also in speech and via video calls. Examples of language teaching that make use of online multimodal environments abound (e.g. Guichon and Cohen, 2014; Guo, 2014; Hampel and Stickler, 2012; Yamada, 2009; Wang, 2008) yet second language acquisition theories used to investigate interaction in such environments do not always provide a complete understanding of the multifaceted nature of social presence in online multimodal communication among language learners.

Social presence

Short, Williams and Christie (1976: 65) described social presence (SP) as the 'degree of salience of the other person in the interaction and the consequent salience of the interpersonal relationship'. The definition was introduced as an attempt to differentiate between mediated (e.g. telephone) and non-mediated (face-to-face) interactions and was initially treated as an attribute of the medium where the 'capacity to transmit information about facial expression, direction of looking, posture, dress and non-verbal vocal cues, all contribute to the social presence of a communications medium' (Short et al., 1976: 65). Later definitions of SP used a relational view in which SP was perceived as a quality of people in online environments, conveyed through their use of language, media, and communications tools (Kehrwald, 2008). As such, SP was de ned as social and emotional connection among participants (Garrison, Anderson & Archer, 2010) and 'the ability of learners to project themselves socially and affectively into a community of inquiry' (Rourke, Anderson, Garrison, & Archer, 1999: 50). Other definitions include the degree of affective connection between the interactants (Swan & Shih, 2005) and the ability of the individual to demonstrate his/her availability for and willingness to participate in interaction (Kehrwald, 2008). In this paper, I take the relational view and consider SP as a quality of participants to establish and maintain social and affective connections with others in interaction and their ability to project their self into the community.

In terms of fostering interaction and learning in educational settings, social presence has been considered a key element in distance education (Tu & McIsaac, 2002), enhancing learners' satisfaction with learning (Gunawardena & Zittle, 1997), making communication more natural (Lowenthal, 2010) and helping learners manage turn-taking (Bee Bee & Gardner, 2012). Garrison, Anderson and Archer (2000) also argued that social presence is a direct facilitator of learning especially when continued interaction with the other members of the course is necessary for course completion and success.

Indicators of social presence

Garrison, Anderson and Archer (2000) presented the concept of social presence within a model of Community of Inquiry in the context of asynchronous written learner interactions. This model has three components: cognitive presence, social presence and teaching presence. Within a community of inquiry, social presence indicators – which are affective, interactive and cohesive responses – are identified to describe social presence. The affective indicators are expression of emotions, use of humour and self-disclosure. They can reduce social distance, help interlocutors get to know each other and establish trust (King, 2007). One way of expressing emotions in the absence of body language is the use of emoticons. Interactive indicators include continuing a thread, quoting from others' messages, asking questions, complimenting

or expressing appreciation and expressing agreement. Receiving replies from group members indicates acceptance; referring specifically to others' messages encourages others and provides evidence that others are attending; questions help sustain interactions; compliments, agreement and appreciation satisfy the need for affiliation and self-esteem (King, 2007; Swan & Shih, 2005). Finally, the cohesive indicators in the model are vocatives, inclusive pronouns, and phatics and salutations, which help create a sense of group commitment. Phatics and salutations such as small talk and greetings establish mood; inclusive pronouns such as 'we', 'us' and vocatives, i.e. addressing group members by their names, establish a sense of association and involvement (King, 2007).

ese indicators have been used in various studies to analyse social presence in several online learning contexts (Hughes, Ventura & Dandon, 2007; Lowenthal, 2012; King & Ellis, 2009; Na Ubon, 2005; Satar, 2007; Swan, 2002; Weinel & Hu, 2007). While some of these studies adapted the indicators as they emerged in their specific contexts (e.g. Swan, 2002; Hughes et al., 2007), they 'largely remain unchanged' (Lowenthal and Dunlap, 2014).

Social presence and theoretical approaches to multimodal interaction

The indicators identified by Rourke et al. (1999) relate to verbal interaction online. In understanding social presence (SP) in multimodal contexts, findings of studies of non-verbal communication also provide guidance for analysis. Short et al. (1976) suggested that two factors determine the degree of SP: immediacy and intimacy. Immediacy is described as the psychological proximity of the interlocutors, while intimacy is seen as the perceived familiarity of the people in interaction. The feelings of immediacy and intimacy depend on the amount of eye-contact, physical proximity, topic of conversation and smiling (Argyle & Dean, 1965). In educational research, non-verbal behaviours (e.g. gestures, facial expressions, touching, smiling, meaningful posture and intonation) alongside verbal teacher immediacy behaviours (e.g. humour, inclusive pronouns, encouraging participation and providing feedback) are believed to reduce the physical and/or psychological distance between the teacher and the learner, thus positively influencing learner participation and attitudes (Bozkaya, 2008).

Responsiveness (i.e. empathy, friendliness and warmth) increases positive affect towards the teacher (Wanzer & McCroskey, 1998). People adjust to each other's communication style in order to gain approval and achieve positive social identity, i.e. to make positive evaluations of their membership to the social group (Richmond & McCroskey, 2000). However, some immediacy cues may communicate dominance in interpersonal relationships, such as direct eye contact, vocal loudness and rapid tempo, direct body orientation and forward body lean, and hyper-relaxation (Burgoon & Dunbar, 2000).

e exploration of SP in online multimodal contexts also requires an understanding of the notion of mediation and of multimodal elements as social semiotic systems. All human communication is mediated via tools such as language, people, technology or cultural and institutional assumptions (Leontiev, 1981; Vygotsky, 1978). In computer-mediated contexts, tasks, participants and physical settings mediate interaction (Lamy & Flewitt, 2011). In the case of online synchronous multimodal interaction, written language, speech and visuals constitute modes for meaning-making, thus also mediating interaction.

As the science of signs, semiotics studies how meaning is made through semiotic systems that include verbal language but also other social and symbolic meaning making resources (van Lier, 2004). In their 2001 book, Kress and van Leeuwen adapt Halliday's Systemic Functional Linguistics to include objects other than language and explore how humans make sense of these systems in sociocultural practices, such as writing or reading a paper together. Using this approach, Jones (2012), for example, shows how gaze as a semiotic system has the interpersonal function to create a relationship, the ideational function to signify that the person is paying attention and the textual function of being a resource in turn-taking. Studying social semiotic resources in video- chats, Sindoni (2013) found alternation of speech and writing, new patterns in proxemics (distance between people) and the impossibility of eye-contact. She argues that in videochats 'the illusion of a face-to-face conversation dissolves as soon as video-specific resources are unpacked' (Sindoni, 2013: 51).

Interactional sociolinguistics is an approach that can further our under- standing of language learning through social interaction in online multi- modal environments. Interactional sociolinguistics (Gumperz, 1982, 2003) emphasizes cultural differences and studies semiotic cues that can be observed in meaning making, such as prosody (features of stress and intonation) and code-switching. In online multimodal interactions, it is possible to use elements of other non-verbal semiotic systems (such as posture, gaze, gestures, proxemics and facial expressions) as contextualization cues in meaning making (Norris, 2004). Within this, multimodal interaction analysis (ibid.) tries to understand how lower-level actions, such as gestures and body movements help create social practices, social identities and social relationships. In order to determine how messages are interpreted, not only the sent messages, but also 'how other individuals in the interaction react to these messages' should be analysed (Norris, 2004: 4).

Investigating social presence

Although the SP indicators identified by Rourke et al. (1999) have been useful in describing written learner interactions, applying them in an analysis of multimodal interactions is time-consuming and complex. Thus, another way of investigating SP is to use questionnaires to measure perceived social presence. Previous studies which

used questionnaires to measure SP include, but are not limited to, Biocca, Harms & Burgoon (2003), Bozkaya (2008), Gunawardena & Zittle (1997), Short et al. (1976), Swan & Shih (2005), Yamada & Akahori (2007). More recently, the developers of the Community of Inquiry framework have also been conducting studies to develop questionnaires to measure social presence, teaching presence and cognitive presence (e.g. Garrison, Anderson, & Archer, 2010).

Regarding methodology, SP has mostly been studied within a realist ontology. is implies that SP is a reality out there, 'separate from human meaning- making' (Stainton-Rogers, 2006: 79) which can be investigated objectively and measured quantitatively 'in order to identify the laws and rules that govern behaviour' (Richards, 2003: 34). Examples of such studies include Short, et al. (1976) and Rourke et al. (1999).

However, recent research, such as Kehrwald (2008; 2010), has begun to investigate social presence within a relativist position. The relativist position rejects the idea of a single reality outside people's interpretation and 'asserts that the only world we can study is a semiotic world of meanings' (Stainton- Rogers, 2006: 79).The approach to studying social events includes an investigation of subjective meanings and lived experience of the participants and respect for differences between people. Therefore, knowledge is 'constructed not discovered', is 'multiple not single' and cannot 'ever be simply "dis-covered"' (Stainton-Rogers, 2006: 80).

Table 1 presents a summary of the methodologies used to investigate social presence with information on data collection tools and analysis methods.

Table 1: Summary of methods used to investigate social presence

	Earlier SP studies (e.g. Short *et al.*, 1976)	**Studies exploring SP using content analysis** (e.g. Rourke *et al.*, 1999)	**Studies exploring SP qualitatively** (e.g. Kehrwald, 2008, 2010)
Epistemology	Positivist	Positivist	Constructivist
Ontology	Realist	Realist	Relativist
Understanding of Social Presence	Media richness view	Relational view	Relational view
Data collection tools	Questionnaires	Written records of online interaction	Interviews
Data analysis techniques	Quantitative (statistical analysis)	Quantitative (content analysis)	Qualitative (thematic analysis)

This study was conducted from an interpretivist/constructivist stance and special consideration was paid to the participants' cultural assumptions and to the fact that there can be multiple interpretations of the same social phenomenon (Hammersley, 1992). Therefore, using the theory of social presence, the most plausible explanations are provided for the ways in which online language learner interactions were established and sustained within the given context.

Social presence and language learning

According to Kehrwald (2008), SP allows learners to maintain productive relations and promotes willingness to take risks through participation in inter- personal exchanges. Risk taking is only possible when learners feel at ease to communicate without worrying about making mistakes and achieve camaraderie, a level of 'cooperating and collaborating with each other' (Darhower, 2007). SP ensures continuity of interactions, thereby providing further opportunities for language learning (Lamy & Goodfellow, 1999; Stockwell, 2003) and it has been reported that social presence helps learners online or at a distance to compensate for a lack of non-verbal communication (Heiser, Stickler & Furnborough, 2013).

SP can be more complicated to achieve in online foreign language learning settings than in other learning contexts because cognitive and social presence are almost intertwined – learning occurs 'not through interaction but in interaction' (Ellis, 2000: 209), which means that interaction is not only a social necessity, but it is a requirement for language learning. For example, Arnold and Ducate (2006) observed interactions between language learners and native speakers in discussion forums and found that social activity outweighed cognitive density. Furthermore, in language learner interactions, learners' linguistic skills, or lack of these, may affect their ability to participate in the interaction.

Therefore, when the model developed by Rourke et al. (1999) is applied to language learner interactions, indicators such as self-disclosure and emotions become more di cult to identify as serving a purely social function. What is more, other aspects of online language learner interactions such as peer status, empathy, discourse markers and politeness (Satar, 2007) may become more significant in establishing SP. Lomicka and Lord (2007: 223–224), for example, reported that certain indicators including 'the expression of feeling, vulnerability, self-constructive comments, compliments, encouragement, asking questions, advice/opinion, agreement, salutations, and the use of names' were observed more frequently. In these studies, the language learning task types (e.g. argument, role-play, providing personal information) also seemed to impact on social presence.

In multimodal interaction, the concept of SP and its indicators become more complex. Yamada and Akahori (2007) compared four SCMC modes: text-based chat with and without interlocutors' image, videoconferencing, and audioconferencing. The

participants reported that when their partner's image was visible they felt more comfortable in communicating because they were able to 'see the partner's personality and non-verbal behaviors' (p. 61). In a similarly designed study by Yamada (2009), the addition of video was observed to motivate the participants to communicate more, especially via visible behaviours of nodding and laughter. The findings also confirmed that 'non-verbal behavior has a strong power of not only immediacy but also negative feedback which may lead to effective learning' (p. 9). Other learner comments underlined the importance of visual cues for turn-taking, willingness to communicate and increased SP.

However, in a recent study, Guichon and Cohen (2014) compared language learner–teacher interactions in audioconferencing and videoconferencing set- tings and did not find any differences in the student perceptions of their teachers' warmth and presence between the two conditions. They further argued that the visibility of interlocutor images in interaction might even distract learners from the teacher's verbal message, 'hindering understanding to some extent'. Yet the two conditions showed different results in terms of silences and overlaps. The authors observed more student silences in audioconferencing and more overlaps in the videoconferencing condition and concluded that audioconferencing 'offers no paralinguistic cues as to when to take the floor'. They also observed that when video interaction was used conversation ow was more rapid and seamless.

Therefore, there is a strong need for an exploration of how learner interactions can be studied in online multimodal language learning settings and what constitutes social presence in such contexts.

The aims of this paper are to explore social presence using a qualitative methodology in online multimodal language learner interactions and to identify what constitutes social presence in such contexts. In terms of the results, this paper specifically focuses on one component of social presence, i.e. sustaining interaction, in order to demonstrate how communicative harmony is achieved, and how participants project their own social presence and perceive each other's in interaction through simultaneous use of linguistic and paralinguistic contextualization cues (text, audio and video modes).

Methods

Participants and settings

Data for this study was collected from learners of English outside formal learning settings. Six female and four male volunteer language learners, aged 18–22, participated in dyadic interactions, which were carried out outside class. Participation in the study was not assessed and teachers were not involved in task completion. Although participants were first year teacher trainees of Teaching English as a

Foreign Language programmes in three geographically distant universities in Turkey, they would be best described as advanced level language learners because the first year of these programmes focuses on developing linguistic skills, and pedagogical instruction starts from the second year onwards. Additionally, the tasks and topics used in this study were not related to teacher education but only acted as stimulus for interactions in English. The tasks were flexible and open-ended, with some requiring collaborative description, drawing and writing. The participants completed three or four sessions and one task in each session. The task topics included getting to know each other, describing personality and talking about best friends, describing real and ideal rooms, talking about everyday activities and describing hometowns.

e native language and culture of all the participants were Turkish and they had all learnt English as a foreign language at school in Turkey. All inter- actions were conducted in the foreign language, i.e. English, and the students in each dyad did not know each other prior to the study and they never met face-to-face. All interactions took place via a free Desktop Videoconferencing (DVC) tool called ooVoo (www.oovoo.com) and were recorded for subsequent analysis. ooVoo was used because it was the only free DVC tool which included a recording function. A screenshot representing the DVC environment and its features is provided in Appendix 1.

This study is a collective case study trying to achieve 'in-depth understanding of the cases' (Creswell, 2007: 74). It is also an instrumental case study as the aim is not to extensively investigate all features of the interaction within the cases, but to focus on how social presence is constructed and participants' experiences within the case boundaries (Creswell, 2007; Richards, 2003; Stake, 2005; Yin, 2003).

Data collection and analysis

The participants were paired to form five cases (Table 2) based on their availability to participate in the Desktop Videoconferencing (DVC) sessions. Cases 1 and 2 completed three DVC sessions each, while Cases 3, 4, and 5 each completed four DVC sessions. All the participants completed a background questionnaire prior to their DVC sessions and post-task questionnaires with open-ended and closed questions after each DVC session. Upon completion of the DVC sessions, all participants completed final questionnaires and attended individual interviews and stimulated reflections. See Appendix 2 for sample interview and post-task questionnaire questions. The DVC sessions were conducted in English, post-task and final questionnaires were in English and Turkish, and the interviews were conducted in Turkish. The data which were originally in Turkish are presented in the analysis as translations by the author.

Table 2: Participants and cases

	Case 1	Case 2	Case 3	Case 4	Case 5
Participant pseudonyms and gender	Deniz (M) and Zeynep (F)	Filiz (F) and Nil (F)	Defne (F) and Hale (F)	Emre (M) and Osman (M)	Eda (F) and Ali (M)

In the analysis of multimodal DVC interactions, I drew on principles of social semiotics (van Lier, 2004; Kress & van Leeuwen, 2001), interactional sociolinguistics (Gumperz, 1982, 2003) and multimodal interaction analysis (Norris, 2004) as outlined in the introduction to investigate participants' meaning-making practices via semiotic systems available in DVC, in particular how they express and perceive the salience of their relationship and the interaction. is requires paying attention to meaning-making systems which are not verbal, including how participants switch between the modes, use gaze, posture, proxemics, gestures and body orientation and prosodic features, including silences. The data presented in the analysis section of this study mostly consist of participants' comments on such elements and other verbal indicators of SP for sustaining interactions.

For the analysis of data collected from post-task questionnaires, stimulated reflection and interviews, I conducted a thematic analysis based on case study analysis principles identified by Stake (1995) and Creswell (2007) and grounded theory analytical principles outlined by Strauss and Corbin (1998). Starting with a general reading and annotating process, I continued the analysis by establishing salient categories and constantly comparing and contrasting them among cases. During this process, some of the categories proved to be unique to a single case, and were then excluded from cross- case themes. ese cross-case themes were subjected to direct interpretation to describe and explore the facts about, and present the bounded context of each case.

Trustworthiness and ethics

Trustworthiness or credibility in qualitative research involves justification of the research decisions, showing consideration of the ethical issues involved, using rigorous methods, presenting findings which arise out of the data, ensuring that the interpretations are transparent, and having a clear, logical and persuasive presentation (Creswell, 2007; Hammersley, 1992; Lincoln & Guba, 1985; Miles & Huberman, 1994; Silverman, 2006; Stake, 1995; Yin, 2003).

I ensure the trustworthiness of my study by explaining the methodological paradigm within which the claims are credible. I provide detailed explanation of the analytical procedures and reasoning. I collected multiple sources of data and triangulated the findings whenever possible. In my analysis, I tried to be reflexive by exploring any potential researcher influence and to provide as many potential interpretations as possible before I provided my own perspective. Rather than distancing myself from

the data, I used my shared back- ground with the participants as a basis for my interpretations. As I collected video data, ensuring the anonymity of the participants and informed consent was of particular importance. Prior to data collection, I gained approval from the ethics committee at my institution.

Results and discussion

e SP framework used was developed as part of a PhD study (Satar, 2010) which was proposed as a tool to guide future research by providing a qualitative, exploratory and holistic overview of aspects of social presence in online multimodal language learner interactions. This paper exemplifies one component of the framework, i.e. sustaining interaction (others being building intimacy, establishing intersubjectivity, apprehension and relaxation, multimodality, beliefs about online communication and foreign language – see Appendix 3). I provide a cross-case thematic analysis of this component, sustaining interaction, which includes the indicators of questions, backchannels, reciprocation, listening and paying attention, collaboration, chronomics, turns and silences.

Questions

According to Kehrwald (2008), an individual's ability to demonstrate willing- ness to participate in interaction is an indicator of his/her social presence. In the present study, questions were predominantly perceived as significant indicators of a willingness to prolong contact and an invitation to continue the conversation. Asking questions was very important in feeling important and comfortable (Eda) and to extend interaction time (Defne). For Filiz questions were an invitation to talk more; she reported (final questionnaire) that they encouraged each other by asking questions, which made them feel 'happy' and that questions allowed them to have 'prolonged' interaction.

Questions, and in particular those which were not task-related, may also have indicated a willingness to continue the conversation. When there was extra time after task completion, Filiz, Nil, Ali and Hale asked o -task questions about their personal lives. In her interview, Nil said about Filiz: 'She suddenly turned to daily life by asking like "How is school?" "Have your finals started?" and so on. She wanted to continue more and I enjoyed [talking to her]'. O -task questions were also seen as indicating a genuine interest in the interlocutor. For Eda, when her partner asked her o -task questions, she felt that he was asking 'not simply as a task requirement, but because he wanted to learn something about [her]'.

Being asked opinions on a topic also 'makes the person disclose herself/ himself or relax' (Eda, final questionnaire), and questions 'open up the person' and make the person go into more detail (Filiz, interview). Moreover, questions were an aid to ensure the ow of the conversation, especially when the interlocutors felt stuck

(Zeynep, Emre). By asking and answering questions participants felt they were both actively involved (Nil, Eda), and that their point of view was understood and acknowledged (Hale, Emre, Ali). Participants also asked questions to prevent misunderstandings, especially of jokes (Eda, Zeynep), and clarify inaudible turns caused by audio delay (Filiz). Filiz also said that Nil and she both reciprocated using questions like 'How about you?' when each finished talking on a topic. This ensured that both had an equal opportunity to talk and share experiences.

Being able to ask questions seemed to be an issue of power for Deniz. In his interview, he expressed his unhappiness at his failure to ask his partner any questions. He said when he was talking, Zeynep frequently asked him questions, but when it was her turn to speak, he could not ask any. He later suggested that it took him longer to construct what he wanted to say in English and that he felt slow as trying to translate from Turkish interrupted the ow. Richmond and McCroskey (2000) state that people adjust to each other's communication style in order to achieve a positive social identity. The inability to ask questions may have been the cause of Deniz's unhappiness as he could not adjust to and reciprocate his interlocutor's communication style.

Therefore, asking questions either to start a new topic or to follow up on an existing topic can be regarded as a very important interactive indicator of social presence. Asking questions is also an indicator of interactivity identified in the work of Rourke et al. (1999); and King (2007) argues that questions help sustain interaction. Questions were also one of the frequent indicators observed in the study of Lomicka and Lord (2007). However, the precise effects of questions related to task and o -task talk, questions that initiate a new topic, questions asked to elaborate on an immediate topic or reciprocal questions on social presence and sustaining interactions have not been studied.

Based on the participants' comments above, the following could be suggested:

- Questions indicate a willingness to continue the conversation and prolong contact.
- Questions aid conversational ow and prevent discontinuity.
- Questions ensure involvement and indicate understanding and acknowledgement.
- Questions help to deal with audio delay.
- Off-task questions are useful to continue the interaction when time remains upon completion of the task.
- Off-task questions indicate a genuine interest on the part of the speaker and thus increase intimacy and immediacy.
- Follow-up questions on a topic encourage the addressee to talk more, self-disclose more and provide more details.
- Reciprocating questions (such as 'And you?', 'How about you?', etc.) increase intimacy, provide equal opportunities to talk and ensure equal status between the interlocutors.

Backchannels

A distinguishing feature of synchronous computer-mediated communication (SCMC) is the availability of backchannels. By providing immediate feedback, backchannels reinforce maintenance of interaction. For example, Filiz perceived backchannels as acknowledgement of her turn and as approval, and thus as encouragement to continue in a similar manner. Non-verbal back- channels, such as head nods, facial expressions, smiles, or raising an eyebrow, were also seen as important indicators of involvement in communication (Nil, Osman, Defne, Ali). Moreover, backchannels facilitated meaning negotiation online. While for Zeynep and Nil facial expressions such as smiles indicated that their partners could understand them, Eda depended on her partner's facial expressions to understand his message when she could not clearly hear it.

In terms of turn-taking practices, backchannels in DVC did not seem to be as effective as they tend to be in face-to-face interactions. In his interview, Emre complained about the impact of the delayed (near synchronous) visual cues on turn taking in DVC. While Emre was able to interpret when an interlocutor wanted to take the floor in face-to-face interactions, he was unable to see these cues online. He was dissatisfied with the disruption of interaction when both waited for the other to take the turn. Guichon and Cohen (2014) report similar findings in their comparison of online audio-video interactions and audio-only interactions. They conclude that online audio-video interaction led to increased conversation ow where interaction was more rapid and seamless. In the audio-only interactions, more silences were observed due to a lack of paralinguistic cues on when to take the floor. In the present study, although non-verbal indicators for turn taking were present, delayed trans- mission caused problems for Emre. This can be particularly problematic and frustrating in videoconferencing environments. While in audio-only interactions both interlocutors are aware of the absence of these cues, in video inter- action, unless both interlocutors are experiencing problems, there can be a misalignment of what interlocutors believe to be projecting and what is perceived at the other end.

Eda, on the other hand, commented on her partner's backchannels from an affective perspective. She found her partner warm and friendly because 'he was not just talking and looking, but he was also laughing, raising his eye- brows like when he didn't understand, and was like nodding his head' (inter- view). Therefore, it might be assumed that animated interlocutors who provide ample non-verbal backchannels are perceived as warmer, friendlier and thus more immediate and intimate. Likewise, Bozkaya (2008) suggested that providing verbal and non-verbal feedback reduced psychological distance and positively influenced learner participation.

Reciprocation

Reciprocating their partners' initiatives emerged to be a necessary element for mutual involvement in and satisfaction from the conversation. Deniz stressed how Zeynep reciprocated his humorous banter and teasing. He believed this helped their friendship grow on a sound foundation. For Zeynep, reciprocal question-answer sequences allowed them to interact better. Similarly, reciprocal interaction generated a feeling of 'togetherness' and 'involvement' for Defne. However, some participants (Filiz, Osman) were dissatisfied with the amount of information their partner provided. For example, Filiz took the first turn to talk about her hometown and she showed pictures, talked about the places in detail; and she expected the same from her partner. Filiz said she was 'disappointed' due to her partner Nil's lack of equivalent amount of response.

Reciprocating humour, questions and the amount of information incorporated in the talk may have been positively perceived because mirroring the communication style of their conversation partner helped participants achieve a positive social identity (Richmond & McCroskey, 2000). The influence of reciprocation has not been studied within social presence theory. How- ever, given the participants' comments on their feelings of togetherness and involvement, reciprocating humour, questions and amount of information given appears to be an important element of interactive responses. In other areas of research, interpersonal synchrony, which is operationalized as doing the same movement at the same time, has been found to enhance rapport, affiliation, cooperation (Lumsden, Miles & Macrae, 2014) and social connectedness to others (Marsh, Richardson & Schmidt, 2009). Similarly, although it does not necessarily happen at the same time, reciprocation of conversational patterns might produce comparable results.

Paying attention

Short et al. (1976) identify 'evidence that the other is attending' as a critical feature in the promotion of socially meaningful interaction. This idea is operationalized in Rourke et al.'s (1999) indicators as quoting from others' messages.

In general, it was important for participants to feel that their online partners were listening to them, were paying attention and were involved in the communication. This signalled to them that their interlocutors cared about them (Deniz), cared about what they said (Filiz), showed consideration (Eda) and 'did not want to be disengaged' (Defne, post-task questionnaire). More- over, Emre expressed the view that he felt involved in the interaction when his partner was listening and providing appropriate responses.

Intertextuality, or referring back to what had been previously said, was perceived as a clear indication of listening. For example, Nil thought that Filiz listened to her during their interaction because Filiz offered her own comments and views on what she had said. In her final questionnaire, commenting on the importance of quoting from the

other person's messages Eda wrote, 'just a good way to have a sincere and a humorous atmosphere, I think I said humorous, coz, during our conversations, we just quoted our deficiencies, negative sides and laughed a lot ☺ also it can show how you have been listened by your partner' (student's own English).

Non-verbal reactions, that is, backchannels, were the other indicator of paying attention. ese included smiles (Hale, Osman), head nods (Nil, Filiz, and Osman) and other non-verbal reactions (Nil) such as facial expressions, gaze (Filiz and Defne) and expressions of acknowledgement or surprise and raising eyebrows (Osman).

Filiz compared video communication with text-only asynchronous online interactions. For her, in text-only interactions due to delays in response time she would not know for sure whether her partner was paying attention, while in DVC she could 'see' whether her partner was listening or not. Filiz suggested that there was continuous acknowledgement of turns in DVC, which constantly reminded her that both were involved in interaction.

Collaboration

Participants mentioned several instances when they needed to collaborate in order to keep the conversation going. First of all, they had to find a way to initiate and maintain the conversation. Awkward silences at the beginning were normal as they were new acquaintances. Additionally, there was no immediate context that surrounded and shaped the interactions; the participants had to create their own context in interaction (Gumperz, 1982). Lack of physical embodiment and space in the online context also made it di cult to ensure ow and sustain the interaction.

Participants (Filiz, Zeynep, Hale, Emre) stated that they encouraged each other when the conversation was stuck, especially by asking each other questions (as discussed in the section 'questions' above). As the tasks were carried out in a foreign language (i.e. English), participants sometimes struggled linguistically. However, they were mostly very sympathetic and provided linguistic help to one another when required, e.g. by simplifying their language (Zeynep, Defne, Hale, Nil, Eda, Emre). Zeynep also appreciated her partner's help and collaboration in using IT so ware and equipment, which were a source of frustration for her.

Collaboration to sustain the interaction is another feature that emerged in this study, which had not previously been investigated in the study of social presence. For a smooth ow of the interactions in online multimodal communication, language learners might need to collaborate and put in extra effort to move the conversation forward and provide linguistic and technical help when needed.

Chronomics

Time or chronomics as a non-verbal indicator (Andersen, 2008) was a theme that came up frequently in participants' comments on three aspects: increased familiarity via increasing amount of contact; response time in each turn; and limited, extended or flexible amount of time in each session. ere was general consensus that over time partners had more opportunities to get to know each other better. Most of the time increased familiarity meant growing closeness and intimacy (Short et al., 1976), increased trust and smoother and more relaxed interaction.

In terms of response time, Defne and Ali felt that quick reactions via back- channels implied being involved. Hale and Filiz commented that in text-based online interactions delayed responses might indicate an unwillingness to sustain the interaction. They valued the synchronicity of DVC interactions, which allowed them to feel engaged.

Time allocated for each session was the third issue related to chronomics. Defne found the time set for the organized online sessions to be a limitation on how well she could get to know her partner. She thought she could share and learn more in face-to-face meetings 'without a limited time' for interaction. Filiz also felt limited by the session time; she sensed that the interaction was 'only a task to be completed for the study and would end when the study ends' (interview). Spending more time together was an indication of being valued and important (Emre, Defne). Eda and Ali were more relaxed and flexible about time, with their last session going on for about an hour and a half. Eda perceived this very positively, feeling that they continued the conversation because they were enjoying it, and not that it was a study requirement.

As asynchronous online communication is time independent, chronomics has not really been researched. Yet even in asynchronous interaction response time and familiarity over time need to be investigated further for their effects on social presence. Research to date has mostly ignored the effects of time on the establishment of SP and treated SP as a static quality of the total amount of interactions in a given context (e.g. Kehrwald, 2008; King, 2007; Rourke et al., 1999; Swan & Shih, 2005).

Turns and silences

Some participants commented on the influence of the amount and pace of talk as well as silences. In terms of turn length, Defne, Hale and Ali said short replies frequently signalled an unwillingness to communicate. Additionally, Deniz, Zeynep, Osman and Filiz expressed their uneasiness with silences. For example, Deniz said they both encouraged each other to speak because he found it unacceptable to be silent. An intolerance for silence was also observed in the interactions between Osman and Emre, with quicker turns and some- times overlaps.

In contrast, Filiz and Nil were more tolerant of silences in terms of the pace of their conversation. Once the task was over, in order to allow enough time to initiate new

topics, they accommodated long silences about five seconds long. Likewise, the interaction between Eda and Ali contained many pauses and slower turns, which allowed them plenty of time to think and reflect on their language use.

On the one hand, it might be suggested that tolerance of longer silences might indicate a higher amount of familiarity, longer interaction time and thus a higher amount of social presence. On the other hand, silences might also be perceived as an unwillingness to communicate, or as in the case of Emre, short replies and silences can be perceived as an indication of weakness. While Emre was unhappy with his limited amount and length of responses, he interpreted his interlocutor Osman's talkativeness as dominance. This resonates with Burgoon and Dunbar's (2000) suggestion that some immediacy cues, such as vocal loudness and rapid tempo, may communicate dominance in interpersonal relationships.

Previous research on silences in language learning contexts via audio- conferencing (Stickler, Batstone, Duensing & Heins, 2007) suggested several reasons for silences, including lack of linguistic skills to express oneself, avoidance of mistakes, thinking time for reflection and creativity, and cultural reasons including power and gender differences and concluded that silences might mean either action (way of engaging) or inaction (refusal to engage). More recently, Guichon and Cohen (2014) linked the abundance of silences in audioconferencing to the lack of non-verbal cues to guide turn taking. While video interactions, where silences were less tolerated and overlaps occurred, were observed to be more seamless, silences in audioconferencing led to an increase in teacher talk.

To conclude, similar to the effects of time, turn length, turn taking practices and silences have been undertheorized as an indicator of sustaining interactions and social presence. Especially in language learning contexts, where learners might need more time to construct their utterances, the inter- play between social presence and tolerance of silences would be worth further investigation.

Strategies for sustaining interaction

Based on the preceding analysis, several recommendations can be made for language learners to help them maintain a smooth ow of interaction in online multimodal communication. Some general strategies could be as follows:

- Asking questions, both follow-up questions to further the current topic and questions that probe new topics.
- Initiating a topic of mutual interest.
- Establishing intersubjectivity and encouraging one's partner to talk more by initiating new topics.
- Smiling to encourage the speaker to continue.

- Providing backchannels and language-related compliments which encourage one's interlocutor to continue talking.
- Talking o -task: chatting about daily life when the task is complete.
- Simplifying sentences and grammar when needed and tolerating failure to negotiate meaning.

Conclusions

This paper has explored how language learners sustained interactions in online multimodal communication, thus exemplifying one component of the social presence framework (Appendix 3), which has been developed using a qualitative and exploratory approach to research and presents a holistic overview of social presence in language learner interactions via desktop videoconferencing. Researchers could use this framework as a tool for qualitative analysis of social presence to either represent an overview of interactions in similar and/ or other contexts or to focus on individual components in order to zoom in on certain aspects of the interaction. Moreover, educators could use the components of the framework to generate guidelines to advise language learners on the ways in which they can create and project their social presence.

The present study used an analytic framework that brought together principles of social semiotics, interactional sociolinguistics and multimodal inter- action analysis to investigate how participants sustained their interactions in DVC. The features that were found to be significant were grouped under the following themes: questions, backchannels, reciprocation, listening and paying attention, collaboration, chronomics, turns and silences. Questions were found to play an important role in maintaining the smooth ow and to be an indication of involvement and willingness to communicate. Both verbal and non-verbal backchannels were identified as key elements to support warmer and friendlier interactions. Reciprocation of humour, questions, the amount of information shared and conversation patterns were explored for their effects on feelings of togetherness, involvement, rapport and social connectedness. Another important element in maintaining inter- actions was reported to be the feeling that the other person is attending, i.e. is paying attention to and is involved in communication. Providing appropriate responses, referring back to previous interactions and non-verbal reactions were described as the best ways to indicate involvement and attention. In these multimodal online language learner interactions, collaboration was felt to be needed beyond task completion. Participants also needed to help each other when they experienced linguistic and technological difficulties. Collaboration during such challenges was perceived very positively and as willingness to continue interacting. The other indicators that emerged as salient for sustaining interactions relate to chronomics, in terms of response time (delayed or

immediate), time allocated for each session and familiarity over time, and the length and pace of turns and silences.

The findings also suggested guidelines to both teachers and learners on how to foster interactivity and facilitate social presence among participants. Teachers can foster interaction and the establishment of social presence by encouraging learners to incorporate their feelings, experiences, examples and ideas in task completion. As also reported by Bozkaya (2008) and Yamada (2009), encouraging learners to initiate new topics, to ask follow- up questions, and to provide quick, and above all non-verbal, backchannels is crucial for the continuation of online interactions. In addition, giving learners ample opportunities for o -task talk has been highlighted in this study.

Furthermore, teachers who wish to set up computer-mediated collabo- ration for their learners should consider how interaction among learners of different and similar cultures can establish intersubjectivity, or a shared back- ground (Kehrwald, 2010), especially when interactions are in a foreign language which limits self-expression. Learners should be aware of potential silences (Stickler, Batstone, Duensing and Heins, 2007) in interaction due to lack of intersubjectivity, limited linguistic proficiency or technological glitches and learn to tolerate and interpret these ambiguities. They need to be able to distinguish between silences and slow turns that are caused by technical or language-related difficulties and those that indicate unwillingness to communicate or seem to denote weakness. Similarly, learners need to be careful when evaluating quick turns and lack of silences as these can signal willingness to continue the interaction as well as dominance. Thus, language learners need to strike the right balance between quick turns and tolerance for silence when projecting their own intention towards continuing the interaction and interpreting their interlocutor's intentions.

The findings also carry implications for the theory of social presence. They indicate that how willingness to continue interacting is expressed and how social presence is projected are unpredictable because of individual and contextual variation. Previous research has treated social presence as a single, total quality of interactions (Bozkaya, 2008; Garrison et al., 2010; Kehrwald, 2008; Lomicka & Lord, 2007; Lowenthal & Dunlap, 2014; Rourke et al., 1999; Yamada, 2009). However, it appears that each learner projects his/her own presence differently and perceives the relative importance of each component differently. Learner variation also exists in how each participant interprets the social presence projected by others. The findings also imply that social presence is not a constant and fixed quality, but is dynamic and co-constructed during interaction with moments of higher immediacy and interactional synchrony. Therefore, more studies are needed to investigate how individuals co- construct their social presence, how others perceive this construction and how it changes over time.

Furthermore, both the language that is used (whether first or second) and the technology (mono- or multimodal) are highly relevant to learners' skills of projecting and interpreting social presence. Thus, trying to implement and adapt indicators of SP identified in asynchronous written interactions developed by Rourke et al. (1999), as in studies by Satar (2007), Hughes et al. (2007) and King (2007), is not always easy, nor can the resulting framework comprehensively account for social presence in every con- text. Future in-depth research exploring how social presence is developed and projected in a variety of contexts would further our understanding of the concept.

The findings of this paper are thus unique as an attempt to explore social presence qualitatively in online multimodal language learner interactions. The qualitative approach followed here allowed for an in-depth understanding of participants' construction and interpretation of social presence through an exploration of their multiple realities and lived experience. More specifically, the qualitative approach permitted a detailed examination of the different ways in which each participant sustained their interactions. This kind of detail and the voice of participants cannot be investigated through quantitative research, such as questionnaire studies or content analysis.

Finally, learners and teachers should keep in mind that although being a rich multimodal context, DVC is a technology that mediates interaction and that is different from face-to-face communication (Sindoni, 2013). Key differences are delays and distortions in audio and video, limited visual field and mediated eye-contact (Develotte, Guichon, & Vincent, 2010; Satar, 2013). Teachers and learners should learn to accommodate and manipulate these factors to project and interpret social presence online.

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Appendix 1: ooVoo video call interface

1. Video and microphone controls
2. Sound control
3. Internet connection quality
4. Left to right: send file, start and/or end call, start text-chat (pop-up window)
5. The researcher, minimised, audio and video disabled
6. Participant videos with usernames on top (concealed)
7. Indication that the call is being recorded by the other participant(s)
8. Recording button.

Appendix 2: Sample interview and post-task questionnaire questions

Sample interview questions:

Q 3. Can you talk about your first impression about your friend and how this developed in time?

Q 5. Do you think the available modes (write, listen, see) affected your interactions? If so, in which ways?

Q 7. Do you think the way your partner behaved affected your interactions? If so, in which ways?

Q 8. What do you think is important in online communication via videoconference?

Q9. In your videoconference sessions were there times when you felt you were in the same room with your partner?

Q10. In your videoconference sessions were there times when you felt you did not notice the computer interface as if you were communicating directly?

End of interview.

Stimulated reflection: A three minute recording from other learner interactions were used to stimulate participant comments on the effects of different modes on how they interpret the interactions.

Sample post-task questionnaire questions:

Q1. What would you like to tell about your online interaction? If you were keeping a journal, what would you write in it about this interaction? What were the best and the worst aspects of your interaction?

Q2. Have your impressions about your conversation partner changed in this session? If so, in which ways and why? Please give an example.

Q5. How did you feel in this interaction? Why? Can you give examples?

Q6. Please out an X to the most appropriate answer to the below questions.

	Never	Rarely	Sometimes	Often	Always
Did you feel you were involved in communication?					
Did you feel you could express your thoughts and feelings?					
Did you feel you understood your partner's thoughts and feelings?					
Did you feel you worked together and helped each other to do the task?					

Appendix 3: A framework to analyse social presence in Desktop Videoconferencing via foreign language

<table>
<tr><th>Building Intimacy</th><th>Sustaining Interaction</th><th>Establishing Intersubjectivity</th></tr>
<tr><td>Smiles (warmth and sincerity)
Self-disclosure (personal info and emotions)
Humour
Complimenting and expressing appreciation (personal, language-related, task-related)
Off-task talk
Familiarity
Empathy</td><td>Questions (initiation and follow-up)
Backchannels (including smiles)
Reciprocation
Paying attention
Collaboration
Chronomics (pause time, time spent together)
Turn length and silence</td><td>Common ground
Agreements and disagreements
Vocatives
Inclusive pronouns
Phatics and salutations
Power
Smiles (interactional synchrony)</td></tr>
<tr><td colspan="3">Apprehension and Relaxation</td></tr>
<tr><td>Multimodality</td><td></td><td>Beliefs about online communication</td></tr>
<tr><td rowspan="2">Eye contact and gaze (oculesics)
Visual expressiveness
Proxemics: Body orientation, forward leaning
Kinesics: Smiles, head nods, gesture, facial expressions, body synchrony, interactional synchrony
Physical appearance: clothing, height, bodily relaxation, open body positions</td><td rowspan="2">Vocal expressiveness
Tone and pitch of voice
Fluency
Backchanneling
Vocal synchrony

Text chat (mode-switching)</td><td>Immersiveness
Trust
Cyberspace and online communication</td></tr>
<tr><td>Foreign Language
Code-switching
Perceived FL development
Language learner frustration</td></tr>
</table>