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Indice

Virtual co-presence in an intergenerational language-learning videoconferencing project: an exploratory pilot study

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Abstract

The possibility of using senior citizens as native speaker partners for language learners represents an interesting modification to the more traditional telecollaboration models. One type of telecollaboration, videoconferencing, allows participants to hear and see each other in real time. This paper aims to explore virtual co-presence (de Fornel, 1994; Galimberti, & Riva, 2001; Steuer, 1992) in one-to-one intergenerational videoconferencing exchanges. For this exploratory pilot study, two non-specialist learners of English at a French university and two American senior citizens were paired. Each learner-senior pair Skyped twice, and the learners recorded video of their complete interactions with their senior citizen partner. Learners and seniors were asked to answer pre-project and post-project questionnaires about their experience, and post-project interviews were conducted with all participants. Analysis of the data showed that being able to see one's partner was integral to establishing virtual co-presence. Moreover, the seniors in the study, despite having limited experience with videoconferencing, used the visual affordances of the webcam to share their physical surroundings with their language learner whereas the learners did not. The results of this

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exploratory study suggest that intergenerational videoconferencing has potential as a new telecollaboration model and therefore merits further examination.

Keywords: intergenerational, videoconferencing, telecollaboration, telepresence, virtual co-presence

Introduction

Using desktop videoconferencing (DVC), "a two-way transmission of audio and video from a personal computer equipped with a fast internet connection, a microphone and a video camera" (Lee, 2007, p. 281), as a tool for teaching and learning foreign languages has been increasing over the past twenty years thanks to the growth and expansion of high-speed Internet access and the on-going development of videoconferencing technologies. This practice is a form of telecollaboration which links learners who are either learning a common foreign language or who are learning each other's language in order to develop learners' linguistic and intercultural competences (O'Dowd, & Ritter, 2006). The importance of practicing foreign language skills in a realistic setting is highlighted by Lee (2007, p. 281), who asserts that DVC provides learners with authentic and genuine real-time interactions which allow them to practice their language skills in a "socially and culturally rich context."

To date, most telecollaboration research has focused on a learner-to-learner model (e.g. Müller-Hartmann, 2000; O'Dowd, 2000; O'Dowd, 2003; O'Dowd, & Ritter, 2006; Chun, 2015; Helm, 2015; etc.) or on a teacher-to-learner or teacher-trainee-to-learner model (e.g. Develotte, Guichon, & Vincent, 2010; Dejean-Thircuir, Guichon, & Nicolaev, 2011; Guichon, & Cohen, 2014; O'Dowd, 2015; etc.). However, over the last decade, an unusual model of telecollaboration has appeared: intergenerational telecollaboration between learners and senior citizens.

This paper presents the results of an exploratory pilot study into virtual co-presence in an intergenerational videoconferencing project, *DISCUSS* (*Dynamic Interactions between Senior Citizens and Universi-*

ty Students through Skype), which pairs learners of English at a French university with American senior citizens. This pilot study is part of an ongoing research project into intergenerational videoconferencing for language learning. The objective of the present paper is to explore one aspect of intergenerational DVC exchanges in order to modify and adapt the research protocol before undertaking a broader, more in-depth study.

1. Literature Review

To the best of the author's knowledge, relatively little research has looked at the possibility of using senior citizens as language partners for learners. Previous research into the ongoing project presented in this paper demonstrated that intergenerational videoconferencing is fraught with risks, such as the difficulties involved in recruiting senior citizens who are comfortable with the necessary technology and the potential health risks inherent when working with older people (Johnson, 2016).

The intergenerational aspect is particularly intriguing considering that "society has an ever-growing number of older people" (Cabanillas, 2011, p. 231) who have more time than working adults to devote to their communities (Holtgrave, Norrick, Teufel, & Gilbert, 2014). This is an interesting modification to the more common models of telecollaboration with peers; working with seniors whose mother tongue is the desired foreign language allows language learners to develop their intergenerational communication skills in addition to the more traditional linguistic and intercultural skills.

Holtgrave et al. (2014) advance that intergenerational projects between learners and seniors have been shown to be beneficial for all participants. On the one hand, learners work on developing relationships with older non-familial adults and on challenging any pre-existing stereotypes they may have about seniors (Jones, 2011). On the other hand, seniors may also benefit from these intergenerational experiences by developing a better understanding of young people and participating in more meaningful social interactions

(Roodin, Brown, & Shedlock, 2013). Cabanillas (2011, p. 231) adds that intergenerational learning represents "an effective instrument in optimizing the possibilities of active aging in this population [of senior citizens]."

1.1 Intergenerational language learning projects

In their paper, Cordella et al. (2012) explore a face-to-face intergenerational language learning project for which Australian high school students learning Chinese, German, or Spanish were paired with senior citizens who were native speakers of the desired language and migrants to Australia. The primary goal of this endeavor was to allow learners to practice and enrich their linguistic skills with native speakers. The authors conclude that the high school students and the older migrants mutually benefitted from their intercultural, intergenerational interactions. The project provided seniors an opportunity for "meaningful social engagement" (Cordella et al., 2012, p. 84) while students developed increased confidence in their spoken English skills.

The CNA Exchange[1] (FCB Brasil, 2014) is an intergenerational DVC project which pairs English learners in Brazil with senior citizens living in a retirement community in Chicago, Illinois. The CNA Exchange video explains the primary idea for the project: learners want someone to practice their language skills with and seniors want someone to talk to. *LinguaLink of Generations* is a similar intergenerational language learning project which exists in Russia (Kulchitskaya, 2017). This project links learners of Russian and Russian senior citizens through Skype for language practice. Kulchitskaya discusses both language practice and sharing cultural knowledge. This is echoed by Lai, & Kaplan (2013), who argue that intergenerational projects encourage English learners to progress from simply learning the language to using the language as a communication tool.

[1] CNA is the name of the Brazilian language school which created and manages the project.

1.2 Virtual co-presence

The development of communications technologies has modified interpersonal communication, progressing from face-to-face interactions to include technology-mediated interactions such as a telephone call or a videoconferencing exchange. De Fornel (1994) affirms that in a face-to-face conversation, the participants are both physically present, thus embodying a physical co-presence. Galimberti, & Riva (2001) assert that during computer-mediated interactions, physical co-presence is no longer required; instead, participants create a virtual co-presence through their verbal exchanges. De Fornel (1994) agrees, suggesting that "virtual co-presence" is created by participants in DVC-mediated interactions. In a paper examining notions of presence in virtual reality, Steuer (1992) refers to virtual co-presence, although he calls it "telepresence." He explains that presence is "*the sense of being in an environment*" (Steuer, 1992, p. 6) whereas telepresence is "*the experience of presence in an environment by means of a communication medium*" (Steuer, 1992, p. 6). Suler (1999) argues that in 1999, when users connected to the internet, they often felt as if they were arriving in a different space, and that the terminology – *rooms*, *worlds* – emphasized the virtual embodiment of physical spaces.

Being able to see real-time video of one's interlocutor in modern videoconferencing only heightens the sense of virtual co-presence. In synchronous computer-mediated communication (CMC), interlocutors must simultaneously manage both their presence in their physical surroundings and the sense of presence in the virtual space created by the CMC (Steuer, 1992). Thanks to the visual nature of the webcam, each participant in a videoconferencing exchange can share his or her physical surroundings with the others despite the geographical distance between them, thus allowing the participants to be virtually present in each other's physical space (de Fornel, 1994).

This concept of "virtual co-presence" is supported by the work of Develotte et al. (2010), who examined teacher trainee use of DVC for foreign language teaching. In their conclusion, they stress that "webcamming creates presence at a distance, installs an obvious connec-

tion between the participants and, furthermore, develops the quality of the pedagogical relationship" (2010, p. 309). In addition to allowing for the creation of virtual co-presence, DVC also allows for participants to create connections more easily, particularly teacher-learner relationships. Guichon, & Cohen (2014) mention that language researchers had claimed that in videoconferencing exchanges, the visual affordances of the webcam should allow interlocutors to see social cues and to feel closer to each other.

This paper presents an exploratory study of intergenerational DVC exchanges between non-specialist undergraduate English learners at a French university and American senior citizens. Using a qualitative methodology, the author explores how language learners and seniors create a sense of virtual co-presence in their exchanges. In these learner-senior exchanges, how important is the webcam to the creation of virtual co-presence? What kinds of experiences do they share thanks to the affordances of audio and video technologies? This paper will shed light on virtual co-presence in intergenerational DVC exchanges – how it was created between the learners and the seniors in this project and how it was perceived by the participants – as preparation for a broader study into the linguistic and intercultural aspects of intergenerational telecollaboration.

2. Methodology

Senior citizen participants are volunteers who are recruited through collaboration with a senior center in the United States[2]. For the intergenerational telecollaboration project presented in this paper, two seniors volunteered to talk with learners of English and help them practice their speaking skills.

Learner participants were selected from two second-year non-specialist English classes – one B2-level (upper-intermediate) class and one C1-level (advanced) class according to the *Common European Framework of Reference for Languages* (Council on Europe, 2011) – at

[2] A more specific location is not provided in order to protect the anonymity of the participants.

a French university where all students learn one foreign language as a required part of their undergraduate degree.

Students in both classes were asked to answer a questionnaire which focused on their personal background, their computer skills and their foreign language experience. They were also asked to indicate if they were interested in participating in a research project which would involve recording DVC exchanges with a partner; at that point in the selection process, students were unaware that the research project focused on exchanges with senior citizens.

One B2-level learner and one C1-level learner were chosen to participate in the research project based on several criteria: a willingness to participate, foreign language experience, a reliable internet connection, a computer, and technological savvy. It was necessary for learners to use a computer in order to record their DVC sessions properly, as the software does not yet work on tablets or smartphones[3]. Being able to solve computer issues was necessary because the learner-senior exchanges would take place outside of class, and students needed to be good with technology in order to record their conversations.

The chosen learners were informed of their selection and were told of the focus of the research project: DVC exchanges between French learners of English and American senior citizens. They were given the chance to withdraw, but both learners chose to participate.

The two learner participants and the two senior citizen participants were instructed to fill out a personal survey about their contact information (email and Skype name), background, hobbies, and any taboo subjects to be avoided in discussions. They were then paired with a partner for one-to-one DVC exchanges, and each participant received his/her partner's personal survey in order to help participants get to know their partner and later to find discussion topics. Skype (Skype, n.d.) was selected as the DVC technology for these exchanges because it is the most commonly used by seniors and the easiest for senior citizens to install and use, according to the director of the senior center.

[3] While learners were required to use a computer in order to record their exchanges, seniors were allowed to use whatever technology they wanted.

Before their videoconferencing exchanges began, all participants received their partner's personal survey. They were instructed to talk with each other twice, and given the learners' advanced language skills, learners were not assigned any particular task. All participants were told that they had complete freedom as to what to discuss. In addition, learner participants were notified that nothing related to the intergenerational project would be evaluated or graded. This decision was made for two primary reasons: first, in order to avoid disparities with the other students who did not participate, and second, so that the learner-senior interactions would be as natural as possible. By removing the risk of being evaluated, learner participants could interact spontaneously with their senior citizen.

2.1 Participants

The B2-level English learner is François[4], a 20-year-old French student who is studying performing arts. His senior citizen partner is Ann, a 66-year-old American nurse. François and Ann Skyped twice, once on April 14 and again on April 22. Overall, 1 hour, 17 minutes and 33 seconds of data were collected from their exchanges. There are a total of three videos from two sessions. Due to a connection problem in the middle of their first exchange, they had to call each other again, thus creating a second video of that first exchange. It is important to note that Ann used a tablet for her DVC exchanges with François.

The C1-level English learner is Julie, a 21-year-old French student who is studying performing arts. Her senior citizen partner is Claire, a 70-year-old retired American nurse who was working as an outreach worker at the senior center. Julie and Claire Skyped twice, once on May 17 and again on May 18. There are two videos from their 2 sessions, and a total of 33 minutes and 39 seconds of data were collected from their Skype sessions. Just like the two learners, Claire used a laptop to Skype with Julie.

Between April and May 2016, the learners Skyped with their seniors and recorded their sessions using software such as Evaer (Evaer,

[4] Names of all participants have been changed in order to provide anonymity.

n.d.) to capture the incoming and outgoing video streams or Open Broadcaster Software (Open Broadcaster Software, n.d.) to record the screen. Given their advanced levels in English, learners were instructed to talk about anything they wanted during their conversations with their seniors. There was no pre-assigned task that learners were asked to complete; the primary objective was to allow learners to practice speaking English and interacting with a native speaker. As this was a voluntary project that took place after the end of the semester, nothing related to the learner-senior exchanges was evaluated or graded.

After their exchanges had finished, all participants were asked to answer a post-project questionnaire about their experiences. The questionnaire for learners focused on their opinions about how their language skills had evolved and their impressions of their exchanges with their senior citizen. The seniors were also asked to answer a short questionnaire which inquired about their exchanges with their English learner and how much they felt they had helped their English learner develop his/her language skills. One-on-one interviews were then conducted with all participants, with questions being based on participants' answers to the post-project questionnaire and on the video recordings of the learner-senior exchanges.

2.2 Data Analysis

At the end of the project, the learners provided the researcher with all of the recorded video data from their exchanges. Each video file was renamed with the anonymized names of the participants and the date and start time of the exchange. The video recordings were then analyzed and annotated to uncover if virtual co-presence was created between each learner-senior pair. The moments when virtual co-presence was established were then examined and compared in order to determine the role of the webcam, i.e. the affordances of audio and video technologies, on the experiences shared by each learner-senior pair. The personal surveys, questionnaires and interviews were analyzed in order to provide additional information regarding participants' own impressions of the role of the webcam on their learner-senior exchanges.

Analysis of the recorded video data found that a sense of virtual co-presence was created between both learner-senior pairs thanks to the visual affordances of the webcam. The data showed that virtual co-presence was created only when partners were able to see each other in real time. After establishing a synchronous visual connection, two different types of virtual co-presence emerged from the learner-senior exchanges: using the webcam to introduce one's Skype partner to important people and sharing one's physical surroundings.

2.2.1. The importance of establishing a video connection

In this study, establishing an audio and video connection between the participants was found to be an essential feature of the creation of virtual co-presence. Being able to see each other in addition to hearing each other prepares participants for future interactions which rely on the visual characteristics of DVC exchanges.

Julie and Claire provide an example of the significance of the visual nature of the webcam to the creation of virtual co-presence. The first time they connected through Skype, they encountered some technical difficulties: despite being able to hear Julie, Claire was unable to see her, so they worked together to find a solution. Even though their main task was discussion, an audio connection was not sufficient for Julie and Claire to feel virtually co-present. If the learner and the senior had met in a face-to-face situation, they would not have had to overcome any technical issues in order to establish a visual connection. In the following example, it appears that the sense of virtual co-presence is not established until both the learner and the senior can hear and see each other.

In this first example, Claire vocalizes the fact that Julie's video feed does not seem to be working. Claire asks Julie what they have to do in order to fix this technological problem.

Having used Skype only once before, Claire does not appear to be very impressed to be able to hear her partner. This may be because the experience was very similar to talking to someone on the phone.

The novelty of the experience for Claire is demonstrated when she is finally able to see live video of Julie. Right before the video starts working, Claire is leaning toward her computer, visibly checking her

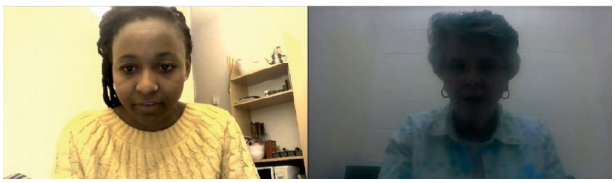

Figure 1. Julie and Claire work together to get Julie's video feed working so that Claire can see her

computer screen. She has just told Julie that she can see a picture of Julie, but upon verification, she states, "But that's not live." In Fig. 2, both participants have serious expressions on their faces as they try to find a solution to their technical issue.

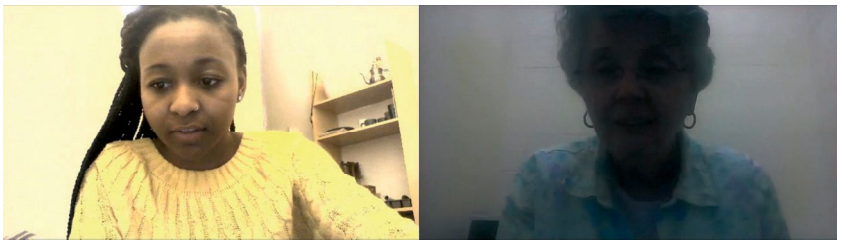

Figure 2. Julie and Claire are serious as they continue to work on finding a way to establish a mutual video connection

In the moment following this screen capture, Julie's video feed starts to work and Claire is finally able to see Julie. Claire has an astonished look on her face as she leans backwards, smiles broadly, and laughs excitedly as she exclaims, "*There you are! I can see you now!*" before making a reference to an aspect of Julie's physical appearance ("*Look at all those braids!*"), thus proving that the visual connection was correctly established.

Being able to see each other in real time allows virtual co-presence to be created between Julie and Claire. For approximately ten seconds after their video connection is established, the pair smiles and waves at each other, as demonstrated in the series of screen captures below in Fig. 3.

Figure 3. Julie and Claire smile and wave at each other after fixing their technical issue and establishing a mutual visual connection

It is only when the visual connection is established between the two participants that virtual co-presence is truly created. The visual aspect of the webcam in the learner-senior exchanges was referred to in one of Claire's responses to her post-project questionnaire; when asked about whether or not the project lived up to her expectations, she indicated that she had enjoyed Julie's "*beautiful smile*". When both partners can see and hear each other, they share the same experience in the virtual space that they have created.

It is important to note that the visual nature of the webcam is not always perceived as an advantage. In her post-project interview, Julie talked about being apprehensive about her first Skype exchange with

Claire. Because she is black, Julie worried that she would not match Claire's expectations and that Claire would somehow treat her differently because of the color of her skin. Julie mentioned that she had not been expecting her senior citizen partner to be black either. Unlike a telephone call, one's physical appearance is a factor in a DVC exchange because of the visual nature of the webcam. When asked if it had been an issue, Julie said that as soon as Claire could see her, the latter had exclaimed enthusiastically, "*Look at all those braids!*" At that moment, Julie had known that her skin color was not going to be a problem. In this instance, the concept of virtual co-presence, of sharing video with a stranger, caused Julie to be anxious and uneasy before her first DVC exchange with Claire.

2.2.2. Introducing important people to one's DVC partner

The webcam makes it possible for participants to introduce people who are physically present in their environment to their Skype partner. While this may be relatively awkward to do on the phone, the visual aspect of DVC creates a sense of virtual co-presence which makes it seem as if the distant person were physically present.

Figure 4. François and Ann are facing their screens and focusing on each other as they talk about teachers

François and Ann provide an example of this type of virtual co-presence. During one of their conversations, they are talking about teachers. In this example, their attention is focused on each other, as shown in Fig. 4. They are both looking at their screens in order to show the other that they are paying attention.

At a certain point in their discussion, Ann becomes distracted. While François continues talking to her, Ann looks to her right at something outside the frame of her webcam.

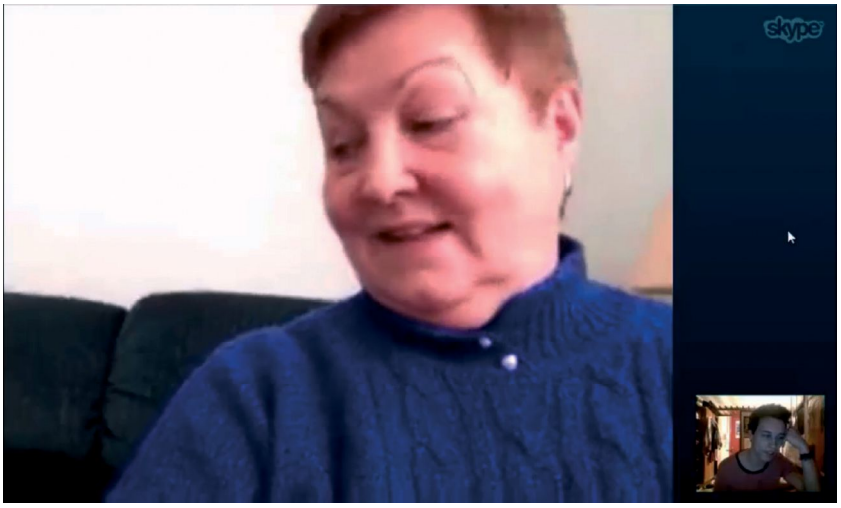

Figure 5. As François continues talking, Ann looks to her right at something outside the frame of the webcam

When François finishes speaking, she moves her tablet so that the webcam captures her family cat, Tuukka, who has just jumped onto the couch next to her, and in a high-pitched voice, she asks the cat if it wants to say hi to François.

In the screen capture in Fig. 6, François has adjusted his posture as he talks to Ann's cat: he is leaning forward and hunching down, and he is tilting his head to the side as he says hello to the cat in a high-pitched voice.

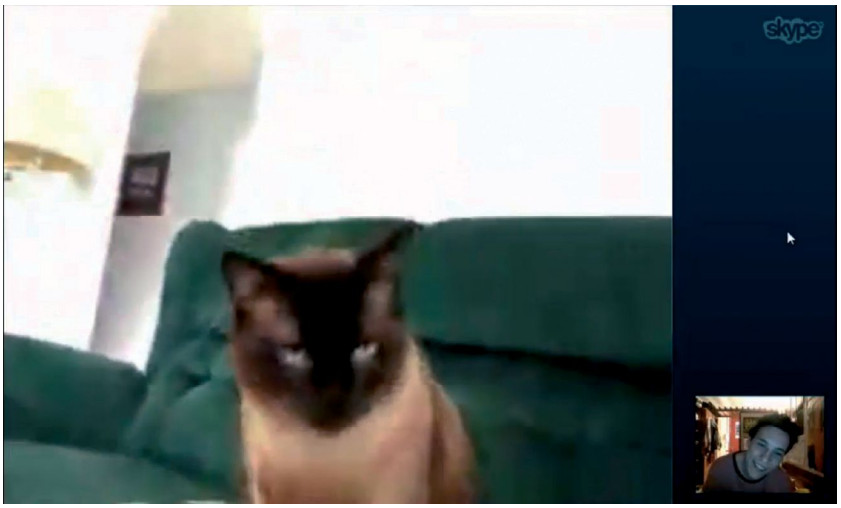

Figure 6. Ann moves her tablet to allow François to see her cat which had just jumped onto the couch next to her

In this case, Ann has created a sense of co-presence by widening the frame of the webcam; if François were physically present in the room with Ann, he would be able to see the cat walk into the room and jump on the couch. However, because the webcam reduces the virtual image to a static frame, Ann has to make the conscious decision to move the webcam in order to include François in her physical surroundings. Thanks to the webcam, François is able to see Ann's cat and to participate in the experience taking place in Ann's living room. Later during the same exchange, Ann walks around the room with her tablet in order to introduce François to the other family cat. By sharing her family pets with François, Ann appears to be sharing personal information about herself with her English learner, possibly with the intention of trying to create an interpersonal bond with him.

2.2.3. Sharing one's physical surroundings

Using the webcam to share one's physical surroundings is another way of creating a sense of virtual co-presence, as it allows the distant

partner to comprehend one's physical environment. This is especially significant in an intercultural exchange, where the physical spaces are likely to look very diverse due to the cultural differences. Julie and Claire provide the first example of this type of co-presence. When they are still getting to know one another during their first Skype exchange, Claire offers to take Julie on a tour of her office at the senior center, where she is Skyping from. Julie responds positively to this suggestion with a smile, as displayed in the screen capture below.

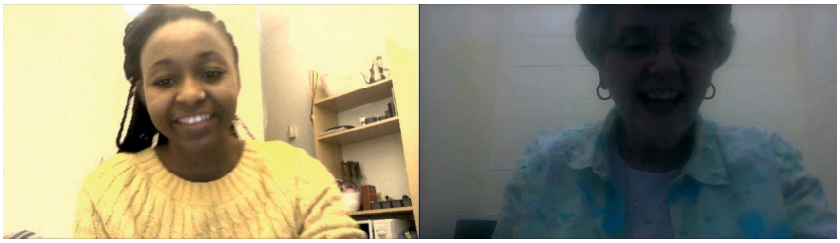

Figure 7. Claire offers to take Julie on a virtual tour of her office at the senior center, and Julie responds positively

Claire proceeds to pick up her laptop and move around her office.

Figure 8. Claire picks up her laptop and moves around her office

As Claire moves the laptop so that the webcam shows Julie her office, Claire describes what she is showing Julie: "*See, I've got stuff up...*" as she points the webcam at the objects that she has hung on the walls of her cubicle.

Figure 9. Claire shows Julie some objects hanging on the wall of her cubicle. Julie is slightly leaning forward, focusing on what Claire is sharing

Claire continues to move her laptop to use the webcam to show Julie her desktop computer, which is visible in the bottom left-hand corner of Claire's frame in the screenshot below in Fig. 10.

Figure 10. Claire shows Julie her desktop computer. Julie is still focused on her screen, indicating that she is paying attention to what Claire is showing her

Similar to Ann moving her tablet to introduce François to her cats, Claire moved the webcam so that her partner could be virtually present in her physical environment. Julie referenced the importance of the visual affordances of the webcam during her Skype exchanges with Claire in her post-project questionnaire. In discussing the advantages of this intergenerational exchange, she wrote, "*Ability to meet someone far away from me and actually see her environment thanks to video*." Julie therefore considered seeing Claire's physical surroundings as an advantage to these exchanges, which indicates that the webcam played a role in the creation of virtual co-presence between learner and senior.

This is only the second time ever that Claire has used Skype, yet she wants to share her physical surroundings with her partner, offering to pick up and move the laptop computer in order to take Julie on a virtual tour of her office. When asked about this moment during her post-project interview, Claire explained that she had gotten the idea from her niece: prior to this interaction with Julie, Claire's niece had taken Claire on a virtual tour of her physical surroundings by moving the webcam as the niece walked around her apartment.

François and Ann also shared an experience which is an example of sharing one's physical surroundings as a way of creating co-presence. In this second example of this type of virtual co-presence, Ann used the visual affordances of the webcam to allow François to be virtually co-present for an event. On vacation on the western coast of Florida in May, Ann emailed François to ask if he wanted to join her virtually to watch the sun set on the Gulf of Mexico[5]. François willingly accepted, so Ann called him and woke him up so that he could visually experience the sun set over the Gulf of Mexico. In Ann's post project questionnaire, when asked to explain any surprising or unexpected experiences shared with their partner, she mentioned this experience, stating, "*I was glad he was willing to wake up at 2am French time in order to watch the sun set on the Gulf of Mexico.*" Despite being awoken in the middle of the night, François was virtually present to watch the sunset. He referred to being virtually co-present for the sunset in his post-project questionnaire in response to the question about surprising or unexpected experiences, describing the sunset experience as "*really great*". In an email received from François in June, he explained that he had been unable to record the sunset DVC exchange because of a bad connection, but he emphasized that the experience was unique. It is also possible that François was so present in the moment that he forgot to record the exchange. In this example, Ann used the visual affordances of the webcam to allow François to experience the sunset virtually, despite the geographical distance and the difference in time zones between them.

[5] Due to the six-hour time difference between Florida and France, the sunset would occur around 2am French time.

3. Discussion and Conclusion

This exploratory pilot study of DVC exchanges between learners of English and senior citizens demonstrated that the visual aspect of the webcam allowed participants to create a sense of virtual co-presence. One of the primary results of this study is the importance of establishing the visual connection between the participants. Claire's experience in the project was much more exciting when she could see her partner, possibly because of Claire's limited experience with DVC exchanges: for a 70-year-old, being able to see someone on the other side of the world and talk with them is extraordinary.

The present study also found evidence of two types of virtual co-presence in intergenerational DVC exchanges: using the webcam to introduce important people to one's exchange partner and to share one's physical surroundings.

Despite both seniors having limited experience with videoconferencing, the results of this study have shown that it was the seniors who used the webcam in order to allow their learner of English to be virtually present in their environment. The seniors moved around, changed rooms and explained their environment to the learners. On the contrary, the learners stayed relatively static, remaining in the same position throughout the interactions. When asked about it in her post-project interview, Julie explained that she had done her Skype sessions at a friend's apartment; as it was not her own space, she did not feel comfortable sharing it with her senior. François may not have taken Ann on a virtual tour of his student dorm room because he was not proud of it, which can be inferred from the way he verbally described it to Ann in one of their exchanges. The learners' lack of movement may also have to do with the participants' roles in the exchange: having taken on the role of teacher, it is possible that the seniors wanted to share as much as possible about their daily lives and routines. The students may have taken on a passive role of accepting the new information without thinking that their seniors might be just as interested in the students' physical surroundings.

This study presents two primary limitations. The first concerns the limited number of learner-senior pairs; as a result of difficulties

recruiting seniors, the research project had to be downsized. The second limitation concerns the length of the project. All learner-senior pairs were meant to exchange over a 6-to-8 week period, but this was impossible due to various problems with recruiting seniors (for a more detailed explanation of the difficulties, see Johnson, 2016). Two exchanges are not sufficient for an in-depth study of intergenerational telecollaboration.

The results of this pilot study imply that the affordances provided by videoconferencing technologies allow partners to create a sense of virtual co-presence. While these conclusions are merely preliminary based on the limitations of this project, the results of this paper demonstrated that learners and seniors in intergenerational DVC exchanges take advantage of the visual affordances of the webcam in order to create a sense of virtual co-presence. In a future study, it would be interesting to investigate how the technology used, e.g. computer or tablet, influences the participants' feelings or perceptions of presence.

This exploratory pilot study has examined virtual co-presence in intergenerational telecollaboration. However, many significant aspects of intergenerational telecollaboration have not yet been explored. Regarding potential future research, the author hypothesizes that learner-senior DVC exchanges may develop learner motivation for language practice by allowing learners direct contact with native speakers of the desired foreign language. As an innovative model of DVC exchanges, intergenerational telecollaboration warrants additional studies into its effects on language learning, motivation, and the development of intercultural knowledge as well as the socio-affective bonds which may be created between learners and seniors.

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