

Telepresence Experienced in Videoconference Varies According to Emotions Involved in Videoconference Sessions

Stéphane BOUCHARD^{a,b,1}, Stéphanie DUMOULIN^{a,b}, Mélanie MICHAUD^{a,b} and
 Véronique GOUGEON^a

^a Université du Québec en Outaouais

^b Centre Hospitalier Pierre Janet

Abstract. Previous studies have linked telepresence to the strength of the therapeutic relationship experienced during telepsychotherapy. This finding comes as a surprise for many people who have been involved in a teleconference meeting, where telepresence is often considered weak. The aim of this study is to (re)evaluate the impact of emotional engagement on telepresence. Participants were randomly assigned to one of the two conditions: (a) emotionally charged verbal exchange first (followed by a more neutral verbal exchange), or (b) emotionally neutral verbal exchange first (followed by an emotionally charged verbal exchange). A distraction task was performed between the two verbal exchanges in videoconference. Results showed that verbal exchanges involving stronger emotions increase telepresence. These results may explain why telepresence is so high in telepsychotherapy.

Keywords. sense of presence, videoconference, emotional engagement

Introduction

Using videoconference to deliver psychotherapy (i.e., telepsychotherapy) is receiving more and more empirical support. Studies showed a high level of satisfaction from patients involved in telepsychiatry [1-3] and the therapeutic alliance and bond between the patient and the therapist appear to be very good [4, 5, 6]. For example, Allard et al. [5] assessed the strength of the therapeutic alliance using two measures of alliance, one developed from a pan theoretical perspective (the Working Alliance Inventory) and one developed from a psychodynamic perspective (the California Psychotherapy Alliance Scales). Both measures were administered after the first, the fifth and the last therapy session of a cognitive behavior program delivered in face-to-face and in videoconference to 45 patients suffering from panic disorder with agoraphobia. In order to reduce social desirability, patients mailed their completed questionnaires directly to the provincial board of psychologists and were reassured that their answers would only be known to their therapist after the study. And to reduce the risks of

¹ Corresponding Author: Stéphane Bouchard (stephane.bouchard@uqo.ca). The study received ethical approval from both the university and the hospital.

potential contamination of the data gathered after the fifth was very high in both face-to-face conditions that were significantly different.

An examination of the results further revealed that the strength of the therapeutic alliance in telepsychotherapy [7]. The results of the study in the therapy room *with* the results of the study in telepsychotherapy, most participants reported feeling substantially present during verbal exchanges. Telepresence and presence are correlated [1]. The results of the study on emotionally relevant content are charged. The role of emotion in telepresence is now explored more thoroughly. The results of the study on emotional engagement on

1. Methods and Tools

A total of 20 participants enrolled to perform the experimental task. They were aged between 20-56 years old and were recruited on the internet. All participants were informed about the study. They then completed two questionnaires to assess their comfort toward telecommunication and control for the impact of these factors on the study. They were requested to list five activities they performed in the last six months and to rate the pleasure experienced during these activities.

Participants were randomly assigned to one of the two conditions: (a) emotionally charged verbal exchange first (followed by a more neutral verbal exchange), or (b) emotionally neutral verbal exchange first (followed by an emotionally charged verbal exchange). In both conditions, participants were asked to discuss the most neutral verbal exchange over videoconference. In the second condition, participants were asked to discuss the most neutral verbal exchange over videoconference. Following each verbal exchange, questionnaires assessing presence and telepresence were administered. A distraction task was assigned between verbal exchanges. Participants were asked to cross the letter "e" each time it appeared in the text.

The experiment was conducted in a laboratory. In condition A, the participant was seated in front of a television and a Tandberg Vision 4000 camera (different from the one who was used in the other procedures) and handed out the

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potential contamination of alliance ratings by treatment success, the authors focused on data gathered after the fifth therapy session. Their results showed that working alliance was very high in both face-to-face and videoconference, with differences between the two conditions that were very small (η^2 below .03) and far from being significantly different.

An examination of treatment processes with the same sample as Allard et al. [5] further revealed that the strength of the alliance is mediated by the feeling of presence in telepsychotherapy [7]. Telepresence can be defined as the illusion of being *there*, in the therapy room *with* the other person [8, 9] and, although it seems important in telepsychotherapy, most people involved in a videoconference meeting do not report feeling substantially present. One possible explanation would be the role of emotions experienced during verbal interactions in videoconference sessions. Emotions and presence are correlated [10] and psychotherapy sessions are usually fuelled by emotionally relevant content, while business meeting are usually less emotionally charged. The role of emotions in telepresence has been previously examined [11], but is now explored more thoroughly. This study aims to assess the impact of the intensity of emotional engagement on the feeling of telepresence.

1. Methods and Tools

A total of 20 participants enrolled in the study, but two were excluded due to failures to perform the experimental task. The study's sample was composed of 18 participants aged between 20-56 years old. More than half of the participants were women (60%) and were recruited on the university campus. Before the videoconference session, participants were informed about the aims of the research and signed a consent form. They then completed two questionnaires evaluating their immersive tendencies and comfort toward telecommunications in order to describe the sample and statistically control for the impact of these variables if differences would occur after randomization. They were requested to list five personal positive life events that occurred to them in the last six months and to place them in a hierarchical order according to the degree of pleasure experienced during that event.

Participants were randomly assigned to one of the following two conditions: (a) emotionally charged verbal exchange first (followed by a more neutral verbal exchange), or (b) emotionally neutral verbal exchange first (followed by an emotionally charged verbal exchange). In the emotionally charged verbal exchange, participants were asked to discuss the most positive life experience they had listed for 15 minutes over videoconference. In the emotionally neutral verbal exchange, participants were asked to discuss the most neutral life experience on their list for 15 minutes over videoconference. Following each discussion, participants were asked to fill out two questionnaires assessing presence and the intensity of their current emotions. A distraction task was assigned between each discussion where patients were requested to cross the letter "e" each time it occurred in a three-page article on relaxation.

The experiment was conducted in two separate rooms in the research lab. In room A, the participant was seated in a psychologist's office, four feet away from a 32-inch television and a Tandberg Vision 2500 videoconference system. A female experimenter (different from the one who welcomed the participant, went through the ethics procedures and handed out the questionnaires) was in room B and discussed using a

similar videoconference system with the participant. Both systems were linked at 384 kbits per second using six ISDN lines.

The Immersive Tendencies Questionnaire [9] and the Distance Communication Comfort Scale [12] were administered at the start of the experiment. The Brief Mood Introspection Scale [13] was used as a manipulation check using the three positive mood items (happy, joyful, energetic). The dependent variable was the Telepresence in Videoconference Scale [14], which is composed of eight items and has a Cronbach's alpha of .84.

2. Results

The descriptive statistics for the sample are reported in Table 1. Paired t-tests did not find any statistical differences between both conditions after the random assignment.

Table 1. Descriptive statistics (standard deviation) for participants in both conditions.

	Emotionally charged session	Emotionally neutral session	Statistics
	first	first	
Age	26.63 (8.5)	26.80 (11.22)	$t_{(16)} = .04$, ns
Gender	75% females	60% females	$\chi^2_{(1)} = .45$, ns
Immersive Tendencies Questionnaire	72.63 (11.21)	74.6 (14.7)	$t_{(16)} = 0.31$, ns
Comfort with distance communication in videoconference	39.38 (12.58)	45.78 (9.39)	$t_{(15)} = 1.2$, ns
Comfort with distance communication in videoconference	38.13 (7.95)	43.22 (5.78)	$t_{(15)} = 1.52$, ns
Comfort with communication in face-to-face	49.0 (9.3)	53.22 (5.52)	$t_{(15)} = 1.16$, ns

Table 2. Descriptive statistics (standard deviation) for mood state and telepresence after each experimental session of discussion in videoconference.

	Emotionally charged session		Emotionally neutral session first	
	first		first	
	1 st session	2 nd session	1 st session	2 nd session
Positive mood	18.88 (5.41)	16.13 (5.94)	20.8 (3.91)	21.6 (4.77)
Telepresence	49.13 (15.15)	45.31 (11.22)	60.0 (18.26)	63.05 (20.36)

As a manipulation check, the impact of discussion on mood was assessed after both videoconference sessions (see Table 2). A repeated measures ANOVA confirmed the change in positive mood [interaction $F_{(1,16)} = 4.64$, $p < .05$; no significant main effect of Time and Condition]. A 2 Times X 2 Conditions repeated measures ANOVA was performed of the telepresence measure. Both the Time [$F_{(1,16)} = .07$, ns; partial eta squared = .004], and Condition [$F_{(1,16)} = 3.27$, ns; partial eta squared = .17] main effects were not significant. As expected, results on the Time by Condition Interaction revealed a clear impact of the emotional content of the discussion on the feeling of presence [$F_{(1,16)} = 5.42$, $p < .05$].

3. Discussion

Mood inductions techniques [15] and their impact in Virtual Reality (VR) have been studied in a study on mood and (tele)presence. It was confirmed that experiential exchanges between two people affect the subjective feeling of presence in VR [17], where an emotional presence was found to be more significant than a neutral one.

The significance of telepresence, and the working personal experience of conducting a business meeting does not lead to such a conclusion. Our results suggest that telepresence can contribute to the structure of the result. Replication of these results is needed to confirm the conclusion.

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3. Discussion

Mood inductions techniques are effective ways to manipulate participant's effective states [15] and their impact on the feeling of presence experienced during an immersion in Virtual Reality (VR) has been studied [16]. This appears to be the first experimental study on mood and (tele)presence experience in videoconference sessions. Our results confirmed that experimentally manipulating the emotional valence of the verbal exchanges between two people meeting in a videoconference has a direct impact on the subjective feeling of presence. These results are consistent with findings in the field of VR [17], where an emotionally charged environment led to a stronger feeling of presence than a neutral one.

The significance of these results is to offer a potential explanation as to why presence, and the working alliance, is so strong in telepsychotherapy. Based on the personal experience of authors and therapists involved in telepsychotherapy [e.g., 5, 6], conducting a business meeting or attending a class in a videoconference session usually does not lead to such a strong impression of presence compared to psychotherapy sessions. Our results suggest that emotionally charged discussions favor telepresence and contribute to the strong feeling of presence experienced in telepsychotherapy. Replication of these results with a negative mood, which is more similar to what is experienced in telepsychotherapy, and a larger sample, would give more weight to this conclusion.

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Online Social

Bridiana
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Abstract. The impact of technology on the development of communication skills of teachers. Online social networking utilities amongst a generation of youth provide varied methods of communication. This study examined the impact of social support, self-esteem, and social skills on social support, self-esteem, and social skills. 400 participants (M_{age} = 17.5) completed parametric and non-parametric tests. The research has focused on the acceptance of technology in the acceptance of technology.

Keywords. adolescents, technology, communication, social networking, self-esteem, social support, social skills.

Introduction

With over 500 million users, social networking is transforming the nature of social interaction. This interaction is now replicated in the virtual world. The Internet has become a space where teens can interact. Social networking sites (SNS) such as Facebook, MySpace, and Twitter encourage individuals to interact, regain social skills, and increase the popularity of these utilities. The growth of these connections, creates a unique socialization and the implications for the future.

In adults, recent studies have shown that social networking lead to closer emotional relationships. However, research on SNS is not related to individuals [5]. Whilst SNS develop social skills, social networking utilities also provide a space for socialization.

¹ Corresponding Author: Bridiana
University of Sydney, Australia; E-mail: brian@sydney.edu.au