

USING THE MIXED-METHOD APPROACH TO EXAMINE  
TELEPRESENCE OUTSIDE THE LAB

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by  
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## ABSTRACT

This study's main focus is people's experience of telepresence (or presence for short) —where the roles of technology are misperceived by media users in various ways, such as the illusion of “being there” in a mediated environment. Although over 2000 articles have examined telepresence and nearly all of research studies about telepresence have been conducted in labs by controlling and measuring the effects of different factors, with few examining it from the perspective of people's experiences in their daily lives. Following Lombard and Sun's (2014) (my previous study with Lombard) study of people's presence experience outside the lab, this study used the combined results of a survey and an interview ( $n = 36$ ) to explore participants' lived experiences of presence. Participants offered basic information about them and their experience of presence in the survey; and talked about any experience of presence in their lives and specifically talk more details about their recent experience during the interviews. This study found when, where, with what kind of media, and in what situation people are more likely to have the experience of presence, and explored what elements could contribute to people's experiences of different types of presence. The results of this study noted aftereffects of presence experiences, which means the effects presence has after people's mediated experiences are over. These results were new findings to the study of presence outside the labs. Moreover, this study also demonstrated the value of Lombard and Sun's (2014) survey and found two questions in the survey that could be improved.

*Keywords:* Telepresence, mixed-method, Telepresence outside the lab

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## CHAPTER 1

### INTRODUCTION

#### Defining Telepresence

The term “telepresence” dates from 1976. Short, Williams, and Christie (1976) wrote about an experience with social presence in organizational communication. Marvin Minsky in his 1980 *Omni* article wrote about how technology offered people a sense of operating equipment directly, when actually they were operating the equipment remotely. The feeling created by this kind of technology is a type of telepresence. Cisco and other companies introduced the term “telepresence” to the public in the mid 2000s. Cisco created a high-tech conferencing room with high-bandwidth, large HD screens, and high-quality audio and video equipment to make people who were working in different places feel like they were working physically together in the same conferencing room (Cisco, n.d.).

Scholars of different fields have developed different and interrelated definitions of telepresence. For example, Waterworth and Waterworth (2003a) said, “We see presence as the feeling a conscious organism experiences when immersed in a concrete external world” (p. 1). Jacobson (2002) wrote, “Presence is the experience of being engaged by the representations of a virtual world” (p. 1). Lombard and Ditton (1997) wrote, “Presence [is defined formally as t]he perceptual illusion of nonmediation” (abstract). Even though scholars have different definitions of the phenomena they study, they agree that these definitions all have something in common. “Presence is still a vague concept; researchers in the area agree that there is something important conveyed by the term, but differ widely on exactly what that something is” (Waterworth & Waterworth, 2003b, conclusion). Lombard and Jones (2015) noted that the core of these definitions is a kind of “misconstrual of the role of technology in an experience” (Lombard & Jones, 2015, introduction). In other words, these definitions focus on people’s feeling that a mediated experience is not mediated. The

International Society for Presence Research (ISPR for short) held an extended electronic discussion in 2000 among scholars of presence in various fields and developed a common definition of telepresence (the statement reviewed by a community of scholars interested in the presence concept on April 29, 2000):

Presence (a shortened version of the term “telepresence”) is a psychological state or subjective perception in which even though part or all of an individual’s current experience is generated by and/or filtered through human-made technology, part or all of the individual’s perception fails to accurately acknowledge the role of the technology in the experience. Except in the most extreme cases, the individual can indicate correctly that s/he is using the technology, but at “some level” and to “some degree”, her/his perceptions overlook that knowledge and objects, events, entities, and environments are perceived as if the technology was not involved in the experience. Experience is defined as a person’s observation of and/or interaction with objects, entities, and/or events in her/his environment; perception, the result of perceiving, is defined as a meaningful interpretation of experience.

This definition made it clear what is presence, when and how presence can occur. The presence studied by my research is based on this definition.

### The Role of Telepresence in Daily Life

Telepresence is a common phenomenon in people’s lives, and the study of telepresence has increased very quickly. Because media technology is developing fast in recent decades, it is possible to offer media users a more frequent and/or intense experience of presence, and a good understanding of presence is more important than ever before. The ISPR has sponsored a series of international conferences about telepresence since 1998. According to Lombard and Jones (2007), more than 2000 articles have shown that



telepresence can be evoked in the lab by controlling different factors, and this experience can be valuable in many areas. However, there are few studies that have investigated telepresence experiences in people's normal, daily lives. For example, Lombard and Sun (2014) used an online survey (see appendix2) to explore the possible relationship among people's experience of presence and their media usage behaviors and personal characteristics. We also studied the frequency of different types of presence in people's daily lives. Lombard and Sun's (2014) study suggested that the most frequent telepresence experiences people reported were engagement (in which people feel mentally immersed), social presence (people feel they were actually with the people who were available via technology), social realism (people feel the media content they experienced through technology could or did occur in the real world), and perceptual realism (people feel the content they experienced through technology looked, sounded and/or felt as they would in the real world).

We found that the place where people were more likely to have an experience of presence is home or the workplace and the time when they were more likely to have this kind of experience is afternoon or evening. They prefer to have the feeling of presence when they are alone or with one other person while using computers, phones, and televisions.

My study drew inspiration from Lombard and Sun's (2014) investigation, hoping to obtain a better understanding of the different types of presence that occur in people's daily lives. I used the survey from Lombard and Sun's (2014) study and an interview to explore 36 participants' experiences with presence in their daily lives. The research questions of this project were focused on the possible relationships among people's telepresence experience and media usage behaviors, circumstances, and personal characteristics. Moreover, I also explored participants' recent experiences with presence to examine whether there were patterns in people's presence experiences or not, hoping to make a contribution to help scholars obtain a better understanding of people's daily telepresence experiences. Lombard

and Sun's (2014) study examined people's experiences of presence in general, whereas my study explored in more detail people's feelings and their recent experiences of presence in their daily lives. This current study combined a survey and interview, which could acquire more information than Lombard and Sun's (2014) study. An interview method allows participants to share their feelings and explain their experience of presence to explore the relationship between people's characteristics and their experience, and the factors other than technology that could influence presence. This study also discovered the factors, other than media factors, that have an influence on participants' experiences of presence—and the aftereffects of presence. These results could not have been gleaned by using the online survey alone. Finally, this study also provided an assessment of the validity of the survey from Lombard and Sun's (2014) study and thus could aid in improving the survey.

Below, this thesis introduces the previous studies of telepresence, the theory framework of this thesis, this study's research questions, the recruitment method and sample, and the research method used by this study. After a brief introduction of the data analysis, this thesis will present the study results and an analysis of each research question, and then discussion of the results of this study, the limitations, and implications for future studies.

## CHAPTER 2

### REVIEW OF LITERATURE

#### Previous Studies of Telepresence

Because telepresence is an interdisciplinary area, studies of telepresence have focused on a wide variety of topics. There are three main types of studies of telepresence. The first type focuses on the description of telepresence. Scholars (e.g., Barfield & Weghorst, 1993; Biocca, Harms, & Burgoon, 2003; Draper, Kaber, & Usher, 1998; Freeman, 2004; Heeter, 1992; Lee, 2004; Lombard & Ditton, 1997; Mantovani & Riva, 1999; Sheridan, 1992; Waterworth & Waterworth, 2001; Zahorik & Jenison, 1998) have described the details, explanations, and different types (e.g., social presence, perceptual realism presence) of the telepresence experience and noted in their studies the different research areas in architecture, health, music, education and so on. They did not study how to take advantage of telepresence for practical purposes. These studies showed that telepresence is widely experienced, and it is an important phenomenon, worthy of scholarship.

The second type of presence studies focuses not just on description but also on how to take advantage of telepresence in different fields (e.g., art, physics, religion). According to Lombard and Jones (2007), more than 1614 articles related to telepresence have been published since 1930 (some articles studied the presence phenomena without using the term “presence”): “They feature an impressive diversity of topics and come from a wide array fields” (Lombard & Jones, 2007, p. 203). A growing number of scholars have studied how presence relates to virtual environments, art, business, communication, computer science, education, engineering, linguistics, medicine, music, physics, psychology, religion, social work, sociology, and so on (Lombard & Jones, 2007). For example, Aardema, Cote, and O’Connor (2006) studied how virtual reality could offer people a better experience of presence to make the virtual media more attractive to media users. Adams (2001) explained

how to design comics to help people procure a better experience of presence to improve the enjoyment of comics. Fortin and Dholakia (2005) conducted research on how a web-based advertisement would influence people's presence experiences and a good use of presence could influence people's intention to make a purchase. Andsager, Austin, and Pinkleton (2001) tried to understand what kind of presence experience alcohol-related public service announcements and advertising offered to young adults. Adriaansen, Krumm-Heller, and Gunn (2004) wanted to learn how to enhance human computer interaction in networked Hapto-Acoustic Virtual Reality Environments on the CeNTIN network, which is a system called "a 'haptic workbench' which combines 3D graphics visualization, touch (haptics) and audio interaction with a computer generated model" (p. 905). They wanted to improve the computer design to offer people a more enjoyable presence experience. Scholars such as Allan and Lawless (2003), Asay-Davis et al. (2000), Bae and Lee (2004), Conant (1996), and López, Duffy, and Kirkley (2004) conducted research on learning how to use presence to teach people skills or knowledge. Anumba and Duke (2000) found telepresence played an important role in concurrent lifecycle design and construction, which is a new method used by the construction industry to create an environment that helps clients, engineers, architects, materials suppliers, and many other people involved in a project. "The primary features of the environment are visual representations of the construction project and of the people working on it. These representations provide access to project information via integration with project data management a system and access to the people via integrated communication channels" (Anumba & Duke, 2000, p. 218). Zitzen and Stein (2004) wanted to learn about the presence experience's influence on human conversation. For example, they explored how people's presence experiences influenced their conversations via texting. Bergeron (1998) studied how to use the experience of presence to assist people with medication training to improve the efficiency of medical training equipments. Trueman and Cook (2000) showed how to use

presence to make improvements in music. They explored how to create a song to bring people a vivid experience of presence (such as adding natural voice into a song) to improve the enjoyment of music to people. Capri, Vincent, Vieyres, Poisson, and Makris (2006) studied the experience of presence related to the complexity of interfaces for echographic images. They attempted to learn how people interact with and/or understand echographic images, which are images created by ultrasound (high-frequency) waves to show the insides of a human body. Researchers such as Anolli et al. (2006) and Apter (1992) used the experience of presence to study human emotion. They utilized technology to offer participants the telepresence experience of different situations to stimulate and observe their emotional reactions. Mellor (2004) used presence to explain how religion is adapting to the “information age.” The results of these studies showed that an effective use of presence could help people to have a better experience using media in different areas and help these areas to develop.

Cole and Leets (1999) studied the parasocial relationship (Horton & Wohl, 1956) created by media productions. A parasocial relationship is a one-side relationship: people might think they have a relationship with other people while they do not really have a relationship, such as the one between audiences and celebrities. When people having one type of presence experiences, in which situation they feel like the characters in the media are real people in their lives and/or they have a personal relationship with the characters, they have a parasocial relationship with the characters. A good understanding of the parasocial relationship could help to understand the presence experience and could also help media producers to create a close/strong relationship with media users. As a result of this second type of study, having a good understanding of the causes and effects of presence is helpful to scholars to make developments in many fields.

The first and second types of studies highlighted presence experiences and how they

relate to different areas of studies. Moreover, these studies demonstrated how widely presence exists and that the study of presence can benefit a lot of research areas.

Interdisciplinary studies could also encourage scholars of presence to study presence from different perspectives, like from the perspectives of psychology, technology, art and so on. On the other hand, these types of studies have not explored the presence experiences that occur in people's daily lives.

The third type of presence studies is focused on the details of presence itself, in particular communication and/or psychology perceptions. Most scholars (e.g., Brambilla, Gallazzi, McCavanagh & Maddalena, 1997; Carlsson & Jaaro, 1995; Davis et al., 1997; de Kort, Ijsselsteijn, Kooijman, & Schuurmans, 2003; Feintuch et al., 2006; Kim et al., 2004; Labonte-Chartrand & Bouchard, 2006; Mercurio et al., 1992; Schneck, 2004) have conducted research about presence through laboratory studies, in which scholars carefully manipulated the factors (e.g., the content and form of media, participants to be studied, and the technology involved) to test their hypotheses. My project design is inspired by previous scholars and makes use of similar variables. Researchers analyzed the relationship between personal characteristics and the experience of presence they studied. Take Labonte-Chartrand and Bouchard's (2006) study, for example. They showed participants content that included emotional information and observed their reactions to this information. After they collected the data, they tried to discover if there were some relationships among people's presence experiences and their personal characteristics and demographics. They found people's personal characteristics apparently influence their experience of presence in labs. Although some scholars have used physiological and other "objective" measures of presence in their studies, most often scholars utilized "one of several standardized questionnaire instruments and/or sets of custom-designed questionnaire items" (Lombard & Weinstein, 2012, Introduction). However, participants in the third type of studies only reported their specific

presence experiences that occurred in the laboratory, not the natural presence experiences they had in their daily lives.

The third type of presence studies aided my research by helping develop my research methods and demonstrating that even though the study of presence is a young area, researchers already have a general understanding of what will cause presence in a lab; what is the nature of presence in the lab; and what is the influence of the various characteristics of media content, personal and demographic characteristics, and other factors that might have influence on the experience of presence in the lab. However, there are few articles that study people's presence experiences in their daily lives (e.g., Lombard, 2012, Lombard & Sun, 2014 Lombard, Ditton & Weinstein, 2012). Lombard and Sun's (2014) research studied people's experience of presence outside the lab through an online survey. Our 2014 study explored whether or not people could identify different types of presence in their daily lives; how often people have different types of presence; what media technologies are involved when people have experiences of presence; how people feel about their presence experiences in their daily lives; and whether or not their personal characteristics (e.g., what information they prefer to have the experience of presence with will influence their experience of presence outside the laboratory setting.) Lombard and Sun found respondents had access to and spent a lot of time with many media devices (TVs, smartphones, desktop/laptop computers, tablets, and computer and gaming consoles). Their respondents also showed they often have experiences of engagement, social presence, social realism, and perceptual realism (see discussion below); and the most frequent media technologies they had the experience of presence with were computers, phones, and televisions. Lombard and Sun also found that presence experiences were more easily facilitated at home, alone or with one other person, or in the afternoon or evening.

However, Lombard and Sun's (2014) research results only built on the data of a

survey, and they did not examine people's feelings regarding the questions in the survey. I hope to learn more about what factors influence people's experience of presence in their daily lives and learn details about their experience. My research used the same survey from Lombard and Sun's (2014) study—a mixed closed- and open-ended questions survey—and individual interviews to measure the presence experiences that occurred in people's daily lives, trying to explore the nature of presence outside the lab. Adding an individual interview helped me to learn more about the details of people's feelings and their experiences of presence. During the interviews, I talked with the participants to help them understand the questions in the survey and in the interviews, which could not be done by the survey alone. In other words, adding an individual interview helped me obtain more and richer data.

### Theory Framework

As noted above, the definition of telepresence has not been developed uniformly. Some scholars such as Minsky (1980) only used the term “telepresence” to identify a particular type of experience, and some scholars such as Biocca et al. (2003) used the term “telepresence” to refer to several types of phenomena. Other scholars (de Greef & IJsselsteijn, 2001; Lessiter et al., 2001; Ratan, 2013; Schubert et al., 2001; Slater, Usoh, & Steed, 1994; Vorderer et al., 2003., 2004; Witmer & Singer, 1998) did not directly use the term “telepresence” in their studies, but they studied similar phenomena. Based on different understandings of telepresence, scholars created several models to study how telepresence works, including

- A. The three-pole (TP) model (Biocca et al., 2003), which describes presence with three poles: the real world, the virtual world, and the internal mental world. “Each of the three poles (physical, virtual and mental imagery) represents stimulus sources which can lead to presence in that space” (Nunez, 2007, p. 67). TP model represents presence in a physical space, and does not contain “explicit notions of immersion or



display technology” (Nunez, 2007, p. 66).

- B. The environment selection (ES) model (Slater & Steed, 2000), which assumes that no matter how many environments are presented to people, they can only react to a single one at a time.
- C. The focus-locus-sensus (FLS) model (Waterworth & Waterworth, 2001), which “does not explain presence itself, but rather explains the experience of being, how this shifts between real and virtual worlds, and how subjects move from awareness to non-awareness of the external world” (Nunez, 2007, p. 75).
- D. The layers of presence (LOP) model (Riva et al., 2004), which suggests that presence has three layers: proto self/proto-presence, core self/core-presence, and extended self/ extended presence. In the LOP model, “Presence functions on three separate but interactive levels of consciousness [...] Each of the three levels of presence acts to regulate the organism or to initiate action in the world” (Nunez, 2007, p. 77). Presence helps an organism to distinguish which stimuli come from the environment and which stimuli come from inside itself (Waterworth & Waterworth, 2001).
- E. The measure, effects, conditions (MEC) model (Wirth et al., 2007), which points out that “presence occurs due to two processes: the construction of a spatial situation model, and the subsequent acceptance of that model as a viable hypothesis for interaction” (p. 74).
- F. The capacity, limited, cognitive constructionist (CLCC) model (Nunez, 2007), which emphasizes that “a subject constructs their own experience of an environment based on perceptual and semantic data, while being constrained by the limits imposed by working memory” (p. 133).

In summarizing the various areas’ studies of telepresence, Lombard and Ditton (1997)

“identified six interrelated but distinct dimensions of presence from diverse literatures” (Concept explication). The six dimensions are: (a) presence as social richness, (b) presence as realism, (c) presence as transportation, (d) presence as immersion, (e) presence as social actor within medium, and (f) presence as medium as social actor (Lombard & Ditton, 1997). Since their definition of the six dimensions of presence combined the most important information from different models, and offers researchers more details about presence, this thesis will use Lombard and Ditton’s (1997) definition of presence as its theoretical perspective.

To help participants acquire a better understanding of the different types of presence, Lombard and Sun (2014) classified ten types of presence based on Lombard and Ditton’s (1997) six types. I used the same ten types of presence as we did. Lombard and Ditton (1997) said presence as transportation included: you are here, we are together, and it is here. In our study, we used “spatial presence” as you are here, “social presence” as we are together, and “transportation” to represent all the other possible phenomena of presence as transportation. Lombard and Ditton (1997) also separated presence as realism into “social realism” and “perceptual realism;” and we used “engagement” to represent Lombard and Ditton’s (1997) presence as immersion. Moreover, in our study, we added two kinds of presence that could probably happen in people’s daily lives: self-presence and inverse presence. As a result, the ten different but also overlapped types of presence in this study are the following: (1) spatial presence; (2) social presence; (3) transportation; (4) engagement; (5) social realism; (6) perceptual realism; (7) medium as social actor; (8) actor within medium; (9) self-presence; (10) inverse presence. Below is a brief introduction of the ten types of presence:

(1) Spatial presence describes a feeling of “you are there.” Kim (1996) defined presence as a “feeling of being a part of the phenomenal environment created by television and not being a part of the physical environment surrounding the viewer and the television set” (p. 27). When people have the experience of spatial presence, they feel like they are in the

space or environment created by technology. For instance, when people watch a TV show about traveling in a desert, they might feel like they are in that desert.

(2) Social presence represents a feeling of “we are together.” “This form of presence is found in literature concerning video conferencing as well as virtual reality” (Lombard & Ditton, 1997, Concept explication). People who have the experience of social presence might feel like they are actually with the people they are interacting with via technology. For example, when people from different locations have a conference through Skype, they might feel like they are actually sitting in the same room and talking to one another face to face.

(3) Transportation presence offers people a feeling of “it is here,” and “going there.” By “watching a television program, we feel not so much that we are being taken out into the world, as that the world is being brought to us” (Millerson, 1969, p. 201–202). People who have this kind of presence might feel like they were in the environment that created by media. For example, some people might feel the characters in TV shows are actually in their home.

(4) The engagement presence is called “presence as immersion” in Lombard and Ditton’s (1997) article. Presence as immersion “emphasizes the idea of perceptual and psychological immersion” (Biocca & Levy, 1995, conclusion). Perceptual immersion means “the degree to which a virtual environment submerges the perceptual system of the user” (Biocca & Delaney, 1995, p. 57). During the experience of engagement presence, people might feel mentally immersed and focused on or absorbed in the experience. For example, when people read a book, they might become completely focused on the book and not even know what is going on around them in the real world.

(5) Social realism “is the extent to which a media portrayal is plausible or ‘true to life’ in that it reflects events that do or could occur in the nonmediated world” (Lombard & Ditton, 1997, Concept explication). In other words, during the experience of social realism people might feel like the people, things, and events they experience through technology look,

sound, and/or feel as they would in the real world. For example, some people might think the things happening in a TV show could happen in their real lives and want to learn how the characters react to these situations in case these events occur in their real lives.

(6) Perceptual realism involves the senses: “A scene from a science fiction program may be low in social realism but high in perceptual realism because although the events portrayed are unlikely, the objects and people in the program look and sound as one would expect if they did in fact exist” (Lombard & Ditton, 1997, Concept explication). For example, many readers believe vampires have two fangs, need to drink blood and cannot walk under sunshine. Although these readers have not see vampires in their real lives, they believe vampires should have these characteristics if they were real. This kind of experience of presence readers had is perceptual realism presence.

(7) Presence as medium as social actor is a kind of presence whereby users treat a medium as if it is a human. Media users treat the medium as if it has a feeling and can act as a social actor. In this case, people feel like the technology itself (including computers, phones, robots, mannequins, etc.) has a personality. Nass and other scholars at the Center for the Study of Language and Information at Stanford University did some studies (Nass, Lombard, Henriksen, & Steuer, 1995; Nass, Moon, Fogg, Reeves, & Dryer, 1995; Nass & Steuer, 1994; Nass, Steuer, Tauber, & Reeder, 1993) to demonstrate that “because computers use natural language, interact in real time, and fill traditionally social roles (e.g., bank teller and teacher), even experienced computer users tend to respond to them as social entities. In most of these studies a social psychology finding concerning human-human interaction is replicated in the context of human-computer interaction” (Lombard & Ditton, 1997, Concept explication). For example, characters in the show *Star Trek: The Next Generation* treat “Data” (which is actually a robot) as a real human. Many episodes of this show are devoted to if and to what extent the character “Data” is “human.”

(8) Presence as social actor within medium refers to “a parasocial interaction [in which] media users respond to social cues presented by persons they encounter within a medium even though it is illogical and even inappropriate to do so” (Lombard & Ditton, 1997, p. 215). Horton and Wohl (1956) first came up with the idea of a “para-social relationship.” They argued that,

One of the striking characteristics of the new mass media—radio, television, and the movies—is that they give the illusion of face-to-face relationship with the performer. The conditions of response to the performer are analogous to those in a primary group. The most remote and illustrious men are met as if they were in the circle of one’s peers; the same is true of a character in a story who comes to life in these media in an especially vivid and arresting way. We propose to call this seeming face-to-face relationship between spectator and performer a parasocial relationship. (p. 215)

In other words, media users treat the characters in media as real persons in “real life” and ‘interact’ with the characters. For example, a lot of readers care about Harry Potter’s fate. They may feel elated with Harry’s happiness and sorrow at his tragedies. People even talk about Harry with each other like Harry is an old friend of theirs and everyone knows him.

(9) Self-presence refers to an experience of feeling like one is connected to an avatar or other representation of oneself in the world created by technology (Lee, 2004). For example, when people play computer games, users may feel like they are really the character in the game, and they may even feel “pain” when their character is hurt in the game.

(10) Inverse presence is a presence experience where people feel like they are using a technology even when they are not (Timmins & Lombard, 2005). For example, when some people see a very beautiful place, they may feel like it is “like a picture.” When people go through something unusual, they may feel their situation is just “like a movie.”

The Research Design

Following Lombard and Weinstein's (2012) research, and the survey used by Lombard and Sun's (2014) study, I utilized standardized questions to measure people's media use behaviors and their experiences of presence. It included some opened-ended questions, as a few other scholars (McCall, O'Neill, Carroll, & Benyon, 2004; Murray, Arnold, & Thornton, 2000; Turner et al., 2003) did, for people to offer more detailed information that they want to share with the researcher. Even with these few open-ended questions, it is still hard to determine more details about people's feeling regarding their experiences. It is also hard to know whether or not they could identify different types of telepresence in their daily lives, and scholars still have no idea whether or not the survey has missed some important factors that participants think are important to their experiences of presence. As a result, in my study after the participants finished the survey, they took an interview to talk about their experiences. The hope was that discovering this omitted data would be useful both in expanding our understanding of presence and in testing the validity of and refining the survey.

Based on the early research and the fact that studies of telepresence in daily lives are missing, this study explored the following research questions:

**RQ1:** Is there any relationship between media usage habits (e.g. the number of media device they have accessed to, the time they spend on different media technology etc) and people's presence experiences?

**RQ2:** What factors (media elements and other elements: such as the relationship between media users, the relationship between media content and media users, etc.) have influence on people's most frequent types of presence?

**RQ3:** Is there any relationship between people's circumstances (such as the time of day, the location, and the other people present) and people's experiences of presence?

**RQ4:** What are people's presence experiences like?

**RQ5:** What are the relationships between the characteristics of media users (e.g., demographic information, education background, the knowledge of presence, being a “visual” person, etc) and the frequency and nature of the different types of telepresence they experience?

**RQ6:** What is the validity of the survey used in Lombard and Sun (2014) and what are possible improvements for it?

## CHAPTER 3

### METHODS

This section will review the recruitment method, the sample, the survey, the interview and the data analysis procedures used by my study.

#### Recruitment Method

To recruit participants for this study, I posted messages, including a brief introduction of this study and contact information, on social media—Facebook and Twitter. I posted on my own account and asked my friends to help me to send on their accounts—and around retail stores Walmart, Target, and Costco where I hoped I could reach various people with different education backgrounds. Since the sample in the Lombard and Sun study (2014) had a relatively high education level, I hoped to include various education levels in my study. I posted the message around one Walmart and two Targets in Philadelphia and two Walmarts, two Targets, and two Costcos in New Jersey. I posted the messages from March 28 to April 5, 2015. I only used space provided by the retailers for public postings. All the respondents had a chance to win one of two 50-dollar Amazon gift cards. Participants were required to be 18 years of age or older and be fluent in English to ensure language barriers did not skew the results.

#### Sample

This study had 36 participants. Of the participants, 33.3% were male ( $n = 12$ ) and 66.7% were female ( $n = 24$ ).

The participants came from six different countries: 77.8% ( $n = 28$ ) came from the United States, 5.6% ( $n = 2$ ) were from Canada, 5.6% ( $n = 2$ ) from China, 5.6% ( $n = 2$ ) from Australia, 2.8% ( $n = 1$ ) from the Netherlands, and one from Qatar. Although 77.8% ( $n = 28$ ) of the participants came from the United States, this study still showed some responses from people with different cultural backgrounds (see table 1).



Table 1 *Country of participants*

	Frequency	Percent
United States	28	77.8
Canada	2	5.6
China	2	5.6
Australia	2	5.6
Netherlands	1	2.8
Qatar	1	2.8
Total	36	100.0

Only one of the participants had only a high school education. The others had a college degree or above: 27.8% ( $n = 10$ ) people already had or were studying for a college degree, and 69.4% ( $n = 25$ ) people had or were studying for a graduate degree. Of the participants, 22.2% ( $n = 8$ ) were college students and 75% ( $n = 27$ ) were college graduates (see table2).

Table 2 *Education levels of participants*

	Frequency	Percent
Pre-high school	0	0
Some high school	0	0
High school	1	2.8
Some college	0	0
College degree	10	27.8
Some graduate school	0	0
Graduate School	25	69.4
Other	0	0
Total	36	100

The survey used closed-ended questions to measure participants' ages. The participants indicated their ages using 8-year spans, from 6–13 years to 78–85 years old. Of the participants, 38.9% of the participants ( $n = 14$ ) were 22–29 years old, 27.8% ( $n = 10$ ) were 30–37 years old, 16.7%, ( $n = 6$ ) were 14–21, years old, 8.3% ( $n = 3$ ) were 38–45 years old, and finally 5.6% ( $n = 2$ ) people were between 46 to 53 years old and 2.8% ( $n = 1$ ) was

between 54 to 61 years old.

Table 3 *Age of participants*

	Frequency	Percent
6-13 years old	0	0
14-21 years old	6	16.7
22-29 years old	14	38.9
30-37 years old	10	27.8
38-45 years old	3	8.3
46-53 years old	2	5.6
54-61 years old	1	2.8
62-69 years old	0	0
70-77 years old	0	0
78-85 years old	0	0
86-93 years old	0	0
94 or more years old	0	0
Total	36	100.0

During the interview, I asked the six participants who chose “14-21 years old” in the survey how old are they, and they all said they were 21 years old.

My research’s sample was a group of people without professional knowledge of presence before this study. Every participant chose 1 or 2 when they were asked to use a number from seven numbers (1=I know nothing about presence, 7= I know a lot about presence) to measure their knowledge of presence in the survey. In other words, participants of my study did not have knowledge of presence before the research. However after they read the introduction of presence in the survey, they could identify their presence experience in their lives.

In summary, the participants of this study were 21 to 53 years old; they had different cultural backgrounds, education levels, and genders; and they did not have knowledge about presence before this study. To maintain anonymity, all participants will be named by a number from No.1 to No.36 in this study (see Appendix 1). All participants submitted the IRB consent before the survey started.

Survey

This study combined a quantitative and a qualitative research method. First of all, participants were asked to complete an online survey about presence (the survey used by Lombard and Sun's [2014] study). The online survey (see Appendix 2) was developed as part of the class Psychological Processing of Media (Media Studies and Production 4446/8446 in spring 2014). This survey included questions measuring demographics and media usage behaviors; a brief introduction to the concept of telepresence; and questions about the frequency, types, environments, and other aspects of respondents' recent experiences with telepresence. Most of the questions were closed-ended, but there were a few opened-ended questions for respondents to offer some descriptions of their experiences. All the survey questions were created and refined by Matthew Lombard, Weimei Sun and the graduate students in the class. The results of Lombard and Sun (2014) showed the survey could measure the relationships between people's media use behavior, their characteristics, and their experience of presence. The results of our survey also showed it could produce some details about participants' recent presence experience. This survey helped me develop general knowledge of the participants and their experiences with presence.

#### A Short Introduction to Telepresence

The survey included this definition of telepresence:

Telepresence (which is often shortened to just "presence") is something that often happens when people use media technologies. When telepresence occurs, users feel present in or connected to the people or things in the media experience. They still know they are using a technology, but, on some level, they ignore the technology and just perceive the people, items, and events of the experience. For example, they get "lost" in the world of a novel, TV show, movie, videogame, or theme park ride. People can become convinced by the realism of paintings or graphic designs or treat their cars, computers, or other machines as if they had personalities of their own.

When telepresence occurs, people feel like they are “with” a person they talk to on the phone or in a videoconference. These are just a few examples; telepresence can happen with many other media as well. But, in every case of telepresence, people know they are just using technologies, yet they ignore this fact and just experience the people and places the technologies provide.

After reading the above introduction, participants answered several closed-ended and a few opened-ended questions related to their media use behaviors and their own experiences with presence. Participants took the survey online via my iPad, and it took them about 15 to 45 minutes.

#### Interview

Based on our Lombard and Sun study (2014), this interview was designed to explore more information about people’s experience of presence than the survey. The questions in the interview were focused on questions about people’s media use behaviors, their presence experiences in general, their recent experiences of presence, and the relationship between their personal characteristics (e.g., their education background, etc.) and their presence experiences. The interview questions were as follows:

1. Do you feel like the number of media, and the time you spend with each of these media, has an influence on your experience of presence?
2. Do different types of media have different influences on your experience of presence? Why do you think so?
3. What is the most frequent type of presence experience that you have had?
4. Could you describe an example of this type of presence for me?
5. Could you describe when, where, and who you are with when you often had the presence experience, and why?
6. Do you think any other factors besides media devices are very important for

you to achieve the experience of presence?

7. Could you describe your most recent presence experience? What type of presence was it?

7a) How long did this experience last?

7b) Did the intensity change during the process?

7c) Did you enjoy it? Could you explain why you enjoyed it?

8. Do you think your job or your study major (or any personal experience) had an influence on your presence experiences?

9. Did you know much about presence? Do you think the knowledge of presence has an influence on your presence experiences?

10. Is there anything related to your presence experiences you think you should share with me?

11. Do you have any questions about presence?

12. Thinking back on the survey, do you think the questions were clear? Would you change any of your answers now that we've had this discussion? Please explain.

I used a semi-structured interview. In short, I asked each participant the same questions in the same order. However, I asked participants questions in a flexible way. If the participants shared an interesting experience, I would ask them to share more details. Sometimes, I would change the order of the questions depending on the participants' answers. If the participants shared a lot of details about their presence experiences, I would not ask more questions about the details of their experiences. On the other hand, if participants' answers missed some important information, I added questions to assist them to share more details. For instance, No.22 said he had his experience of presence when talking with his mother on Skype, and they had a fight during that time. He did not enjoy that experience of presence at all. Because he was the only participant who shared an unpleasant presence

experience, I asked a lot of questions to find out details about this experience, such as the location, the companion, and whether he enjoyed his other presence experiences or not to obtain a better understanding of his special experience with presence.

The average length of the interview was 30 to 50 minutes, and most of the interviews took place in public areas—for example, coffee shops or parks near the participants' homes when they had free time. Three participants completed the interview in their homes. All participants said they felt relaxed when they underwent the interview. In this way, this study tried to produce reliable and valid results.

### Analysis Procedures

After having collected the data from the survey and interview, I used SPSS (Statistics Package for the Social Sciences) to do the description of the results of the survey and coded certain themes of the results of the interviews to find patterns in participants' answers. I took note of every participant's answer during the interview. Interviews last for 30 to 60 minutes and it took me about one hour to read the note of each participant after I finished the interviews. When I read the notes I coded the types of media devices, the types of presence experience, the circumvent elements they said, the media factors and the factors other than media they mentioned. After I coded these themes, I organized all the answers that have similar codes together and analyzed the patterns. When I finished analyze the organized data, I went back to read every participant's whole answers again to make sure I did not get them wrong and to see if I missed some information that could not be coded but very important to the research.

I combined and compared the consequences of both analyses and tried to explore the relationship among people's presence experiences and their media use habits, their circumstances, and their personal characteristics; investigate their recent presence experiences; and explore how to improve the survey.

## CHAPTER 4

### RESULTS AND DISCUSSION

#### Media Habits

This study used three factors to measure people's media use habits: the number of media devices to which they had access, the amount of time they spend with each of these media devices, and the presence experience of using the different media devices. I used the survey questions to learn participants' media use habits and then analyzed the interview answers to explore why they had these media use habits and the relationship between their media use habits and their experiences with presence.

According to the results of the survey, the most common media device people used was a smartphone. Of the 36 participants, only 2.8% ( $n=1$ ) said he did not have a smartphone. 30.6% ( $n=11$ ) people had one smartphone, 44.4% ( $n=16$ ) people reported that they had two smartphones in their household, 2.8% ( $n=1$ ) person had three smartphones and 19.4% ( $n=7$ ) people reported four or more smartphones at home. Participants also spent a lot of time using smartphones. 61.1% ( $n=22$ ) people said they spent more than 2 hours on their smartphones during a typical day. 8.3% ( $n=3$ ) people even said they spent more than 8 hours on their phones.

The second common media device people had access to was a desktop or a laptop computer. In the survey, every participant reported they had at least one desktop or laptop computer. 16.7% ( $n=6$ ) people had one desktop or laptop, 47.2% ( $n=17$ ) people said they had two desktops or laptops at home, 19.4% ( $n=7$ ) people had three desktops or laptops, and the remaining 16.7% ( $n=6$ ) people had four or more desktops or laptops at home. Every participant reported that they used their desktop or laptop for a long time every day. 18.5% ( $n=10$ ) people spent more than 8 hours with their laptops or desktops, 11.1% ( $n=6$ ) people spent 7–8 hours on their laptops or desktops, and 52% ( $n=19$ ) people used their desktops or

laptops for 2 to 6 hours. Only one participant (No.36) said she only spent 0–1 hour every typical day with her laptop. However, she spent 6–8 hours with her tablet computer every day. When I asked her why she used a tablet computer for a very long time, she said,

*My tablet computer is the same size as a normal laptop. I can do everything on my tablet computer; the thing people did with their laptops or desktops. Basically, I treat my tablet computer as my laptop, and it is more convenient to use a tablet computer.*

In this case, this study will treat her experience with the tablet computer as an experience with a laptop computer.

The third common media device was a TV set. In the survey, 16% ( $n=6$ ) participants said they did not have a TV set in their home, whereas 33.3% of the people ( $n = 12$ ) reported that they had one TV set, 25% of the people ( $n = 9$ ) said they had two TV sets at home, and 8.3% ( $n = 12$ ) reported that they had four or more TV sets. Among the 66.7% ( $n=24$ ) participants who said they had at least one TV set at home, 25% of them ( $n=6$ ) spent 0–1 hour with their TV set in a typical day, 33.3% of them ( $n=8$ ) said they spent 1–2 hours with their TV set, 25% of them ( $n=6$ ) said they spent 2-3 hours watching TV, 12.5% of them ( $n=3$ ) said they spent 3–4 hours watching TV in any given day. Only 4.2% of them ( $n=1$ ) said she spent 5–6 hours watching TV every day.

Not many participants of this study had access to tablet computers or gaming consoles. In general, the participants did not report using these devices very frequently. 72.2% ( $n=26$ ) people said they had at least one tablet. Of these 26 participants, 73.1% of them ( $n=19$ ) said they had only one tablet. However, 42% of these 19 participants ( $n=8$ ) eight barely used their tablets. 15.4% of the participants ( $n=4$ ) who said they had tablet computers reported they had two tablet computers, 7.7% of them ( $n=2$ ) had three tablet computers, and only No.3 said he had four tablet computers at home. No.3 explained that three of these tablets were his



roommates', and he only had one. Sometimes his roommates and he would play games on their tablets together, which offered him an interesting experience of presence. In this way, the number of tablets did have an influence on No.3's experience of presence. All participants except No.36 reported that they did not spend more than 3 hours a day on their tablet.

Gaming consoles were the least common media devices that participants had. In the survey, 58.3% ( $n=21$ ) people reported that they had at least one gaming console at home, but three of them never used their gaming consoles. Most of participants ( $n = 11$ ) only had one gaming console, four people reported that they had two gaming consoles, two people said they had three gaming consoles, and four people said they had more than four consoles. None of the participants spent much time on their gaming consoles: 44.4% ( $n=24$ ) people barely used their gaming consoles, and the rest of them reported that they did not spend more than 2 hours a day on their gaming consoles.

In sum, by examining the participants of this study, we can see that people have access to various media devices, but they all have their own preferred devices. The majority of the participants said they liked to use smartphones and desktop or laptop computers. They reported in the interviews that they preferred to have more smartphones and desktop or laptop computers, and they spent much more time on these media devices than others.

According to the interviews, the reasons why smartphones were the most popular device were that smartphones have multifunctionality to meet people's many daily requirements, and they are very convenient. Part of the reason why people spent a lot of time on desktops or laptops (e.g., 10 people spent more than 8 hours a day on using desktop or laptop computers) was they needed to do their work on a computer, and they also had entertainment on their computers. Twelve participants of this study were students who lived on campus, and their apartments did not have access to TV sets. The remaining participants

who lived in their own house all had at least one TV set at home. Moreover, 10 of these 12 student participants told me that, if they had a choice, they would choose to have a TV set in their home. In conclusion, participants' media usage behaviors were largely decided by their own choices, but some external factors also affect their decisions.

### RQ1: Is There Any Relationship Between Media Usage Habits and People's Presence Experiences?

Every participant in this study said, after reading the introduction of the different types of presence in the survey, that they all understood the definition of presence, and they said they often had presence experiences in their daily lives.

Although there was no statistical evidence to show that the number of media devices people have access to or the amount time they spend on their media devices has an influence on people's presence experiences, the interviews demonstrated that media usage habits could affect people's presence experiences. The number of media devices people have could influence the frequency of most people's experiences with media. What is more, the time they spend with each medium and different types of media could offer people different types and/or different intensities of presence experiences.

#### The Media to Which People Have Access

The majority of participants (86%,  $n = 31$ ) said they believed that the more media devices they had, the easier they obtained presence experiences. For example, No.36 said,

*The number of media device around me definitely has an influence on my experience of presence. Through media and the high number of media, it is easier to feel the experience of presence.*

No. 7 stated,

*Being surrounded by multiple media, I feel like I have a lot of choices to have the experience of presence.*

In these cases, the number of media devices had a positive influence on people's presence experiences. Some of the participants agreed that using multiple media together could provide a better experience of presence than using a single medium. Take No.16 for example; she said,

*I like to watch a movie at home on my TV set with a separate stereo system. The big screen and the good quality sound effect help me to have the experience of presence very quickly. I feel like the movie is so real, and I was one of the characters. I would not feel the presence so quickly and so often when I was only watching something on my TV set without the stereo system.*

On the other hand, there were three participants (No.9, No.22, and No.30) who did not agree with the statement "the more media devices they had, the better experience of presence they would have." In their opinions, if they had many media devices around them, they would be distracted very easily, which would make it hard to have the experience of presence. No.9 said,

*When I am reading an interesting book I will keep all my other media devices away from me. If my phone rang when I was reading, it would be hard for me to continue reading after I had picked up my phone. The feeling of presence will be ruined, too.*

No.22 said,

*I will always want to check my phone, check my laptop if they are around me when I am watching my TV set. I feel like I cannot fully get involved with one media when I am surrounded by many media devices.*

No.30 talked about similar experiences. He felt like his phone always disturbed him when he wanted to focus on one medium. In general, participants of this group argued that the fewer mediums they had at any one moment, the easier they would focus on the media content and

the more often they would feel the experience of presence. In this way, the number of media devices around had a negative influence on people's experience of presence.

However, there was another response on this issue: No.31 and No.4 believed the number of media devices did not have a relationship with their experiences of presence. They both agreed that the number of media devices had nothing to do with their feelings of presence: The quality of their media device was the most important thing. No.31 said,

*I always use my laptop for everything, to do my job, Skype, play video games, and so on. It offered me a pretty good experience of presence. I do not think having more media can make any difference since I only use one media at one time.*

No. 4 shared a similar experience:

*I have a smartphone, a laptop, a desktop, an iPad, an Xbox 360 at home. However, I only use one media at one time, so the other media do not have anything to do with my experience of presence.*

Although there was a small exception, the number of media devices that people had access to had both positive and negative influences on people's experiences of presence. The majority of people felt the more media devices they had, the better their experience of presence would be, whereas only a few people thought the opposite. As a result, for the majority of people, the increasing number of media devices could help them to have better experiences of presence.

#### Time Spent Using Different Media

All participants of this study stated that the longer they used a medium, the better experience of presence they had. They all reported that when they used a medium for a long time, they became completely involved in the medium and forgot all other things. Using the media for a long time helped people to focus on the media. For example, No.2 said,

*When I text with my friends for a long time, I will feel like we are sitting together and talking to each other face to face.*

No.4 talked about her presence experience with pictures,

*The longer I watch the photos posted by my friends, the stronger my feeling of “being there” will be.*

Therefore, the length of time people used media influenced the intensity of people’s presence experiences. Generally speaking, the more time people spent with media, the stronger their feeling of presence.

#### Different Types of Media

Every one of the 36 participants agreed that different types of media had different influences on their experiences with presence. This study found two important factors that helped different types of media affect people’s experiences of presence in different ways.

First of all, every participant mentioned that screen size played an important role in offering people an experience of presence. They all said that the bigger the screen was, the better their experience of presence. If they had a choice, the participants would watch their favorite content (e.g., their favorite shows, movies, pictures) on a big screen. No.1 said,

*If I watch a movie on my laptop, I will feel the pictures are so real. The actors in the movie are real to me, too. Therefore, if I want to appreciate my movies, I will use my laptop instead of watching it on my phone or iPad. A big screen can bring me better enjoyment than the small one.*

No.3 said,

*When I Skype with my parents on my phone, I feel like we are just calling each other, but when I Skype with them on my desktop, I feel like my parents are really sitting before me and we are talking face to face.*

No.30 shared an experience of playing video games:

*When I play some games on my phone, I do not feel like I am in the “war,” but when I play the same game on my laptop, I feel like I am the hero in the “war.” I even can feel hurt when the hero I controlled gets hurt in the game.*

The 12 participants who were students, and who had no access to a TV set in their apartment, all said they would watch their favorite shows on TV if they had the opportunity. In other words, they preferred to use big screens when they wanted to better enjoy their media content. Screen size was an important factor that could help to offer people a strong experience of presence. However, five people also pointed out that they did not think “the bigger, the better” was necessarily true about screens. They thought if the images on the screen were the same size as in real life, they would have the best experience of presence. On the other hand, if the images were larger than their real-life size, audiences might feel they are not real and would not have the feeling of presence. Take No.11 for instance,

*When I am watching the portraits on the wall of a building, I do not feel like they are real people. They are too large to be real. Their sizes always remind me that they are just paintings.*

Therefore, the size of the objects on the screen should match their real sizes to offer people a better enjoyment of presence.

The second important reason why people think different media have different influences on them was that different types of media can stimulate varied feelings in people. In this way, they bring the experiences of different types of presence. For example, No.36 said,

*Different types of media have different influence. To me, it is because these different types of media target different types of stimuli. Instagram stimulates visual sensory and makes you visually see that experience. Movies and TV stimulate your emotional, visual, and auditory senses, making you feel as if you*

*are living that experience. Video games that are interactive make you also feel as if you are living that experience because you can choose what actions to do in that environment.*

Every participant said they would experience different types of presence with different media technologies. For example, media content with moving pictures were best at stimulating transportation presence. 41.7% ( $n=15$ ) people said watching shows on computers, TV sets, or even smartphones would inspire them to have an experience of the transportation presence. Media that could be used to make a connection with other people more easily inspired people to experience social presence. 88.9% ( $n=32$ ) people reported that when talking on a phone or Skype (or Facetime) with someone else, they had the experience of social presence. The different functions of media could bring people different types of presence experiences.

#### Summary

In sum, people's media use habits had a strong relationship with their experience of presence. The majority of people thought the more media devices they had, the easier they would have the experience of presence. On the other hand, a few people believed that being surrounded by a lot of media devices would make it harder for them to feel presence. Only two people did not think the number of their media devices could influence their experience of presence. The longer people spent with media, the easier and/or longer they would have the experience of presence. Different media devices had different influences on people's experience of presence for two reasons: Media's size had influence on people's experience of presence; and different types of media can stimulate different feelings in people and inspire them to have different types of presence experience.

RQ2: What Factors (Media Elements and Other Elements: Such As The Relationship Between Media Users, The Relationship Between Media Content And Media Users, Etc.)

Have Influence On People's Most Frequent Types Of Presence?

The survey offered a brief introduction of the different types of presence to participants. After reading it, the participants were then required to choose all the type(s) of presence that were part of their specific recent presence experience. The most common types of presence were engagement, which was mentioned 23 times, and social presence, which was mentioned 21 times. After these came spatial presence, which was mentioned 14 times, social realism, which was mentioned 13 times, actor within medium, which was mentioned 11 times, and perceptual realism, which was mentioned 10 times. 72.2% ( $n=26$ ) participants reported that they had logical combinations of several types of presence, which demonstrated that many people could have experiences with several types of presence simultaneously. For example, No.36 had the experience of presence when she played a video game called *Modern Warfare 3*, and she reported having the experience of social presence, engagement presence, and social realism presence at the same time. The remaining 27.8% ( $n=10$ ) people only experienced a single type of presence.

Combining the results of the survey and the answers to the interview, this study found there were several common factors that could influence people's experience of presence. This section discusses these factors from three perspectives: the media, media elements, and the common factors other than technology involved in the participants' recent experiences of presence.

#### The Media and Media Elements Involved in People's Recent Experiences of Presence

The survey asked what elements of media experiences were involved when participants had their recent experience with presence. Participants chose all the elements they thought were involved. According to the results of the survey, the most common elements were moving images, which were mentioned 24 times, and sound, which was mentioned 21 times. Text was mentioned 16 times, and interactivity was mentioned 16 times. Still images were not as common as the other elements: they were only mentioned five times,



and touch was only mentioned three times. No one thought smell was involved in their experience of presence.

According to the survey and interview, the most common media that people had their recent experiences of presence with were TV shows, video games, Skype and/or Facetime, books, and text. There were also a few participants who had their experience of presence in telepresence meetings and using multiple media, music, and photos. People who had their recent experience of presence with the same media device reported similar combinations of elements they thought contributed to their experience.

Ten participants reported that they had an experience of presence with TV shows, and they all reported that the combination of moving images and sounds played an important role in inspiring their experience of presence. Two of them also thought the subtitles on the screen also helped them to have a feeling of presence. These two participants said they thought the text on the screen helped them to have a better understanding of the plot, and then helped them to have an experience of presence.

Seven participants had their recent experience of presence with video games, and four of them reported that moving images were involved when they had the feeling of presence. The other three people emphasized that interactivity was very important in enabling them to have an experience of presence.

Six participants reported that their recent experience of presence happened with Skype or Facetime. Every one of these six participants said the elements involved were moving images, sounds, and interactivity. Two of them also thought the text could contribute to their experience of presence, too. These two said when they could not hear their friends or families clearly through Skype or Facetime, they would text them while looking at one another through the screen. In these cases, they felt like they could still “hear” their friends or families through the text.

Five participants had their recent experience of presence with a book. They all thought that text was the only element involved in their experience. Three participants had their recent experience of presence with texting, and they all believed the text and interactivity were the elements that inspired their experiences. Two participants had their recent experience of presence when they had a telepresence meeting with a lot of people, and they all believed that the moving images, sound, and interactivity were what helped them experience a feeling of presence. Two people had their recent experiences of presence when they were using different media devices to contact different people. They all thought the text, sounds, and interactivity contributed to their experience of presence.

Two participants had their experience of presence with photos, and they thought the still image was the important element, and the one participant who had his experience of presence with music thought the sound was involved with his experience. The results showed that the participants of this study could obtain the experience of presence with different types of media and media elements. Moreover, the participants of this study showed they could have the experience of presence with different media elements at the same time.

#### The Common Factors Other than Technology Involved with People's Experience of Presence

The results of the interviews showed a pattern in people's recent experiences of presence. There were four important common factors that influenced people's experiences of presence.

The relationship between media users. First, if participants were interacting with someone with whom they had a close relationship they were more likely to have the experience of presence. Although media technology could influence "how real" the experience was, the relationships between media users were the key factors that decided whether or not people had a strong experience of presence. 47.2% ( $n=17$ ) participants emphasized the importance of interactivity when they had the experience of presence, and

they showed two types of relationships between media users that contributed to inspiring people's experience of presence.

The first type of relationship between media users was whether they knew one another very well and had a strong emotional connection in their real lives. For example, when participants were interacting with their families, girlfriends, boyfriends, best friends, and so on, they had a strong emotional connection with them, and, via technology, they would develop an experience of presence very quickly—and they enjoyed the experience a lot. This was the most common relationship that could inspire an experience of presence. All the six participants who had an experience of presence with Skype or Facetime and the three participants who had an experience of presence with texting interacted with someone they knew very well. For example, No. 14 talked about her recent experience of presence with Facetime:

*I was chatting with my sister yesterday via Facetime, and the experience always just feels so real. Especially given the fact that she is in another state with her newborn baby boy. His presence makes the interaction even more meaningful and believable given that I truly want to be able to talk to him and communicate with him.*

No.18 shared her experience of presence when she interacted with a group of families through Facetime:

*This was the 1st birthday celebration of my nephew in Los Angeles. My brother, sister-in-law, my parents, and my other nephew and niece were there. It was really enjoyable. I felt I was there with them. I was interacting, could sing happy birthday. We were using Facetime. My brother connected with me on one device and with his in-laws in Washington DC on another device. At one point he had both devices facing each other so I could talk to them. It was great*

*fun. The only thing I missed was not being able to give the little one hugs and kisses, and tasting the yummy looking cake.*

No.10 shared her experience of presence by interacting with a group of friends through Skype:

*A group of 5 friends from graduate school who are writing our dissertations (plus one who graduated but needs to keep writing) but who are online students with jobs, etc., from all over the US (e.g., Arlington, VA; St. Charles, LA; Portland, OR) met to write for a couple of hours. We use an FB group to hook up, then move to Skype chat where we stay connected as we work. We had a number of convos between writing jags and agreed we felt a connection with each other we hadn't felt since we were taking classes together a number of years ago. Although I knew we were geographically scattered, I felt these people were with me as I worked. No real-world realism was involved—we used chat and emoticons and links to converse—but it was definitely as real an experience to me as the few times I also interacted with my daughter and husband who were in the next room.*

No.9 told me when she had a Skype meeting with her boss or coworkers she would not have the feeling of presence. She was aware that they were interacting via media during the whole process. On the other hand, when she Skyped with her parents, she felt like her parents were sitting before her and they were really talking to each other face to face. In these cases, the strong emotional connection between media users was an important factor in inspiring people's experiences of presence.

The second type of relationship between media users was whether they were doing something together or shared a similar experience. When they were doing the same thing together, they would find it easier to experience the same feelings together. For instance, four

of the seven participants who had their experience of presence with video games talked about how, when they were text chatting or audio chatting with other players in the same game, they felt like they were actually fighting together in a war. No.8 said,

*When playing a video game, you interact with many other people online and while communicating as well as playing you get a real sense of teamwork and feel as if you are actually in the action.*

No.2 said,

*In the case I'm considering it was text chat with friends while we played an online edition of a roleplaying game together. I've had similar experiences with voice chat in games.*

No.13 and No.26 shared a similar experience with video games. Some participants told me that when they talked about the same TV show with other people they felt like they were not watching alone, and they had social presence with those people who had watched the same shows. Take No.15 for example,

*My sister and I have a way of talking to one another, both sitting on the couch in our respective homes (she is in Maine; I am in PA), we were watching the same TV show at the same time and talking about the characters (Criminal Minds reruns), and it was like we were together and experiencing the same thing.*

In sum, if media users were doing something together or had a similar experience, they found it easier to develop feelings of connection, and this helped them to have a sense of presence. A strong emotional relationship between media users would easily inspire people to have an experience of presence, especially social presence.

The ability of media to make users feel it is personal to them. The second no media factor that had an influence on people's experiences with presence was whether or not the media content was personal to the media users. If media users felt the content was personal to

them, they were more likely to have the experience of presence, especially self-presence, engagement presence, and social presence. This study found four ways in which media content could make media users feel they have a personal relationship with the media content.

First, if the media content showed something that had a relationship to media users' own experiences, it would be more likely to inspire people's feeling of presence than other media content. For example, No.3 had her experience of presence with photos. When she saw her friends post a picture of some places she used to go, she would feel like the scenery in the picture was very real, and it reminded her of her experiences she had when she went there.

No.35, who had his experience of presence with music said,

*When I listen to music that reminds me of an experience then I put myself back in that environment.*

No.23 shared a similar experience,

*It helps if I have actually been close to the place where I am reading about—I just read “The Book Thief,” set in Germany, though in WWII. I was in Germany a couple of years ago, so I could picture the towns (at least how they look now) the book talked about.*

Second, if the media content included media users' own images, it was more likely to inspire an experience of presence. When media users saw their images in the media content, they paid more attention to it and more easily experienced a connection to the content. In this way, they developed an experience of presence very quickly, especially self-presence. No.3 told me she often had a feeling of presence with pictures that include images of her. The photos would remind her of the moment she took the photos:

*When I see the photos posted by my friends from one of our parties, I will remember all the details of that party. These kinds of photos can bring me a lot*

*of enjoyment.*

No.1 shared an experience from when she was texting with her brother. Her brother used an app to create cartoon portraits of himself and used these portraits as expressions when they were texting. When No.1 saw these expressions, she felt these images looked exactly like her brother, and she felt her brother was actually doing these expressions in front of her. She enjoyed this experience a lot. In these cases, if the media included media users' images, the media became more personal to these users and more likely to inspire the experience of presence.

Third, if the media content offered users an experience of the first-person perspective or the power to control characters in the media, the media would be more likely to inspire the experience of presence, especially helping users to feel like they were “there.” For example, No. 36 said,

*I was playing an interactive game—Modern Warfare 3—where you play as a soldier in the middle of war. You choose which weapons to use and who to shoot while on missions. It is a presence where all my senses are stimulated, and I vicariously live through the experience.*

Four other participants shared a similar experience. In this case, if the media users felt the media content was personal to them and they had the ability to make a difference in that media environment, they more easily had the experience of presence.

The last way media content could make media users feel it was personal to them was through users thinking they had a relationship with the characters in the content. Three participants reported that they followed the actors of their favorite show on social media, which made them feel like they knew the actors and had a special connection with the actors. For example, No.17 said,

*My sister and I were watching the same TV show at the same time and talking*

*about the characters (Criminal Minds reruns) like they're real . . . we follow Derek Morgan (aka Shemar Moore) on Instagram, so it's like we "know" him.*

Some participants said they had watched some shows for a very long time, and they felt like they knew those characters in person. No.27 said,

*I was listening to my favorite podcast. Listening to the interviews of the people on the show in "real life," I feel like I have a connection to them and having listened to them for years, I feel like I know them very well.*

No. 24 felt his experience of presence was influenced by his emotional relationship with the team he was watching:

*I was watching an NHL hockey playoff game at home in my entertainment room alone on my high definition television. My enjoyment was probably influenced by the fact that the team I am a fan of lost.*

In these cases, participants felt like they had a special, personal connection with the characters in the shows, and this feeling inspired them to have an experience of presence, especially the social presence and actor within medium presence.

The storyline of the media content. The third common factor other than the technology that influenced people's experience of presence was whether or not the media content had an engaging, logical storyline or narrative. A good narrative can help many people have an experience of presence, even with basic media (e.g., books, Kindle), whereas a bad narrative can destroy a lot of people's experiences of presence, even when using a high-technology medium.

For instance, No. 10 said,

*Generally speaking, I experience the highest sense of telepresence when I read books, after that comes video games, after that TV. For me to achieve telepresence, I need a good narrative (simple TV shows don't work for me, it has*



*to be a movie).*

No.13 also talked about how a continuing narrative was important for his experience of presence when he played a video game:

*I played Mass Effect III on Xbox 360 with a 50in plasma TV and headphones. It is not the first time I've played through the game; it was even more engaging at that time. An important element was the continuity of character—the character I was playing was the one I started playing in Mass Effect I 2+ years ago.*

No.24 shared her experience to show how the narrative influenced her feeling of presence:

*I am watching TV with my partner at home, with a fictional show I very much enjoy, which includes some fantastical elements but is mostly presented realistically. I become focused on the storylines and characters in a way that could be described as mindfulness or flow, and lose contact with my physical reality. I believe moments like this occur through a combination of quality media production and of personal and temporal characteristics—when the story is engaging and there are no distractions outside the frame. However sometimes my analytic mind steps in and questions something within the narrative, and I “break” back into awareness of the medium.*

All the 10 participants who had their recent experience of presence with TV shows, the six participants who had their recent experience of presence with video games, and the five participants who had their recent experience of presence with books agreed that the narrative played an important role in their experience of presence.

The willingness to engage. The last common factor that had an influence on people's experience of presence was people's aspiration. Seventy-five percent of the participants ( $n = 27$ ) stated or implied that an important reason why they had an experience of presence was whether they wanted to focus on the media or not, instead of what media they used. For

example, No.9 said,

*If I want to fully focus on the book, I will have a very strong feeling of presence. However, if I do not like the book or I do not want to read it, I do not have the experience of presence at all. It is “me” who decides my feeling of presence, not anything else.*

No.28 said,

*It was a Skype session with family members. I think an important element of telepresence is not that technology “forces” you to it. There must be an internal predisposition in the viewer to “engage.” In my case, I WANTED very much to engage in the conversation, technology was just a tool for it.*

In this way, media users’ willingness to engage had an important influence on their experiences of presence. Whether or not they wanted to have the experience decided the quality of their presence experiences.

### Summary

In sum, the participants of this study showed the most common types of presence people had in their real lives were engagement, social, spatial, social realism, actor within medium, and perceptual realism presence. People often experienced presence with TV shows, video games, books, Skype or Facetime, and texting. The most frequent media elements involved when people experienced presence were moving images, sounds, text, and interactivity. The common factors that influenced people’s experience of presence were the relationship between media users, the ability media had to make users feel like the media content was personal, the storyline of the media content, and participants’ willingness to engage with it.

RQ3: Is There Any Relationship Between People’s Circumstances and People’s Experiences of Presence?

This study found people's circumstances could influence people's presence experiences. Essentially, the more comfortable, safe, and relaxing were the circumstances, the better were the experiences of presence for the participants. In this study, I used the elements of time, location, and companionship to measure participants' circumstances in the survey, and I asked about participants' opinions of these elements in the interview to explore the relationship between people's circumstances and people's experiences with presence.

#### The Time When People's Experience of Presence Occurred

Most of the participants (30.6%,  $n = 11$ ) reported they had their recent experience of presence in the afternoon (12noon–6pm), 27.8% of participants ( $n = 10$ ) had their experience of presence in the early evening (6–9pm), and for 25% of participants ( $n = 9$ ) experiences of presence took place in late evening (9pm–12midnight). Only three participants reported their experience of presence happened in the morning (6am–12noon), and three participants reported that their experience of presence happened at night (12midnight–6am).

All participants agreed that they did not choose what time to have an experience of presence. The experiences just took place whenever the participants were free. Almost every participant reported that their experience of presence happened after they finished their job or school work. They were very relaxed at that time and were more willing to have some fun with media. For example, No.31 said,

*When I come home from my job, I feel like I really need some entertainment, so I watch TV shows on my laptop, and I feel like I am one of the characters.*

As a result, it was hard to determine what time of day could more easily offer people the experience of presence. People's experience of presence happened whenever they were free and relaxed.

#### The Location Where People's Experience of Presence Occurred

According to the survey, most participants (80.6%,  $n = 29$ ) had their most recent

presence experience at home. The other participants had their experience of presence in school (5.6%,  $n=2$ ), at work (5.6%,  $n=2$ ), in a public space (restaurant, park, etc.) (5.6%,  $n=2$ ), and one participant had his experience of presence with a song while walking. Thirty-two participants said they needed a quiet and comfortable environment to experience presence. When participants were at home, they felt relaxed and comfortable; nothing could disturb them, and they felt it easier to have experiences of presence than usual. For example, No. 23 said,

*I'd say the experience took place with the characters in the book! I was at home, in a comfortable chair, relaxed, warm enough, and without other distractions that would get in the way of reading. It's the willing suspension of disbelief. I'm there, wherever the people in the book are.*

The people who had their experience outside the home also pointed out their locations were comfortable and quiet. They said they were in a quiet study room, comfortable café, and so on—wherever they could feel relaxed. People preferred to have their experience in their comfort zones.

#### The Companion When People Have the Experience of Presence

Of the participants, 63.9% ( $n = 23$ ) were alone when they had the experience of presence. These participants said they could do whatever they wanted to help them have the experience when they were alone. Take No.6 for example, who said,

*I was playing an adventure game (Assassin's Creed IV) on my laptop. No one else was home so I turned the volume to full blast and turned out the lights. I played for a pretty long time, but after about an hour and a half or so is when I began to really feel it. I just let myself become lost in the game. I got immersed in the environment and the interactions and felt like I was there. I really enjoy playing the Assassin's Creed series, so I often like to get lost in them. It was a*

*pretty intense experience—I felt like I was connected with the main character, running around on rooftops and gaining information. I only stopped it because I realized it was 3 a.m. and I should probably get some sleep.*

Five of the participants said they had one other person with them when they had their experience of presence. That person was usually someone who had a close relationship with them. For example, No.15 said,

*I was watching P.S. I Love You with my husband. It is a movie (and book) I can relate to in multiple ways and always feel that I am experiencing it as opposed to just watching a movie. It is one of the only movies I cry at.*

Two of the participants were with girlfriends, one of them was with her husband, one of them was with his wife, and the remaining two were with their boyfriends. They said they were relaxed when they were with the people who had a close relationship with them, which made it easier to have the experience of presence.

Eight of the participants said they had their experience with a group of family and/or friends. Every one of these eight participants reported that they were using media together, and they had a very good experience of presence. No.32 said,

*I was watching Game of Thrones last night with a group of my closest friends at one of their houses. It took place at 9:00 p.m., and they have an 80-inch TV set so you feel like you are actually in the show. They also have surround sound so you feel like you are there. Everything is so big, loud, and interesting that I get so into it sometimes I cannot help but show my emotions.*

## Summary

In sum, environmental surroundings can influence people's experiences with presence. Participants preferred to have the experience of presence in places where they felt relaxed, and they had the experience alone or with people they had a strong relationship with. The

more comfortable and relaxed the environment was, the more likely people would have the experience of presence.

#### RQ4: What Are People's Presence Experiences Like?

In this section of the study, I explored the types of presence stimulated by different media, the enjoyment and intensity of people's different types of presence. To determine this, I asked questions about how long the experience of presence lasted, how strong and how enjoyable participants rated their experience, and how the intensity changed during the process of presence to better understand the nature of people's recent presence experiences.

##### The Types of Presence Stimulated By Different Media

In the survey, the participants all reported that they felt they had combinations of different types of presence during their most recent presence experiences. The results of the survey showed 10 participants said they had their recent experience of presence with TV shows. The most common types of presence during these were spatial presence ( $n = 6$ ), engagement ( $n = 6$ ), social presence ( $n = 5$ ), social realism ( $n = 4$ ) and perceptual realism ( $n = 3$ ). According to these 10 participants' answers to the interview questions, they all agreed that the TV shows could attract their attention and maintain their focus. When they were mentally immersed in the shows, they had the experience of engagement. Six of them felt they were in the space created by the shows—and thus had an experience of spatial presence. The participants who cared about the characters a lot were likes to experience social presence, social realism, and perceptual realism than others. Take No. 20 for example,

*It was a TV show, I was alone in my room, and it felt really good. It is just something I do basically every day: I picture myself as a character in the TV series (that is not really part of the story), and I develop an imaginary story with me included in the world of the show.*

In this case, No.20 felt like she was in the show, which was an experience of spatial presence;

she also pictured herself as a character in the show, which was arguably a kind of self-presence. Moreover, No.20 also talked about how much she cared about the characters in the show and felt like they were real people sometimes; she even thought she could interact with these characters. This is an experience combining social presence, social realism, perceptual realism, and actor within medium.

The most common combination of presence inspired by TV shows was spatial presence and social presence. For example, No.3 talked about her experience,

*In this particular event, I was watching Downton Abbey on the television, through Roku, via Amazon Prime. I watched a few episodes with my partner at home on the couch. We had both run a race earlier in the morning, so we were feeling lazy and tired. We decided to zone out with Netflix. Anyway—he is not all that into it, but humored me. Within a few minutes, he got into the show and character drama, as well. Dark room, only stopping to let the dog out or go to the bathroom ourselves. As I wrote above, I easily get into the entertainment I am engaging in, so it isn't difficult for me to feel emotionally invested. In his words, the show is "serious." So to get out of the drama mode, we watched an episode of It's Always Sunny to get us back to our living room.*

In this case, Both No.3 and her partner felt they were in the environment created by the show *Downton Abbey*, which was an experience of spatial presence. Moreover, they also became immersed in the character drama, which made them feel they were actually with the people who were on screen via technology. No. 17 talked about her experience:

*I watched the show by myself at home. Even though the characters on the show were younger than me, I felt like I was in their age group during this experience. I had moments of feeling like I was on that show off and on for a few days. Of course, they were stronger initially.*

In No.17's case, she imagined herself as the characters' age and felt she was there with these characters in their environment. This was an experience that combined spatial presence and social presence.

Seven participants in the survey said they had a recent experience of presence with video games. The most common types for them were spatial presence ( $n = 4$ ), engagement ( $n = 4$ ), social presence ( $n = 3$ ), and self-presence ( $n = 3$ ). No.26 shared an experience of having inverse presence with video games during the interview. When he finished the game, he still felt like he was in the world created by the video games. These seven participants did not report any common combinations of different types of presence. Video games could stimulate different feelings and offer different people different experiences. In this way, it was hard to determine a common combination of different types of presence. Take two participants' experiences to see how people experience different types of presence with video games. No.30 said,

*Playing a created video game character on a sports video game. I was by myself, in the afternoon. It was not a very strong feeling, but it was just strong enough to be enjoyable. I tend to play a game and get the feeling when the real team I follow is playing in real life (e.g., as a Thunder basketball fan I play my character with the virtual Thunder team).*

In this case, he felt like he was playing with the team in his real life, which was an experience of social presence. He also felt mentally immersed in the game, and this was an experience of engagement. No.30 could identify these types of presence both in the survey and the interview. As for the other, No. 13 said,

*Very immersive. I was playing Skyrim and often felt like my character— fear/anxiety battling a monster, triumph when I won, excitement at plundering loot, etc. I was at home; my husband was also playing Skyrim. I played for about*



*4 hours and stopped because it was time for dinner.*

She felt like her character was herself, which is an example an experience of self-presence. Her feeling like she was fighting with monsters was a kind of experience combining transportation presence, social presence, perceptual realism, and actor within medium. What is more, she made it clear that she felt very immersed, which showed she had an experience of engagement presence. She could identify all these different types of presence both in the survey and the interview.

Six participants in the survey reported they had a recent experience of presence with Facetime or Skype. The most common type of presence they had with Skype or Facetime was social presence. All of these six participants reported they had strong feelings of social presence. They all felt like they were actually with the people who were available via Skype or Facetime. For example, No.33 said,

*I was Skyping with my boyfriend who lives in the UK while I was living in Montreal. We felt really close at that moment, even if it was through Skype. I feel like those episodes of intense connection on Skype have brought us closer.*

In this case, she felt she and her boyfriend were actually together, which was a typical experience of social presence, and she could identify this type of presence in the survey and the interview.

The results of the survey and interview showed that people often had engagement presence with Skype or Facetime. Four people of the six reported that they felt they were completely involved with the experience, which is an experience of engagement presence. They focused on the use of Skype or Facetime. The next common type of presence inspired by Skype or Facetime was spatial presence ( $n = 3$ ). The most common combination of types of presence created by Skype or Facetime was spatial presence and social presence ( $n = 3$ ). This combination is also the most common combination presence in people's daily presence

experience. In other words, participants more easily felt like they were in the environment created by Skype or Facetime and felt the people they were talking with via technology were actually with them. For example, No.5 said he felt like he actually went to a meeting with his coworkers, and they were actually with him. He had the experience of spatial presence and social presence:

*It was a meeting by Skype. We used multiple inputs to look at and discuss materials both through Skype's video and screen sharing capabilities and through e-mail, class website, project website, and Google docs. I felt like we were all together doing this in dialogue.*

Five participants reported in the survey that their recent experience of presence was with books. Every one of these five participants said they felt they were mentally immersed and completely focused on the reading. No.12, for example, said she was fully immersed with the book and almost escaped from her real life through it. This was an experience of engagement presence, and she could identify this type of presence during the survey and the interview:

*I was sitting at a local hookah cafe at a table outside in the sun. I was reading the second book in George R.R. Martin's A Song of Ice and Fire. It was late in the evening but still pleasantly warm outside. I became so absorbed in the world of my story that I didn't even notice when the server came to my table. It felt like an escape from the dull reality of my everyday life.*

No.19 shared a similar experience of presence with books:

*I was reading a book series on my own using a Kindle tablet this afternoon in my room at home. While reading the book I felt a deep emotional connection to the plot and the characters so much so that I felt sensations of happiness, sadness, humor, anger, etc., while I was reading. Also, I was able to visualize the people, places, and things very vividly in the book. Almost as if I was there myself.*

In this case, she felt she almost forgot everything else in the world and became completely immersed. Moreover, she also had the feeling “almost as if I was there myself.” That was an experience of spatial presence, which was the second most common type of presence inspired by books ( $n = 3$ ). All participants could identify the type of presence they had in the survey and the interview. Books also often inspired people to have the experience of social presence ( $n = 3$ ), perceptual realism ( $n = 3$ ), and actor within medium ( $n = 3$ ). For instance, the fact that No.12 felt she had a strong relationship with the characters, thought they were real, and even felt like she could interact with them shows she had the experience of social presence, perceptual realism, and actor within medium.

The remaining six participants said in the survey they had their experience with several different types of media. Two of them had their experience with photos. One of them reported in the survey that she had the experience of engagement and self-presence, and the other reported she had the experience of engagement. For example, No.4 said,

*When I looked at my friend’s post, some photos with me on Facebook, I feel like I went back to the moment we took the picture.*

Two participants had their experience of presence when they were texting with a friend. Both of them reported that they had the experience of engagement and social presence. One of the participants had his experience of presence when he was writing e-mails to his coworkers. He reported that he had the experience of social presence and engagement. He said in the interview that he was completely involved in the conversations with his coworkers and felt like the coworkers were actually in his office. The last participant had his experience with music, and he reported that he had the experience of inverse presence in the interview. No.3 said:

*When I listen to my favorite song, I feel like the world is singing and everything is dancing. The world was “like a song”*

In this case, No.3 felt like his world was “like a song” instead of “a real one.” This kind of experience was inverse presence, and he could identify it in the survey.

This study’s sample of people who had experiences with presence in these media is too small to determine conclusive patterns. However, their experiences still show that the common types of presence they had with these media were engagement and social presence, and the combination of these two types of presence.

In sum, TV shows were more likely to inspire spatial presence, engagement, social presence, social realism, perceptual realism, and the combination of spatial presence and social presence. Video games more easily created intimate experiences of engagement, social, spatial, self-presence, and an after effect of playing video game. Facetime or Skype mostly helped people experience social presence, engagement, spatial presence, and a combination of spatial presence and social presence. Books were more likely to give the experience of engagement, spatial, social, perceptual realism, and actor within medium presence.

Participants’ experience of presence with other media showed they often had experiences of engagement and social presence. Based on the survey and the interviews, it appears there are some types of presence most uniquely associated with each medium: TV shows were more likely to inspire perceptual realism; video games were likely to inspire self-presence; Skype or Facetime were more likely to inspire the combination of spatial presence and social presence; and books were more likely to inspire the experience of actor within medium.

Engagement presence was the most common type, engagement and social presence was the most common combination of presence in people’s daily lives.

#### The Enjoyment and Intensity of People’s Different Types of Presence

The participants reported in the survey that their recent experience of presence lasted from 1 minute to 150 minutes the mean of their experience’s time is 42.1 and the std. deviation is 40.0. 55% of participants’ ( $n = 20$ ) experiences of presence lasted under 30

minutes, and eight people said their experience lasted 60 min or over. Every participant said the length of time for their experience of presence was mostly decided by the media content. According to the results of the interviews, all the participants agreed that the more interesting the media content was, the longer their experiences of presence lasted.

A lot of the participants reported that they had a strong feeling of presence. Twenty-nine participants chose a score higher than 5 when asked to measure how strong the presence experience was on a 7-point measurement in the survey. Seven people chose from 2 to 4 to show the intensity of their feeling of presence. Most of the people who had a stronger feeling of presence reported they had a greater enjoyment of the presence.

In addition, according to the results of the survey and interviews, most participants reported that they enjoyed their experience of presence a lot even with a low-intensity feeling of the experience. In the survey, 97.2% ( $n=35$ ) participants chose a score higher than 3 on the 7-point scale indicate their enjoyment. Ten people chose 7 to show they extremely enjoyed their experience of presence, whereas only two people chose 7 to show they had a very strong feeling of presence. During the interview, 35 participants said they could experience strong enjoyment even when they did not have a strong feeling of presence. For example, No.30 talked about his experience with video games:

*It was not a very strong feeling, but it was just strong enough to be enjoyable.*

According to the results of the interview, participants enjoyed the experience of presence for two main reasons: First, they enjoyed getting in touch with their friends and families. Media such as Skype, Facetime, and smartphones helped media users to get in touch with someone they cared about and who was far away from them. The presence experience helped them to keep their relationship stronger. No.9 said,

*Facebook is amazing. I moved a lot during my childhood, but I can still get in touch with my friends from my childhood via Facebook! I can see what they do*

*every day. We can talk via message, and it makes me feel like we still live together. I like this feeling so much.*

The second main reason why participants thought they enjoyed the presence was that this kind of experience could help them have some interesting experiences that they could not have in their real non-media lives. Most people who had their presence experiences with TV shows, video games, and books reported feeling that they were experiencing something brand new to them when they were using these media. No. 36 talked about experiencing this feeling when she was playing video games,

*It was enjoyable because you live that moment of completing a mission and feeling accomplished when all the tasks are achieved. It also evokes a sense of thrill while playing because the experience is most likely one you will never face in real life.*

All the participants who had their experience of presence with TV shows, video games, and books shared similar feelings as No.36. They all enjoyed the fresh experience created by these media.

Even though the majority of participants reported that they enjoyed their experiences of presence, one participant talked to me about an experience of presence that he did not enjoy. In this case, he had a very strong feeling of presence, but it was a negative feeling. The stronger he felt the presence, the more uncomfortable he felt:

*I squabbled with my mom when we Skyped. It was about 11:30 p.m., and I was in my bedroom. I was so angry that it made me feel like she was just in front of me and yelling at me.*

Participants all reported that their enjoyment of presence changed during the recent experience of presence. Their answers to the interview questions showed their feelings of enjoyment and intensity changed in two ways when they had the experience of presence:

First, people's enjoyment and the intensity levels of presence increased along with the time using the media. All participants reported they did not have a strong feeling of presence when they first started using the media, and they did not have much enjoyment the first time either. After they became immersed in the media content, their feelings of presence became stronger, and their enjoyment improved. They all agreed that the longer they focused on the media, the better was their experience of presence and the greater enjoyment they had. Generally speaking, participants' feelings of presence lasted equal to or shorter than the time of the media content. However, if the content was attractive enough to the participants, they might still have the feeling of presence even when the content finished, which is an after effect of presence. For example, No.26 said,

*I've been playing quite a bit of The Sims 3 recently, and last night when I went to bed, for a moment I saw the bedroom and myself in the bed as a character in the game. The moment passed pretty quickly. Whenever I spend a lot of time playing a game that requires me to focus a lot, my dreams tend to be related to playing that game, and I'll imagine things related to the game even when I'm in the real world. Minecraft tends to do this very easily for me—I'll dream of playing the game and sort of being in the world, and when I'm awake I notice myself sometimes thinking things like "I should add a block there" or "this place is missing torches." With other games, the logic is pretty much the same but the content of course changes based on the game.*

No.3's experience of watching *Downton Abbey* with her partner also demonstrated that experiences of presence can last even after the media content finishes. When No.3 and her partner finished the show, they felt like they were still in the drama's world and needed to watch an episode of *It's Always Sunny in the Park* to get them "back to their living room." No.1 said after she texted with her brother with the "self-portrait expression," she came back to look at their

conversation and even felt more enjoyment than the first time she saw the “self-portrait expression.” Her enjoyment of the presence actually increased after she finished the texting. Thus, participants can still have presence experiences without media content, and the length of time they experience presence can be longer than the time they spend on the media. In some cases, participants’ enjoyment of presence even got better after they finished using media, which is an after effect of presence experience.

Second, people’s feelings of presence could change with the plot of the media content. All participants believed that when the plot was intense, they became more involved and had a stronger feeling of presence than usual. For example, the participants said they felt completely involved and had a strong feeling of presence when they were fighting to get their “missions” completed in a video game.

#### Summary

In sum, generally speaking, 97.2% ( $n=35$ ) participants enjoyed their experience of presence, and they even could have a great enjoyment without a strong feeling of presence. What is more, the stronger the feelings of presence participants had, the more enjoyable the experiences became. Participants also could obtain strong enjoyment with a low intensity feeling of the experience. In addition, the more interesting the media content was, the longer experiences of presence lasted. Participants’ enjoyment of presence experiences increased with the time they spent with media devices. Sometimes participants experienced the after effect of presence when their enjoyment of presence last longer than the media content. The plot changes of the media content also played an important role in the changing of participants’ experiences of presence. However, there was an exception whereby if participants had a negative experience of presence, the stronger they felt the presence, the more uncomfortable they felt.

RQ5: What Are The Relationships Between The Characteristics of Media Users (E.G.,



Demographic Information, Education Background, The Knowledge of Presence, Being A  
“Visual” Person, Etc) and The Frequency and Nature Of The Different Types of  
Telepresence They Experience?

This research question explored the influence of three characteristics of participants’ presence experience: the knowledge of presence, their backgrounds, and their preference for information format (e.g. some people are visual people, etc.). As noted above, all the participants of this study had no or little professional knowledge of telepresence beforehand. However, they all reported in the interviews that they could now understand the definitions of the different types of presence in the survey and could identify the different types of presence they had experienced in their lives. They all believed that having less knowledge of presence had not influenced their enjoyment of presence. Moreover, 94.4% ( $n=34$ ) participants thought even after they learned something about presence in this study, their experiences of presence would not change. Two participants said after learning about presence they would pay more attention to this kind of experience in their lives, and they thought they would enjoy them more than before. As a result, a level of understanding presence did not seem to have a significant influence on most participants’ experiences with presence.

But other characteristics of the participants did influence their experiences of presence. During the interviews, all the participants said that their personal characteristics contributed to their experiences of presence. Their educational background and their personal characteristics had influence on what media elements were more likely to inspire their experiences of presence.

All the participants said if the media content included some information related to their education background, they would pay more attention to it, and it was more likely to inspire them to have an experience of presence. Some participants said watching content related to their school majors or jobs made them feel they had a strong relationship with the media

content. For example, No.36, who was a college student from a department of Pharmacy, said she had a strong feeling of presence with media content that had some relationship with medicine:

*There are scenes in the video game where you have to medically treat someone, and, as someone studying biology and on the pre-med track, I feel more interested in those scenes. Because of my higher interest in those scenes, I feel my experience of presence is stronger.*

No.1 studied in a department of Anthropology, and she said her major made her interested in learning about the differences in people with different cultural backgrounds. Therefore, when she watched something involving people from different cultures, she felt a stronger experience of presence than usual. No.7 and No.30 worked in banks and said they preferred to have experiences of presence with content that had financial elements, and several participants studying in Chemistry departments said they had a strong feeling of presence with the show *Breaking Bad*, which contained stories involving chemistry. In this way, participants' educational backgrounds and/or interest areas helped to determine what kind of elements would create experiences of presence.

During the interviews, the participants also reported that other personal characteristics contributed to what kind of element would more likely inspire their experiences of presence. For example, two participants said that they were visual people, and they were more likely to have experiences of presence with visual images (both still images and moving images). Some participants said they were more sensitive to text, so they were more likely to have experiences with text rather than other media elements. Three participants told me they felt they had the strongest feelings of presence with sounds, rather than other elements.

## Summary

In sum, participants' lack of knowledge of presence did not seem to have a significant

influence on their experiences of presence. Their educational backgrounds and their personal characteristics contributed to deciding which elements would more likely create the experience of presence for them. All participants in this study explained they would be more likely to have the experience of presence with familiar content, and they said they would find it easier to have the feeling of presence with media related to their interests.

#### RQ6: What Is the Validity of the Survey and What Are Possible Improvements for It?

The survey from Lombard and Sun's (2014) study collected a lot of important information about participants' experience of presence in their daily lives. First of all, it clearly displayed the demographic information of participants, which helped to understand more about the people in the sample and make it easier to explore the relationship between demographic factors and participants' experiences of presence.

Second, the survey outlined some information about the participants' media usage behaviors. It showed very clearly the number of media devices participants had—and the time they spent with each medium. This information could also help other researchers to learn about participants' media usage behaviors in general.

Third, the survey plainly explained the concept of presence and the different types of presence to participants. Every participant in this study said they understood the difference between the different types of presence after they took the survey, and they displayed their ability to identify different types of presence in the interviews. Moreover, the introduction of presence in the survey helped the participants to understand the questions in the interviews.

Fourth, the survey clearly showed what type of presence was the most recent presence experience that participants had, and the environment (the time, the location, and the companions) where the experience took place. Moreover, the survey outlined clear information about what elements of media were involved when participants had their most recent experiences with presence and helped to explore what kind of factors influence

people's experiences of presence. Last but not least, the survey also showed the research participants' enjoyment and the intensity of their presence experience. So the results of this study reinforce the conclusions in Lombard and Sun's (2014) study and demonstrated that this approach, and this survey instrument, is a valid tool for measuring presence.

During the interviews, the participants noted that the most important part of the survey that needed to be improved was the way it asked about the media technologies that were involved in people's experiences. In the survey, I asked the question what media technologies were involved in participants' experiences to explore what media devices more easily inspired an experience of presence than others and to learn the relationship between different media devices and different types of presence. However, 55.6% ( $n=20$ ) of participants said they felt confused when they answered this question. They could not separate the media technologies and the media content they used. They chose all the media they thought were involved. For example, two people chose "book" and "tablet" at the same time. When they talked about their experiences, they said they were reading a book on their Kindle. Three participants chose "phone" and "computer" together when talking with their families through Facetime on their computers. Five participants chose "television" and "computer" together because they were watching TV shows on their computers. Two participants had a similar experience: They were watching TV shows on their smartphones, so they chose "television" and "smartphone." In this way, there is a possibility that it is hard for researchers to tell what different media devices contributed to the different types of presence. However, because a survey cannot explain all the details of every question, these kinds of issues were acceptable and inevitable.

To improve this question, the survey could emphasize "media device" in this question, offer a brief explanation of the difference between media device and media content, and give some examples to make it clear that the aim of this question is to learn what media device

played an important role in participants' experiences instead of the media content they used. All participants in the interview said they agreed with this suggestion, and they all thought this would be helpful to make these survey questions more clear.

Another issue regarding the survey was that 83.3% ( $n=30$ ) of participants thought the question about what time of day the recent experience of presence took place was not necessary. The aim of this question was to help discover what time made it easier to inspire the experience of presence. However, 55.6% ( $n=20$ ) of participants said they did not choose what time they had an experience of presence—it was decided by their work or school schedules. Whenever they were free and had time to use their media for entertainment they would be more likely to have the experience of presence. Six participants said they felt nothing different when the presence experience happened at different times. Moreover, four participants said they did not remember when their presence experience happened. In this way, the question about when did the experience take place could not offer the answers it intended.

To refine this survey, 55.6% ( $n=20$ ) of participants suggested deleting this question. I suggested changing the survey question to ask why participants used media when they had the presence experience (e.g., used the media for work, entertainment, keeping in touch with families and/or friends, and so on). Every participant in the interview agreed with this suggestion, and they thought the new question would be more valuable than the original question.

Since the question about time of day could help researchers and media producers to learn what time participants are free, this question is still valuable to researchers. I suggest adding the new question and keeping the old question, too.

## Summary

In sum, the survey from Lombard and Sun's (2014) study offered valuable

information about people's experiences of presence in their daily lives. However, it also could be improved. If it could clarify the question related to media devices and add a new question to ask what the purposes were when using media, it would offer researchers more valuable information.

## CHAPTER 5

### CONCLUSION

This research project studied people's experiences of presence in their lives. Combining a survey and interviews with 36 participants, this study tried to obtain a better understanding of the relationship between participants' experiences of presence with media using participants' habits, circumstances, and characteristics; and exploring participants' most recent presence experiences.

#### Summary of Results

My research pointed out that people often have different types of presence in their daily lives, and their presence experiences have a strong relationship to their media use behavior, environment, and their personal characteristics.

The results suggest that people's media use habits play an important role in their experiences with presence. Although there are exceptions, most participants are more likely to have an experience of presence when they have access to multiple media devices. On the other hand, nearly all participants said they could have presence experiences with only one medium at one time. Participants' feelings of presence increased the longer they spent with media devices. Different media devices could also stimulate different senses and help participants to have experiences of different types of presence.

The most common media that people had an experience of presence with were TV shows, video games, Skype and/or Facetime, books, and texting. The most common media elements involved were moving images, sounds, and interactivity. The most frequent types of presence were engagement, social, spatial, social realism, actor within medium, and perceptual realism presence. The common factors that contributed to people's experiences of presence were the relationship between media users, the storyline of the media content, the ability of the media to make users feel a personal connection, and participants' willingness to

engage. These results were similar to those in Lombard and Sun's (2014) study.

This study also demonstrated that participants' circumstances could influence their experiences of presence. Participants were more likely to have an experience of presence in circumstances where they felt relaxed and comfortable. Different types of media could inspire various types of presence. For example, TV shows were more likely to inspire spatial, engagement, social, social realism, perceptual realism, and the combination of spatial and social presence. Video games more easily created an intimate experience of spatial, engagement, social, and self-presence.

Generally speaking, almost all participants enjoy their experience of presence, they might enjoy it even after media use. Their enjoyment of presence increased while their feelings of presence grew stronger. The longer participants used a medium, the stronger were their feelings of presence; feelings of presence could also change due to plot. If the media content's plot was enjoyable enough, some participants obtained strong enjoyment even after the media use ended. This is an after effect of presence and barely studied by scholars before.

This research found that media users' characteristics could influence their experiences of presence, too. Their educational backgrounds and their personal characteristics (e.g., whether they were visual people or were more sensitive to sound than visuals, etc.) had an important influence on what kind of media they liked to use and what kind of presence experiences they had.

### Contribution and Implications

First of all, most of the findings support many findings of studies that have been found in the laboratory: my research confirmed that people's media use behavior and their characteristics could influence their experiences of presence not only in the labs, but also in their daily lives. Moreover, my results also supported Lombard's (2012) research that the bigger the screen is, the better presence feeling the media could offer.



Second, this study contributed valuable knowledge of people's presence experience outside labs. Especially important, common factors other than technology were new results in the study of presence. With Lombard and Sun's (2014) study, we explored the experience of presence in people's daily lives, which is rarely studied by scholars before. Our results could help scholars to have a better understanding of presence outside labs and help media producers to improve their media productions. Media producers could get some inspiration from this research, too. The results, which uncovered the different types of presence associated with different types of media in people's daily lives, could help media producers to refine their productions to offer people a better experience of presence. For example, this study pointed out that if the media content could make people feel like they have a personal connection, they will more likely to have an experience of presence. For example a movie company could create a social media account for their characters and interact with audiences to make audiences feel like they have a personal relationship with the characters. In this way, audiences might be more likely to have the feeling of presence experience with these characters than others.

Moreover, as I talked above presence is a widely exist phenomena in different areas, a better understanding of presence could benefit a variety of areas: virtual environments, art, business, communication, computer science, education, engineering, linguistics, medicine, music, physics, psychology, religion, social work, sociology, and so on. For example, scholars could take advantage of the after effect of presence to make improvement to the education equipment to help people learn knowledge efficiently.

Third, this research pointed out that almost every participant enjoyed their experience of presence, which reinforces the importance of previous scholars' studies, which focused on how to help media producers to offer people a strong feeling of presence. However, I also found an exception whose experience of presence is displeasure, which had not been studied

in labs. This exception, a participant showed the possibility that people might not enjoy their presence experience all the time and exploring more details about the displeasure experience of presence could inspire scholars to think about different possibilities when they do their research on presence, and help media producers to avoid producing this kind of experience.

Fourth, this research pointed out the after effect of presence, which has barely been studied by scholars before. The after effect of presence has something in common with inverse presence. As discussed above, inverse presence is a presence experience where people feel like they are using a technology even when they are not (Timmins & Lombard, 2005). It focuses on people's mistaken feeling of using technology and it can take place at any time. On the other hand, the after effect of presence focused on people's feeling when their experience of presence finished. It only could happen after people experienced presence. For instance, when a person sees a very beautiful place, he might think this place is too beautiful to be true, and it looks like a picture. This is an example of inverse presence. He felt like the place was painted even though he knew the place was real. After he comes home from that beautiful place, he might think about that place many times, and every time he thinks about that painting-like place, he feels he might still be in that place and enjoy it a lot. This is an example of an after effect of presence. His enjoyment of the presence experience lasts for a long time after his experience finished. Having a good understanding of the after effect of presence would help scholars to have a better understanding of the effect of presence and inverse presence, and help media producers to improve their productions.

Fifth, this study revealed that the survey from Lombard and Sun's (2014) study could help researchers learn valid information about participants' demography, media usage behaviors, the types of their recent presence experience, the context, enjoyment and intensity of these experience. The survey could help researchers to learn about people's experiences of presence in their daily lives in general. This study also noted that the survey could benefit

from altering its questions about what media were involved in people's recent experiences of presence, and what time of day they had that experience.

### Next Steps

This research could inspire researchers/theorists to do three things in the future:

First, scholars might refine the survey, expand the study sample and keep exploring people's experience of presence out labs. For example, the common factors, other than the technology, found by this study could also inspire researchers of presence to further explore what has an influence on people's experiences of presence.

Second, the finding that people's enjoyment of presence could last for a long time even beyond media use, which is new in the study of presence, suggests researchers should conduct more research about the after effects of presence. Moreover, comparing the after effects of presence and inverse presence could also make an important contribution to the study of presence.

Third, the participant who had an unpleasant experience of presence could also inspire researchers to study the factors that contribute to this experience.

### Limitations

However, this study had several limitations. First, the sample of this study included only 36 people and there was an uneven gender ratio, and thus their experiences may not represent most people's experiences. Second, the educational levels of this study's participants were high and may not represent the population in general. Lombard and Sun's (2014) study experienced a similar problem. Third, this project was based on participants' self report and there is a possibility that the results did not show participants' real information.

Despite these limitations, this study has still made important contributions to the better understanding of telepresence, helping scholars to monitor changes of presence in a

natural environment over time and aiding scholars in developing a more useful telepresence experience across different media.

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APPENDIX A: PARTICIPANT DEMOGRAPHIC CHARACTERISTICS

Name	Sex	Age	Education	Country
No.1	Female	22-29 years old	College degree	United States
No.2	Male	14-21 years old	College degree	United States
No.3	Male	14-21 years old	High School degree	United States
No.4	Female	22-29 years old	College degree	United States
No.5	Female	38-45 years old	Graduate school degree	United States
No.6	Female	22-29 years old	College degree	United States
No.7	Female	30-37 years old	Graduate school degree	United States
No.8	Male	22-29 years old	College degree	United States
No.9	Female	22-29 years old	Graduate school degree	United States
No.10	Male	22-29 years old	Graduate school degree	Austria
No.11	Male	30-37 years old	Graduate school degree	United States
No.12	Female	22-29 years old	College degree	United States
No.13	Male	22-29 years old	Graduate school degree	United States
No.14	Female	54-61 years old	Graduate school degree	United States
No.15	Female	38-45 years old	Graduate school degree	United States
No.16	Female	22-29 years old	College degree	United States
No.17	Male	30-37 years old	Graduate school degree	United States
No.18	Female	30-37 years old	Graduate school degree	United States
No.19	Female	14-21 years old	College degree	United States
No.20	Female	14-21 years old	College degree	United States
No.21	Female	30-37 years old	Graduate school degree	United States
No.22	Male	22-29 years old	Graduate school degree	China
No.23	Female	22-29 years old	Graduate school degree	United States
No.24	Female	30-37 years old	Graduate school degree	United States
No.25	Female	22-29 years old	College degree	United States
No.26	Female	22-29 years old	Graduate school degree	Canada
No.27	Female	38-45 years old	Graduate school degree	Qatar
No.28	Female	30-37 years old	Graduate school degree	Netherlands
No.29	Male	30-37 years old	College degree	United States
No.30	Female	30-37 years old	Graduate school degree	Australia
No.31	Male	14-21 years old	College degree	United States
No.32	Male	46-53 years old	Graduate school degree	United States
No.33	Female	46-53 years old	Graduate school degree	United States
No.36	Female	14-21 years old	College degree	United States

## APPENDIX B: TELEPRESENCE SURVEY (SPRING 2014)

We're studying a kind of media experience that many people have and that researchers have labeled 'telepresence.' We hope to better understand these experiences and how they occur in the normal course of people's lives; we hope that this better understanding will lead to the creation of more useful and enjoyable media experiences in the future.

If you choose to participate, you'll complete a short online survey containing questions about you and your experiences. It will take 5 to 20 minutes.

There are no reasonably foreseeable risks or discomforts associated with this study. The benefits you will obtain from the research include your learning about your own media experiences (and those of others if you request to receive notice about the study's results), along with the satisfaction that you have contributed to the understanding of this topic.

The alternative to participating is not to participate, without any consequence.

Please contact the research team with questions, concerns, or complaints about the research and any research-related injuries by calling Matthew Lombard at 215 204-7182 or e-mailing [lombard@temple.edu](mailto:lombard@temple.edu).

This research has been reviewed and approved by the Temple University Institutional Review Board. Please contact them at (215) 707-3390 or e-mail them at: [irb@temple.edu](mailto:irb@temple.edu) for any of the following: questions, concerns, or complaints about the research; questions about your rights; to obtain information; or to offer input.

**Confidentiality:** You will not be required to provide your name or other identifying information in the survey. Efforts will be made to limit the disclosure of all survey responses to people who have a need to review this information. However, the study team cannot promise complete secrecy. For example, although the study team has put in safeguards to protect your information, there is always a potential risk of loss of confidentiality. There are several organizations that may inspect and copy your information to make sure that the study team is following the rules and regulations regarding research and the protection of human subjects. These organizations include the IRB, Temple University, its affiliates and agents, and the Office for Human Research Protections.

Your clicking on the "I consent" button below documents your permission to take part in this research. It does not waive any of the legal rights that you otherwise would have as a participant in a research study.

### \* Required

1. **Consent to participate in this study:** \* *Check all that apply.*

I consent

**First just a few questions about you**

2. **Sex\*** *Mark only one oval.*

■ Male

- Female

3. **Age\*** *Mark only one oval.*

- 6-13 years old
- 14-21 years old
- 22-29 years old
- 30-37 years old
- 38-45 years old
- 46-53 years old
- 54-61 years old
- 62-69 years old
- 70-77 years old
- 78-85 years old
- 86-93 years old
- 94 or more years old

4. **What is your education level? \*** *Mark only one oval.*

- Pre-high school
- Some high school
- High school degree
- Some college College degree
- Some graduate school
- Graduate school degree
- Other:

5. **What city or town do you live in? \***

6. **What country do you live in? \*** *Mark only one oval.*

- Australia Belgium
- Brazil
- Canada

- China (mainland)
- Denmark
- Finland
- France
- Germany
- Hong Kong
- Italy
- Japan
- Netherlands
- Norway
- Portugal
- Singapore
- South Korea
- Sweden
- Switzerland
- Taiwan
- United Kingdom
- United States
- Other:

**7.How many of each of the technologies below are in your household (where you currently live)? \***

TV sets

None One Two Three Four or more

Smartphones

None One Two Three Four or more

Tablet computers

None One Two Three Four or more



Desktop or laptop computers

None One Two Three Four or more

Gaming consoles

None One Two Three Four or more

**8. How much time during a typical day (at home, work, school or elsewhere) do you spend WATCHING A TV SET? \* *Mark only one oval.***

- None 0-1 hour
- 1-2 hours
- 2-3 hours
- 3-4 hours
- 4-5 hours
- 5-6 hours
- 6-7 hours
- 7-8 hours
- More than 8 hours

**9. How much time during a typical day (at home, work, school or elsewhere) do you spend USING A SMARTPHONE? \* *Mark only one oval.***

- None 0-1 hour
- 1-2 hours
- 2-3 hours
- 3-4 hours
- 4-5 hours
- 5-6 hours
- 6-7 hours
- 7-8 hours
- More than 8 hours

10. **How much time during a typical day (at home, work, school or elsewhere) do you spend USING A TABLET COMPUTER?** \* *Mark only one oval.*

- None 0-1 hour
- 1-2 hours
- 2-3 hours
- 3-4 hours
- 4-5 hours
- 5-6 hours
- 6-7 hours
- 7-8 hours
- More than 8 hours

11. **How much time during a typical day (at home, work, school or elsewhere) do you spend USING A DESKTOP OR LAPTOP COMPUTER?** \* *Mark only one oval.*

- None 0-1 hour
- 1-2 hours
- 2-3 hours
- 3-4 hours
- 4-5 hours
- 5-6 hours
- 6-7 hours
- 7-8 hours
- More than 8 hours

12. **How much time during a typical day (at home, work, school or elsewhere) do you spend GAMING ON A CONSOLE?** \* *Mark only one oval.*

- None 0-1 hour
- 1-2 hours
- 2-3 hours
- 3-4 hours

- 4-5 hours
- 5-6 hours
- 6-7 hours
- 7-8 hours
- More than 8 hours

13. **How much do you know about media production?** \* You don't need to know anything about media production to complete this survey. *Mark only one oval.*

Nothing 1 2 3 4 5 6 A lot (expert)

14. **How much do you know about telepresence?** \* You don't need to know anything about telepresence to complete this survey. *Mark only one oval.*

Nothing 1 2 3 4 5 6 A lot (expert)

15. **If you know about telepresence, where have you learned about it?** \* Please check all that apply.

*Check all that apply.*

- Don't know about telepresence
- In the media
- As a student in college class
- From a job (other than academic)
- From academic work as a researcher/scholar
- Other:

### **A short introduction to telepresence**

Telepresence (which is often shortened to just "presence") is something that often happens when people use media technologies. When telepresence happens, the user feels present in or connected to the people or things in the media experience. We still know we're using a technology, but at some level we ignore the technology and just perceive the people, things and events of the experience. For example, we get "lost" in the world of a novel, TV show, movie, videogame or theme park ride; we're convinced by the realism of paintings or graphic designs; we treat our cars, computers or other machines as if they have personalities of their own, and we feel like we're "with" a person we talk to on the phone or in a videoconference. These are just a few examples; telepresence can happen with many other media too. But in every case of telepresence, we know we're just using technologies but at some level we ignore that and just experience the people and places the technologies provide.

### **You and telepresence**

16. **Have you experienced telepresence, as it's described above? \* Mark only one oval.**

- Yes, many times
- Yes, at least once
- No *Skip to question 34.*
- Not sure

**You and telepresence**

17. **There are several types of telepresence experiences (some of which are very similar), and a single experience may include more than one type. When did you most recently experience each type of presence described below? \***

*Mark only one oval per row.*

SPATIAL PRESENCE - I felt like I was in the SPACE OR ENVIRONMENT created by the technology

NEVER Today Yesterday 2-6 days ago 1-4 weeks ago 1-12 months ago  
More than a year ago Don't remember

SOCIAL PRESENCE - I felt I was actually with the PEOPLE who were available via technology

NEVER Today Yesterday 2-6 days ago 1-4 weeks ago 1-12 months ago  
More than a year ago Don't remember

TRANSPORTATION - I felt like I WENT somewhere else, people or things CAME to me, or we went somewhere else TOGETHER

NEVER Today Yesterday 2-6 days ago 1-4 weeks ago 1-12 months ago  
More than a year ago Don't remember

ENGAGEMENT - I felt MENTALLY IMMERSED; I was focused on or absorbed in the experience

NEVER Today Yesterday 2-6 days ago 1-4 weeks ago 1-12 months ago  
More than a year ago Don't remember

SOCIAL REALISM - The people, things and events I experienced through the technology COULD (or did) OCCUR in the real world

NEVER Today Yesterday 2-6 days ago 1-4 weeks ago 1-12 months ago  
More than a year ago Don't remember

18. \* *Mark only one oval per row.*

PERCEPTUAL REALISM - The people, things and events I experienced through the technology LOOKED, SOUNDED, and/or FELT as they would in the real world

NEVER Today Yesterday 2-6 days ago 1-4 weeks ago 1-12 months ago  
More than a year ago Don't remember

MEDIUM AS SOCIAL ACTOR - The technology itself SEEMED TO HAVE A PERSONALITY (including computers, phones, robots, mannequins, etc.)

NEVER Today Yesterday 2-6 days ago 1-4 weeks ago 1-12 months ago

More than a year ago Don't remember

ACTOR WITHIN MEDIUM - Even though I COULDN'T INTERACT with them, I FELT I WAS ACTUALLY WITH THE PEOPLE or characters who were available via the technology

NEVER Today Yesterday 2-6 days ago 1-4 weeks ago 1-12 months ago  
More than a year ago Don't remember

SELF-PRESENCE - I felt connected to the AVATAR OR OTHER REPRESENTATION OF ME in the world created by the technology

NEVER Today Yesterday 2-6 days ago 1-4 weeks ago 1-12 months ago  
More than a year ago Don't remember

INVERSE PRESENCE - Even though I WASN'T USING TECHNOLOGY, I FELT LIKE I WAS (one example: I felt like I was in a movie when I was really walking in the street)

NEVER Today Yesterday 2-6 days ago 1-4 weeks ago 1-12 months ago  
More than a year ago Don't remember

**Now, please think of the MOST RECENT TIME YOU EXPERIENCED TELEPRESENCE (of any kind). Please answer the following questions about that specific experience.**

**19. Which type(s) of telepresence were part of this specific recent presence experience?**

\* Please check all that apply.

*Check all that apply.*

- SPATIAL PRESENCE - I felt like I was in the SPACE OR ENVIRONMENT created by the technology
- SOCIAL PRESENCE - I felt I was actually with the PEOPLE who were available via technology
- TRANSPORTATION - I felt like I WENT somewhere else, people or things CAME to me, or we went somewhere else TOGETHER
- ENGAGEMENT - I felt MENTALLY IMMERSED; I was focused on or absorbed in the experience
- SOCIAL REALISM - The people, things and events I experienced through the technology COULD (or did) OCCUR in the real world
- PERCEPTUAL REALISM - The people, things and events I experienced through the technology LOOKED, SOUNDED, and/or FELT as they would in the real world
- MEDIUM AS SOCIAL ACTOR - The technology itself SEEMED TO HAVE A PERSONALITY (including computers, phones, robots, mannequins, etc.)
- ACTOR WITHIN MEDIUM - Even though I COULDN'T INTERACT with them, I FELT I WAS ACTUALLY WITH THE PEOPLE or characters who were available via the technology

- SELF-PRESENCE - I felt connected to the AVATAR OR OTHER REPRESENTATION OF ME in the world created by the technology
- INVERSE PRESENCE - Even though I WASN'T USING TECHNOLOGY, I FELT LIKE I WAS (one example: I felt like I was in a movie when I was really walking in the street)

**20. When did this presence experience take place? \*** *Mark only one oval.*

- Today Yesterday
- 2-3 days ago
- 4-7 days ago
- 1 to 4 weeks ago
- 1 to 12 months ago
- More than a year ago
- Don't remember
- Other:

**21. When did the experience take place? \*** Please check the option that best matches when the experience BEGAN.

*Mark only one oval.*

- Morning (6 am - 12 noon)
- Afternoon (12 noon – 6 pm)
- Early evening (6 – 9 pm)
- Late evening (9 pm – 12 midnight)
- Night (12 midnight - 6 am)

**22. How many minutes did the presence experience last? \*** Please only enter one number here, even if it's approximate.

**23. What media technologies were involved? \*** Please check all that apply to this single presence experience.

*Check all that apply.*

- Book Computer (desktop or laptop)
- Film (in theater)
- Radio

- Telephone - cell / smartphone
- Telephone - land line Television
- Video games (console)
- Tablet (iPad, Kindle, etc.)
- Portable media player (mp3 player, etc.)
- Other:

24. **What elements of media experiences were involved?** \* Please check all that apply to this single presence experience. *Check all that apply.*

- Text
- Still images
- Moving images
- Sound
- Touch
- Smell
- Interactivity
- Other:

25. **Were you interacting with one or more real people in real time (e.g., while using Skype or playing an online game)?** \*

*Mark only one oval.*

- Yes
- No

26. **Where were you when this experience happened?** \* *Mark only one oval.*

- Home
- School
- Work
- A public space (restaurant, park, etc.)
- Traveling by car or other vehicle

- Traveling by walking

- Other:

27. **Who else was with you?** \* *Mark only one oval.*

- Nobody, I was alone
- One other person
- A group of just family and/or friends
- A group of strangers (e.g., an audience)

28. **How STRONG was the sense of presence in this experience?** \* *Mark only one oval.*

Not at all strong 1 2 3 4 5 6 7 Very strong

29. **Any comments or explanations about how strong the sense of presence was?**

30. **How much did you ENJOY the experience?** \* *Mark only one oval.*

Not at all strong 1 2 3 4 5 6 7 Very strong

31. **Any comments or explanations about how much you enjoyed the experience?**

32. **What caused the presence experience to end?** \* *Mark only one oval.*

- The media presentation ended (you couldn't continue without starting it over; e.g., the movie was over)
- You decided to end the media experience (e.g., you decided to stop watching/playing/etc.)
- Something or someone in the environment interrupted it
- Don't remember
- Other:

33. **What else can you tell us about the experience?** \* Please include as much detail as possible about the technology and content; with whom, when, and where the experience took place; and especially what it felt like; along with any other relevant information not captured in the other questions.

**Wrapping up 34. Where did you hear about this survey?** \*

*Mark only one oval.*

- E-mail list: CRTNET
- E-mail list: AoIR



- ISPR Presence News
- A class at school
- A friend via email
- Facebook
- Twitter
- Not sure
- Other:

**35. If you would like to receive a summary of the results of this study after the project is complete, please provide your e-mail address below.**

The summary will not include any information that could specifically identify you or others who completed this survey.

<b>Temple IRB Approved</b>
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## **Telepresence Survey and Interview**

### **Weimei Sun, Department of Media Studies and Production:**

I am studying a media experience called Telepresence, which means an experience where media users feel like a mediated experience is not mediated. I hope to learn what factors will affect people's Telepresence experience in their everyday lives; I hope that this study will help to the creation of more useful and enjoyable media experiences in the future.

The participation is voluntary. If you choose to participate, you'll complete a short online survey and an individual interview containing questions about you and your experiences. You will be audiotaped during the interview. The survey will take 5 to 15 minutes and the interview will take 10 to 30 minutes.

There are no reasonably foreseeable risks or discomforts associated with this study. The benefits you will obtain from the research include your learning about your own media experiences (and those of others if you request to receive notice about the study's results), along with the satisfaction that you have contributed to the understanding of this topic. Meanwhile, you have a chance to win a 50 dollar Amazon gift card.

The alternative to participating is not to participate, without any consequence.

Please contact the research team with questions, concerns, or complaints about the research and any research-related injuries by calling Weimei Sun at (908) 821-2987 or e-mailing [weimei.sun@temple.edu](mailto:weimei.sun@temple.edu).

This research has been reviewed and approved by the Temple University Institutional Review Board. Please contact them at (215) 707-3390 or e-mail them at: [irb@temple.edu](mailto:irb@temple.edu) for any of the following: questions, concerns, or complaints about the research; questions about your rights; to obtain information; or to offer input.

**Confidentiality:** You will not be required to provide your name or other identifying information in the survey and the interview. Efforts will be made to limit the disclosure of all survey responses to people who have a need to review this information. However, the study team cannot promise complete secrecy. For example, although the study team has put in safeguards to protect your information, there is always a potential risk of loss of confidentiality. There are several organizations that may inspect and copy your information to make sure that the study team is following the rules and regulations regarding research and the protection of human subjects. These organizations include the IRB, Temple University, and its affiliates and agents.

Your clicking on the “I consent” button below documents your permission to take part in this research. It does not waive any of the legal rights that you otherwise would have as a participant in a research study.

Subject Initials: \_\_\_\_\_

Date: \_\_\_\_\_