

## **Popular Media and Telepresence**

### **Future Considerations**

*Cheryl Campanella Bracken and Paul D. Skalski*

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The chapters in this book presented what is known to date about several areas of popular media and telepresence. As readers can probably tell, much is still undecided in the telepresence literature regarding issues such as terminology and methodology. Resolving these issues is beyond the scope of this volume, but several important considerations will be touched on in this chapter. These include: (a) definitional and conceptual issues, including the “types” of telepresence; (b) Methodological issues, including telepresence as a variable; and (c) Telepresence in the changing popular media environment.

#### **Definitional and Conceptual Issues in Telepresence Research**

Many different terms have been used to refer to telepresence experiences in this volume, including presence, telepresence, spatial presence, immersion, and even theatrical presence (see chapter 2, this volume). In one sense, this shows the complexity of telepresence experiences, but it also points to a potential conceptualization problem in the telepresence literature, chiefly overlapping concept labels. Lombard and Jones (2007) identify many different telepresence-related terms, including telepresence, tele-presence, (tele)presence, spatial presence, social presence, computers are social actors, copresence, co-presence, subjective presence, virtual presence, and sense of presence (p. 202). A number of these terms confusingly refer to the exact same thing, which may impede knowledge advancement. Future work should attempt to reduce these into a coherent set of concepts that captures telepresence experiences without redundancy.

A related issue concerns types of telepresence. Scholars have identified such distinct telepresence experiences as spatial presence, social presence, and self presence, among others. These terms refer to different forms of “the perceptual illusion of non-mediation” (Lombard & Ditton, 1997). While there is no clear consensus on types of telepresence,

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we strongly recommend that researchers clearly identify the type of presence they are interested in studying. We believe that the most commonly studied telepresence types are forms of either *spatial presence* or *social presence*, and the choice of one or the other has conceptual and measurement implications. If a study is looking at reactions to a mediated other, for example, then measurement items getting at spatial presence or feeling "in" the mediated environment do not make as much sense as items specifically addressing feeling "with" a mediated other. Incorporating the "wrong" type of presence raises validity issues in a study and may reduce the potential strength of statistical relationships. Another way to avoid this problem is by including multiple presence types in research, to parse out the relative contributions of each type and better understand how they relate. Ultimately, a formal telepresence "theory" could help unify types of presence or at least show how they relate to one another and to other concepts. Schubert (2009) recently addressed this type of issue in a re-conceptualization of spatial presence to arguing that it relates to both mediated and non-mediated environments, following similar work by Wirth et al. (2007) and Lee (2004). Much more can still be done along these lines.

**Methodological Issues in Telepresence Research**

The chapters in this volume establish the importance of telepresence in media research, but methodological questions remain about the nature of telepresence as a variable. One consideration is whether telepresence is an independent or dependent variable. In much of the literature, telepresence is treated as a dependent variable. Many researchers are interested solely in how technology and user characteristics affect the perceptual illusion of non-mediation as an outcome. This has been the dominant approach in Computer Science, Engineering, and related fields, as exemplified by the articles in a typical issue of the *Presence: Teleoperators & Virtual Environments* journal. Other researchers, however, particularly those in Communication, Psychology, and other social/behavioral sciences, treat telepresence as an independent variable leading to further outcomes of interest in particular domains, such as entertainment and persuasion (see chapter 6 and chapter 7, in this volume).

The use of telepresence as both independent and dependent variables points to an additional consideration, the role of telepresence in multiple variable models of media effects. Is telepresence a mediator or moderator? Baron and Kenny (1986) define *moderator* as a variable that affects the direction and strength of the relationship between an independent and dependent variable, whereas a *mediator* accounts for the relationship between an independent and dependent variable. Moderators specify when certain effects will hold, while mediators indicate how or why such effects occur, according to Baron and Kenny. In the case of telepresence, it seems that the variable could be either a mediator or moderator. Treated as a moderator, telepresence would be a variable that interacts with other variables such as age, prior experience, and content to affect outcomes of media exposure. It seems plausible that telepresence could function in this manner, but given that telepresence is viewed primarily as a state (instead of a trait) driven by aspects of media form and content, we argue that telepresence should be treated more often as a mediator in multiple-variable models. That is, telepresence comes between technology and outcomes and explains why such effects occur. In this sense, telepresence functions as both a dependent and an independent variable. For example, in the case of video game effects, there may a relationship between video game play and enjoyment, and this relationship may be explained (at least in part) by adding telepresence as a mediator. As discussed by Tamborini and Bowman in chapter 5 of this volume, video game characteristics such as natural mapping make players feel more "in" the game, and this sense of presence in an exciting game world contributes to enjoyment. There is a likely direct path between video game play and enjoyment in this example, but if telepresence is added as a mediator, the paths leading to and from it should be stronger and account for more variance, as well as serving as an explanatory mechanism.

If there is a moderator in this type of relationship, it would likely be content or individual differences. Telepresence is a direct and logical outcome of technology exposure with an evolutionary basis (Lee, 2004), but it may be affected by content types and individual differences such as gender, age, and suspension of disbelief (see Oliver, 2002, for a detailed discussion of individual differences). Moderating variables like these can change the expected relationship between technology and telepresence. For example, exposure to IMAX movies should relate positively to telepresence, but if a viewer is not interested in the subject matter of the film, they may not feel a high sense of telepresence. In this example, content interest moderates the relationship between media exposure and telepresence. Moderators can reduce or increase telepresence, and as telepresence increases or decreases, the outcome that is mediated by it will respond accordingly (e.g., less or more enjoyment).

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Another important methodological issue in telepresence research is measurement of the concept. Much has already been written on this issue, including discussions of measurement methods and specific scales (e.g., Insko, 2003; International Society for Presence Research, n.d.; Nunez, 2007). Here we would like to address the multidimensional nature of telepresence. Within the Communication literature, Kim and Biocca (1997) first presented telepresence as a two-dimension concept with Arrival and Departure factors. These dimensions describe audience sensations of transportation when viewing television. As a result of more recent work on the concept, there now seems to be general consensus amongst telepresence researchers that there are three dominant sub-dimensions: spatial or physical presence, engagement, and naturalness (Freeman, 2004). Freeman also identifies several measurement scales that include each of these three sub-dimensions in some form (see Schubert, 2009, for a fuller discussion of presence sub-dimensions). They include but are not limited to the ITC-SOPI (Lessiter, Freeman, Keogh, & Davidoff, 2001), Reality Judgment (Banos et al., 2000), and Measurement, Effects, Conditions (MEC; Wirth et al., 2007). Additional work has attempted to identify measurement dimensions of social presence (e.g., Biocca, Harms, & Burgoon, 2003). We are not advocating one scale over another at this time but recommend that researchers do not ignore the multi-dimensional nature of the concept. Furthermore, unless unidimensionality can be established, we recommend treating the dimensions of telepresence as separate in statistical analyses rather than summing to create an overall "presence" variable. One reason for this is that telepresence subdimensions may respond differently to particular experimental manipulations and other independent variables, as well as affecting outcomes in different ways.

### Telepresence in the Changing Popular Media Environment

Entertainment and popular media are changing faster today than at any time in history. As communication becomes digitized, more of our media entertainment experiences are becoming mobile. In addition, media technologies are evolving into amalgams of popular media forms from the past and present, best exemplified by the Internet. There are more ways to exchange and experience entertainment than ever before. We know little about how much telepresence can be experienced when viewing new content types on YouTube or iPods or cell phones. Early research on screen size and video resolution would suggest that these formats should not lead to much telepresence, but newer research casts some doubt on this assumption. Bracken and Petty (2007) found that telepresence can be evoked by screens as small as 2.5 inches or 6.4 cm on

of telepresence in media users (Jeffery, 2008). Interestingly, Nielsen Company has begun to track the total use of screens in American's lives. They have dubbed television, the Internet, and mobile phones "the three screens" (Nielsen, 2008). According to Susan Whiting (vice chairperson for the Nielsen Company), "America's keep finding more time to spend with the three screens. TV use is at an all-time high, yet people are also using the Internet more often—31% of which is happening simultaneously" (TV, Internet, 2009). The implications of this type of use from a telepresence standpoint remain uncertain.

We know even less about media user characteristics that are likely to impact sensations of telepresence. As Jenkins (2006) points out, media audiences are becoming increasingly active in shaping their experiences with media form and content, and these types of changes have important implications for how they will experience telepresence in coming years. Future research should attempt to identify and account for these and other individual differences influencing telepresence.

What does the future hold for popular media? All the predictions point to communication technologies that will heighten media users' experiences of telepresence. One area of discussion has been various uses of nanotechnology for entertainment purposes. For example, a "bionic" contact lens will allow people to view visual displays within their field of view (Jackson, 2008). This is one step closer to neurotechnology (or the integration of biological and computer systems), which one expert believes will become feasible within the next 10 years (Singer, 2006). Wearable technology is another area poised to become more popular in the near future, with applications in entertainment and health (Stevens, 2008). And augmented reality (AR), or the blending of the real and virtual world (McCall & Braun, 2008), is now being used in advertising (Schmitt, 2009)—MINI, for example, published a 2-D magazine ad that used webcams to provide readers with an interactive experience (TechnaBob, 2008). AR has other popular media applications as well and may eventually fulfill the promise that VR was never able to achieve. These are but a few examples of popular media on the horizon, most of which are going to be designed to create more compelling telepresence experiences than ever before. As a result, the importance of telepresence in research cannot be understated. It is central to our understanding of media in everyday life, now and (especially) in the future.

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