

Chapter 8

Telepresence and Media Effects Research

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It was just when the Martians were spraying the people at Grovers Mill with the heat ray. At first we couldn't believe it was happening but it was so real...

(Koch, 1970, p. 90)

The above quote could be that of a person who had just visited some exciting, futuristic virtual environment, or someone who had recently played the latest high-definition video game. But in reality, as any media scholar might guess, it comes from a college student who had listened to the *War of the Worlds* radio broadcast at a party on Halloween Eve, 1938. This famous incident of millions of Americans being panicked by a radio dramatization highlights the power of the mass media to affect audiences, which has received a great deal of scholarly attention. The scientific study of media effects has a rich history dating back to investigations of such high-profile phenomena as World War II propaganda (Hovland, Lumsdaine, & Sheffield, 1949) and the *War of the Worlds* broadcast itself (Cantril, 1940). Although this early research did not include the concept of telepresence, it seems plausible that telepresence played a key role, for example, in the fright reactions observed following the "invasion from Mars." Radio listeners who were especially frightened may have felt more "in" the invasion (spatial presence) or "with" Martians (social presence), causing them to be more fearful of the broadcast. The concept of telepresence has the potential to help explain fright reactions such as these as well as a host of other media effects, making it a valuable consideration for media scholars and anyone else interested in the ability of presence to affect outcomes of technology use.

This chapter focuses on the potential for telepresence to influence media effects that have received recurring attention in the mass communication literature. Beyond the role of telepresence in entertainment and persuasion covered in the two prior chapters, theory and empirical evidence suggests that telepresence may also affect other important outcomes of media exposure, such as aggression and fear. Although

research linking telepresence to these areas is scant compared to that on enjoyment and persuasion, this chapter discusses the likely relationship between telepresence and media theory and illustrates how the concept may shape outcomes of media exposure in three prominent content domains: violent media, frightening media, and sexual media/pornography. The goal of this chapter is to highlight the importance of the concept of telepresence in empirical considerations of media effects, both negative and positive.

Media Theory and Telepresence

How do media affect people? Although individual studies can identify important variables in this process, such as telepresence, nothing helps to advance knowledge better than theory. Good theories help to explain and predict empirical phenomenon as well as generate new hypotheses, thereby advancing science (Chaffee & Berger, 1987). As Kurt Lewin (1951) famously put it, "there is nothing so practical as a good theory" (p. 169). In the area of mass communication, several theories have been formulated over the years in an effort to elucidate the various influences media may have on audiences.

The first major "theory" of media effects, although never formally stated, has become known as the *magic bullet* (or *hypodermic needle*) *model of mass communication* (Sparks, 2006). This perspective emerged in the early twentieth century as a result of the dual emergence of mass society and mass media, the latter of which was viewed by some as dangerous and a threat to social order (Lowery & DeFleur, 1995). In line with this thinking, the idea behind magic bullet/hypodermic needle theory was that the media messages could "shoot" or "inject" mass audiences with direct and powerful effects on their thoughts and behaviors. This perspective treated media users as uniform and undifferentiated, and it seemed supported by early studies like the Payne Fund Studies of film (e.g., Blumler, 1933) and aforementioned research on the *War of the Worlds* radio broadcast (Cantril, 1940). The grim view of magic bullet theory was that media affected everyone the same and could be used to control the masses if it got into the wrong hands. However, later research such as the People's Choice study (Lazarsfeld, Berelson, & Gaudet, 1948), which showed the media had a weak influence on voting behavior, largely debunked this idea and pointed to more limited or subtle effects, paving the way for considerations of moderating variables such as telepresence.

Indeed, more recent media theories have adopted a more sophisticated view that takes the medium, message, audience, and type of effect into account in determining the extent to which people are affected (Sparks,

2006). Cultivation theory, for example, which emerged in the late 1960s, suggested that television messages may influence viewer perceptions of social reality, with the effect being strongest among heavier viewers and those who have real-world experience with the content (Gerbner, Gross, Morgan, Signorielli, & Shanahan, 2002). Other, functional approaches to mass communication such as parasocial interaction (Horton & Wohl, 1956) and uses and gratifications (Katz, Blumler, & Gurevitch, 1974) called attention to the idea that the way in which we experience media is important (Tamborini, 2000). Instead of treating audiences as passive like magic bullet theory, functional theories view audience members as more active in determining the effects media have on them. The move to an active view of audiences is supported in media research meta-analyses, which clearly demonstrate that certain types of individuals or situations are associated with particular effects (Allen & Casey, 2007).

The notion of an "active audience" has taken on new meaning in recent years due to technological advances such as interactivity. Moreover, as Tamborini (2000) points out, "with technology's promise to blur the distinction between reality and virtual reality to a point where we can no longer take for granted our ability to separate the two, researchers have been forced to focus their attention on subtle differences in the complex process of media experience" (p. 11). The primary way in which this has happened is through considerations of telepresence, "the perceptual illusion of nonmediation" (Lombard & Ditton, 1997), and related concepts such as spatial presence, social presence, immersion, and realism. The rise of telepresence as a research area has not only furthered understandings of how highly advanced media technologies affect users, but it has also called attention to the potential of this type of psychological experience to shape outcomes of exposure to everyday media, as this volume shows.

Given the emergent and growing importance of telepresence as an individual difference variable affected in part by technology form and content, an important next step is to connect it to existing theories of media effects in order to better explain and predict future outcomes. Scholars have already attempted to do this in the relatively new area of entertainment theory (see chapter 7, this volume), but few have examined more established media theories through the lens of telepresence. As Bryant and Cummins (2007) note, "one of the most pressing needs in communication research is the greater development, testing, and synthesis of communication theories" (p. 9). Linking these theories to telepresence, where relevant, should help their development immensely given the profound changes that have occurred in everyday media technologies and use since classic effects theories were formulated. A full consideration of these linkages is beyond the scope of this chapter, but it will illustrate in depth how one prominent media effects theory, social learn-

ing theory, relates to the experience of non-mediation as an example of how telepresence can be integrated into theories and models attempting to explain the media's impact.

Application: Social Learning Theory and Telepresence Research

A general effect of great interest to media researchers is learning, and one of the most well-known theories of how media affect learning is social learning theory (SLT), formulated by Albert Bandura (1977). In simple terms, this theory explains how people may model behaviors observed in the media. SLT was most famously tested through Bandura's classic "Bobo doll" studies in the 1960s, designed to show that children may imitate violent behavior viewed on television. In one early experiment (Bandura, Ross, & Ross, 1961), a random group of children were shown a film of a model aggressing against a punching bag-like Bobo doll while another group was shown a non-aggressive model. Both groups were then left to play with a Bobo doll and other toys. Results showed that the children who saw the aggressive model were more likely to play aggressively themselves, sometimes even imitating the exact behaviors they observed in the film such as bashing the Bobo doll with a hammer. This research established that observational learning may occur and laid the foundation for what would become social learning theory. Subsequent studies by Bandura and colleagues varied features such as whether the model was rewarded or punished to further refine the perspective (Sparks, 2006), and it has since been used as a theoretical basis for numerous investigations of media effects. SLT is the most frequently cited mechanism by which violent video games may cause aggressive behavior, for example (Sherry, 2007), and it has also been applied in prosocial contexts such as entertainment education (Smith, 2002).

Social learning theory has clearly been useful to media researchers, and a closer look at the complex process by which it works reveals several possible linkage points with telepresence and related research. According to Bandura (2002), observational learning is governed by four subfunctions, each of which may include a number of influencing factors. The first, *attentional processes*, determine what modeling influences are observed and extracted from ongoing modeled events. These are determined in part by characteristics of modeled events such as salience and complexity and also by observer attributes such as cognitive capabilities. The second subfunction, *retention processes*, involves the coding and remembering of modeled events. Influential factors at this level include cognitive construction and rehearsal. Third, *behavioral production processes* involve translating symbolic conceptions into courses of action, and the final subfunction, *motivational processes*, has to do with incentives for performing observed behaviors. Overall, the subfunctions

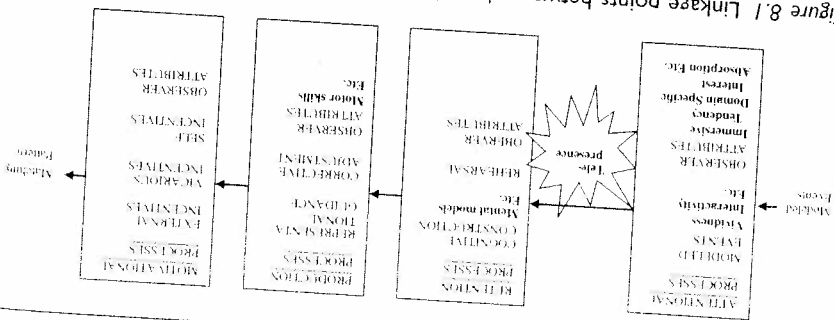


Figure 8.1 Linkage points between the subfunctions governing observational learning and influential factors from telepresence research.

and factors involved in observational learning mediate the relationship between modeled events and matching performances of observers (Tan, 1986), and the first two—attentional and retention processes—are particularly relevant from a telepresence standpoint, as shown in Figure 8.1.

The model depicted in Figure 8.1 is adapted from work by Bandura (2002) and shows the relationship between the four subfunctions governing observational learning and categories of influential factors. The specific influential factors in Bandura's work, however, have been replaced by selected concepts from the telepresence literature that may also play into these processes, in an attempt at theoretical expansion. At the attentional processes stage, "modeled events" may be expanded to include concepts from scholarship attempting to explain dimensions of technology affecting telepresence, such as Steuers' (1992) work on vividness and interactivity and Lombard and Ditton's (1997) enumeration of media form variables. In line with the concept of *salience* identified by Bandura, the expectation is that these characteristics will relate positively to attention through increased sensory or (in the case of interactive media) motor engagement. As for "observer attributes," several works have attempted to identify user characteristics influencing attention to telepresence-inducing media, and these may also be added to the observational learning model, including immersive tendency (Witmer & Singer, 1998), domain specific interest (i.e., content interest), and absorption (Witmer et al., 2007). Next, telepresence itself has been added as a potential mediating (or moderating) variable between attentional and retention processes. Attention has been suggested to be a precursor of spatial presence experiences (Wirth et al., 2007), and the spatial situation models created in response to attention, as specified by Wirth and colleagues, should influence retention of observed events in the form of more enduring *mental models*, discussed elsewhere as cognitive representations of situations in real or imagined worlds (Roskos-

Ewoldsen, Roskos-Ewoldsen, & Dillman Carpentier, 2002; Tamborini & Bowman chapter 5, this volume). These mental models for behavior can be thought of as "cognitive constructions" (to use Bandura's term) that may be strengthened through repeated media exposure. And, in the case of mental models formed in response to naturally mapped interactive media experiences, they may even affect motor skills for performing the behavior (Tamborini & Skalski, 2006), identified in the model as a production processes "observer attribute."

The revised observational learning model illustrates several possible linkage points between social learning theory and telepresence, showing how the concept may facilitate social learning theory effects. Further work along these lines could help increase the explanatory power of the theory in the wake of the profound technological changes that have occurred since the Bobo doll experiments of the 1960s. As Bandura himself recently observed, "whereas previously modeling influences were confined to the behavior patterns exhibited in one's immediate environment, the accelerated growth of video delivery technologies has vastly expanded the range of models to which members of society are exposed to day in and day out" (Bandura, 2002, p. 127). These words ring especially true following the rise of YouTube, mobile video devices, and similar applications and technologies. The potential to learn behaviors both good and bad through media has never been greater. Expanding theories such as SLT to include telepresence and related concepts can reinvigorate these powerful tools and help them maintain their relevance in the digital age.

Other Media Theories and Telepresence

Beyond social learning, several other media theories could benefit from a consideration of telepresence. Rubin and Haridakis (2001) identified the dominant theoretical perspectives in mass communication at the turn of the century and they included agenda setting, diffusion of innovations, social cognition, uses and gratifications, cultivation, gap hypothesis, critical/cultural studies, framing, and third person effects. Although these perspectives encompass different approaches to the study of communication, most are studied at a level conducive to adding the concept of telepresence as an additional explanatory mechanism, as in the following brief examples:

Cultivation Theory and Telepresence As previously discussed, cultivation theory says that television consumption affects perceptions of social reality (Gerbner et al., 2002). The perspective has recently been explained in terms of cognitive processes underlying the effect.

Specifically, this newer work argues that cultivation happens when viewers are unmotivated to process information systematically and instead rely on cognitive heuristics to arrive at a judgment (Shrum, 2002). One factor that makes constructs more accessible for making judgments is *vividness*, which in this domain has to do with the extent to which something is "concrete and imagery provoking, and proximate in a sensory, temporal, or spatial way" (Nisbett & Ross, 1980, p. 45). Although not exactly the same, this treatment of vividness is very similar to how the term is used in the telepresence literature, with the same implications. One would expect more vivid media of either type to create a sense of presence with "constructs" such as those relating to violence (e.g., the extent to which certain places are dangerous) or social roles (e.g., the number of people in real life who are police officers), making those constructs more accessible and likely to be used in making reality judgments. Of all media theories, cultivation theory has one of the clearest linkages to telepresence, since both have to do with differences between mediated experiences and real ones. The more mediated experiences seem nonmediated, all other things being equal, the stronger cultivation effects should be.

Agenda Setting Theory and Telepresence Agenda setting refers to the ability of news media "to influence the salience of topics on the public agenda" (McCombs & Reynolds, 2002, p. 1). It says that the amount of coverage the press gives to particular issues gives "salience cues" as to their relative importance (Wantra & Ghanem, 2007), telling people what to think about. The frequent appearance of terms related to "salience" in the agenda setting literature suggests a linkage point to telepresence. Salience may be defined as an orienting motive that directs attention toward specific aspects of a stimulus environment (Zillmann & Brosius, 2000). Aspects of a stimulus environment can be made more salient by the manner in which they are presented through media technology, and this may affect their perceived importance among members of the public. For example, the Vietnam War has been called the first "living-room war" because of its regular coverage by television news (Arlen, 1982). TV's ability to bring the battlefield to the home front undoubtedly contributed to the anti-war movement (agenda) at the time by making the "horrors" of war salient. More specifically, the high-telepresence evoking medium of television likely brought more attention to (and presence with) death and human casualty than older forms of media, which do not capture that aspect of the stimulus environment as well. The phrase "living-room war" itself suggests a presence-like phenomenon, and there have been efforts to reduce media access to certain images (e.g., coffins carrying fallen soldiers) in recent conflicts such as the war in Iraq (Memmott, 2006). The ability of media salience and resulting telepresence to make

particular topics and issues more salient to the public is an interesting future direction for agenda setting research, particularly in light of technological advancements such as HDTV.

Uses and Gratifications and Telepresence The uses and gratifications perspective focuses on motivations for media consumption and how people use media to meet their needs (Katz, Blumler, & Gurevitch, 1974; Rubin, 2002). As a result of years of research grounded in the approach, a great deal is now known about the reasons people choose to engage in various kinds of media use (Sparks, 2006). A scan of specific motivations uncovered in uses and gratifications studies reveals several linkage points with telepresence. In television research, *escape* and *companionship* have been identified reasons for use (e.g., Greenberg, 1974; Rubin, 1983), and in that they involve using television to feel "away from" one's physical environment or "with" others. Similarly, work on video game uses and gratifications identifies *fantasy* and *social interaction* as reasons for play (Sherry, Lucas, Greenberg, & Lachlan, 2006), and the ability of games such as *World of Warcraft* to create corresponding senses of spatial and social presence has already been discussed (see chapter 5, this volume). The uses and gratifications perspective calls attention to the idea that telepresence experiences are not merely a consequence of exposure to advanced media technologies but also something that audiences may actively seek. Uncovering the extent to which individuals have a "need for telepresence" along with the ability of various media to gratify this would be a valuable endeavor.

The above examples highlight just a few ways in which telepresence may inform media theory. There are many other possibilities, and the examples presented in this section call attention to some meta-considerations concerning telepresence and media theory. While none of the theories discussed above specifically mention telepresence, all include concepts that are similar to concepts in the telepresence literature, e.g., vividness, saliency, escape, etc. One obvious future research direction for inquiry would be to search for more potential concept linkages in an effort to expand the scope of media theories and reconcile the telepresence and media theory literatures. A second and related avenue for inquiry would be to identify the implications of mediated experiences that seem "real" or "nonmediated" across multiple theories. This can help reduce conceptual and theoretical overlap and cut to the heart of what telepresence means for media effects. Generally, it seems to intensify effects, and perhaps a theory with broader scope can help inform this process. Exemplification theory, for example, addresses how noteworthy examples influence subsequent judgments (Zillmann & Brosius, 2000). Similar to the drench hypothesis, which says that certain portrayals

stand out and may have a stronger impact on viewers (Greenberg, 1988). Exemplification theory assumes a superior influence of certain types of media events (e.g., concrete or emotionally arousing ones). Telepresence seems to function similarly, with high-telepresence inducing experiences producing stronger effects by making certain stimuli more prominent. Future work should continue to examine the complex relationship between telepresence and media theory to advance knowledge of both.

Although much progress has been made in our understanding of media effects since the days of magic bullet theory, Bryant and Cummins (2007) lament the absence of theory in the mass communication literature. They cite content analyses showing that only 27% to 39% of articles in popular communication journals contain theory. They also note that many media "theories" are not true theories at this time "but rather a relatively coherent body of research guided by repeated theme and a general framework of ideas and research methods" (p. 2). Several of these bodies of research will now be discussed in light of telepresence, particularly research on media sex, violence, and fright reactions. This discussion will help further illuminate how telepresence may inform the study of media effects, with the ultimate goal of advancing both theory and research.

Telepresence and Media Effects

Telepresence and Violence Effects

Media violence has long been a theme of public concern and anxiety and is arguably the most researched topic in mass communication. The first documented scientific observation of the mass media dates back to the Payne Fund Studies of the early 1930s, which focused in large part on violence in film. Of the 12 independent studies conducted, Dale's (1935) content analysis of 1,500 films produced from 1920–1929 illustrated a substantial number of crime-related themes and incidents. Blumler's (1933) survey regarding media experiences of nearly 2,000 children also confirmed that many respondents had performed and imitated violent behaviors learned from the cinema, fueling anxieties about the medium. The early public concern over film likely stems in part from its highly immersive nature compared to other media that preceded it (see chapter 2, this volume).

Since this initial glimpse at the beginning of the 20th century, hundreds of studies have looked at the effects of media violence, guided by theories such as social learning and cultivation. The swift rise in juvenile delinquency and youth crime in the 1950s prompted U.S. congressional hearings on the effects of television violence on children (Wright et al., 2001). The ability of television to bring highly realistic (possibly presence-inducing) depictions of violence into the home undoubtedly con-

tributed to the distress it caused. An increase in real world and televised urban crime eventually led to government funding at the University of Pennsylvania to monitor TV programming, and this resulted in a report by the National Commission on the Causes and Prevention of Violence (convened by President Johnson) citing television violence as the primary contributor to America's crime and violence epidemic (Baker & Ball, 1969). Concern about media violence among members of the scientific community, paralleling that of legislators and the public, has persisted over time. Bushman and Anderson (2001) recently argued that the statistical magnitude of the link between media violence and aggression has been clearly positive and consistently on the rise since 1975. The increase in the number and availability of telepresence-inducing technologies since then may be one reason.

Consistent with this logic, recent scholarship has focused on violence in the relatively new popular medium of the video game. A meta-analysis by Sherry (2007) of the video game violence literature indicated that there is a small but significant overall effect of violent game play on aggression ($d = .30$), though the effect was less than the effect of violent television on aggression found by Paik and Comstock (1994) of $d = .65$. Interestingly, however, the link between video game violence and aggression was positively correlated with the year of the study ($r = .39$), suggesting that the effect of violent video game play on aggression has increased over time. This finding makes sense considering the numerous advances in video game technology that have occurred throughout the history of the medium (Skalski, 2004). These advances are troubling from a violence effects standpoint given the growing ability of games to immerse players in violent scenarios in which they are active participants.

As a result, researchers have recently shifted their attention to the role of telepresence in video games violence effects (e.g., Eastin, 2006; Ivory & Kalyanaraman, 2007; Farrar, Krcmar, & Nowak, 2006; Tamborini et al., 2004). Why might telepresence in response to video games contribute to violent outcomes? Tamborini and Skalski (2006) suggest that feeling spatially present in violent games that require players to repeatedly aggress against others can foster the development of mental models for real-life aggression. This should be intensified when games have features that increase telepresence, such as naturally mapped controls (see chapter 5, this volume). Along these same lines, playing violent video games using immersive virtual environment technology (IVET) should lead to even greater telepresence and aggression compared to traditional game platforms. A few studies have examined this relationship and findings for this type of technology have been mixed. Contrary to predictions, Tamborini et al. (2004) did not find telepresence to mediate the relationship between virtual reality (VR) technology and hostile cognitions, but aggressive feelings were mediated by telepresence in a

similar study using IVET by Persky and Blascovich (2008), even though aggressive behavior was unaffected. As IVET becomes less bulky and more familiar to users over time, telepresence should mediate violent outcomes more consistently.

Other research has considered additional form, individual difference, and content variables related to telepresence and violent video game effects. Ivory and Kalyanaraman (2007) investigated the impacts of technological advancements more common than IVET (e.g., whether a game is accompanied by a narrative storyline). Results indicated that both technological advancements and violent video game content were positively correlated with telepresence and arousal. Eastin (2006) explored the subject of video game violence and gender effects on telepresence and aggressive thoughts, and results indicated that females playing violent video games experience an increase in aggressive thoughts and self existence when a gender match between the game character and self exists (an ethical issue that has further been addressed by Klimmt, Schmid, Nosper, Hartmann, & Vorderer, 2006). Moreover, Eastin found that combating a human opponent, rather than playing against the computer, increases aggressive thoughts in both males and females, perhaps due to an increase in social presence. Farrar, Krcmar, and Nowak (2006) found two separate causal paths leading to telepresence. First, males and more frequent gamers experienced more telepresence, and second, participants who played a violent video game felt more telepresence than those who played a nonviolent video game, ultimately leading to an increase in resentment, verbal aggression, and physically aggressive intentions. Lachlan and Maloney (2008) examined the role played by individual differences in generating violent content in games and found it to be highly variable across telepresence tendencies and other player characteristics.

For years, the question of whether media violence leads to aggressive behaviors or if people with naturally aggressive tendencies seek out violent media has sparked heated debates between industry figures, scholars, legislators, and the general public. Yet it's hard to deny that the diffusion of technological innovations such as high-definition (HD), surround sound, and interactive controls are increasingly immersing media users in worlds of violence, with uncertain consequences. This makes research on media violence of continued importance. Although almost all of the research on media violence and telepresence thus far has focused on video games, violent television and film should not be overlooked. These popular sources of violent content lack interactivity but offer more salient models and greater realism, features that will become more pronounced as high-resolution digital technologies continue to diffuse. These and other developments need to be considered to advance knowledge on this important topic and help inform the ongoing media violence debate.

Sexual Media and Telepresence

Although video games have received much scrutiny for their violent content, perhaps the biggest game-related controversy of 2005 concerned sexual content in the hit title *Grand Theft Auto: San Andreas*. The infamous "Hot Coffee" mini-game had the player engage in simulated sexual intercourse, and though it could only be accessed through a game hack, the Federal Trade Commission took action against the companies responsible, resulting in the title being pulled from retailer shelves for a time and an eventual settlement (Adams, 2006). The depiction of sex in the "Hot Coffee" mod was tame compared with much of the sexual media content available today (the characters were animated and mostly clothed), yet it still drew the ire of many, no doubt due to its appearance in a popular new interactive (and more telepresence-inducing) medium. Sexuality has enjoyed a close connection with technology over the years, and, in addition to being highly controversial, their union has proven to be highly sought after by consumers. Pornography or "adult entertainment" is an estimated \$12 billion dollar a year industry in the United States alone (Sloan, 2007). In line with scholarship on the topic, pornography is defined here as "media material used or intended to increase sexual arousal" (Mundorf, Allen, D'Alessio, & Emmers-Sommer, 2007, p. 181). The term "pornography" is frequently used to refer to sexually explicit media materials such as those featuring nudity and intercourse. However, as Sparks (2006) points out, the study of sexual media content is "fraught with definitional ambiguities" and could refer to anything from kissing to a brutal rape scene (p. 108). This section focuses on more explicit sexual content (which would likely be dubbed pornography) since it has received the most scholarly attention.

In addition to including a wide range of content types, sexual media has been presented in many forms over the years due to technological innovation. Lombard and Jones (2004) argue that sexual media content has often driven the development, use, and profitability of new technologies. As Steinberg (1993) notes:

[E]very new technological achievement quickly finds its way, like water flowing downhill, to a sexual application. When the photographic process was first discovered, one of its first uses was to create enticing images of naked women. When motion pictures were born, underground sex films immediately followed. One of the prime economic foundations of the home video revolution has been the sex video market.

This popular media trend has continued with the Internet, which accounted for more than 20% of adult industry revenue in 2006 (Harris

& Barlett, 2009), and even extends to mobile devices such as the iPhone now. The creators of sexual media clearly seem to want to give users a sense of being physically close to the people represented in their content (i.e., experiences of presence), and they have attempted to do this in large part through innovative applications of technology, a number of which have been identified by Lombard and Jones (2004). Presence as *realism*, for example, has been attempted by adult entertainment producers through HD videos and sex toys such as artificial genitals with lifelike skin. *Transportation* has been achieved through interactive DVDs that allow users to "come together" with mediated partners. This is similar to *social actor within medium* computer programs featuring virtual girlfriends and other "lovers." *Immersion* has been attempted through combinations of the above that engage multiple senses, e.g., video of a performer along with an external reproduction of the performer's genitals that the user can interact with. And products such as the Realdoll, which are life-sized and lifelike love dolls (one of which was memorably featured in the film *Lars and the Real Girl*), provide an example of presence as *medium as social actor* (for a more comprehensive discussion of these and other intersections of media form and sexual content, see Lombard & Jones, 2004). Aside from products such as the Realdoll, one notable aspect of the above examples is their reliance, for the most part, on popular media such as TVs, VCRs, computers, and the Internet. Sexual media has clearly come a long way in terms of its presence potential, and yet it is still rooted in everyday technologies instead of more advanced ones such as VR (or "teledildonics," a term coined to refer specifically to advanced sexual technologies).

To date, no studies have examined how telepresence relates to sexual media effects, but many studies have been done on sexual media effects in general. Research generally lumps these outcomes into three major categories: (a) arousal, (b) attitudinal changes, and (c) behavioral effects (Harris & Barlett, 2009). In terms of the first type of effect, one might expect telepresence to relate positively to sexual arousal simply by making the mediated experience more like the "real thing," which seems to be what users of sexual media content want (along with users of presence-inducing media in general; Lombard & Ditton, 1997). And as suggested above, the arousal effect should increase with more sensory engagement and interactivity, especially if the latter provides genital stimulation. However, these formal features of technology are not necessary for arousal to occur. As Harris and Bartlett (2009) suggest, explicitness need not correlate highly with arousal, since viewers can fill in their own scripts for what may happen during a sex scene that is not fully shown (or shown at all). And in the case of technology, an imperfect device that has limited immersive or interactive capabilities may constrain what happens physically, whereas a person's imagination

can go anywhere and do anything. This highlights the need to conduct research on the psychological experience of telepresence as it relates to a person's arousal level in response to sexual media content. Sexually explicit media has already been shown to lead to high levels of physiological arousal (Allen & D'Alessio, 1993). While it seems likely that telepresence may mediate or moderate this effect, the role of technology form and content variables in the process is more questionable and in need of further study.

The other two general types of sexual media exposure outcomes, attitudinal changes and behavioral effects, have a less intuitive connection to telepresence. Attitudinal effects that have been studied include acceptance of violence in interpersonal relationships, acceptance of the rape myth, and the view that sexual relationships are adversarial (Mundorf et al., 2007). On the behavioral side, researchers have looked at outcomes such as disinhibition of known behaviors and impact on rape and other sex crimes (Harris & Bartlett, 2009). Research in this area has tended to focus on the effects of sexually explicit material of either a nonviolent or violent nature. Meta-analysis findings indicate that exposure to this type of content (particularly violent pornography) is positively related to negative attitudes and antisocial behaviors (Mundorf et al., 2007). However, researchers have struggled to identify a coherent theoretical explanation for the observed pattern of results, and telepresence may be able to help. It has been found, for example, that simple exposure rates to sexually explicit materials do not predict criminal sexual behavior (Allen, D'Alessio, & Emmers-Sommer, 1997). Mundorf and colleagues suggest that individual differences or situations need to be taken into account, particularly how a person "reacts" to exposure.

This calls attention to the potential value of considering telepresence and related concepts in future work on this topic, since telepresence is a psychological reaction that can help explain and predict effects. Viewers who experience telepresence in response to a rape film, for example, may be more likely to engage in criminal sexual behavior after exposure (and develop strong mental models for doing so), whereas other viewers may be disgusted and break the connection, minimizing the effect. In that sense, telepresence may serve as a consumer's basis for selecting from different types of sexual media content and technologies, since they want to feel "there" or "with" content of interest. Theories such as uses and gratifications and social learning can help determine where telepresence fits in the complex interplay between exposure and effects.

On a final note, the experience of telepresence may also provide clues for what to do about the negative outcomes associated with exposure to sexually explicit materials. Meta-analysis has also been performed on studies examining educational messages designed to combat harmful effects (Mundorf et al., 2007), and these findings indicate that such

messages not only eradicate negative effects but also cause a small *positive* change in attitudes! As Mundorf and colleagues explain:

Educational efforts assume that the problem of media is the misappropriation of content to real life. A vicarious fantasy experience creates an emotional reaction. The educational material recontextualizes this experience, perhaps reminding the consumer that such material is in fact a fantasy and not a reflection of real life. (p. 194)

Although telepresence is never mentioned in this literature, the discussion of content being equated with "real life" is consistent with research on perceived reality (Potter, 1988) and seems to partially implicate it in shaping harmful effects, though it also suggests a solution. Breaking or reducing telepresence over time, as in virtual exposure therapy, may help at-risk individuals to overcome their urge to act out in violent and antisocial ways in response. Regardless, sexually explicit media is likely to remain controversial due to moral and ethical issues associated with it, as well as its ubiquity in everyday life and media.

Telepresence and Fright Effects

At the start of the chapter, a quote from a listener of the 1938 *War of the Worlds* radio broadcast illustrated that mediated messages can have adverse effects upon an audience known as *fright effects*. Like the reactions to the *War of the Worlds* broadcast, many *fright effects* are immediate in nature, meaning that they occur while the audience is attending to a frightening media presentation according to Harrison and Cantor (2000). They point out that the symptoms of these effects can include increased heart rate, sweating, trembling, shortness of breath, choking, chest pain, nausea, dizziness/faintness, and many other physiological manifestations, as well as emotional effects ranging from a feeling of losing control to crying and tantrums. Along with panic, it would seem that most of the effects stemming from the *War of the Worlds* broadcast were immediate, and that once the Martian attack was revealed to be nothing more than a radio drama, those who had fallen prey to the broadcast saw these symptoms subside. In the case of other *fright effects*, however, this is not always the case.

Attending to frightening media content can lead to enduring effects. As Harrison and Cantor (2000) explain, avoidance behaviors such as the avoiding of situations that are either reminiscent or merely similar to those that were presented in a frightening media message or the avoiding of that type of scary media content or form altogether can last anywhere from several hours to more than one year following exposure to such content. Other symptoms that might have a short- to long-term

hold upon audience members can be an alteration of one's behavior in the areas of sleeping and eating, and obsessive talking or thinking about the frightening content. Regardless of whether the effects are immediate or enduring, such effects should not be taken lightly, and it might be important to determine if telepresence plays a role in increasing fright effects.

As mentioned in the introduction, telepresence may have had a hand in increasing the level of terror felt by the *War of the Worlds* broadcast's audience. Furthermore, it is almost certain that telepresence plays a role in the effects of other frightening media content as well. Through the examination of several of its core concepts, a better understanding of just how telepresence might increase levels of fright in those who attend to frightening stimuli can be gained.

Realism is a key component for experiencing presence. The more accurately a mediated environment can capture reality, then the greater the telepresence effects (Lombard & Ditton, 1997). Many researchers have also found that when looking at realism in terms of frightening media content, realism is one of the biggest contributors to increasing affective response in children and adults (Neuendorf & Sparks, 1988; Harrison & Cantor, 2000; Valkenburg, Cantor, & Peeters, 2000). Other than children of a very young age, viewers generally find realistic threats or events more frightening when presented in the media than fantastic threats. Harrison and Cantor (2000) discuss the principle of Stimulus Generalization, which posits that if a person is frightened by a real-life stimulus, then a mediated representation of that stimulus will elicit a fear response that is similar to that of the stimulus being represented, but to a lesser level of fear. For instance, if a person is frightened by spiders, then a film that features spiders as a threat will induce a similar fright response for the person that he or she would experience with a real-life spider, but the person will experience less anxiety with the film version. Interestingly, this tactic has been applied intentionally in the area of cybertherapy, where high telepresence-inducing technologies such as VR have been used to help people overcome fears including spider phobia (Garcia-Palacios, Hoffman, Carlin, Furness, & Botella, 2002).

Harrison and Cantor (2000) point to psychology research that categorizes frightening stimuli into five classifications, four of which are exclusively real-life objects or situations. The four real-life stimuli categories include animals, such as sharks or the aforementioned spiders; environmental, such as natural disasters; blood/injection/injury, thus capitalizing on people's fear of needles, physical harm, or queasiness at the sight of blood; and situational, such as a fear of heights or the dark. Filmmakers and television programs that utilize these stimuli are numerous, and with such realistically frightening inclusions, viewers may experience greater levels of both presence and fear.

The immersion component of presence may also elicit greater fright responses in audience members. Immersion is the aspect of presence that draws a person into a medium physically and psychologically (Lombard & Ditton, 1997). For instance, a more immersive video game would be a game where the player physically feels as if they are a part of the video game world, and while playing, shuts out much of the external world in which they reside. In the case of *The War of the Worlds* broadcast of 1938, no visual immersion could be achieved; however, many listeners were no doubt immersed into the medium of radio, perhaps like never before. The format of the presentation itself, a program that mimicked the characteristics of a musical program with breaking news bulletins that reported the invasion from Mars (Koch, 1970), was a presentation style that listeners were accustomed to, and thus it is understandable why so many listeners were drawn into what was happening before their very ears (Cantril, 1940). The broadcast boasted skilled actors, a solid script, and sound effects to further bring listeners into the apocalyptic experience. Even without the aid of visuals to draw in its listeners, the medium of radio was seemingly capable of pulling the public into its world.

Of course, motion pictures have an obvious advantage over radio in terms of achieving immersion and non-mediation due to its ability to visually pull in its audience. When looking at film, one finds a medium that has always been doing its utmost to represent the real world within its frame, and that has successfully been drawing its audience into this representational realm both physically and psychologically (see chapter 2, this volume). Also, in film one finds a medium that, soon after its inception and transformation into a narrative device (Cook, 2004), began serving up mixes of fantasy and horror to its terrified audiences (Gifford, 1973), all the while striving to attain the greatest possible immersive quality.

The horror film may work extraordinarily well as an immersive genre because of the divide between the real world and that which is in the frame. Undoubtedly, sitting in a darkened movie theater and viewing cinematic terror unfold on the screen while enveloped by darkness all around helps viewers psychologically shut out the external world and focus more attentively on the world presented on the screen. Not only is the film surrounded by darkness, but it is projected onto a giant screen, which has been found to increase viewer arousal and sense of participation, as well as excitement felt during the viewing experience (Lombard & Ditton, 1997). If the image filling this giant screen is one of horror, offering some realistic threat as was discussed earlier, and the audience is fully drawn into the world presented within the frame of the film, then it is logical to argue that the immersion aspect of presence can lead to greater fright effects in viewers. Furthermore, when looking at coping

strategies that have been developed or that are instinctively practiced to reduce the effects of viewing frightening content, it is clear that many of these strategies can be successful in reducing or sometimes even eliminating viewer immersion. The behavioral control strategy of covering the eyes was found to be effective in reducing fright effects in younger children (Wilson, 1989). Of course, covering the eyes breaks any visual contact that the child has with the frightening content, and without visual contact, the level of immersion (and telepresence) naturally would be lessened.

Telepresence and Other Effects

In addition to the violence, sex, and fright reactions, there are many other media effects areas that telepresence may help inform. Spence, Lachlan, and Westerman (2009), for example, examined how presence affects responses to tragic news stories, showing how the concept may benefit journalistic research. In an earlier presence and news study, Bracken (2006) found that the improved image quality of HDTV (over standard definition) had a positive impact on source credibility and overall credibility of a newscast. Additional media effects areas that could benefit from incorporating telepresence include media portrayals (of minorities, gender, etc.), political media effects (e.g., perceptions of issues and candidates), effects of health and safety campaigns, and cultural effects of the mass media. As discussed earlier, entertainment and persuasion are also important considerations in the matrix of media effects (see chapter 7, and chapter 6, this volume).

Conclusion

The evidence presented in this chapter underscores the rich potential for telepresence to affect outcomes of media exposure. Future research should attempt to link these outcomes to both media theory and telepresence. This will help advance knowledge of how individuals and society are affected by both current and emerging popular media. Though it is true that audiences have come a long way since the *War of Worlds* broadcast of 1938, the same is true of the media that frighten them (and affect them in other ways). Scary radio and films, for example, have now been joined by the popular genre of survival horror video games, including such grisly titles as *Resident Evil*, *Left 4 Dead*, and *Carnevil*. These and other interactive, immersive experiences point to potentially powerful effects. They demand a reconsideration of how media impact audiences, as does the ubiquity of media in daily life and the steep rise in media use due to tethered mobile devices like cell phones. To keep up with current and future trends in popular media use and understand the

array of effects it may have, new concepts are needed, and telepresence can help immensely in filling this void.

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