Are we together? Exploring the similarities between the concepts of transportation imagery model and presence and their possible impact on persuasion

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Abstract
While the concept of presence has been investigated for over 10 years, there have been few studies investigating presence and persuasion. Work in the area of consumer psychology has recently begun to explore the possible connections between aspects of presence and persuasion and have developed a new concept called – transportation imagery model. This paper attempts to demonstrate the similarities between these two concepts (Presence and Transportation imagery model) and the benefits of integrating this new concept into the Presence fold.

*Keywords - **Presence, Transportation Imagery Model, Persuasion.***

1. Introduction

Many commercials use stories to entertain and sell their products. Advertisers are aware that people can and often expect to be entertained by commercials . Some television commercials are mini-movies can be considered "mini-movies" that are designed to meet this types of consumer expectations. Commercials are a type of television content that has not yet been explored by Presence researchers.

The extent to which media users are "lost in", "immersed in", have a sense of "being there", or "connected to" media has been explored by Presence researchers in a variety of disciplines. These types of experiences have been recently identified and examined within the area of consumer psychology research [1-2]. These scholars are referring to this phenomenon as "transportation" and have developed the "transportation imagery model" (TIM) [2-3]. To presence scholars the phenomenon they describe will sound quite familiar, but these researchers have not connected their conceptualization, operationalization, or findings to the larger (tele)presence literature that has been developing since the early 1990s. This paper discusses presence, introduces TIM, and discusses the relevant findings of both concepts as they relate to persuasion within media. Further this paper attempts to integrate TIM into the presence literature and along they way illustrate how these areas of research can be mutually beneficial.

2. Presence

The concept of presence or (tele)presence has been defined as the "Illusion of non-mediation" [4]. Since the introduction of this conceptualization several types of presence have been identified and studied: physical or spatial presence (the sense of being there) [5], social presence (having a sense of another personality) [6], and co-presence (a sense of being together with another person either in a mediated space) [8]. This paper address the similarities between spatial/physical presence and TIM.

2.1 Presence and Entertainment Media

What do we know about presence and entertainment media? While the bulk of presence research has focused on the creation of and media users' responses to highly immersive environments [8-11], there are some researchers who have also studied entertainment media and presence. The use of media to induce presence-like experiences is not a new phenonomenon. For a detailed discussion of presence and media history, see [12]. Other entertainment media and presence researchers have found that television audiences have presence experiences [13], and film makers intentionally encourage audiences to "stay in the film" [14]. More recent research on video games has shown presence is not only experienced by video game players [15-16] but that some researchers have argued presence should be considered a moderating variable [15] when designing video game studies. The findings of these studies unanimously found that presence can be experienced by media users in far less immersive environments and in the case of television and film, less interactive media that virtual reality environments.

2.2 Encouraging Presence in Entertainment Media

Researchers in the area of entertainment and presence have studied some of the variables that have been linked to encouraging presence sensations – these include both form and content variables. Previously, two types of form variables were identified [4]: user controlled and producer controlled. Examples of user controlled variables are screen size, home theatre (surround sound), image quality, etc… Findings related to user controlled variables demonstrate that larger screen size (or field of view) [17-18], improved quality of both the sound [19], the image [20] increase the likelihood that the media user will experience a sense of

presence. Similar findings were documented with increased image quality and video games [16].

Producer controlled variables include pace, camera shots, cuts, etc…The findings for this type of form variable have not been individually studies by presence researchers, however, the literature suggests that faster, quick cutting programs are likely to decrease a media users sense of presence (because it makes the experience less like-like). Producer controlled variables have not been as widely studied in regards to television and presence, but have been investigated with videogames. Video games have also been found to evoke a sense of presence [21]. Recently, there have been several studies that explored the use of narratives (or storyline) in videogames and whether it has any impact on gamers' sensations of presence. There appears to be consensus that the use of narrative increases players' level of enjoyment and sensations of presence [22-23].

Another area of entertainment and presence research has explored the influence of content on media users' sensations of presence. The type of content viewed or the type of game played has an impact on the level presence experienced. Examples include arousing versus calming content [24] with viewers who saw the calming content being reporting higher level of presence. Point of view movement in television has been found to induce a sense of presence in television viewers [13] and first-person shooter games [23].

Together these studies on presence and entertainment media make a strong case that presence as an experience that is not limited to highly immersive media systems. This point is important to acknowledge because it is the use of these types of media that most people are likely to use and experience (with the exception of simulation rides and arcade VR systems).

2.1 Presence and persuasion

There are only a few studies exploring the impact of presence on persuasion [25-28]. In a series of experiments exploring the role of presence on consumers' responses to 3-D advertising, researchers [27] found that presence influenced consumers' feeling of physical presence and engagement and their purchase intentions. While others [25, 28] found that presence impacts the processing route by which the information is processed.

An explanation for why presence should increase advertising effectiveness is offered by [29] who state

"One thing interactivity is thought to increase is the sense of 'presence,' and presence is thought to lead to a variety of effects which include enjoyment and persuasion, primary goals of advertising. Therefore presence, and research and theory concerning presence, may serve as a useful guide to understanding and marshaling the use of interactivity in advertising to maximum effect" (paragraph 18).

Presence has also been found to impact persuasion in less immersive environments, specifically [26], found that television viewers who reported a sense of physical presence influenced purchase intentions and consumer confidence. It is interesting to note that the authors found differences between the two dimensions of physical presence they measured

- "arrival" or being present in the mediated environment
- "departure" or a feeling of separation from the physical environment.

Specifically, arrival had a positive impact on consumer confidence in a product/brand, while departure had a positive impact on purchase intentions. Together these results indicate that presence can have an impact on the process of persuasion, specifically advertising, but possibly on other types of persuasion in a mediated setting (i.e., product placement, edutainment, etc…). The following section will detail another concept, Transportation Imagery Model [2] and its role in persuasion.

3. Transportation Imagery Model

This particular model has emerged within the areas of Psychology and Consumer Psychology. The model is concerned with predicting the extent to which consumers are persuaded by advertisements. The model holds that many advertisements contain drama or narrative stories. The basic premise of this model is that narrative structures are able to "involve, captivate, and entertain consumers" [1, p. 267]. It has been argued that narratives or dramas "draw the viewer into the action it portrays [30, p. 335]. The same authors also assert that the audience becomes "lost" in the narrative and empathizes with the characters (p. 335). The Transportation Imagery Model (TIM) has been developed from these prior assumptions, within narration, as well as reader response theory, and diegesis [31].

The TIM model adapts the term "transportation" from [32] who refers to a "traveler" as a media user (though Gerrig is only concerned with readers of text-based materials) who make a mental journey to a distant location (typically the reality of the text) and returns a "changed" person. Green and Brock assert that transportation can have a physical and psychological dimension for the traveler or transported individual. Even though they borrow heavily from the narrative or print tradition, they argue that "transportation is not limited to the reading of written material. Narrative worlds are broadly defined with respect to modality; the term "reader" may be construed to include listeners, viewers, or any recipient of narrative information" [2, p. 702].

The model is seen as having a high to low continuum of "transportingness" with a high level being more likely to be persuasive [3, p. 334]. Persuasion is felt to be influenced by two factors: 1) imagery ability and 2) absorption propensity. Imagery ability [33] is the ability of a person to visualize or mentally rehearse, but can occur without the physical stimulus. While absorption is seen the disposition

of individuals to have their attentional resources completely engaged in the activity [34]. However, research on the impact of these two individual differences and their impact on TIM.

3.1 TIM and information processing

The mechanism by which TIM leads to persuasion is by "reduced negative cognitive responding, realism of experience, and strong affective responses" [2, p. 702]. Green and Brock [2] assert that "Transportation into a narrative world is conceptualized as a distinct mental process, which may mediate the impact of narratives on beliefs (p. 324). One of the most interesting assertions of the TIM is that this type of persuasion occurs via a separate route from the dual process models of attitude change (.i.e., Elaboration Likelihood [35] and Heuristic-Systematic Persuasion Model [36]).

The TIM is different argue Green and Brock (2002) because personal relevance is not a necessary condition for the desirable central processing (in Elaboration Likelihood Model) or persuasion. In fact the researchers have empirical evidence demonstrating strong held assertions are just as influenced as weak held assertions when exposed to a persuasive narrative [37]. It also noteworthy that need for cognition appears to play no part in TIM.

4. Presence and TIM

There are obvious similarities between the concept of presence and the transportation imagery model. Aside from the specific application of TIM to persuasion, both focus on the perceptual process by which media users are willing to ignore or transcend the technology they are using to access the content. There has been previous overlap of some the dimensions identified within these concepts. Specifically, individual differences, such as absorption, has been identified as playing a moderating role on the amount of transportation (and in turn the level of persuasion) and was included in the "presence equation" [38].

The language and terms used by TIM researchers to describe the experience media users have when they are transported sounds very like the early presence literature. Some examples include: "immersion into a text", "lost", "absorbed", and "transported." Even the term "transportation" has a direct link to the presence literature. There were six dimensions of presence identified by [4], one of which is transportation.

However, it is here that the concepts being to differ. Lombard and Ditton use the term "transportation" to refer to a group of three types of feelings: "You are there," (user is transported to a different location); "It is here," (people/things come to user); and "We are together," (use and others are together in shared space). Please note, this is one more than was discussed earlier where the different sensations were referred to as arrival and departure. However, these are similar types of experiences [26].

The TIM only uses this first dimension (the feeling that a media user is either physically or mentally in a different local than the physical one they occupy) when conceptualizing and measuring what they refer to as transportation.

Another and perhaps more interesting difference is the literature which these concepts have been built. The (tele)presence literature predominantly developed out of computer science, and social science, while the TIM grew out of reader response and narrative theory. It has also only been tested with television commercials and print ads (non-immersive environments) However, what is missing from the TIM literature is the mechanism for how this process occurs. The presence literature has come a bit further in making claims about the process (see [39] for a full discussion). Another area where these two concepts may inform each other is the "book problem" [41-42].

4.1 Presence and TIM research questions

These two concepts share several obvious research questions, including:

- Does experiencing a sense of presence also increase the likelihood a media user will be persuaded within highly immersive environments?
- Can presence and/or TIM be used an as explanation for the effectiveness of product placement in film, TV shows, or video games?
- Does presence offer a stronger theoretical grounding to TIM?
- Will high-definition television be more persuasive than the current standards?
- Can TIM and/or presence be used to encourage healthier or pro-social messages conveyed through entertainment?

Conclusion

The concepts of presence and transportation imagery model share a common interest, the investigation of feeling of being connected to or in an artificial or virtual environment (though perhaps TIM would claim it was only in one's imagination). The similarities are strong enough to consider TIM a new area of presence research. Researchers using TIM may benefit from both the breath and depth of existing presence research. It seems that presence and TIM may be a way of exploring the persuasiveness of entertainment content, such as "edutainment" – which includes an on going narrative, and for which there is empirical evidence that it is persuasive and little about the mechanism [40]. Presence may illuminate the processes by which audiences are in a state to be persuaded.

References

[1] Escalas, J. E. (1998). Advertising narratives: What are they and how do they work? In B.B. Stern (Ed.). *Representing Consumers: Voices, views, and visions.* New York: Routledge.

[2] Green, M.C., & Brock, T. C. (2000). The role of transportation in the persuasiveness of public narratives. *Journal of Personality and Social Psychology, 79*(5), 701-721.

[3] Green, M. C., & Brock, T. C. (2002). In the mind's eye: Transportation-imagery model of narrative persuasion. In M. C., Green, J. J. Strange, & T. C. Brock (Eds). *Narrative Impact: Social and Cognitive Foundations*. New York: Lawrence Erlbaum.

[4] Lombard, M., & Ditton, T. B. (1997). At the heart of it all: The concept of presence. *Journal of Computer-Mediated Communication, 13*(3). Available: http://www.ascusc.org/jcmc/vol3/issue2/lombard.html

[5] Minsky, M. (1980, June). Telepresence. *Omni,* 45-51.

[6] Biocca, F., Harms, C., & Burgoon, J. K. (2003). Toward a More Robust Theory and Measure of Social Presence: Review and Suggested Criteria. *Presence: Teleoperators & Virtual Environments, 12,* 456- 481.

[7] Zhao. S. (2003). Toward a taxonomy of copresence. *Presence: Teleoperators & Virtual Environments, 12,* 445-455.

[8] Bystrom, K.E., Barfield, W., & Hendrix, C. (1999). A Conceptual Model of the Sense of Presence in Virtual Environments. *Presence: Teleoperators & Virtual Environments, 8,* 241-245.

[9] Mania, K., & Chalmers, A. (2001). The Effects of Levels of Immersion on Memory and Presence in Virtual Environments: A Reality Centered Approach. *CyberPsychology & Behavior, 4,* 247-265.

[10] Schubert, T., Friedmann, F., Regenbrecht, H., (2001). The Experience of Presence: Factor Analytic Insights. *Presence: Teleoperators & Virtual Environments, 10,* 266-282.

[11] Slater, M., Sadagic, A., Usoh, M., & Schroeder, R. (2000). Small-Group Behavior in a Virtual and Real Environment: A Comparative Study. *Presence: Teleoperators & Virtual Environments, 9,* 37-52.

[12] IJsselsteijn, W. (2003). Presence in the past: What can we learn from media history? In G. Riva, F. Davide, & W. IJsselsteijn (Eds*), Being there: Concepts, effects, and measurement of presence in synthetic environments*. Amsterdam: Ios Press.

[13] Lombard, M., Reich, R. D., Grabe, M. E., Bracken, C. C., & Ditton, T. B. (2000). Presence and television: The role of screen size. *Human Communication Research, 26*(1), 75-98.

[14] Marsh, T. (2003). Presence as experience: Film informing ways of staying there. *Presence: Teleoperators & Virtual Environments*, *12*(5), 538-549.

[15] Lee, K.M. (2005). *Presence as a mediator for psychological effects of computer games*. Paper presented to the Communication & Technology Division of the annual International Communication Association, New York

[16] Bracken, C.C., & Skalski, P. (2005, May). *Presence and video games: The impact of image quality and skill level.* Accepted for presentation to the Information Systems division of the annual conference of the International Communication Association, New York, NY.

[17] Bracken, C. C., & Atkin, D. (2004). How screen size affects perception of television: A survey of presence-evoking technology in our living rooms. *Visual Communication Quarterly, 59*(4), 23-28.

[18] IJsselsteijn, W., de Ridder, H., Freeman, J., Avons, S. E., & Bouwhuis, D. (2001**).** Effects of Stereoscopic Presentation, Image Motion, and Screen Size on Subjective and Objective Corroborative Measures of Presence. *Presence: Teleoperators & Virtual Environments, 10,* 298 – 312.

[19] Lessiter, J., Freeman, J., & Davidoff, J. (2001). *Really Hear? The Effects of Audio Quality on Presence.* Paper presented to the fourth annual Workshop on Presence, Philadelphia, PA.

[20] Bracken, C. C. (2005). Presence and image quality: The case of high definition television. *Media Psychology, 7*(2), 191-205.

[21] Eastin, M. S., Griffiths, R., & Lerch, J. (2005). *Beyond Shooter Games: How Game Environment, Game Type, and Competitor Influence Presence, Arousal and Aggression.* Paper presented to the Communication & Technology Division of the annual International Communication Association, New York.

[22] Lee, K. M., Jin, S. A., Park, N., & Kang, S. (2005). *Effects of Narrative on Feelings of Presence in Computer-Game Playing.* Paper presented to the Communication & Technology Division of the annual International Communication Association, New York.

[23] Schneider, E. F, Lang, A., Shin, M., Bradley, S.D. (2003). Death with a Story How Story Impacts Emotional, Motivational, and Physiological Responses to First-Person Shooter Video Games. *Human Communication Research, 30*, 361 - 376.

[24] Dillon, C., Keogh, E., Freeman, J., & Davidoff, J. (2001). *Presence: Is Your Heart In It?* Paper presented to the annual meeting of the Presence Workshop, Philadelphia, PA.

[25] Grigorovici, D. (2003). Persuasive effects of presence in immersive virtual environments. In G. Riva, F. Davide, & W. IJsselsteijn (Eds*), Being there: Concepts, effects, and measurement of presence in synthetic environments*. Amsterdam: Ios Press.

[26] Kim, T., & Biocca, F. (1997). Telepresence via television: Two dimensions of telepresence may have different connections to memory and persuasion. *Journal of Computer-Mediated Communication, 3*(2), Available at: http://www.ascusc.org/jcmc/vol3/issue2/kim.html

[27] Li, H., Daugherty, T., & Biocca, F. (2002). Impact of 3-D advertising on product knowledge, brand attitude, and purchase intention: The mediating role of presence. *Journal of Advertising, 31*, 43-57.

[28] Skalski, P., & Tamborini, R. (2005). *Vividness, Social Presence, and persuasion: Reconsidering the influence of modality on attitude formation.* Paper presented to the Information Systems Division of the annual International Communication Association, New York.

[29] Lombard, M., & Synder-Duch, J. (2001). Interactive advertising and presence: A framework. *Journal of Interactive Advertising, 13*(2). Available at www.jiad.org.

[30] Deighton, J., Romer, D., & McQeen, J. (1989). Using drama to persuade. *Journal of Consumer Research, 16,* 335-343.

[31] Burch, N. (1979). *To The distant observer: Form and meaning in the Japanese cinema.* London: Scolar Press.

[32] Gerrig, R. J., (1993). *Experiencing narrative worlds*. New Haven, CT: Yale University Press.

[33] Sheenan, P.W. (1967). A shortened form of the Bett's questionnaire upon mental imagery. Journal of Clincial Psychology, 23, 386-389.

[34] Tellegen, A., & Atkinson, G. (1974). Opennes to absorbing and self-altering experiences ("absorption'), a trait related to hypnotic susceptibility. *Journal of Abnormal Psychology*, *83*(3), 268-277.

[35] Petty, R. E. and Cacioppo, J. T. (1986) *Communication and persuasion: Central and peripheral routes to attitude change,* New York: Springer-Verlag.

[36] Chaiken, S., Wood, W., & Eagly, A. H. (1996). Principles of persuasion. In E.T. Higgins and A. Kruglanski (Eds.), S*ocial psychology: Handbook of basic mechanisms and processes.* New York: Guilford Press.

[37] Wheeler, S. C., Green, M., C., & Brock, T. C. (1999). Fictional narratives change beliefs: Replications of Prentice, Gerrig, & Bailis (1997) with mixed collaboration. *Psychonomic Bulletin and Review, 6,* 136-141.

[38] Sas C. & O'Hare G.M.P. (2003). Presence Equation: An Investigation into Cognitive Factors Underlying Presence. *Presence: Teleoperators & Virtual Environments,12*, 523-537.

[39] Vorderer, P, Wirth, W., Saari, T., Gouveia, F. R., Biocca, F., Jäncke, F., Böcking, S., Hartmann, T., Klimmt, C., Schramm, H., Laarni, J., Ravaja, N., Gouveia, L. B., Rebeiro, N., Sacau, A., Baumgartner, T. & Jäncke , P. (2003). *Constructing Presence: Towards a two-level model of the formation of Spatial Presence.* Unpublished report to the European Community, Project Presence: MEC (IST-2001-37661). Hannover, Munich, Helsinki, Porto, Zurich.

[40] Stitt, C. R., & Nabi, R. (2005). *The persuasive impact of narratives: A comparison across message types and modalities*. Paper presented to the Information Systems Division of the annual International Communication Association, New York.

[41] Schubert, T., & Crusius, (2002). *Five theses on the book problem: Presence in books, film and VR.* Paper presented to PRESENCE 2002- Fifth annual Workshop on Presence, Porto, Portugal.

[42] Gysbers, A., Klimmt, C. , Hartmann, T., Nosper, A. & Vorderer, P. (2004). *Exploring the Book Problem: Text Design, Mental Representations of Space, and Spatial Presence in Readers*. Paper presented to Seventh annual Workshop on Presence, Valencia, Spain.