

Is Text Always Superior to Video? Investigating the Impact of Moving Images, Standard Video, and Text on Presence

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Abstract

Prior research has suggested that a message delivered through a leaner text channel will be more likely to elicit greater presence experiences than the same message delivered through a richer video channel. We further this research by introducing a unique channel manipulation that incorporates video and moving images, and compares its effects on presence experiences to traditional video and text. Results indicated that text elicited greater spatial presence, naturalness, and higher cognitive involvement than traditional video; video with images elicited greater engagement, naturalness, and higher cognitive involvement; and there were no significant differences between text and video with images for spatial presence, engagement, naturalness, and higher cognitive involvement.

Keywords--- media richness, presence, channel, mission statement

1. Introduction

Research suggests that messages delivered via a text/print channel are more effective at stimulating presence experiences than the same messages delivered through a richer video channel. One example is Jones (2008), who reported that comic book versions of stories (i.e., Superman, Catwoman, and Sin City) resulted in higher presence experiences compared to their film counterparts. A second example is Whitbred, Skalski, Bracken, and Lieberman (2010), who found participants who received a text introduction of a mission statement experienced greater presence than those who received a video introduction. Several reasons for these results have been offered including: (a) differences in the speed at which information must be processed, in that video requires a receiver to process information at a pre-determined speed while text allows a receiver to go at his/her own pace, (b) complex messages, such as story plots are better communicated via paper (Chaiken & Eagly, 1983), (c) the message source in a video is more apparent, making moderating variables such as source credibility more salient, and (d) the possible influence of

video production quality on results, with poorer productions leading to more negative results.

Based on these findings, one may reasonably recommend that for some content a leaner text strategy be selected over richer video when trying to stimulate presence, especially given the relatively high cost of quality video production. While this is consistent with prior research, we suggest this may not be a viable option in today's multimedia environment. Message receivers enter communication situations with existing expectations (Petty, Bracken, Rubenking, Bunhcer, and Gress (2010). Expectation was found to contribute to sensations of presence only when expectation was exceeded. Media users expect high quality video production and believable special effects, when these expectations are not met, presence is not experienced.

Conversely, simple text transmission of messages may not be tolerated by today's increasingly tech-savvy consumers. We seek to inform this circumstance by testing the influence of channel richness on dimensions of presence, but extend prior research by including a video that utilizes moving images. Specifically, we build upon Whitbred et al's (2010) study by developing a new manipulation of channel richness (hereafter video with moving images) which we use to introduce a mission statement to organizational members. We investigate how the effects of this new manipulation compare to a text introduction, and a typical video presentation involving a source-delivered message (hereafter standard video) on receivers' experiences of presence, or the "perceptual illusion of non-mediation" (Lombard & Ditton, 1997). Specifically, we begin by reviewing media richness theory, and discuss how our study design enacts the richness concept. Next, we identify and define four dimensions of presence we use as dependent variables to assess the channel effects, and specify hypotheses. Following, we describe a study that tests these hypotheses. Then, we present the results of our analysis, and conclude by discussing the results.

2. Media Richness Theory

Galbraith (1973) first defined richness as a quality of an organizational structure needed to effectively manage

the complexity of information being communicated. Media scholars applied this basic idea, arguing that richer media is needed for messages and tasks that are complex and ambiguous (Daft & Lengel, 1986; Lengel & Daft, 1988; Trevino, Lengel, & Daft, 1987) and effective managers select appropriate media accordingly. Richer media allow immediate feedback, allow for the use of multiple communication cues (e.g., verbal and nonverbal), make available the use of natural language, and are able to convey a personalized focus to the receiver. The theory places communication channels and/or technologies on a richest-to-poorest continuum, with face-to-face interaction being the richest and impersonal memos being the poorest.

Video is a richer medium for introducing messages compared to text for multiple reasons. First, video allows the use of multiple cues such as voice inflection, strategically selected clothing, and reinforcing gestures for emphasizing main points and communicating enthusiasm, while text relies mainly on words. Second, video allows the source to utilize more natural language that matches his/her personal style, while text allows zero adaptation. Third, video allows message receivers to hear any accents a source may have and view the demographics of the source, which (unfortunately) brings to bear possible prejudices.

Much prior research examining the impact of media richness on presence experiences compared text with a video where the same source was introducing the same message. While this type of video is certainly richer compared to text, it is limited to one person delivering a scripted message. Whitbred et al (2010) reported richness 'backfired' in that text created greater presence experiences compared to this type of video, possibly due to the source exhibiting poor extemporaneous delivery. Another possible reason is that receivers' were expecting a more interesting production (Petty, et al, 2010). In this study, we extend this prior research by producing a video where the voice of the source is integrated with pictures and imagery enacting the content of the message. We provide a detailed description of our manipulation in the methods section.

3. Presence, Richness, and Hypotheses

Presence is the psychological state in which information technology users suspend the mediated experience in order to feel a sense of connection with the content they are using. "Although presence developed out of computer science (Bracken & Skalski, 2010) ... it has captured the attention of communication scholars as a

critical concept for understanding how people respond to media form and content" (Whitbred et al, 2012). Presence research typically addresses the feelings of being "present" in a narrative presented (spatial presence) or with another person while using computer-mediated technologies (social presence). Social Presence theory began with empirical research comparing face-to-face interaction and talking on the telephone (Short, Williams, & Christie, 1976), and can now also be seen to include how the people involved relate themselves to the online or computer-generated environment. Lombard and Ditton (1997) identified six dimensions of presence: social richness, realism (naturalness), transportation, and immersion (spatial presence), social actor within a medium (engagement), and medium as social actor.

An early assumption of presence scholars was that sensory engagement would relate positively to presence (e.g., Lombard & Ditton, 1997; Steuer, 1992). However, Chaiken and Eagly, (1976) conducted studies that suggested complex messages (like a mission statement) may be better communicated through leaner channels (text) as compared to video, since video requires receivers to process information at the speed it is delivered, whereas information in text format is processed at the pacing of the reader. Similar findings were reported by Lang (2006) who recommended that complex messages were not well received when presented via video. Research (e.g. Jones, 2008; Whitbred et al, 2010; Whitbred, Skalski, Bracken, & Weaver, 2012) provided evidence of text being better at stimulating presence experiences than video. We further investigate this relationship by investigating the possible effect of our video with images manipulation on four dimensions of presence

3.1. Spatial Presence

The International Society for Presence Research (2000) defines spatial presence as "a sense of being there" which "occurs when part or all of a person's perception fails to accurately acknowledge the role of technology that makes it appear that s/he is in a physical location and environment different from her/his actual location and environment in the physical world." More recently, Wirth et al. (2007) conceptualized spatial presence as a two dimensional construct with a core dimension of being physically situated in the spatial environment of a medium ("spatial presence: self location") and a secondary dimension of being able to interact within the spatial environment of a medium ("spatial presence: possible actions"). In the case of a non-interactive message such as a mission statement communicated through print or video,

only the first dimension would be relevant. However, questions remain about the applicability of even this dimension of spatial presence to a message like a source-delivered mission statement. What spatial environment, exactly, would receivers of such a message feel physically situated in? And if there is no clear spatial environment, as seems to be the case with a message like a standard mission statement, what could be done to increase receivers' opportunity to experience spatial presence?

Spatial cues supporting the message are one possibility. In this study, we build on research by Whitbred et al. (2010; 2012) by examining how video with moving images of the place described in a message statement enhance spatial presence. Whitbred et al. merely examined the effects of a standard video message involving a talking source, essentially a video-recorded speech. They found that print was more effective at generating presence than this type of video message. Here, we argue that their findings may have been driven in part by the type of video message used, and that an alternative video presentation might lead to different results. We specifically examine the effects of a video with moving images of a place, expected to enhance presence responses.

3.2. Engagement

Engagement is the receiver's sense of involvement, interest, immersion, attention, awareness and enjoyment from the experience, and has been phrased as "ecological validity" as well (Lessiter et al, 2001). Freeman (2004) reported that engagement/immersion are found in most presence scale. However, there are differences in how the concept has been defined. Some researchers view immersion as a characteristic of the technology. One such definition is offered by IJsselsteijn, de Kort, Westerink, de Jager, and Bonants (2006) who define Immersion as "the system's ability to accommodate many sensory modalities with a rich representational capability" (p. 689). While others view immersion as a psychological state (Bracken, Pettey, & Wu, 2011; Lombard & Ditton, 2000; Witmer & Singer, 1998). Immersion is the perception of feeling "enveloped by, included in, and interacting with an environment" (Witmer & Singer, 1998, p. 227). We view engagement/immersion as a psychological state which is a sub-dimension of presence.

3.3. Naturalness

Naturalness is the receiver's sense of realism from the experience. Naturalness has been linked to social realism

(Lombard & Ditton, 1998). Research has shown that audio/visual images have been rated as highly realistic (Bracken, 2005; Bracken, 2006). Since one common explanation for print eliciting greater presence experiences is that print allows information processing at the receiver's pace (Whitbred et al, 2012), we reason that print may facilitate media users being able to cognitively incorporate their own experiences with and better identify with a message. It may also be that media users are used to receiving complex messages via print (e.g. textbooks, journal articles), so print would be considered natural in this context.

3.4. Higher cognitive involvement

Higher cognitive involvement refers to the level of information processing inherent in an experience for receivers that may have affective, conative, or cognitive aspects (Wirth et al. 2007). It is an important variable in the MEC spatial presence model, which specifies higher cognitive involvement as a variable facilitating the formation of spatial presence experiences (Vorderer et al., 2003), and includes activities such as thinking and counter-arguing. Although not a type of presence per se, higher cognitive involvement is likely an important correlate of presence, and it has particular relevance to reception of messages such as mission statements. It is also of interest to explore whether the inclusion of video images results in greater or less cognitive involvement. Mission statement messages presented in print form should lead to higher cognitive involvement than those presented through video due to the mental resources required for reading, consistent with research by Whitbred et al. (2010; 2012).

As we reviewed above, prior research has consistently found that text introductions of complex messages (such as the mission statement message used here) elicit greater presence experiences than video treatments. Thus, our first hypotheses predict:

H1a – Participants who experience the text condition will be more likely to experience spatial presence than those who experience the standard video condition.

H1b - Participants who experience the text condition will be more likely to experience engagement than those who experience the standard video condition.

H1c - Participants who experience the text condition will be more likely to experience naturalness than those who experience the standard video condition.

H1d - Participants who experience the text condition will be more likely to experience higher cognitive involvement than those who experience the standard video condition.

An alternative line of thinking (Steuer, 1995; Tamborini, 2000; Tamborini & Skalski, 2005) suggests that media high in vividness (multiple perceptual components) should evoke more presence because of their ability to engage multiple senses in the user—essentially the opposite of the other findings. It may be that while the standard video condition (source presenting a message) is a richer medium than text, it does not meet the vividness criteria. Our unique channel manipulation (video with moving images) provides multiple pictures along with the source's voice; thus it is more vivid than the tradition video and may stimulate greater presence. Based on the reasoning, we predict:

H2a – Participants who experience the video with moving images condition will be more likely to experience spatial presence compared to the standard video condition.

H2b – Participants who experience the video with moving images condition will be more likely to experience engagement compared to the standard video condition.

H2c – Participants who experience the video with moving images condition will be more likely to experience naturalness compared to the standard video condition.

H2d – Participants who experience the video with moving images condition will be more likely to experience high cognitive involvement compared to the standard video condition.

Hypotheses 2a-2d examine whether our new manipulation better stimulates presence experiences. There is no research we are aware of to guide a prediction of whether the video with moving images condition or text will stimulate greater presence experiences. As such, we ask the following research questions:

RQ1a –Will there be a difference in experiences of spatial presence between the text and the new video with moving images?

RQ1b –Will there be a difference in experiences of engagement between the text and the new video with moving images?

RQ1c –Will there be a difference in experiences of naturalness between the text and the new video with moving images?

RQ1d –Will there be a difference in experiences of higher cognitive involvement between the text and the new video with moving images?

4. Methods

This experiment took place at a medium-sized urban university in the Midwest. Participants were recruited from various Communication courses, where class members were offered extra credit for participation. Ninety-one students participated in this study, of which 85 were full time students. Eight (9%) were freshman, seventeen (19%) were sophomores, twenty-two (24%) were juniors, forty-two (26%) were seniors and two of an unknown class rank. Age ranged from 19 to 62, with a mean age of 26.7. Forty-one (45%) of the respondents were male, while 47 were female (52%), and three respondents did not report their sex. Fifty-six (62%) of respondents identified themselves as Caucasian, with twenty-three (25%) being African-American, four (4%) being Hispanic, and six (7%) respondents identifying their ethnic origin as “Other.”

4.1. Experimental Stimuli: Channel Richness

The content of the introduction of the mission statement contained a brief introduction to the university, the statement itself, and some examples of activities that illustrate the main themes in the statement. The mission statement is:

Our mission is to encourage the development of human and humane knowledge in the arts, sciences, humanities and professions through scholarship, creative activity and research while providing an accessible and contemporary education to all individuals. We are here to serve and engage the public and prepare our students to lead productive, responsible and satisfying lives in the region and global society.

Prior research (Whitbred et al, 2010) demonstrated the mediating role presence experiences play in the successful introduction of a mission statement. Specifically, those who experienced greater presence when being introduced to a mission statement were better able to recall the content the statement, reported greater personal involvement with the statement, and more positively evaluated the importance of the statement.

Presence experiences provide a conceptual solution to avoid deterministic explanations grounded in richness theories, which assume characteristics of the channel directly impact outcomes, thus neglecting the role of the cognitions and interpretations of receivers. By incorporating the lived experience of message receivers, presence allows for more robust models and explanations.

For the text condition, the introduction was typed onto letterhead that clearly identified the University President by name as the source. For the traditional video condition, the University President was taped presenting the introduction; the content was the same, except he began by saying 'Hello, I'm XXX, president of XXXX University.' The "video with moving images" condition was developed as follows. First, the opening few seconds where the University President introduced himself was identical to the other video. The soundtrack was the same, but a series of video clips and images reflective of the message content appeared instead of the President presenting. All of the clips were stock footage of the university that appeared in through commercials and various promotional videos.

The experiment took place in a private computer lab on the campus. Upon entering the room, participants were first given and signed an informed consent form. They then were randomly assigned to a computer workstation, and were asked if they knew the university mission statement to identify anyone who may have already known the mission; none did. The mission statement was then introduced by having participants view either a PDF text or Windows Media Player video on standard desktop computers screens with audio headsets. These students were randomly assigned to one of three different computers, each containing a different channel manipulation of the introduction of the mission statement. For the text condition, $n=31$, for the traditional video condition; $n=31$, and for the video with moving images condition $n = 29$. After viewing or reading the message presented, the student then continued with an outcome survey; SurveyMonkey was used to collect data.

4.2. Instrumentation

The first three dimensions of presence were measured with subscales from the ITC-SOPI (Lessiter et al, 2001), which uses Likert Type scales with 5 points, where 1 = Strong Disagreement with items and 5 = Strong Agreement with items. The spatial scale has 18 items; samples are "I felt I could interact with the displayed environment," "I felt that the characters and/or objects could almost touch me," and "I felt I was visiting the

places in the displayed environment". The Cronbach's alpha of this scale was .95. The engagement scale has 13 items; samples are "I was sad that my experience was over," "I would have liked the experience to continue", and "I vividly remember some parts of the experience". The Cronbach's alpha of this scale was .91. The naturalness scale has 5 items; samples are "The displayed environment seemed natural", "The content seemed believable to me", and "The scenes depicted could really occur in the real world". The Cronbach's alpha of this scale was .76. Higher cognitive involvement was measured with an eight item subscale from the MEC spatial presence questionnaire (Vorderer et al, 2003), which uses Likert Type scales with 5 points, where 1 = I do not agree at all with items and 5 = I fully agree with items; samples are "The presentation activated my thinking", "I kept wondering whether the presentation could have personal meaning for me", and "I thought intensely about the meaning of the presentation". The Cronbach's alpha of this scale was .84.

5. Analysis

We ran four one-way analyses of variances (ANOVAs) to test hypotheses. Each had the channel as the grouping factor, and one of the four presence dimensions as the dependent variable. To test Hypotheses 1a – 1d, contrast tests comparing the text and traditional video conditions were run. To test Hypotheses 2a – 2d, contrast tests comparing the traditional video and the video with moving images conditions were run. To answer Research Questions 1a-1d, contrast tests comparing the text and video with moving images conditions were run.

6. Results

Table 1 provides the descriptive statistics and inter-correlations for the presence dimensions, and show that the presence dimensions were significantly associated with each other. Table 2 summarizes the results from the one-way ANOVA testing whether channel significantly affected the four presence dimensions. Table 2 also provides the results of the contrasts testing the hypotheses and answering the research questions. Results showed channel significantly impacted three of the four presence dimensions, specifically spatial presence ($F = 3.14, p < .05$), naturalness ($F = 7.99, p < .01$), and higher cognitive involvement ($F = 6.80, p < .01$). There was no affect for engagement, though this did approach significance ($F = 2.50 p. < .10$).

Table 1. Means, Standard Deviations and Correlations

<i>M</i>	<i>SD</i>	Continuous Variables	1.	2.	3.	4.
2.06	.73	1. Spatial Presence	-	.748**	.581**	.405**
2.56	.81	2. Engagement		-	.657**	.602**
2.96	.84	3. Naturalness			-	.605**
3.22	.95	4. Higher Cognitive Involvement				-

Hypotheses 1a-1d predicted that participants who experienced the text condition would be more likely to experience spatial presence (H1a), engagement (H1b), naturalness (H1c), and higher cognitive involvement (H1d) compared to the standard video condition. The results of the contrast tests supported H1a ($t = 2.50, p < .05$), H1c ($t = 2.86, p < .01$), and H1d ($t = 2.49, p < .05$). However, contrary to expectations, H1b was not supported for the engagement dimension ($t = -1.59, p < .12$).

Hypothesis H2a-H2d predicted that participants who experienced the video with moving images condition were more likely to experience spatial presence (H2a), engagement (H2b), naturalness (H2c), and higher cognitive involvement (H2d) compared to the standard video condition. The results of the contrast tests supported H2b ($t = -2.15, p < .05$), H2c ($t = -3.84, p < .01$), and H2d ($t = -3.59, p < .01$). However, contrary to expectations, H2a was not supported for the spatial presence dimension.

Research Questions 1a-1d asked if there would be a difference in experiences of spatial presence (RQ1a), engagement (RQ1b), naturalness (RQ1c), and higher cognitive involvement (RQ1d) between the text and the new video with moving image. The results of the contrast tests showed no significant differences between the text and video with image conditions. While this may initially appear to be a disappointing finding, we discuss why this is not the case below.

7. Discussion

We conducted this study both to further explore the relationship between channel richness and presence experiences and to explore how different types of video may yield different results. Specifically, we examined whether a more vivid and overall visually appealing presentation of a message (video with moving images) would stimulate higher levels of presence compared to a more mundane, “traditional” presentation of the same message in video form, and how the effect of this richer channel would compare to a text introduction of the same message.

Figure 1 illustrates our basic results. Two general findings are apparent. First, there was a significant difference between channels for all the presence dimensions but engagement. Stated differently, receivers experienced greater spatial presence, naturalness, and cognitive involvement depending on the channel through which they were introduced to the mission. One possible reason for the lack of significance for engagement may have been the nature of our video with images manipulation. While this video provided a much more vivid and energetic message experience, it also tended to jump from image to image, spending only a few seconds on each. This may have interrupted receivers’ cognitive “stream of consciousness” as they continually refocused on different images., such changes in presentation have been linked to cognitive overload (Lang, 2000). Second, there was a consistent pattern of the text and video with image conditions stimulating greater presence than the traditional video condition.

DV	Descriptives	Sum of Squares	DF	Mean Squares	F	Sig.	Contrast Tests
Spatial Presence	Print: n = 31, m = 2.29, sd = .67	Between: 3.154	2	1.577	3.141	.048	H1a: t = 2.50 (p < .014) H2a: t = -1.07 (p < .287) RQ1a: t = 1.39 (p < .169)
	Video n = 31, m = 1.84, sd = .77	Within: 44.177	88	.502			
	Images n = 29, m = 2.04, sd = .67	Total: 47.331	90				
	Total n = 91, m = 2.06, sd = .73						
Engagement	Print: n = 31, m = 2.63, sd = .78	Between: 3.144	2	1.572	2.495	.088	H1b: t = 1.59 (p < .116) H2b: t = -2.15 (p < .034) RQ1b: t = -.59 (p < .558)
	Video n = 31, m = 2.31, sd = .83	Within: 55.456	88	.630			
	Images n = 29, m = 2.75, sd = .77	Total: 58.600	90				
	Total n = 91, m = 2.56, sd = .81						
Naturalness	Print: n = 31, m = 3.10, sd = .62	Between: 9.759	2	4.880	7.989	.001	H1c: t = 2.86 (p < .005) H2c: t = -3.84 (p < .001) RQ1c: t = -1.03 (p < .308)
	Video n = 31, m = 2.54, sd = .87	Within: 53.748	88	.611			
	Images n = 29, m = 3.31, sd = .83	Total: 63.507	90				
	Total n = 91, m = 2.98, sd = .84						
Higher Cognitive Involvement	Print: n = 31, m = 3.33, sd = .87	Between: 10.839	2	5.420	6.804	.002	H1d: t = 2.49 (p < .015) H2d: t = -3.59 (p < .001) RQ1d: t = -1.15 (p < .255)
	Video n = 31, m = 2.77, sd = 1.02	Within: 70.092	88	.797			
	Images n = 29, m = 3.59, sd = .77	Total: 80.931	90				
	Total n = 91, m = 3.22, sd = .95						

Table 2. ANOVAs and Contrast Tests Comparing Presence by Channel Richness

Hypotheses 1a-1d predicted that participants who experienced the text condition would be more likely to experience spatial presence (H1a), engagement (H1b), naturalness (H1c), and higher cognitive involvement (H1d) compared to the standard video condition. The contrast tests results showed significant differences for spatial presence, naturalness and higher cognitive involvement, but not for engagement. This is consistent with previous research by Whitbred et al (2012) and Jones (2008), all of which showed that viewers are more likely to experience presence through reading a text narrative as opposed to viewing its video counterpart. Scholars have identified multiple reasons for this result, including video requiring a receiver to process at a pre-determined speed while text allowing a receiver to go at his/her own pace, the message source in a video message being more apparent (therefore making credibility issues more salient), and video production quality influencing results. Future research should examine which of these (and possibly others) specifically are influencing this relationship.

There appears to be considerable evidence that if a message is complex (such as mission statements or plots in comic books), and the objective of a researcher or practitioner is to encourage presence, the superior strategy is text. This finding is consistent with Lang (2006) and media users' limited capacity to understand complex messages when presented in an audio/visual format. Simple text in a video age may not be 'good enough;' thus

we explored whether a more vivid video treatment with moving images would alleviate this difference.

Hypotheses 2a – 2d tested whether the video with images increased presence experiences compared to the traditional video. The traditional video was a one-shot video (no cuts) of the University President introducing the mission message to the camera, while the second video included various video clips of students, faculty, courses and extra-curricular activities throughout the university--while hearing the exact same audio of the University President. Results showed those in the video with images condition experienced greater engagement, naturalness, and cognitive involvement, but not greater spatial presence.

The lack of findings for spatial presence were somewhat surprising given our initial expectation that the video with images condition, which provided spatial cues, would facilitate spatial presence. However, the exact nature of the video content may again be an issue. For our manipulation, we edited together stock footage of different spatial environments at the university described in the mission statement. Although this was a convenient way to provide spatial cues, there may not have been enough consistent spatial information for receivers to latch onto. The MEC model describes a complex process leading to the experience of spatial presence—receivers must attend to a message and then form a situational spatial model before they can experience spatial presence. They may not have had enough time to do this in response

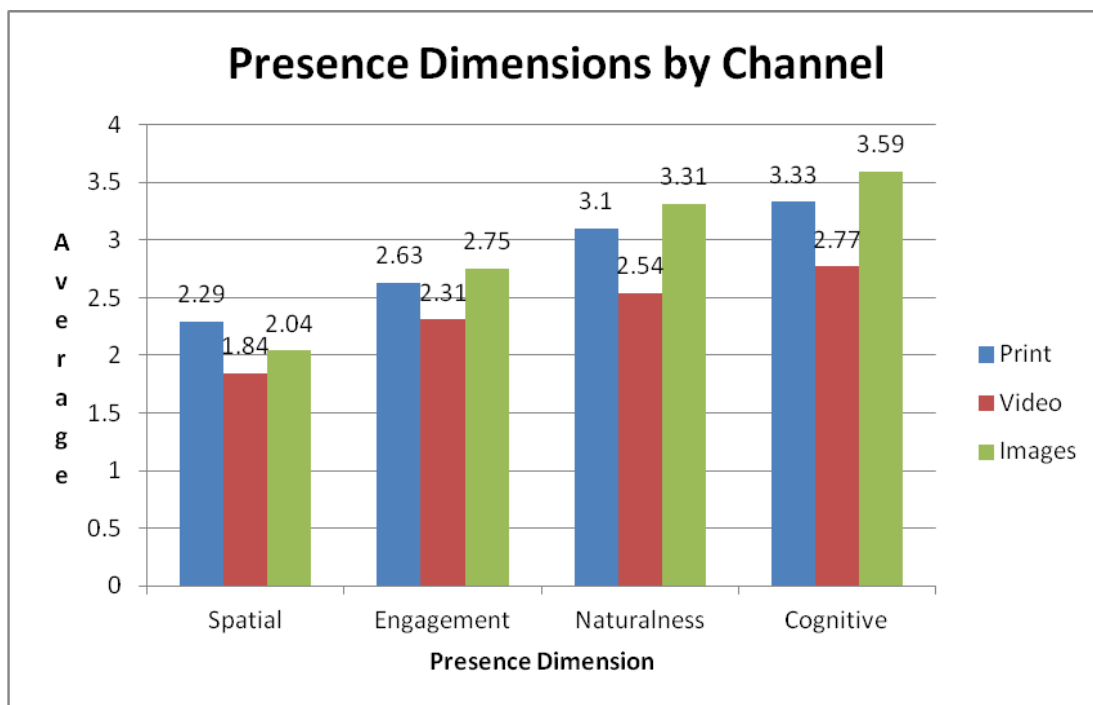


Figure 1

to our rapidly cut together montage of commercial and promotional images. Future research should provide more consistent spatial information to manipulate spatial presence through video. This is common in interactive environments such as virtual worlds and video games and could also be implemented in passive experiences, such as through lingering point-of-view images of a place.

We also asked whether text or video with images would increase presence experiences (Research Questions 1a – 1d). The results of the contrast tests showed no significant differences between the text and video with image conditions. This is important in that it demonstrates both that text is not inherently ‘better’ than video when inducing presence, and that the relationship depends on the content and presentation of the video. Future research should focus more on content and contextually specific factors, in addition to channel issues. These results are consistent with the arguments of Tamborini (2000) that a more vivid, rich medium yields more presence. Future research should begin to more robustly conceptually define what is meant by concepts such as media vividness, and how text and video may both be considered vivid in different circumstances, as Skalski and Tamborini (2005) have attempted to do.

Reading text may also allow for another factor which the video form inhibits: creativity/imagination. When observing a video, a receiver of that message is engaged in that video, and subjugated to the “narrative world” being visually displayed for them, whereas when reading, the receiver uses their own imagination and creativity to help create the narrative world at their own pace. What this study has effectively done is show that the experiences of presence are greater when video is richer and more vivid. However, inspection of Figure 1 shows that presence was generally greater in the text condition than the video with images condition (though this difference was not significant). Future research may wish to incorporate techniques such as allowing receivers to rewind or delay videos to see if this impacts presence.

We suggest two additional areas for future research. The first concerns the type of editing on the videos. Film theory suggests that discontinuous editing can have a disorienting effect on the viewer (Goldman & Papson, 1994). Our video tended to jump between images, which may have had this effect. An alternative video where there is a clearer link between the audio track and the imagery, with more time spent on each image, may yield stronger results. The second concerns the context within which the message was delivered. These types of messages are often delivered via presentation to an audience of hundreds or more. Future research could

investigate whether these differences alter the relationships we found here.¹

A final strength of this study was the willing participation of the University President, which provided us with an extremely credible source for introducing the statement, and while allowing for a more realistic set of conditions. The primary limitation is that our sample was composed of students. Future research using similar methods in a university setting should attempt to include faculty and staff, and these findings should also be examined in non-university settings as well.

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¹ We would like to thank an anonymous reviewer for this suggestion.

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