

Preprint. To appear in *Online education and adult learning: New frontiers for teaching practices*.

Lowenthal, P. R. (in Press). The Evolution and Influence of Social Presence Theory on Online Learning. To appear in T. T. Kidd (Ed.), *Online education and adult learning: New frontiers for teaching practices*. Hershey, PA: IGI Global.

The Evolution and Influence of Social Presence Theory on Online Learning

Patrick R. Lowenthal

CU Online

University of Colorado Denver

1250 14th Street Room 720G, Campus Box 198

P.O. Box 173364

Denver, CO 80217-3364

USA

(303) 315-3687

Abstract

The theory of social presence is perhaps the most popular construct used to describe and understand how people socially interact in online learning environments. However, despite its intuitive appeal, researchers and practitioners alike often define and conceptualize this popular construct differently. In fact, it is often hard to distinguish between whether someone is talking about social interaction, immediacy, intimacy, emotion, and/or connectedness when they talk about social presence. Therefore, the focus of this chapter is on outlining the evolution of the construct of social presence in an effort to understand better its relationship to online learning.

Keywords: Social Presence, Social Interaction, Presence, Sociability, Collaboration, Computer-mediated Communication

The Evolution and Influence of Social Presence Theory on Online Learning

Introduction

People are social creatures (Brown & Duguid, 2002; Read & Miller, 1995). They learn and work in groups (Read & Miller, 1995). The Internet evolved out of an effort to connect computers and information and therefore people. Since its early days, the Internet has grown exponentially (Madden, 2006). However, unlike the early days when only scientists used it, people use the Internet today in a variety of different ways, including communicating with friends, family, and co-workers. In addition to connecting with current friends and family, people also use the Internet to form new relationships (Madden & Lenhart, 2006). As a result, some researchers have begun to describe the Internet as a social medium (Baym, Zhang, & Lin, 2004; Walther & Parks, 2002).

However, just as the Internet can bring people together and be described as “social,” it can separate people and be described as isolating and impersonal (Kraut, et al., 1998; Morahan-Martin & Schumacher, 2003; Nie, 2001). Some researchers have reported examples of Internet addiction and dependence (Hiltz & Turoff, 1993), and others (Nie & Erbring, 2002) have found that the more time that people spend on the Internet, the less time they spend with people in face-to-face social situations. Further, van Dijk (2006) determined that the Internet invites certain types of people to withdraw into the computer. Whether the Internet is a social medium, therefore, remains a heated debate in many ways (Kraut et al., 1998; Nie, Hillygus, & Erbring, 2002). As states like Michigan begin to require high school students to take online courses to graduate (Watson, 2006), and online enrollments at the college level continue to grow (Allen & Seaman, 2006), the sociability—or isolation—of the Internet remains a nationwide concern.

The theory of social presence is perhaps the most popular construct used to describe and understand how people socially interact in online learning environments. However, despite its

intuitive appeal, researchers and practitioners alike often define and conceptualize this popular construct differently. In fact, it is often hard to distinguish between whether someone is talking about social interaction, immediacy, intimacy, emotion, and/or connectedness when they talk about social presence. Therefore, the focus of this chapter is on outlining the evolution of the construct of social presence in an effort to understand better its relationship to online learning.

Background

In the late 1980s and early 1990s, researchers began to study the effects of computer-mediated communication (CMC). Some concluded that CMC was inherently antisocial and impersonal (Walther, 1996; Walther, Anderson, & Park, 1994). While Hiltz & Turoff (1993) acknowledged that interpersonal relationships might be fostered through CMC, early research suggested—and convinced others—that CMC was better at task-oriented communication (Walther & Parks, 2002). These early CMC researchers turned to social presence theory to make sense of their findings.

Social Presence Theory

Short, Williams, and Christie (1976) originally developed the theory of social presence to explain the effect telecommunications media can have on communication. They defined social presence as the degree of salience (i.e., quality or state of being there) between two communicators using a communication medium. They posited that communication media differ in their degree of social presence and that these differences play an important role in how people interact (p. 65). They conceptualized social presence primarily as a quality of a communication medium that can determine the way people interact and communicate. From their perspective, people perceive some media as having a higher degree of social presence (e.g., video) and other media as having a lower degree of social presence (e.g., audio). More importantly, they believed that a medium with a high degree of

social presence is seen as being sociable, warm, and personal, whereas a medium with a low degree of social presence is seen as less personal. CMC researchers later used this theory to explain that CMC was inherently impersonal because nonverbal and relational cues—common in face-to-face communication—are filtered out of CMC (Walther & Parks, 2002).

The Importance of Settings

Early researchers, though, studied CMC primarily in organizational or business settings; that is, early on, they conducted very little research on CMC in educational settings. Educational settings—specifically classroom settings—have different dynamics that researchers consider when studying CMC because no such thing as a typical CMC message exists (Herring, 2007). Much of the meaning and significance of CMC depends on its surrounding discourse (Herring, 2007), and the surrounding discourse in educational settings—specifically online educational settings—is very different from that in business settings (Gee, 2007).

Education is a social practice (Lafey, Lin, & Lin, 2006; Shea, Frederickson, Pickett, & Swan, 2001); consequently, any formal learning environment must be able to support the social practice and process of learning (Shea et al., 2001). Earlier on though, people criticized online education because they believed that the absence of social cues would interfere with teaching and learning (Berge & Collins, 1995). Despite this criticism, online education continues to grow as access to the Internet increases; in fact, enrollments in online education continue to grow each year (Allen & Seaman, 2006; Tallent-Runnels et al., 2006).

However, despite occasional reports of loneliness and isolation (Grubb & Hines, 2000; Robinson, 2000), proponents and practitioners of online education argue that online education and CMC can support the social practice of learning. Even though nonverbal and relational cues are filtered out, these researchers have argued that CMC can still be very social and interpersonal

(Gunawardena, 1995; Gunawardena & Zittle, 1997) and at times even hyperpersonal (Walther, 1996). Further, as researchers (Gunawardena, 1995; Tu, 2000) began examining the sociability of online education, these new researchers began to question the degree to which the attributes of a communication medium—in this case the cues filtered out of CMC systems—determine how people socially interact and are perceived as “being there” when communicating online (Danchak, Walther, & Swan, 2001; Gunawardena, 1995; Gunawardena & Zittle, 1997; Richardson & Swan, 2003; Tu, 2000).

Evolving Social Presence Theory

As a result, these researchers began questioning and further developing the theory of social presence developed by Short et al. (1976). They argued, based on their experience and research, that participants in online discussions, using text alone, are able to project their personalities into online discussions and create social presence (Swan, 2003; Swan & Shih, 2005). They found that online learners are able to present themselves as being “real” as well as “connect” with others when communicating in online learning environments by doing such things as using emoticons, telling stories, and even using humor (Rourke et al., 2001; Swan, 2003). Thus, a user’s personal perceptions of social presence and the behaviors used to make up for the cues that are filtered out matter just as much, if not more, than a medium’s supposed capabilities. This new line of research sparked a renewed interest in the sociability of online learning, social presence, and CMC as evidenced in the increased amount of literature focused on social presence.

Social presence is now a central concept in online learning. For instance, social presence has been listed as a key component in theoretical frameworks for learning networks (Benbunan-Fich, Hiltz, & Harasim, 2005) and distance education (Vrasidas & Glass, 2002). Researchers have shown—in varying degrees—a relationship between social presence and student satisfaction

(Gunawardena, 1995; Gunawardena & Zittle, 1997; Richardson & Swan, 2003), social presence and the development of a community of learners (Rourke, Anderson, Garrison, & Archer, 2001; Rovai, 2002), and social presence and perceived learning (Richardson & Swan, 2003). Just as earlier researchers of CMC (Kiesler, 1986; Kiesler, Siegel, McGuire, 1984) used social presence theory to explain why CMC was inherently impersonal, later researchers (Gunawardena, 1995; Tu, 2000) reconceptualized social presence theory—focusing less on the medium and more on people—to explain how CMC in online learning environments can be very personal and social.

Social Presence and Online Learning

Social presence theory has a complex history. To better understand how this complex history has evolved over the years, it is important to look at influential and related research on social presence, competing theories of social presence, and finally some ways that contemporary researchers define, operationalize, and study social presence.

Influential and Related Research on Social Presence

Short et al. were members of the Communications Studies Group (CSG) at the University College in London. The CSG consisted of roughly 30 researchers conducting experiments in the 1970s on communication media (Pye & Williams, 1978). Interestingly, *The Social Psychology of Telecommunications* appears to be the only joint publication of Short et al. Despite this, each of them conducted a number of studies on the effects of communication media during the 1970s (e.g., Short, 1974; Christie & Holloway, 1975; Christie & Kingan, 1977; Williams, 1975; Williams, 1977; Wilson & Williams, 1977).¹ Their research focused on comparing people's attitudes toward different

¹ They each appeared to have taken part in and written a number of studies with the Communication Studies Group. See Williams (1977), Pye & Williams (1978), and Johansen (1977) for a summary of the results of some of the unpublished research conducted by Short et al.

communication media (e.g., face-to-face, audio, video). The following paragraphs will briefly summarize a few key findings from this early research that later influenced the development of and people's understandings of social presence theory.

The majority of their early research focused on the assumed importance of the visual channel of communication. Short (1974), Christie (1974), and Williams (1975) initially found that communication media were strengthened by the addition of a visual channel. Christie (1974) reported from one study that,

visual media were ... more useful for complex group discussions, private conversations and non-private dyadic conversations. Thus, the presence of visual channel appears to be perceived as an important advantage of a communications medium. (p. 367)

However, as more research was conducted (e.g., Christie & Kingan, 1977; Williams, 1975) it became apparent that the value of a visual channel was more situational than originally thought. For instance, research began to show that the importance of a communication medium depended largely on the task at hand. In fact, according to Christie (1974), "it is clearly misleading to conceptualize different media as lying along a single dimension of acceptability or usefulness. Their perceived usefulness varies according to the application considered" (p. 368). People might want a less intimate or immediate communication medium for certain tasks (Williams, 1975). For instance, Williams (1975) suggested "that with tasks of very high intimacy—perhaps very embarrassing, personal or conflictual ones—the least immediate medium, the telephone, would lead to more favorable evaluations than either or the more immediate media" (p. 128). Further, Williams (1978a) showed that tasks that are low on interpersonal involvement and cooperative in nature can easily be accomplished by audio or video conferencing; however, tasks that are higher on interpersonal involvement "are sensitive to the substitution of telecommunications for face-to-face interaction" (p. 127).

For the most part, these early communication researchers were not concerned with the role of the visual channel of communication on educational or instructional tasks. Williams (1978a) though argued that “tele-education seems especially promising since educational activities are primarily for cooperative problem-solving and the transmission of information—activities which have been shown to be almost unaffected by the medium of communication used” (p. 129). Williams (1978a) intelligently pointed out though in the very same article that our knowledge about the role of mediated communication is far from complete—as was our understanding of how people learned in the late 1970s.

Their later research, among other things, showed that while visual cues are helpful, they are not necessary for people to communicate effectively (Christie & Kingan, 1977, p. 272). Also, contrary to previous theories, Williams (1978b) found that physical presence may be even more important for people communicating than visual communication (p. 101). Results like these began to call for a more complex explanation for the role of visual cues in the communication process, which Williams (1978b) thought might be found in social presence theory.

Competing Theories of Social Presence

The theory of social presence developed by Short et al. (1976) was only one of a number of theories used to explain the influence communication media have on communication. Three popular competing theories of social presence—especially during the 1980s—were *Cuelessness Theory* developed by Rutter (1984, 1987), *Media Richness Theory* developed by Daft & Lengel (1984, 1986; Daft, Lengel, & Trevino, 1987), and *Social Information Processing Theory* developed by Walther (1996; Walther & Parks, 2002). The first two theories (like Social Present theory) have been described as deficit models because they focus on the cues that are filtered out while idealizing face-to-face communication as the gold standard of communication (Thurlow, Lengel, & Tomic, 2004).

Each of these competing theories will be addressed briefly in the following sections in an effort to illustrate the zeitgeist of the 1980s and early 1990s—a time that led to the reconceptualization of Short et al.'s theory of social presence.

Cuelessness. Working from a similar theoretical framework as Short et al. (1976), Rutter (1984, 1987; Rutter, Pennington, Dewey, & Swain, 1984; Kemp & Rutter, 1986) developed the cuelessness model. Rutter was concerned with the over-emphasis placed on the importance of eye-contact when two people communicate. As a result, he and his colleagues (1984) set forth to challenge the intimacy model developed by Argyle and Dean (1965) and later Argyle and Cook (1976). They argued that previous research had focused too much on looking and eye-gaze and not enough on the mutual gazing back and forth. Like Williams before, Rutter et al. (1986) found that what matters when communicating is visual access to the entire person rather than simply access to another's eyes. Rutter et al. argued that it was the combined social cues—from vision and other senses—that mattered more than simply eye-contact.

The cuelessness model essentially claims that the fewer social cues, the greater the psychological distance between two communicators (Rutter et al., 1984). Further, Rutter and his colleagues argued that the greater the psychological distance between two people the more likely communication will be task oriented and depersonalized (Kemp & Rutter, 1986; Rutter, 1984; Rutter et al., 1986). In fact, Rutter (1989) and colleagues found that the number of social cues—that is, both visual and physical presence cues—decreased when people used a closed-circuit television (i.e., visual cues), versus a curtain and wooden screen (i.e., no visual cues), versus audio (i.e., neither visual or physical cues) to communicate with each other.

Media Richness. Another competing theory that emerged during the 1980s is the theory of media richness. Daft and Lengel (1984, 1986) developed the theory of Media Richness. Whereas Rutter and colleagues were aware of the work of Short et al., Daft and Lengel never explicitly acknowledge the work of Short et al. (1976). Daft and Lengel (1984) were focused primarily on information processing behaviors in organizations. More specifically, they were interested in a concept they called information richness

Richness is defined as the potential information-carrying capacity of data. If the communication of an item of data, such as a wink, provides substantial new understanding, it would be considered rich. If the datum provides little understanding, it would be low in richness. (p. 196)

They posited that communication media can determine the richness of information (Daft & Lengel, 1986). They argued that face-to-face communication has the highest richness whereas numeric communication (e.g., spread sheet with numbers) has the lowest. According to Daft and Lengel (1986), a “medium’s capacity for immediate feedback, the number of cues and channels utilized, personalization, and language variety” (p. 560) all influence its degree of information richness.

Social Information Processing. The last of the three competing models is the Social Information Processing model developed by Walther (1992, 1994, 1996). Walther developed his model in response to the previous “deficit” theories. Whereas previous researchers were interested in media effects across various communication media, Walther focused primarily on CMC. He criticized previous research, like that addressed earlier in this chapter, for a number of reasons. First, the majority of the early research was conducted in experimental settings that failed to mirror how people communicate with different media in the real world (1992). Second, these early studies and

researchers assumed that the absence of visual cues led to an absence of sociability. Third, they assumed that task-oriented communication lacked relational and social communication. And fourth, they failed to acknowledge that just as cues are filtered out, other cues are filtered into CMC and therefore CMC has some affordances that face-to-face communication does not (Walther, 1996; Walther & Parks, 2002).

Walther (1992) argued that human's social nature is the same in CMC and face-to-face environments. Given enough time, he believed that people will find ways to compensate for any cues that are filtered out in CMC. The social information processing model essentially posits that given enough time, CMC can be very personal and even hyperpersonal (Walther, 1992, 1996). Previous research tended to put time restrictions that Walther believes diminished the possibility of interpersonal and relational communication. Walther also found that previous interaction between communicators influenced how people communicated online. Further, Walther (1994) found that the possibility of future interaction influenced the degree to which people socially interacted online. Finally, he found that the way users used emoticons also influenced interpersonal communication online. In summation, Walther's social information processing model argued that "given the same investment of time and commitment, relational quality in CMC will be the same as face-to-face communication" (Thurlow, Lengel, & Tomic, 2004, p. 249).

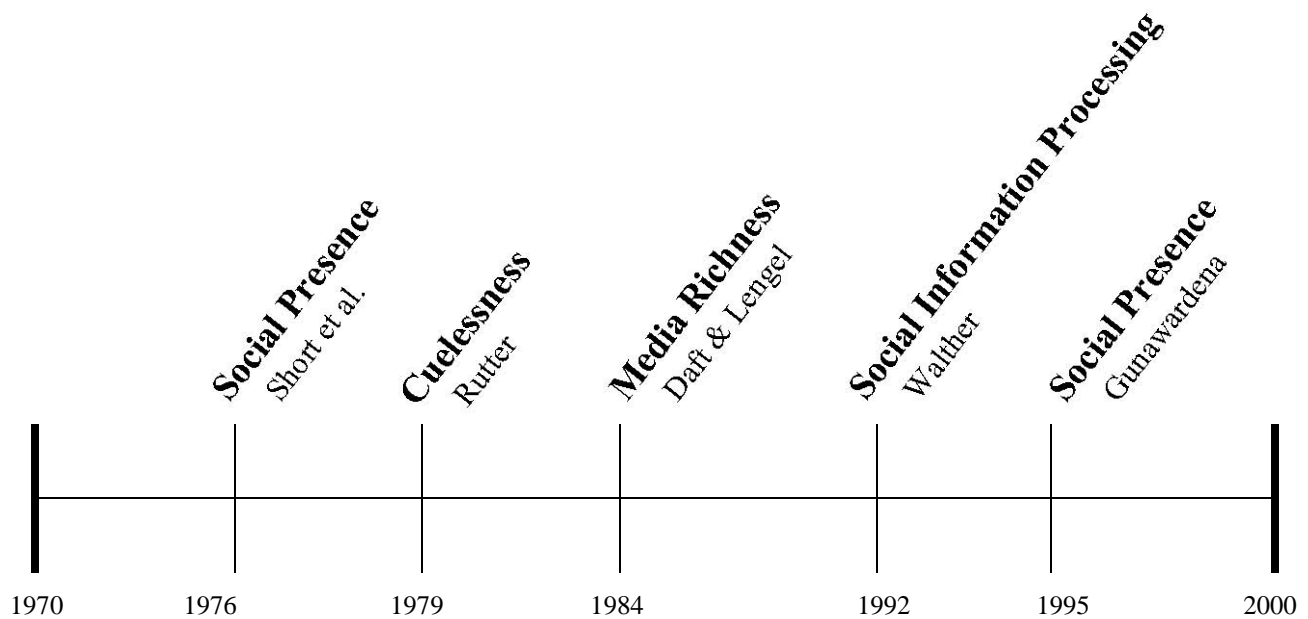


Figure 1. Timeline of Competing Theories of Social Presence

These competing theories, as illustrated in Figure 1, help illustrate the way that thinking about a medium’s effect on communication—especially interpersonal and social communication—changed over time. Research on social presence and online learning, that began with the work of Gunawardena (1995; Gunawardena & Zittle, 1997)—which I consider the third phase of social presence research (see Table 1)—was influenced by this previous research and theories, especially that of Walther. Rather than conceptualizing social presence as Short et al. (1976) did, Gunawardena and those that followed her (most notably is Garrison, Anderson, and Archer, 2000) began reconceptualizing social presence theory—moving away from a technological deterministic conceptualization of mediated communication.

Table 1

Phases of Social Presence Research

Phase	Period	Key Figures	Focus of Research
Phase 1	1970s	Short et al.	Focused on Telecommunications
Phase 2	1980s-early1990s	Rutter Daft & Lengel Kiesler Walther	Focused on CMC
Phase 3	Early/mid 1990s-Present	Gunawardena Rourke et al. Tu Swan	Focused on Online Learning

Defining Social Presence

Given the evolution of social presence theory, it is probably not surprising that there is not a clear, agreed upon, definition of social presence (Rettie, 2003; Tu, 2002b). In fact, nearly everyone who writes about social presence seems to define it just a little differently. To complicate matters, related terms such as presence, copresence, and telepresence are used to describe similar things (and sometimes even the same thing) as social presence.

Presence is a key theoretical construct used in a variety of disciplines besides communication and online learning—most notably virtual reality (see Biocca, 1997). In fact, Lombard and Ditton (1997) identified six interrelated (and cross-disciplinary) but distinct ways people understand “presence”: (a) presence as social richness, (b) presence as realism, (c) presence as transportation, (d) presence as immersion, (e) presence as social actor within medium, and (f) presence as medium as social actor. They even attempted to create one *all* encompassing definition of presence. According to Lombard and Ditto, the following definition takes into consideration all six ways presence is

understood; presence is “the perceptual illusion of nonmediation” (presence explicated section). To date, though, Lombard and Ditto’s all encompassing definition has not received wide spread adoption—especially by researchers of online learning. Lombard and Ditton, though, were not alone; Biocca, Harms, and Burgoon (2003) also recognized the different ways researchers across different fields defined presence. They also created an all-encompassing definition of social presence; they defined social presence as simply the “sense of being with another” (p. 456) whether that other is human or artificial.

Despite attempts by Lombard and Ditto (1997) and Biocca et al. (2003) to develop some conceptual clarity about presence in general or social presence in particular, researchers of social presence and CMC in educational environments continue to redefine and categorize social presence (Picciano, 2002). For Gunawardena (1995), social presence was “the degree to which a person is perceived as a ‘real person’ in mediated communication” (p. 151). Garrison et al. (2000), on the other hand, defined social presence “as the ability of participants in a community of inquiry to project themselves socially and emotionally, as ‘real’ people (i.e., their full personality), through the medium of communication being used” (p. 94). Tu and McIsaac (2002) defined social presence as “the degree of feeling, perception, and reaction of being connected by CMC to another intellectual entity through a text-based encounter” (p. 140). Finally, for Picciano (2002), social presence in an online course “refers to a student’s sense of being in and belonging in a course and the ability to interact with other students and an instructor” (p. 22).

Definitions of social presence, at least for researchers of social presence and online learning, tend to fall on a continuum. At one end of the continuum, researchers tend to conceptualize social presence as the degree to which a person is perceived as being “real” and being “there.” These definitions tend to focus on whether someone is able to project him or herself as being “real” in an online environment and whether others perceived this person as being there and being real. In fact,

Williams (1978a) defined social presence in this way when he defined social presence as “the feeling of contact obtained...” across various communication media (p. 127). At the other end of the continuum, researchers tend to go beyond whether someone is perceived as being “present”—that is, simply “there” or “real”—but focus on whether there is an interpersonal emotional connection between communicators. It is important to note, though, that on this end of the continuum, there tends to be an assumption that the interpersonal and emotional connection that communicators establish when there is social presence is a positive connection (Wise, Chang, Duffy, & Del Valle, 2004). Finally, like most continuums, the majority of researchers find themselves somewhere in the middle—placing a little bit of emphasis on an emotional connection—rather than on the ends of the continuums.

Operationalizing and Measuring Social Presence

The differences in how researchers define social presence might seem minor but they end up having significant consequences on how people conceptualize social presence. For instance, Garrison et al. focused on students (or instructors) ability to project themselves as “real” whereas Picciano focused more on student’s sense of belonging to a community. Issues of definition are important because the way researchers define social presence influences how they measure social presence and the conclusions they draw.

After all the theorizing, researchers need to be able to identify, measure, and test their theories about social presence. As researchers of CMC and online learning began to reconceptualize social presence, rather than use the techniques developed and utilized by past researchers—perhaps in part because of Walther’s critique of these techniques—they began to look for new ways to study social presence. Gunawardena and Zittle (1997), Rourke et al. (2001), and Tu (2002b) have each been very influential in developing ways to study social presence. But just like in the mid-1970s—when

researchers either studied social presence by observing user behavior or examining users attitudes (Christie, 1974)—researchers in this third wave of social presence research have tended to either focus on user’s attitudes or behaviors online. For instance, Gunawardena and Zittle as well as Tu focused primarily on studying user’s attitudes whereas Rourke et al. focused on studying user’s behaviors. Regardless of their focus, these researchers have heavily influenced most of the studies on social presence and CMC. Therefore, in the following paragraphs, I briefly summarize how each of these researchers studied social presence.

Social Presence Scale. Gunawardena (1995; Gunawardena & Zittle, 1997) conducted some of the earliest studies on social presence and CMC in an education setting. In her first article, Gunawardena (1995) had student’s rank 17 bi-polar scales on a 5-point likert-type scale (from negative to positive). For instance, she asked students whether CMC was more socialable or unsocialable or more warm or cold. The bi-polar scales she used appear to focus on user’s perceptions of the medium more than the degree to which others are perceived as “real” or “there.” In a later more influential article, Gunawardena and Zittle (1997) reported on additional data collected with an instrument called the Social Presence Scale. The Social Presence Scale was similar to the previous scale used by Gunawardena, but instead of responding to bi-polar scales (which were similar to the semantic differential technique used by Short et al.), students were asked to rank 14 questions on a scale of 1 to 5. For instance, one question asked students to rank, on a scale of 1 to 5, to what degree they agree or disagree that, CMC is an excellent medium for social interaction. The Social Presence Scale was tested for internal consistency (Alpha = .88); Gunawardena and Zittle concluded that it investigated the construct of social presence more directly than the previous scale.

Social Presence Indicators. Unlike Gunawardena and Zittle who measured social presence through a self-report questionnaire, Rourke et al. (2001) sought to measure social presence through

analyzing online discussions. Rourke et al. identified three different categories of social presence: affective responses, interactive responses, and cohesive responses. They then developed twelve indicators that researchers could use to analyze transcripts of CMC (primarily through content analysis). For instance, the indicators of affective responses are the expression of emotions, use of humor, and self-disclosure. Rourke et al. developed these categories and indicators based on their previous work (Garrison, Anderson, & Archer, 2000; Rourke, Anderson, Garrison, & Archer, 2001), other literature in the field, and finally their experience reading online transcripts.

Rourke et al. tested and measured the “efficacy and reliability” of their categories and indicators by using them with participants in two graduate education online courses. Other than latent variables (e.g., expression of emotion and use of humor), they had high interrater reliability. However, Rourke et al. cautioned readers about generalizing their results because their main purpose was to “develop and test the efficacy of a tool for analyzing the social presence component of educational computer conferences” (Discussion section) rather than to draw conclusions specifically about the samples in question. They also acknowledged that they were still unclear whether all 12 indicators should be weighted equally—which later researchers have questioned (Hughes, Ventura, and Dando (2007)—as well as whether or not there is an optimal level of social presence. In fact, Garrison mentioned in a round table presentation at the 2008 annual meeting of the American Educational Research Association (AERA) that these indicators might need to be revisited to ensure that they do not need to be revised (Arbaugh, et al., 2008).

Social Presence and Privacy Questionnaire. Tu (2002b) criticized early research on social presence that used the same semantic differential technique as Short et al. (1976) (e.g., Gunawardena, 1995). Tu argued that this technique is not an adequate measure one’s perception of social presence when it comes to CMC. He also argued that the Social Presence Scale developed by Gunawardena

and Zittle (1997) failed to take into consideration different variables cited in the research (e.g., recipients, topics, privacy, task, social relationships, communication styles). As a result, Tu (2002b) developed The Social Presence and Privacy Questionnaire (SPPQ).² Tu developed the SPQQ by using parts of Steinfield's (1986, as cited in Tu, 2002b) CMC attitude instrument and Witmer's (1997, as cited in Tu, 2002b) perceived privacy instrument.

Tu tested the content validity and the construct validity of his instrument. Five factors emerged from the factor analysis: social context, online communication, interactivity, system privacy, and feelings of privacy; these five factors accounted for 82.33% of the variance with Cronbach's alpha values ranging from .74 to .85. While Tu acknowledged that online privacy had a weak correlation and therefore might not need to be included as a dimension of social presence, he continued to use online privacy as a dimension of social presence in later studies (Tu & Corry, 2004; Tu & McIsaac, 2002). Despite the strengths of his survey, Tu and McIsaac (2002) later determined as the result of a mixed method study, using the SPPQ and a dramaturgy participant observation qualitative approach, that there are "more variables that contribute to social presence" than previously thought. Therefore, Tu and McIsaac concluded that social presence was more complicated than past research suggested. Specifically, they found that the social context played a larger role than previously thought.

These three examples are evidence that there is still little agreement on how to measure social presence (Lin, 2004; Stein & Wanstreet, 2003). Just as Tu criticizes how Gunawardena measured social presence, others have criticized and modified Tu's work (Henninger & Viswanathan, 2004). Also, while social presence has been presented as a perceptual construct, Hostetter and Busch (2006) point out that relying solely on questionnaires (i.e., self-report data) can cause problems because "respondents may be providing socially desirable answers" (p. 9). Further, Kramer, Oh, and Fussell

² In a different article, Tu (2002a) refers to the SPPQ as the CMC Questionnaire; however, he tends to refer to it more often as the SPPQ and therefore SPPQ will be used to refer to this instrument.

(2006) point out that self-report data “are retroactive and insensitive to changes in presence over the course of an interaction [or semester]” (p. 1). But at the same time, even the scale created by Rourke et al. (2001a) has been modified by Swan (2003) and later by Hughes, Ventura, and Dando (2007); moreover, Hughes et al. also questioned the usefulness of “reducing social presence to an overall number” (p. 27) as Rourke et al. did.

Researchers need “a multifaceted presence instrument, one that examines presence more than single items and addresses the construct more by evaluating specific behaviors rather than a global effect” (Russo & Benson, 2005, p. 60). However, it is likely that any multifaceted instrument would be influenced by the work of Gunawardena and Zittle (1997), Rouret et al. (2001), and/or Tu (2002b) because most researchers continue to use (or adapt) the instruments created by these researchers. Therefore, any study of social presence should at least acknowledge how its methodology has been influenced by these early pioneers.

Future Trends

Despite failing to meet initial estimates of growth (Shank & Sitze, 2004), enrollments in online courses and programs continue to grow dramatically each year (Allen & Seaman, 2006; Tallent-Runnels et al., 2006). This growth, coupled with the people’s concerns with the Internet, will nearly ensure that researchers, policy makers, and practitioners will continue to debate the sociability of the Internet and the role that online learning should play in our future. The third wave of research on social presence will likely give birth to a fourth wave of research on social presence. During the fourth wave, it is likely that researchers will begin to employ multiple and mixed method approaches (e.g., like the work of Swan and Shih, 2005) of studying social presence that focus on, among other things, the socially situated and contextual nature of social presence. Further, researchers and practitioners alike will have to consider a new host of things related to social presence with the

continued blurring of boundaries between classroom and fully online courses as well as between course bound communication tools (e.g., discussion forums) and non-course bound tools (e.g., Facebook and Twitter).

Conclusion

Despite initial concerns about the sociability of the Internet, researchers of social presence and CMC have demonstrated that indeed online learners can project themselves online and be perceived as being there and being real. However, given the history and evolution of social presence theory, coupled with the multitude of ways that researchers define and operationalize social presence, researchers as well as practitioners must begin to question what we know and do not know about social presence. Regardless of one's perspective, one thing is clear, researchers need to continue to study social presence using multiple and mixed methods as well as how it manifests and changes in different contexts.

References

- Allen, I. E., & Seaman, J. (2006). *Making the grade: Online education in the United States, 2006*. Needham, MA: Sloan-C.
- Arbaugh, J. B., Cleveland-Innes, M., Diaz, S. R., Garrison, G. R., Philip, I., Richardson, J. C., Shea, P., & Swan, K. P. (2008). The community of inquiry framework: Development, validation, and directions for further research. Paper presented at the annual meeting of the American Education Research Association, New York, NY.
- Argyle, M., & Cook, M. (1976). *Gaze and mutual gaze*. London: Cambridge University.
- Argyle, M., & Dean, J. (1965). Eye contact, distance and affiliation. *Sociometry*, 28, 289-304.
- Baym, N. K., Zhang, Y. B., & Lin, M-C. (2004). Social interaction across media: Interpersonal communication on the Internet, telephone, and face-to-face. *New Media & Society*, 6(3), doi:10.1177/1461444804041438
- Benbunan-Fich, R., Hiltz, S. R., & Harasim, L. (2005). The online interaction learning model: An integrated theoretical framework for learning networks. In S. R. Hiltz & R. Goldman (Eds.), *Learning together online: Research on asynchronous learning networks* (pp. 19-37). Mahwah, NJ: Lawrence Erlbaum Associates.
- Berge, Z., & Collins, M. (1995). *Computer-mediated communication and the online classroom: Overview and perspectives* (Vol. 1). Cresskill, NJ: Hampton Press.
- Biocca, F. (1997). The cyborg's dilemma: Progressive embodiment in virtual environments. *Journal of Computer-Mediated Communication*, 3(2). Retrieved from <http://www.ascusc.org/jcmc/vol3/issue2/biocca2.html>
- 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(5), 456-480.

- Brown, J. S., & Duguid, P. (2002). *The social life of information*. Boston: Harvard Business Press.
- Christie, B., & Holloway, S. (1975). Factors affecting the use of telecommunications by management. *Journal of Occupational Psychology*, 48, 3-9.
- Christie, B., & Kingan, S. (1977). Electronic alternatives to the business meeting: Managers' choices. *Journal of Occupational Psychology*, 50, 265-273.
- Daft, R. L., & Lengel, R. H. (1984). Information richness: A new approach to managerial behavior and organizational design. In L. L. Cummings & B. M. Staw (Eds.), *Research in organizational behavior* (191-233). Homewood, IL: JAI Press.
- Daft, R. L., & Lengel, R. H. (1986). Organizational information requirements, media richness and structural design. *Management Science*, 32(5), 554-571.
- Daft, R. L., Lengel, R. H., & Trevino, L. K. (1987). Message equivocality, media selection, and manager performance: Implications for information systems. *MIS Quarterly*, 11(3), 355-366.
- Danchak, M. M., Walther, J. B., & Swan, K. P. (2001, November). *Presence in mediated instruction: Bandwidth, behavior, and expectancy violations*. Paper presented at the annual meeting of Asynchronous Learning Networks, Orlando, FL.
- Garrison, D. R., Anderson, T., & Archer, W. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The Internet and Higher Education*, 2(2-3), 87-105.
- Gee, J. P. (1996). *Social linguistics and literacies: Ideology in discourses* (2nd ed.). New York:RoutledgeFalmer.
- Grubb, A., & Hines, M. (2000). Tearing down barriers and building communities: Pedagogical strategies for the web-based environment. In R. A. Cole (Ed.), *Issues in Web-based pedagogy: A critical primer* (pp. 365-380). Westport, CT: Greenwood Press.

- Gunawardena, C. N. (1995). Social presence theory and implications for interaction and collaborative learning in computer conferences. *International Journal of Educational Telecommunications*, 1(2/3), 147-166.
- Gunawardena, C. N., & Zittle, F. J. (1997). Social presence as a predictor of satisfaction within a computer-mediated conferencing environment. *The American Journal of Distance Education*, 11(3), 8-26.
- Henninger, M., & Viswanathan, V. (2004). Social presence in online tutoring: What we know and what we should know. In P. Gerjets, P. A. Kirschner, J. Elen, & R. Joiner (Eds.), *Proceedings of the first joint meeting of the EARLI SIGs Instructional Design and Learning and Instruction with Computers (CD-ROM)*. Tuebingen: Knowledge Media Research Center.
- Herring, S. C. (2007). A faceted classification scheme for computer-mediated discourse. *Language@Internet*, 4(1). Retrieved from http://www.languageatinternet.de/articles/2007/761/Faceted_Classification_Scheme_for_CMD.pdf
- Hiltz, S. R., & Turoff, M. (1993). *The network nation*. Cambridge, MA: MIT Press.
- Hostetter, C., & Busch, M. (2006). Measuring up online: The relationship between social presence and student learning satisfaction. *Journal of Scholarship of Teaching and Learning*, 6(2), 1-12.
- Hughes, M., Ventura, S., & Dando, M. (2007). Assessing social presence in online discussion groups: A replication study. *Innovations in Education and Teaching International*, 44(1), 17-29.
- Johansen, R. (1977). Social evaluations of teleconferencing. *Telecommunications Policy*, 1(5), 395-419.
- Kiesler, S. (1986). The hidden messages in computer networks. *Harvard Business Review*, 64(3), 46-54, 58-60.
- Kiesler, S., Siegel, J., McGuire, T. W. (1984). Social psychological aspects of computer-

- mediated communication. *American Psychologist*, 39(10), 1123-1134.
- Kemp, N. J., & Rutter, D. R. (1986). Social interaction in blind people: An experimental analysis. *Human Relations*, 39(3), 195-210.
- Kramer, A. D. I., Oh, L. M., & Fussell, S. R. (2006). Using linguistic features to measure presence in computer-mediated communication. In *Proceedings of the SIGCHI conference on Human Factors in Computing Systems* (pp. 913-916). New York: ACM Press.
- Kraut, R., Patterson, M., Lundmark, V., Kiesler, S., Mukopadhyay, T., & Scherlis, W. (1998). Internet paradox: A social technology that reduces social involvement and psychological well-being? *American Psychologist*, 53(9), 1017-1031.
- Laffey, L., Lin, G. Y., & Lin, Y. (2006). Assessing social ability in online learning environments. *Journal of Interactive Learning Research*, 17(2), 163-177.
- Lin, G.-Y. (2004, October). *Social presence questionnaire of online collaborative learning: Development and validity*. Paper presented at the annual meeting of the Association for Educational Communications and Technology, Chicago, IL.
- Lombard, M., & Ditton, T. (1997). At the heart of it all: The concept of presence. *Journal of Computer-Mediated Communication*, 3(2). Retrieved from <http://jcmc.indiana.edu/vol3/issue2/lombard.html>
- Madden, M. (2006, April). Internet penetration and impact. Retrieved from Pew Internet & American Life Project: http://www.pewInternet.org/pdfs/PIP_Internet_Impact.pdf
- Madden, M., & Lenhart, A. (2006, March). Online dating. Retrieved from Pew Internet & American Life Project: http://www.pewInternet.org/pdfs/PIP_Online_Dating.pdf
- Morahan-Martin, J., & Schumacher, P. (2003). Loneliness and social uses of the Internet. *Computers in Human Behavior*, 19(6), 659-671.

- Nie, N. H. (2001). Sociability, interpersonal relations, and the Internet: Reconciling conflicting findings. *American Behavioral Scientists*, 45(3), 420-435.
- Nie, N. H., & Erbring, L. (2002). Internet and society: A preliminary report. *IT & Society*, 1(1), 275-283.
- Nie, N. H., Hillygus, D. S., & Erbring, L. (2002). Internet use, interpersonal relations and sociability: A time diary study. In B. Wellman & C. Haythornthwaite (Eds.), *The Internet in everyday life* (pp. 215-243). Malden, MA: Blackwell.
- Picciano, A. (2002). Beyond student perceptions: Issues of interaction, presence, and performance in an online course. *Journal of Asynchronous Learning Networks*, 6(1), 21-40.
- Pye, R., & Williams, E. (1978). Teleconferencing: Is video valuable or is audio adequate? *Telecommunications Policy*, 1(3), 230-241.
- Read, S. J., & Miller, L. C. (1995). Stories are fundamental to meaning and memory: For social creatures, could it be otherwise? In R. S. Wyer (Ed.), *Knowledge and memory: The real story* (pp. 139-152). Hillsday, NJ: Lawrence Erlbaum Associates.
- Rettie, R. (2003). *Connectedness, awareness, and social presence*. Paper presented at the 6th International Presence Workshop, Aalborg, Denmark.
- Richardson, J. C., & Swan, K. (2003). Examining social presence in online courses in relation to students' perceived learning and satisfaction. *Journal of Asynchronous Learning Networks*, 7(1), 68-88.
- Robinson, P. (2000). Where is every-body? In R. A. Cole (Ed.), *Issues in Web-based pedagogy: A critical primer* (pp. 111-123). Westport, CT: Greenwood Press.
- Rourke, L., Anderson, T., Garrison, D. R., & Archer, W. (2001). Assessing social presence in asynchronous text-based computer conferencing. *Journal of Distance Education*, 14.
Retrieved from http://cade.athabascau.ca/vol14.2/rourke_et_al.html

- Rovai, A. P. (2002). Building a sense of community at a distance. *International Review of Research in Open and Distance Learning*, 3(1). Retrieved from <http://www.irrodl.org/index.php/irrodl/article/view/79/153>
- Russo, T., & Benson, S. (2005). Learning with invisible others: Perceptions of online presence and their relationship to cognitive and affective learning. *Educational Technology & Society*, 8(1), 54-62.
- Rutter, D. R. (1984). *Looking and Seeing: The Role of Visual Communication in Social Interaction*. London: John Wiley.
- Rutter, D. R. (1987). *Communicating by Telephone*. Oxford: Pergamon Press.
- Rutter, D. R. (1989). The role of cluelessness in social interaction: An examination of teaching by telephone. In D. Roger & P. Bull (Eds.), *Conversation* (pp. 294-312). Philadelphia, PA: Multilingual Matters.
- Rutter, D. R., Pennington, D. C., Dewey, M. E., & Swain, J. (1984). Eye-contact as a chance product of individual looking: Implications for the intimacy model of argyle and dean. *Journal of Nonverbal Behavior*, 8(4), 250-258.
- Shank, P., & Sitze, A. (2004). *Making sense of online learning: A guide for beginners and the truly skeptical*. San Francisco: Pfeiffer.
- Shea, P. J., Fredericksen, E., Pickett, A., Pelz, W., & Swan, K. (2001). Measures of learning effectiveness in the SUNY learning network. In J. Bourne & J. C. Moore (Eds.) *Online education, volume 2: Learning effectiveness, faculty satisfaction, and cost effectiveness* (pp. 31-54). Needham, MA: SCOLE.
- Short, J. A. (1974). Effects of medium of communication on experimental negotiation. *Human Relations*, 27(3), 225-234.

- Short, J., Williams, E., & Christie, B. (1976). *The social psychology of telecommunications*. London: John Wiley & Sons.
- Stein, D. S., & Wanstreet, C. E. (2003). *Role of social presence, choice of online or face-to-face group format, and sat with perceived knowledge gained in a distance learning environment*. Paper presented at the Midwest Research to Practice Conference in Adult, Continuing, and Community Education, Columbus, OH.
- Swan, K. (2003). Developing social presence in online course discussions. In S. Naidu (Ed.), *Learning and teaching with technology: Principles and practices* (pp. 147-164). London: Kogan Page.
- Swan, K., & Shih, L. F. (2005). On the nature and development of social presence in online course discussions. *Journal of Asynchronous Learning Networks*, 9(3), 115-136.
- Tallent-Runnels, M. K., Thomas, J. A., Lan, W. Y., Cooper, S., Ahern, T. C., Shaw, S. M., et al. (2006). Teaching courses online: A review of the research. *Review of Educational Research*, 76(1), 93-135.
- Thurlow, C., Lengel, L., & Tomic, A. (2004). *Computer mediated communication: Social interaction and the Internet*. Thousand Oaks, CA: Sage.
- Tu, C.-H. (2000). On-line learning migration: From social learning theory to social presence theory in a CMC environment. *Journal of Network and Computer Applications*, 2, 27-37.
- Tu, C.-H. (2002a). The impacts of text-based CMC on online social presence. *The Journal of Interactive Online Learning*, 1(2). Retrieved from <http://www.ncolr.org/jiol/issues/PDF/1.2.6.pdf>
- Tu, C.-H. (2002b). The measurement of social presence in an online learning environment. *International Journal on E-Learning*, 1(2), 34-45.

- Tu, C.-H., & Corry, M. (2004). Online discussion durations impact online social presence. In C. Crawford. et al. (Ed.), *Proceedings of Society for Information Technology and Teacher Education International Conference 2004* (pp. 3073-3077). Chesapeake, VA: AACE.
- Tu, C.-H., & McIsaac, M. (2002). The relationship of social presence and interaction in online classes. *The American Journal of Distance Education, 16*(3), 131-150.
- van Dijk, J. A. G. M. (2006). *The network society: Social aspects of new media* (2nd ed.). Thousand Oaks, CA: Sage.
- Vrasidas, C., & Glass, G. V. (2002). A conceptual framework for studying distance education. In C. Vrasidas & G. V. Glass (Eds.), *Distance education and distributed learning* (pp. 31-55). Greenwich, CT: Information Age Publishing.
- Walther, J. B. (1992). Interpersonal effects in computer-mediated interaction: A relational perspective. *Communication Research, 19*, 52-90.
- Walther, J. B. (1994). Anticipated ongoing interaction versus channel effects on relational communication in computer-mediated interaction. *Human Communication Research, 20*, 473-501
- Walther, J. B. (1996). Computer-mediated communication: Impersonal, interpersonal, and hyperpersonal interaction. *Communication Research, 23*(1), 3-43.
- Walther, J. B., Anderson, J. F., & Park, D. W. (1994). Interpersonal effects in computer-mediated interaction: A meta-analysis of social and antisocial communication. *Communication Research, 21*(4), 460-487.
- Walther, J. B., & Parks, M. R. (2002). Cues filtered out, cues filtered in. In M. L. Knapp & J. A. Daly (Eds.), *Handbook of interpersonal communication* (pp. 529-563). Thousand Oaks, CA: Sage.
- Watson, H. (2006, April). Governor signs bill establishing rigorous high school curriculum. Retrieved from <http://www.michigan.gov/som/0,1607,7-192-29939-141369--,00.html>

- Williams, E. (1975). Medium or message: Communications medium as a determinant of interpersonal evaluation. *Sociometry*, 38(1), 119-130.
- Williams, E. (1977). Experimental comparisons of face-to-face and mediated communication: A review. *Psychological Bulletin*, 84(5), 963-976.
- Williams, E. (1978a). Teleconferencing: Social and psychological factors. *Journal of Communication*, 84, 125-131.
- Williams, E. (1978b). Visual interaction and speech patterns: An extension of previous results. *British Journal of Social and Clinical Psychology*, 17, 101-102.
- Wilson, C., & Williams, E. (1977). Watergate worlds: A naturalistic study of media and communication. *Communication Research*, 4(2), 169-178.
- Wise, A., Chang, J., Duffy, T., & Del Valle, R. (2004). The effects of teacher social presence on student satisfaction, engagement, and learning. *Journal of Educational Computing Research*, 31(3), 247-271.