



Some things are better left unseen: Toward more effective communication and team performance in video-mediated interactions



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ARTICLE INFO

Article history:

Received 20 December 2016

Received in revised form

2 March 2017

Accepted 18 March 2017

Available online 22 March 2017

Keywords:

Computer-mediated interaction

Virtual collaboration

Distributed teams

Video-mediated communication

ABSTRACT

By default, most video-mediated communication systems show the user his or her own video feed, yet there is no prior research to show if this helps or hinders communication. In general, virtual teams desire richer media to improve team interaction. However, in this case more information may not be helpful. Drawing on Objective Self Awareness theory in social psychology and theories of cognitive overload from communication, hypotheses are proposed concerning how viewing oneself influences virtual team interaction. It is argued that viewing oneself will lead to lower team performance and other negative outcomes. The hypotheses are tested in a laboratory experiment, manipulating whether participants were able to view their own feeds during video-mediated communication. The results suggest that viewing oneself leads to a reduction in team performance and individual satisfaction. The findings, in terms of several theoretical explanations, and implications for managers and systems designers are discussed in the paper.

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1. Introduction

One of the major changes over the last two decades in how work is conducted has been the growth of virtual teams. A recent survey found that 46% of organizations utilize virtual teams (Minton-Eversole, 2012), and the use of these teams is expected to grow (Dobson, 2011, p. 3). Given the growing importance of virtual teams, and the difficulties of group process within these teams (Lin, Standing, & Liu, 2008), it becomes critical to develop methods to improve how they operate. Video mediated communication (VMC) systems are increasingly utilized to improve group processes in virtual teams (Townsend, Demarie, & Hendrickson, 2001). Although these systems vastly enhance the experience of virtual teams, we want to investigate whether aspects of these systems may also have a negative impact on their effectiveness. This negative influence may come from seeing oneself while interacting with the team.

Because virtual teams have become a staple of organizational work, it is essential to ensure that these teams are as effective as possible. Research has shown that virtual teams are less effective, take more time to complete tasks, and have lower member satisfaction than face-to-face teams (Baltes, Dickson, Sherman, Bauer, & LaGanke, 2002). In terms of team process, virtual teams are seen as being deficient to face-to-face teams in regards to communication (Lin et al., 2008), relational links (group cohesion, satisfaction, etc.) (Beranek & Martz, 2005), conflict resolution (Bergiel, Bergiel, & Balsmeier, 2008) and trust (Lin et al., 2008). In general, two approaches have been taken in attempting to improve the performance of virtual teams. A number of authors have examined principles for better managing virtual teams (Hertel, Geister, & Konradt, 2005; Lurey & Raisinghani, 2001; Rice, Davidson, Dannenhoffer, & Gay, 2007). It is thought that by improving the group processes in these teams, not having face-to-face interaction can be ameliorated. The second approach has been improving technology in an attempt to move towards the natural state of face-to-face interaction. Current systems show high definition video and have very little noticeable latency (Enderle, 2016). Companies have also created systems that use multiple cameras and displays to more closely mimic the ways individuals look around or at a person

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who is speaking (Zhang, Rotkin, & Schulze, 2011). More recent efforts have focused on creating systems that allow participants to maintain eye-contact or for the monitor to show the natural line of sight of the participants. These efforts include the use of mirrors (“ProPrompter Desktop,” n.d.) or placing a camera in the line of sight of the screen (Fritsch & Sabety, 2014). Finally, the use of virtual reality, although still in development, has potential for approaching the feel of face-to-face interaction (Zhang et al., 2011).

Due to the growth of virtual teams, there has been considerable research on how these teams operate differently from face-to-face teams and how virtual teams can be made to be more effective. Virtual teams tend to focus more on task aspects, and place less attention on social-emotional aspects (Powell, Piccoli, & Ives, 2004). Because of this focus, and the lack of unplanned opportunities for interaction, relationships, group cohesion and trust are all less developed in virtual teams than traditional teams.

As online team tools have become more sophisticated and bandwidth has expanded, virtual teams are able to meet in a fashion that more closely resembles face-to-face interaction. In this way, virtual teams have been improved through technology. These new methods of computer-mediated teamwork have allowed team members to share information, and with video services, the ability to see each other while they are interacting. It is assumed that this ability to see each other will improve both the effectiveness of the team as well as team members' attitudes about the team experience. In fact, the use of video may mean that previous research on text-based virtual teams is no longer relevant or accurate.

There has been some research examining how video mediated communication (VMC) can improve a variety of virtual team processes. Olson, Appunn, McAllister, Walters, and Grinnell (2014) found that adding video to an existing virtual team increased trust and collaboration, however, there were wide variations across time and across individuals. In addition, other outcomes (institutional trust, reputation and stereotyping) were not affected. An opposite argument was made by Walther (1996), who argued that adding video eliminates the asynchronous advantage of virtual teams, and also eliminates the increased “democratizing effects of strategically impersonal CMC” (p. 32).

Several studies have compared VMC groups with face-to-face groups, typically focusing on group task outcomes. Credé and Sniezek (2003) found that VMC groups had less effective solutions, less confidence in their decisions and less enjoyment by group members. However, there were no differences between the two types of groups on other variables, such as commitment to the group decision or overconfidence.

An interesting byproduct of the ability to see others in a virtual team is the ability to view oneself during interaction. Popular software like Skype allows a team member to view his or her image as well as the images of the persons with which they are speaking. Is this ability to view oneself also an asset in team interactions? This is the central question of our study.

Why should we expect that viewing oneself may impact the process in a virtual team? There are two areas of theory that might predict this outcome, one, Objective Self-Awareness from social psychology, the other, Communication Overload, from communication studies.

2. Theoretical background

2.1. Objective self-awareness

In 1972, social psychologists Duval and Wicklund (1972) developed a theory of objective self-awareness. They argued that people vary across two states of conscious attention, either focusing on themselves (objective self-awareness) or focusing on their

environment (subject self-awareness). This state of awareness has implications for individual motivation and performance, self-evaluation and self-esteem, conformity and opinion change (Duval & Wicklund, 1972). We explore how objective self-awareness may influence the interactions of virtual teams.

Research on self-awareness has shown that when a person observes him/herself in a mirror or on a video monitor, this produces the state of objective self-awareness, where the individual is concentrating on him/herself as an object. Normally, people tend to be focused outward, on their environment, a state that Duval and Wicklund (1972) labeled subjective self-awareness. When objective self-awareness is triggered the individual recognizes gaps between his/her expectations and how he/she actually appears.

Research has demonstrated that objective self-awareness can impact performance in a fashion similar to that of test anxiety. Liebling and Shaver (1973) found that objective self-aware subjects demonstrated higher performance than subjective self-aware subjects on a task under non-evaluative conditions, but had lower performance when being evaluated. These authors argued that there was limited “cognitive space”, and that individuals could not direct attention towards both the evaluated task and objective self-awareness. In a non-evaluative context, Geller and Shaver (1976) found that performance on a perceptual conflict task (the Stroop color-word task) was also influenced by objective self-awareness. Again, the state of objective self-awareness appeared to add to the cognitive load of the subjects, reducing their performance on a task that required concentration.

Self-awareness has also been utilized to explain both pro- and anti-social behavior in computer-mediated communications. Yao and Flanagin (2006) conducted two studies where objective self-awareness was generated by the presence of a web cam and the participant's image in a small window on their monitor. Objective self-awareness influenced perceptions of their virtual partner's attractiveness, politeness, and social versus task orientation. However, it did not influence perceptions of intimacy or group identification.

Objective self-awareness has also been found to influence a number of other outcomes relevant to computer-mediated teamwork. Joinson (2001) found that self-disclosure in computer-mediated communication was higher when participants were objectively self-aware. Duval (1976) found that individuals in a state of objective self-awareness conformed more than subjective self-aware individuals. Macrae, Bodenhausen, and Milne (1998) found that objectively self-aware subjects were less likely to use stereotypes when describing other individuals in several studies. Finally, cross-cultural research by Heine, Takemoto, Moskalenko, Lasaleta, and Henrich (2008) demonstrated that manipulations to produce objective self-awareness (e.g. a mirror) had an impact on North American participants, but not on Japanese, a culture with strong concerns about how one is evaluated by others.

2.2. Communication Overload in virtual teams

Many of the theories that explain and predict the impacts of communication media on communication and performance focus on the amount or richness of information, cues, or symbols that are conveyed by the medium. The argument in these theories is that when communication media convey more information, individuals are better able to understand and decipher ambiguous or complex messages (Daft & Lengel, 1986; Short, Williams, & Christie, 1976).

In the context of virtual teams, videos of the other communicators provide high levels of information richness because of the visual and audio cues and symbols. However, nearly all of today's systems, such as elaborate video conferencing systems or Skype, also display a feed of one's own video to himself or herself. In one

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