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SIMS290 - Computer Mediated Communications
Project Proposal
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We are bad enough at communicating – we don't need the help of technology. But that's that's precisely what video conferencing systems seem to help us do! In a world where the people we work with may be across the country or around the world, we are ever vigilant in finding tools that help us communicate better and we often employ a myriad of technologies to do so. Many of these technologies have been considered a smashing success – electronic mail, instant messaging, cell phone and land line phones. However, video conferencing systems promising to replace face-to-face meetings, has failed to win the space place in our hearts as these other ubiquitous technologies. Is it all that difficult to see why? Studies have shown that these systems help us by making it harder to trust our teammates, more difficult persuade our collaborators, and increases willingness to deceive our friends. That's just to name a few. A system, called MultiView [5] has been proposed which claims to help alleviate some of these issues. As a project, I wish to measure the effect of MultiView on certain aspects of communication, probably persuasion.

In the 80's, we were promised that video conferencing systems would be everywhere, allowing us to communicate with people around the world just as if they were in the same room. What happened? Donath suggests that adding a visual channel increases what we expect from our rendesvous. Email, IM, and telephone appear to offer nothing more than they actually do offer. The expressiveness and its limitations are easy to understand by both the sender and receiver, thus we are better to control our presentation of self [4]. Video conferencing systems, however, are a different story. When we add a visual channel, we expect the images of the people to behave in certain ways [2]. "If I decide to use [...] an avatar with legs, then sliding it across the screen seems awkward. [...] The legs make me

want to have it walk." [2]. This is certainly reasonable, but video conferencing systems introduce all sorts of strange spatial distortions. These spatial distortions adversely effects our nonverbal cues creating strange gaze and gesture behaviors from the remote participants. The ability to make eye contact is the most common non-technical complaint in using video conferencing systems. Only two people have been documented to overcome these issues [3]. In group-to-group situations (that is, when there is more than one participant at any given site), the problem is even worse because it's impossible to tell who's looking at who.

Many aspects of communication have been shown to be affected by video conferencing. Bos et al., in a prisoner's dilemma style investment game, has shown us that there are reduced overall levels of trust in addition to trust developing at slower levels and trust being less resilient in the face of temptation. In fact, those that worked using video conferencing did no better than teams working with only a telephone conference [1]. Werkhoven et al., in the Crash Landing On the Moon Task, has shown us that using video conferencing systems reduces our ability to persuade our teammates [6]. All the cited research has been done with one-to-one or one-to-many teams. There has been little precedence for research on group-to-group interactions on the affects of video conferencing or development of systems that support it. This absence is troubling given that most video conferencing systems bought today are for business, group-to-group settings.

In order to help alleviate this problem, a system has been designed for group-to-group meetings called MultiView [5]. The design of MultiView hypothesizes that we can improve the aspects of communication affected by video conferencing if we repair for the spatial distortions introduced into the video conferencing communication channel. The source of spatial distortions comes from the fact that most systems use a single video camera which defines which all remote participants view through. This video camera may not line up with the image that represents them. So not only is the perspective *shared*, it is also *incorrect*. MultiView fixes this by using multiple cameras capturing *unique* and *correct*

perspectives for each remote participant. A multiple viewpoint display allows us to show each remote participant their video stream (and only thier's) while the person next to them sees a completely different, but appropriate, video stream.

For this project, I would like to develop the next experiment to run on MultiView which will measure a different aspect of communication. We are currently looking at persuasion and using a Crash Landing On the Moon Task as used by Werkhoven et al [6]. The project will be developing this experiment and hopefully begin to run it. I don't anticipate finishing the experiment by the end of class, but can report on current progress.

References

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