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# Media Synchronicity and Stress in Online Interview Settings

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## ABSTRACT

New communication tools allow organizations to take advantage of global talent and minimize location-specific risks; however, they also present new challenges. One such challenge is that the communication tools individuals are using are often not a good fit with their tasks. Unfortunately, stress is one of the negative outcomes from poorly fit communication tools. We ran two experiments to better understand stress in new online interview settings. We first found that computer-based interviewers were more stressed than interviewees. Further, interviewers that were FTF experienced less stress than did interviewers in computer-mediated interview teams. In the second experiment, we looked at the influences of interview structure and two different types of low synchronicity media on stress. Initial findings showed that interviewers performing structured and unstructured tasks had a similar amount of stress, however interviewers using email were more stressed than were interviewers using instant messaging.

## Keywords

Computer-Mediated Communication, Instant Messaging, Online Interviewing, Media Synchronicity, Stress

## INTRODUCTION

In today's dynamic global business environment, individuals often work together in dispersed computer-mediated communication settings. These settings allow organizations to take advantage of global talent and minimize location-specific risks; however, they also present new challenges to organizations. One such challenge is that the communication tools individuals are using are often not a good fit with the tasks they are performing in these settings.

One of the negative outcomes from poorly fit communication media is stress. Employee stress is dangerous to organizations, because it is difficult to detect early, it can negatively influence employee performance over time, and it has bottom line implications for organizations (Dana & Griffin, 1999). Unfortunately,

little research has looked at the stress that individuals experience in new online work settings, and so we have little understanding of where it may be likely to occur. In this study, we use two experiments to better understand stress in a setting where it may be likely to occur, an online interview setting. Our goal is to understand if individuals performing interviews with low synchronicity media experience stress, and if stress is more problematic in less structured task settings and when individuals are using lower synchronicity media.

In our experiments, we first focus on a situation where an online interview might be likely to occur - a dispersed team interview setting, and we look at a moderately low synchronicity communication system. Our second experiment is designed to look at when stress may be particularly problematic, and we look at the influences of interview structure and two different types of low synchronicity media on stress.

## INTERVIEWS, COMPUTER-BASED COMMUNICATION, AND STRESS

Organizational interviews are information-exchange and information-understanding based activities. During an interview, an interviewer (or interviewers) typically inquires into interviewees' knowledge, skills, abilities, motivations, values, and reliability, with the goal of selecting a competent individual for a specific task, position, or award (Eder & Harris, 1999).

Organizations are relying more and more on technology to aid the recruitment and interview process (Silvester & Anderson, 2003), due to the needs to reduce costs and increase (and diversify) applicant pools (Chapman & Rowe, 2001, Kroeck & Magnussen, 1997). Numerous online interviewing sites have emerged, and many of them support multiple types of computer-based interviewing.

Although these sites offer organizations interesting new interviewing capabilities that can potential increase the efficiency of hiring processes, they also have significant drawbacks for organizations, since communication processes are not the same in online settings (particularly

text-based communication settings) as they are in face-to-face settings. Media Synchronicity Theory (MST) (Dennis et al. 2008) provides an explanation of why communication is different in these new settings. MST outlines how media differ in their ability to support transmission velocity, feedback, symbol sets, tailorability, reprocessability, and rehearsability. All things being equal, the authors propose that media high in synchronicity are those with higher velocity, lower parallelism, more natural symbol sets, lower rehearsability, and lower reprocessability. The level of media synchronicity then affects how well media support different types of group processes.

The two fundamental group processes that media support are conveyance and convergence. Conveyance activities involve the sharing and transmission of information, and convergence activities involve processing information and building shared understanding between individuals. Media with high synchronicity, such as face-to-face speech, are better for convergence activities, because in these activities there is need for fast, interactive, and rich communication in order for individuals to interpret information and come to a common understanding. Media with low synchronicity, such as email, are better at supporting conveyance (or information sharing) activities (Dennis et al. 2008). Unfortunately, in many new work settings, communication tools are not used in a way optimal way. For example, low-synchronicity media are often used in situations where collaborative individuals need to gain a common understanding, such as online negotiations.

Some of the implications of using the wrong communication tool for a task are clear, such as poor task performance. If individuals are not adequately performing their task (such as hiring appropriate individuals, in the case of interviewing), they will likely change the task or the media used, if possible (Fuller and Dennis, 2009). However, there are other negative outcomes from using incorrect media that often linger on in organizations.

One of the potential “hidden” outcomes of computer-mediated work is stress. At a basic level, stress can be defined as “when perceived pressure exceeds perceived ability to cope” (Palmer et al., 2003). Much of the stress that individuals experience comes from their workplace (DeFrank & Cooper, 1987), and workplace stress often comes from collaborative settings, due to the pressure that can come from having collaborators and the time constraints that are often present in these settings (Scott et al., 1997).

Stress has always been a problem in workplaces, however, individuals in new lower-synchronicity computer-mediated work settings may be more likely to experience stress while performing their tasks. Researchers have already found that time-constrained computer-mediated settings can lead to difficulties with getting to know collaborators (Walther, 1996; Wallace, 1999) and a lack of timely or adequate feedback, which

can lead to confusion and anxiety (Gunawardena et al., 2001, Feenberg, 1987). In negotiation settings, researchers have found that when individuals do not have visual and audio access to others, they have lower levels of cooperation (Wichman, 1970), and that their bargaining effectiveness suffers (Rubin & Brown, 1975), which highlights the difficulties that individuals face when trying to carry out convergence-based activities over low-synchronicity media.

These difficulties likely lead individuals to feel that they have less control of their situation and less ability to perform their task, which will lead to stress (Karasek, 1979). Unfortunately, little research has been conducted about stress in online work settings, and so little is known about which settings can be particularly problematic.

## STUDY 1

We conducted an initial study to better understand the potential problem of stress in online interview settings. We decided to look at team (or panel) interview settings, which are often used by organizations because of their potential to correct the biases of individual interviewers (Dipboye et al., 2001). We looked at panel interviews since these are settings where convergence activities are a core part of the interview process (and therefore stress may be a problem). Further, panel interviews are situations where a computer-based interview may be appropriate, since panel members will often be based in different locations. As organizations become increasingly geographically dispersed, these teams (as are other types of collaborative teams) are more likely to be dispersed.

Interviewers in a panel setting need to collaboratively plan their questions, coordinate their follow-ups during the interview, and share their collective feelings about the interviewer at the conclusion of the interview. These are activities that require interviewers to come to a common understanding to be most effective, and so they are not optimally supported in a low synchronicity communication setting, such as a text-based online interviewing site. Text-based communication limits individuals’ ability to quickly exchange messages and it thins the richness of understanding between individuals, since many behavioral cues are filtered (Giordano et al., 2007).

If they are not properly supported, dispersed interviewers will have trouble efficiently communicating with each other (particularly in a time-constrained setting), and they will be less likely to work in a collaborative way. Further, they will likely feel that they have less control over the setting, since they cannot control the conversation and flow of the interview as well as they can in a high-synchronicity setting. These tendencies will lead interviewers to feel less confident about their ability to perform their task and experience higher levels of stress.

If a computer-based interview team is co-located and can talk to each other face-to-face, a greater portion of their

conveyance activities will be supported, and they should have lower stress. Further, while they will likely be frustrated, interviewees should not be as frustrated with a computer-based interview setting as interviewers, since their task is more based on information sharing and less on reaching a common understanding with interviewers. We therefore hypothesize that:

*Interviewers in computer-mediated interviewer teams will experience more stress than will interviews in face-to-face interviewer team (H1).*

*Interviewees interviewing with computer-mediated interviewer teams will experience more stress than will interviewees interviewing with face-to-face interviewer teams (H2).*

*Interviewers will experience more stress than will interviewees in computer-mediated interviews (H3).*

A laboratory experiment was conducted to test these hypotheses. Participants were upper-level students in undergraduate business classes at a large US university. Participation was part of their class, and participants were told that they were participating in a new scholarship development activity. Participants were randomly assigned to an interview group. Two of the participants in each group were randomly selected to be interviewers and another individual was selected to be an interviewee. Each interviewee was told that they would be interviewed for a business scholarship as part of a new scholarship development process, and that they would be questioned for up to ten minutes about their resume. They were also told that they should defend their qualifications the best they could for the new “top” scholarship.

The other two participants assigned to the group were the interviewers. They were told that they would be working together to interview an individual for the new business scholarship. Specifically, they were told that the individuals being interviewed were already selected as finalists for a general College of Business scholarship, and that their interview would help the selection process. They were given a copy of the resume and told that they would have ten minutes to question the interviewee about anything on their resume to help determine if they should be given a business scholarship. They were further told that they would conduct the interview as a team, and that they needed work together to try and ask the best questions about the interviewees. The interview task was adapted from the task used in a study that also investigated computer-based interviewing (George et al., 2008).

The interviews took place in two different communication settings. Half the interview teams had interviewers that were face-to-face but were separated from the interviewees, and the other half had interview team members that were separated from each other in addition to the interviewees. In each of these two manipulations, separated parties were only able to communicate using an instant messaging program on a computer. If participants

were familiar with any of their group members, they were reassigned to a group with members they were not familiar with. After the experiment, participants filled out questionnaires using validated instruments to measure their perceived stress.

Stress was measured by a scale from the Stress Response Inventory ( $\alpha = .97$ ) that was used in a previous study that looked at computer-based negotiations (Giordano et al., 2007) and that was originally validated in a stress-focused study (Koh, Park, Kim, & Cho, 2001). The scale had been adapted in the previous study to reflect the tension elements of stress, which are related to internal discomfort and are easily identifiable by participants that are experiencing stress.

We tested 12 groups in each condition, for a total of 24 groups and 72 participants. We looked at the stress level of interviewers at the group level, and so we averaged the stress scores of the two interviewers for each interview. ANOVA analyses were used to test our hypotheses. There was a significant difference in stress experienced by interviewers and interviewees ( $F(1,46) = 210.42, p < .031$ ), and in stress experienced by interviewers in the two settings ( $F(1,22) = 231.26, p < .023$ ). However, there was not a significant difference in the stress experienced by interviewees in the two interviewer communication settings ( $F(1,22) = 0.164, p > .34$ ).

The interviewer teams that were separated experienced more stress (mean stress score, 24.83) than did the teams that were together (7.43), supporting our first hypothesis. Interviewees were not influenced by the communication differences of the interviewers in the different settings, and they did not experience different level of stress in the different interview settings (their level of stress was 16.92 when they were face-to-face, and it was 18.17 when they were dispersed), so our second hypothesis was not supported. Interviewers did experience more tension (21.73) than did interviewees (17.54), and so our third hypothesis was supported.

## STUDY 2

After confirming that computer-based interviewing settings can lead to stress, we decided to look at two additional factors that influence the cognitive workload and pressure that interviewers face, the type of computer-based communication used for an interview, and the structure of the interviewing task.

In structured interviews, interviewers ask a set of predetermined questions to interviewees. The predetermined rules that are a core part of structured interviewing have been suggested to relieve part of the cognitive burden from interviewers (Motowidlo et al., 1992). Also, interviewers doing structured interviews have been found to be better able to assess an applicants' fit within an organization better than interviewers doing unstructured interviews (McDaniel et al., 1994), which implies that individuals doing structured interviews are

better able to manage the demands of an interview situation that are individuals doing unstructured interviews. The benefits of a structured interview should be particularly clear in a low-synchronicity setting, where interviewee responses are difficult for interviewers to quickly and fully understand. Interviewers are likely to spend a significant amount of their cognitive energy on interpreting the few behavioral cues that they receive in these settings (Daft and Lengel, 1986). Having a good understanding of responses is important in unstructured interviews, where interviewers constantly have to develop questions for the interview.

We also looked at instant messaging and e-mail communication in this study, to better understand how different lower synchronicity communication systems relate to stress. E-mail offers the advantage of letting users review messages before they are sent; however, it is much harder to follow-up on interviewee responses due to the low transmission speed. Also, fewer behavioral cues are transmitted over email than over instant messaging, making the task of understanding the meaning of interviewee messages very difficult over email. We therefore hypothesize that:

*Interviewers conducted structured interviews will experience less stress than will interviewers conducting unstructured interviews (H1).*

*Interviewers using instant messaging will experience less stress than will interviewers using email (H2).*

The experimental procedure for the second study was similar to the first, however a single interviewer interviewed each interviewee. Each interviewer conducted a structured or an unstructured interview using e-mail or instant messaging communication. The interviewers conducting the structured interviews were given a paper that told them exactly what to do in the interview. The procedure consisted of seven questions that asked about past work experiences, achievements, and challenges (however, interviewers were allowed to ask their own follow-up questions). The interviewers conducting the unstructured interviews were simply told that the interview should be about the interviewee's resume, and that it was their job to determine the questions and the style of the interview. As with the first study, after the experiment participants filled out questionnaires asking them about their perceived stress during the interview.

We tested 20 interviewers for each condition, for a total of 80 interviews, and 160 participants. There were no repeat participants from the first study. We conducted an ANOVA to test our hypotheses in the second experiment. There was a significant difference in stress between the two communication media ( $F(1,36) = 525.62, p < .018$ ). However, there was not a significant difference in stress between the interview structures ( $F(1,36) = 225.62, p > .074$ ). Since there was no difference between the perceived stress of interviewers in structured (18.55) and unstructured interviewers (23.30), our first hypothesis was

not supported. However, we did find support for our second hypothesis, since interviewers using instant messaging experience less stress (17.30) than did interviewers using e-mail (24.55) to communicate with interviewees.

## DISCUSSION

The initial findings from these experiments confirmed that use of low-synchronicity media can lead to stress in new work settings. Low synchronicity media limit the transmission of important cues from communication partners, and this hinders individuals from understanding the full meaning of the messages they are receiving (Dennis et al. 2009). This limitation influences individuals' perceptions of their ability to perform their tasks effectively, making them feel more task related pressure and experience more stress. We also found that interviewers in teams were more stressed when they were separated and using computer-based communication to coordinate their activities than when they were face-to-face. And as expected, we found that interviewers using very low synchronicity media (e-mail) had more stress than did users of moderately low media (instant messaging). Lower synchronicity media enhance the negative outcomes described above. This finding highlights the importance of using higher synchronicity media when individuals are performing a collaborative task that requires them to have a rich understanding of each other. We lastly did not find that a structured task led to less stress than did an unstructured task. Likely, the unstructured interview task was not perceived as enough of a burden by interviewers for the structured task to make a difference.

## NEXT STEPS

While these findings about the presence of stress in low synchronicity settings are important and have practical implications, they are just the beginning of our understanding of this area. Confirmation of the specific elements of low-synchronicity settings that cause stress is important as is the outcome of task performance. We also collected data related to these variables to further our understanding of this area. However, other researchers need to investigate other settings and look at the impact of this type of stress over time for us to have a general understanding of the implications of stress in new work settings.

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