

EFFECTS OF DISTRACTIONS ON DECISION-MAKING PROCESSES AND
OUTCOMES

by

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ABSTRACT OF THE DISSERTATION

Effects of Distractions on Decision-Making Processes and Outcomes

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Abstract

This dissertation focuses on how distractions affect decision-making. The distractions studied here are in the form of text-messaging using a mobile phone in the context of interdependent decision-making tasks such as a negotiation. The effects are studied under two types of negotiations: distributive (one that requires participants to be competitive) versus collaborative (interests of both parties are similar).

Through a series of four experimental studies, the effects of distractions were observed in the following three types of experimental conditions: (1.) one-person in a dyad is texting during the negotiation, (2.) both persons in a dyad are texting in a negotiation and (3.) control group, with no distractions.

Findings indicate that performance in a negotiation is adversely affected when a person is distracted. Control groups performed best, followed by 'both-receiver' or both-distracted groups. In study 1, it is found that perceptions of trust, satisfaction and professionalism of the distracted person are lower than those for non-distracted persons. In study 4, findings indicate a main effect of distractions for information sharing such that receivers shared least information, followed by observers, followed by 'both-receivers' and then by the control group.

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Introduction

The notion that humans do not always behave rationally is hardly a surprise to psychologists. As Alzola (2012) argues, the fact that one may have been in a good or bad mood, or whether one has either plenty of time or not enough, can lead to different conclusions. For example, people make radically different decisions in a warmer room than in a colder room as well as when one is asked to remember a pleasant event versus an unpleasant one. We even assume that people who occupy a more visible position are more important and pay attention to their performance in more detail. When a group of students in an experiment was asked to indicate where the chairman of a company would likely sit in an interview, most of them pointed to the center chair among three that were lined up next to each other. Similar studies have shown the effect of the physical location of a person to be a proxy for his or her importance (Raghubir & Valenzuela, 2006).

Classic research in human psychology has identified a number of heuristics and biases (Tversky & Kahneman, 1974). Biases can make people choose a particular alternative over another, depending on how evidence is presented, and such biases have been shown to be robust (Baron, 2007). Since humans have a limited ability to process information, we also employ “heuristics” or shortcuts to reduce the load on our cognitive resources (Kahneman, Slovic & Tversky, 1982). Some well-known heuristics are representativeness, availability, and anchoring and adjustment. Hilbert (2012) argues that noisy information processing also leads to bias in our decision making. Noise refers to a mixing of different information flows. Cognitive biases also arise from emotional states, including how feelings of anxiety can make a person evaluate an option as riskier

than it actually is (Loewenstein, Weber, Hsee, & Welch, 2001), as well as social influences, such as an organization's norms or the risk preference of prominent persons in an organization (Yechiam, Druryan, & Ert, 2008).

Distractions, Its Forms in Daily Life

The first decade of the 21st century has seen an unprecedented increase in the use of computers and mobile devices. As devices get smaller, smarter, and more portable, they start finding their way into the day-to-day lives of millions of people. According to Pew Internet data, in 2010 more than 25% of American adults admitted to texting while driving, and over 60% admitted to talking while driving.

Distractions often lead to multitasking or doing two or more things at the same time (Benbunan-Fich & Truman, 2009). In fact, today's technology-rich environment also leads to multicomunication, in which a person engages in multiple conversations at one time, using various communication media (Reinsch, et al., 2008). Consider the following scenario given by Reinsch et al. (2008) in their diary study of employees:

While supervising employees and receiving occasional calls from friends, a manager, Trina, has to respond to complex questions from executives engaged in legally binding negotiations. "What commonly happens for me [is] I'm typing an email and the phone rings so I'll take the conversation [and] while I'm on the telephone.... [I'll also send a chat message to] somebody at the same time. So you have like three things going at once. In some cases...[I lose track] of what the person on the phone is saying and they can be irritated...[because] they have to repeat themselves." Trina added that a mistake "could be very detrimental."

The authors argue that such scenarios often cause problems, including inefficiency, irritation, and mistakes. Two distinct features of multicomunicating—divided attention and delayed responses (gaps of silence)—emerge from these studies. People seem to

inherently understand these risks, since they generally give their undivided attention in some settings, such as when a supervisor is around.

Another alarming example would be the recent television advertisements of a young boy explaining the consequences of the text “Where R” when driving that cost him his life. In addition to how pervasive these smart devices are, today’s workplace culture often demands that employees attend to multiple tasks simultaneously. This often necessitates switching between tasks such as email, phone calls, meetings, and paperwork (Czerwinski, Horvitz, & Wilhite, 2004). Sometimes even within one conversation, a coworker may interrupt the on-going work with a secondary task, all of which contribute to individuals feeling a constant “time famine” (Perlow, 1999). Thus, though not exclusively at fault, as mobile phones become capable of integrating telephony, texting, and internet connectivity, these devices are also causing interruptions in the daily activities of individuals (e.g., unwanted or ill-timed calls, e-mails, and/or texts). Given this context, this research examines the effects that distractions have on crucial decision-making tasks, particularly in the presence of smart electronic gadgets.

While “multitasking” generally refers to any occurrence of performing at least two tasks at the same time (Benbunan-Fich & Truman, 2009), here I use the word to refer specifically to using some sort of electronic communication tool (e.g., smartphones) while engaging in a second activity. Examples of this would be a person checking their smartphone for messages (unrelated to the business at hand) during a meeting or texting and driving. It is widely known that the latter practice is dangerous because the act of engaging in a separate conversation “disrupts performance by diverting attention to an engaging cognitive context other than the one immediately associated with driving”

(Strayer & Johnston, 2001). Importantly, this has an impact not only on the driver but potentially also on others relying on the safety of that driver's behavior.

This widely accepted notion about mobile devices and driving may have a direct corollary in the professional realm. In particular, as (a) the productivity of a person who multitasks may suffer, so also (b) *other* people who are dependent on the attention of such a person may also be adversely affected. Previous psychological research has focused primarily on the consequences of multitasking on an individual performing a task by him/herself. In contrast, I study the effects of multitasking¹ in the dynamic setting of a negotiation where every move by either party has implications for the final outcome, be it a subjective or an objective outcome. As such, I will explore the effects of multitasking behavior first on the multitasker personally and then also on the observer/partner in the negotiation.

Theory and Hypotheses

Multitasking and Performance

It is known that human information processing is limited by finite cognitive resources, particularly with respect to attention (Kahneman, 1973). Thus, engaging in more than one task in a set timeframe burdens our finite cognitive capabilities. Productivity suffers as the limited cognitive resources have to be divided between tasks (Norman & Bobrow, 1975), more for complex tasks than for simple ones (Speier,

¹ The terms multitasking and distractions have been used interchangeably.

Vessey, & Valacich, 2003). Even short interruptions can negatively affect performance (Gillie & Broadbent, 1989).

The literature on multitasking makes a distinction between dual-tasking (doing two things at the same time, such as driving and talking) and task-switching (such as asking someone to wait while you answer a phone call). Research in cognitive science has shown that multitasking, particularly in task-switching cases, requires constant and rapid switching of one's attention from one task to the other. In the task-switching case, one task is paused as the other is attended to. In the dual-tasking case, however, both tasks are still "running" but one is at the forefront of consciousness and the other takes a background position and slows down tremendously, explaining why reaction times are so slow when driving and talking on the phone (Pashler, 2000). Performance is inhibited because the need to transition between tasks taxes an individual's ability to focus effectively. Thus, some of the information cues may be missed, and important information can get overlooked. Interruptions, such as when task switching, use the same sensory channels for both the primary and secondary tasks, thereby also affecting working memory (Norman & Bobrow, 1975). Multitasking in general also leads to the problem of attention residue, which is when thoughts about the first task persist even when attention has been switched to the second task (Leroy, 2009). When a person performing task A is interrupted by task B, for example, attention on A will persist especially if A is not yet complete, and therefore a person cannot disengage completely from A when B is at hand. Attention residue takes up cognitive resources and creates a lower information processing ability for B, resulting in weaker performance not only on

A, but also on B (Leroy, 2009). Even once completed, thoughts of A may linger and inhibit effective thoughts on B (Martin & Tesser, 1996).

Since negotiations are complex tasks that require continuous processing of information, I argue that multitasking by way of texting on a mobile phone during the negotiation will lead to lower performance. Jeong and Hwang (2012) explored the effects of multitasking on (a) information processing and (b) counterarguing. Consistent with prior research, these authors found that distractions reduce one's ability to process information, thereby diminishing comprehension, particularly of persuasive messages. The counterarguing inhibition hypothesis (Keating & Brock, 1974) and the thought disruption hypothesis (Petty et al., 1976) have suggested that distraction can decrease counterarguing, which leads to increased acceptance of persuasive messages. This argument is particularly relevant in the context of a negotiation. The person who multitasks may not process information thoroughly, and therefore is not in a position to counterargue, thus giving an upper hand to the other party. Furthermore, this question is relevant since the effects of distraction on another person are still unknown. Prior studies have used experimental manipulations in which information is presented to an individual, and the distraction is usually in the form of some media, such as video. Jeong and Hwang (2012) gave participants a written persuasive message about three unrelated social issues in Korea: freedom of expression online, Four Major Rivers Restoration Project, and wartime operational control. During the experiment participants read these messages and were asked to simultaneously pay attention to a video, about which they would need to answer questions later. The participants demonstrated significantly less counterarguing, thereby accepting the persuasive arguments with less resistance.

For these reasons I hypothesize that the distracted individual will demonstrate a poorer performance in the negotiation outcome as well as lower joint gains for the dyad in which distraction occurs. Unnecessary distractions interrupt the focus on the negotiation itself, and even though the observer is not cognitively burdened, the joint outcomes of such dyads will also be negatively affected due to the diminished performance of the distracted individual. Koeszegi et al. (2011) found that negotiators often bring out their contentions and then make concessions or bargain to reach a solution that is mutually acceptable. This practice is particularly common in the case of distributive negotiations. Even in value creating negotiations, the full attention of both parties is needed to “grow the pie.” A distracted person may be unable to identify issues of contention or even compatible negotiable issues, which in turn can affect the negotiation strategy and communication of the other partner, even if s/he is not distracted. This problem could arise because the non-distracted observer does not know how to counterargue or does not understand what approach to follow to expand the pie, such as what issues may be conceded or bargained for. Even though within the dyad the observer will perform better than the distracted participant, overall the dyad will have lower outcomes than control groups because of less meaningful deliberations.

Hypothesis 1: Negotiators who are simultaneously checking messages on their mobile device while negotiating face-to-face (i.e., multitasking) will have a lower final outcome than negotiators who are not.

Hypothesis 2: Dyads in which one person is distracted will have a lower outcome compared to dyads with no distractions at all.

Multitasking, Professionalism, and Trust

People often multitask in the presence of others, such as when a person checks messages on their mobile device while in a meeting. In any one given instance, it might not be clear whether the multitasking behavior, such as replying to a text message during a meeting, was truly *necessary* for that person's job and thus was reasonable behavior, or if it was optional and perhaps less appropriate. Fueling the questionable nature of multitasking, one study observed that laptops in meetings were used for "distracting" purposes (as opposed to "compliant" ones) in over 75% of the cases (Benbunan-Fich & Truman, 2009). Additionally, unlike being in a large meeting where one person is distracted, multitasking in a dyadic negotiation virtually guarantees disruption in the flow of events. While a large meeting may continue with one person "tuned out," in a one-on-one, interdependent conversation like a negotiation, one person being distracted can disrupt entire process. How such behavior is perceived can depend on a number of factors, including one's own tendency towards multitasking. It has been suggested that limited time and higher interdependence will lead to a multitasker being perceived more negatively, while one's own tendency to multitask will reduce these negative impressions (Bell, Compeau, & Olivera, 2005).

Within a negotiation, a number of theories all point toward a multitasker being perceived negatively. The actor-observer bias (Jones & Nisbett, 1972) predicts that while one's own multitasking behavior would be more readily excused as necessary and appropriate, another's would be more harshly judged. And according to causal attribution theory (Weiner, 1986), *controllable* behaviors, such as text messaging during a negotiation, are judged more negatively. More specifically, these attributional tendencies

result in negative judgments about the offender (i.e., the mobile phone user) *as a person* and are not explained away by the context. In other words, instead of providing a rationale for the behavior (for example, “I’m sure that message was of critical importance and thus I am still dealing with a reasonable person”), the tendency is instead to blame the actor (for example, “What a rude person this is, to interrupt our conversation like that”). Similarly, social presence theory (Short, Williams, & Christie, 1976) suggests how important non-verbal cues are when communicating parties share the same physical space. At best, non-verbal cues signaled by a distracted partner seem to indicate inattention to the matter at hand, and at worst, may signal the lack of respect for others. Because the effects of multitasking are likely to be salient in one-on-one face-to-face negotiation, I predict such behavior will create unfavorable impressions about the professionalism of the multitasker. Wang and Trevhnev (2012) have explored the question of why people choose to multitask even when it is cognitively unproductive. By conducting a diary-study, these authors have found that people who multitask derive emotional gratification from the process. For example, a student when studying may also simultaneously watch television. Though concentration on studies may be impaired, the student derives gratification by feeling “at least it was entertaining.” Habitual multitasking has also been linked to future multitasking behavior. This argument can be coupled with the actor-observer bias to suggest that an observer who notices another person multitasking will likely conclude that the person is allowing this to happen to derive some sort of gratification or is habitually inclined to do so. This action can further reduce the perception of the person’s professionalism in the eyes of the beholder.

Hypothesis 3a: Negotiators who are simultaneously checking messages on their mobile device while negotiating face-to-face (i.e., multitasking) will be perceived as less professional than those who are not.

Trust essentially refers to the willingness of a person to be vulnerable to others' behaviors (Mayer, Davis, & Schoorman, 1995), and is based, in part, on the belief that the person is competent and reliable. An underlying factor of a person's trustworthiness is not acting in a manner that is detrimental to the interests of the trustor. Trust development is affected by attribution biases (Ferrin & Dirks, 2003), and when undesirable behaviors are attributed to the person, perceptions of trustworthiness will likely be diminished, especially in situations where the individuals are new to each other. Research has shown that trust is based on different types of observations at different stages of a relationship, and new relationships tend to rely on more "surface" features for judgments of trust (Levin, Whitener, & Cross 2006), potentially including one's multitasking behavior during a negotiation. As Tomlinson and Mayer (2009: 93) point out, "Without a history of demonstrated benevolence from the trustee, positive or negative interactions are likely to take on greater significance for the trustor. A given act that appears to indicate either high or low benevolence tends to stand alone as input, rather than being taken in the context of everything that has happened between the parties." Similarly, deviation from etiquette norms has been shown to negatively affect one's trustworthiness (Vignovic & Thompson, 2010). Furthermore, there is the idea that trust is a temporary state of mind (Ross & LeCroix, 1996), which is therefore subject to perception-related biases when the parties do not know each other well. In a negotiation, parties often begin with no prior history and thus no reason to trust each other. Electronic multitasking can contribute to a

person being perceived as less trustworthy for one of the following two reasons. First, a person who is multitasking is failing to build trust. Instead of getting to know the person through a meaningful conversation in order to build trust, the person is focusing on another task. Second, it is possible that since partners begin with no basis for trusting each other, electronic multitasking may in fact cause a basis for forming mistrust. Combining these factors with the tendency to attribute actions to the person instead of the situation, it follows that a person who multitasks in a negotiation will be considered less trustworthy.

Trust has been shown to have three dimensions: ability, integrity, and benevolence (Mayer, Davis & Schoorman, 1995). Ability is the belief that the trustor has the capabilities to accomplish the task assigned to the trustee. Benevolence is the belief that the trustee acts in the interest of the trustor, and integrity is the belief that the trustee has the values that are considered important by the trustor. Being distracted from the negotiation can indicate to the observer that the negotiation is not important. Because the negotiator disregards the norms of negotiation, s/he may appear not to be committed to the process and its outcomes. Thus, such a person will be considered less trustworthy. In addition, research has shown that in certain contexts, trust can mediate the relationship between an individual's dispositions or behavior and outcomes in a negotiation (Tzafrir et al., 2012). I argue that in this case too, distractions would lead to lower trust, which in turn would lead to lower outcomes as well.

Hypothesis 3b: Negotiators who are simultaneously checking messages on their mobile device while negotiating face-to-face (i.e., multitasking) will be perceived as less trustworthy than those who are not.

Hypothesis 4: Trust mediates the relationship between multitasking and outcomes such that multitasking would lead to lower trust between partners, which in turn would lead to lower outcomes for the dyad.

Multitasking and Satisfaction

The success of a negotiation depends not only on the objective outcome but also on the subjective value. Subjective value refers to the social and psychological consequences of a negotiation—i.e., feelings, perceptions, and emotions (Curhan, Elfenbein, & Xu, 2006). Negotiation research has established that many factors other than the objective terms of the outcome can influence negotiator satisfaction, sometimes to the extent that negotiator satisfaction can be fully disconnected from the economic value of settlements (Galinsky, Mussweiler, & Medvec, 2002). For instance, negotiators who received false feedback indicating that their counterpart was happy with the results of their negotiation felt less successful and less satisfied than those told that their counterpart was disappointed, even though there was no difference in the economic outcomes across these conditions (Thompson, Valley, & Kramer, 1995).

Recently it has been established that the subjective value of a negotiation is both consistent and important over time. For example, in the context of a recruitment negotiation, research has found that candidates who had higher subjective value reported higher satisfaction with the outcomes even a year after the interview. Furthermore, higher subjective value also predicted future job attitudes, such as compensation satisfaction, job satisfaction, and lower turnover intentions (Curhan, Elfenbein, & Kilduff, 2009).

While it is known that emotions and perceptions influence the subjective value, I add to this line of research by positing that a disruption to the negotiation due to multitasking on a mobile device may also have a negative impact on the subjective value of the negotiation. Simply put, in addition to a sense of reduced professionalism and reduced trust levels, I also predict lower levels of satisfaction when negotiating with a multitasker.

Hypothesis 5: Negotiators whose partners are simultaneously checking messages on their mobile device while negotiating face-to-face (i.e., multitasking) will be less satisfied with the overall negotiation than those who are not, regardless of their objective outcomes.

Multitasking and Information Sharing

Negotiations can either take a distributive form or an integrative form. In a distributive form, one negotiating party gains at the expense of others. An example would be a buyer-seller situation where any lower selling price results in the buyer's gain at the expense of the seller, and any higher selling price results in seller's gain at the expense of the buyer. In an integrative form, a win-win or a mutually acceptable solution is sought, such that both parties optimize their outputs. These outputs can be either in terms of money or points. Therefore, depending on the context, negotiators may be required to behave competitively, individualistically, or cooperatively (Messick and McClintock, 1968). In a cooperative context, information seeking and sharing have been shown to be advantageous in "expanding the pie" (Bazerman & Neale, 1983), so that both parties benefit. Moreover, negotiators who engage in cooperative behavior achieve higher joint gains than pro-self negotiators (Olekalns et al. 1996). Thus, we see that when negotiations take an integrative form, the dynamics of the negotiation change. For

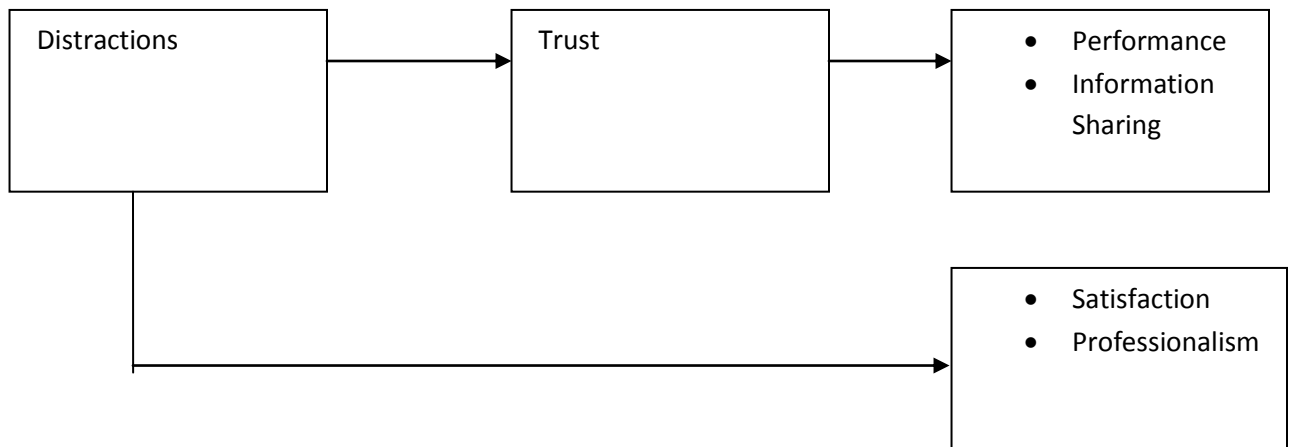
successful optimization of both parties' outputs, information sharing is critical. Research has shown that trust often leads to more information sharing in competitive negotiations. But in cooperative settings, I argue that prior trust will have less of an effect on information sharing. Even buyer-seller or buyer-supplier networks are characterized by greater information exchange, which generally allows for greater production efficiency (Roy et al., 2009). The type and amount of information are also critical in these contexts. Since negotiating partners do not have a prior relationship with each other in this case, outcomes would depend on the on-going process of negotiation itself. For this, information sharing is necessary.

In addition to the detrimental effects of multitasking on one's performance in distributive negotiations, I further argue that with electronic distractions, negotiators will be less prone to share critical information. Such a relationship will be mediated by trust; distractions would lower the trust, which in turn has an effect on information sharing.

Hypothesis 6: Negotiators who multitask will share less information than those who do not.

Hypothesis 7: Trust mediates the relationship between multitasking and information sharing such that multitasking would lead to lower trust between partners, which in turn would negatively affect information sharing.

Figure 1: Theoretical Model



Overview of Studies

In order to test the hypotheses, a series of four experimental studies were conducted. In study 1, participants were MBA students enrolled in an Organizational Behavior course. For the remaining studies, students were undergraduate participants enrolled in introductory management courses who participated in exchange for extra credit. In all the studies, participants were first given their role materials and instructions. (The person who would be sent texts was informed that s/he would receive texts as part of the negotiations and should reply immediately upon receiving it.) The content of the texts was irrelevant to the negotiation itself in all cases. In studies 1 and 2, the negotiation was somewhat competitive, i.e. students had to maximize their outcome. In studies 3 and 4 the negotiation was more collaborative, requiring participants to make a joint decision based on the provided materials, after first making an individual decision. In studies 2 and 4, apart from the control group and one-person text receiver group, a third condition called “both-receiver” was added, in which both participants were sent texts at the same time. By using competitive as well as collaborative negotiations, it is possible to

understand the effects of distractions in different contexts, thereby enhancing the possibility of generalization to decision-making contexts. In study 4, information sharing was explicitly measured by using a survey that asked specific questions about what unique pieces of information their negotiating partner had shared. This procedure helps to open the “black box” of negotiation and elucidate the processes of negotiation that will lead to certain outcomes.

Study 1

Participants and Research Design

Participants were 172 part-time graduate-level business students who participated in this study as part of an organizational behavior class assignment. The experimental design had two conditions – (1) the mobile device condition where the focal negotiator negotiated with another party who checked electronic messages on a mobile device during the negotiation ($n = 42$ dyads, comprised of 84 individuals) and (2) the control condition where participants negotiated without distractions from their mobile device during the negotiation ($n = 44$ dyads, comprised of 88 individuals). Participants were randomly assigned to experimental conditions, and the person receiving the electronic messages was counterbalanced by role. To simplify, these participants are labeled “message receivers” (those who actually got the messages on their cell phones), “observers” (partners of the message receivers who had to wait while the message receiver attended to the messages), and “controls” (those who negotiated face-to-face without mobile phone distractions).

Procedures and Materials

The case used for this negotiation was Oceania (Thompson & Bloniarz, 1998). Participants in this two-party negotiation were randomly assigned to represent either a theatre venue or a production company with a touring show. All participants received their case materials in hardcopy during class time at least one week before the exercise. In all conditions, participants were explicitly instructed that their goal was to maximize their individual payoff, and that they had one hour in which to complete the negotiation.

On the first day of class students reported whether they had e-mail on their cell phones (91% did), and, if so, the e-mail address for their mobile device. They were also instructed that they were never allowed to use laptops or cellphones during class exercises unless explicitly instructed to do so.

The negotiation task was an integrative negotiation involving multiple issues. In the confidential instructions to participants in the “message receiver” condition, participants were asked to bring their mobile devices to the negotiation because they would likely receive e-mails regarding the case during the negotiation. They were also told to keep this information confidential and not to reveal to the opposing side that they are getting messages related to the negotiation. In actuality, participants in this condition were sent three messages on their mobile phones, and though the messages were nominally about the case, they provided no new or useful information that would change the negotiation in any way, other than through the interruption itself. The case is fully quantitative, thus each individual’s level of gain in the agreement as well as the joint gain (both parties’ gain added together) could be scored.

After completing the negotiation and turning in the contract, participants completed a post-negotiation questionnaire in class via pen-and-paper. The class results and study were then fully debriefed.

Dependent Measures

Satisfaction. To measure satisfaction with the negotiation I used a modified 5-item version of the measure developed by Brayfield and Rothe (1951). The original measure has 18 items but it is typically used in the shortened 5 item format (e.g., Bono & Judge, 2002; Judge, Bono, & Locke, 2000), which was modified for the negotiation context. The reliability for this satisfaction measure was acceptable with Cronbach's $\alpha = 0.71$.

Professionalism. Participants were asked two questions targeting the perceived professionalism of their counterpart in the negotiation. The first question addressed the willingness to have future dealings with the other party. Specifically, participants were asked to rate the statements, "I am willing to negotiate with my partner again" and "My partner seemed very professional throughout" on a scale of 1 (strongly disagree) to 7 (strongly agree). The reliability for this professionalism index was acceptable with Cronbach's $\alpha = 0.70$.

Trustworthiness. To assess interpersonal trustworthiness in their negotiating partners, the Organizational Trust Inventory – Short Form (OTI-SF) developed and validated by Cummings and Bromiley (Cummings & Bromiley, 1996) was used. This scale contains 12 items that assess three dimensions of trustworthiness: (1) reliability, (2) honesty, and (3) good faith in the other party with respect to fulfilling their commitments. The OTI-SF was slightly modified to be more appropriate for a negotiation setting by asking

negotiation-based questions (e.g., substituting the words “the other party” where the original questionnaire stated the name of the “other department” or “unit”). The reliability for this measure in the presented study was acceptable with Cronbach’s $\alpha = 0.90$.

Objective Payoff. Each side’s objective payoff in the negotiation was recorded, both in terms of their individual levels of gain and their joint value.

Results

For the “observers,” all of the dependent variables were compared across role assignment with results indicating no difference between roles for any of the dependent variables. Consequently, the data were collapsed across role for all subsequent analysis. There were no impasses in either of the experimental conditions.

Professionalism. Perceptions about the level of professionalism exhibited by their negotiating counterpart also varied by condition. An ANOVA revealed significant differences between experimental conditions, with those in the mobile device condition reporting significantly lower levels of professionalism ($M = 4.82, SD = 1.13$) than those in the control condition ($M = 5.61, SD = .99$), $F(83) = 11.87, p < .01, \eta^2 = .13$. No differences were reported between negotiators in dyads in the control condition ($t(40) = 1.39, ns$), whereas dyads in the mobile device condition did report significant differences between negotiators $t(43) = -10.51, p < .001$. In particular, “observers” reported that their partners, the “message receivers,” were less professional ($M = 3.94, SD = 1.19$) than the “message receivers” themselves rated the “observers” ($M = 5.68, SD = 1.28$), which supports hypothesis 3a.

Trustworthiness. A paired t-test analysis revealed differences in interpersonal trust between negotiators in the mobile device condition, but not the control. In the mobile device condition, “observers” rated the “message receivers” as lower in trustworthiness ($M = 5.31, SD = 1.05$) than did the “message receivers,” rating the “observers” ($M = 5.61, SD = 1.1$), $t(43) = -13.67, p < .01$ (see Tables 1 and 2). On the other hand, negotiators in control dyads reported no differences in interpersonal trust, $t(41) = 1.88, ns, M = 5.67$, supporting hypothesis 2b.

Satisfaction. A paired t-test analysis of satisfaction was performed. Negotiators in the mobile device condition reported different levels of satisfaction than did controls, $t(43) = -4.15, p < .01$ – specifically, “observers” reported less satisfaction, $M = 5.11, SD = .97$, than did “message receivers”, $M = 5.63, SD = .72$. On the other hand, negotiators in control dyads reported no differences in satisfaction levels from each other, $t(41) = 1.53, ns, M = 5.62$, with roughly equivalent ratings to the “message receivers.” Thus, only the observers were less satisfied, supporting hypothesis 4.

Objective Outcome. Objective outcome was analyzed at both the individual and the joint levels. An ANOVA indicated no difference between experimental conditions for the joint level of analysis, $F(1, 84) = 0.39, ns, (M = \$556,571.43, SD = \$121,594.96)$ for the control condition, and ($M = \$551,409.09, SD = \$120,121.08$) for the mobile device condition.

But when exploring the difference in payoff between individual negotiators in each condition, we find a significant difference between negotiators as a function of the experimental condition. I calculated the difference between negotiators in a dyad as a percentage of the total joint payoff. An ANOVA revealed that there is a greater

difference between individual level payoffs within a negotiating dyad in the mobile phone condition ($M = 14.73\%$, $SD = 5.65\%$) than in the control condition ($M = 9.76\%$, $SD = 11.40\%$), $f(84) = 6.77$, $p < .05$, $\eta^2 = .08$. Thus, hypothesis 1 is supported.

In addition, when looking at the mobile phone condition, “observers” did better ($M = \$315,591.76$, $SD = \$68,352.38$) than did “message receivers” ($M = \$235,817.33$, $SD = \$57,402.89$), $t(43) = 14.88$, $p < .01$. Although the objective dyadic joint gains are statistically the same between experimental conditions, there is a greater spread between individual payoffs in the mobile phone condition, with “message receivers” performing worse than “observers,” which supports hypothesis 2.

Discussion

Findings of study 1 demonstrate a consistent set of negative results for those using a mobile phone to check messages during a face-to-face negotiation. These individuals not only fared worse in their negotiated settlement, but they were also considered less trustworthy and less professional by their counterparts. Finally, even though the observers — the negotiators who were not distracted by their own phones — were able to reap more objective gain on average, their satisfaction with the whole negotiation suffered, potentially leading to other negative consequences later on. Consistent with several previous studies (Norman and Bobrow 1975; Spier, Vessey, and Valacich 2003), multitasking was found to reduce one’s performance; thus, multitasking individuals settled for lower payoffs than their non-multitasking counterparts. This study extends the finding into the context of face-to-face negotiations wherein continued responsiveness and adaptation to the opponent’s arguments and counteroffers are required.

It is therefore clear that a lapse in attention or an additional burden on cognitive resources helps prevent a negotiator from attaining the maximum possible outcome. It is also possible that the time the individual takes to use a gadget is fruitfully used by his or her opponent to counterargue or rework the negotiation strategy, although this was not measured in the study. The time lost by one opponent in multitasking may be time gained by another for leveraging his or her stance in the negotiation. While the opponent may use the time gap to her or his advantage, it may also be possible that the multitasking person, when interrupted unexpectedly, becomes apologetic. In an effort to balance the situation or to save face, this situation allows his or her opponent to gain certain advantages in the negotiation.

Study 1 also supports the view that when a person allows distractions, s/he is perceived as less professional, which clearly has significant implications for how people should use electronic devices during a negotiation. This feeling of unprofessionalism likely derives from the observer's undistracted focus on his or her counterpart, which s/he expected in return. As social exchange scholars have argued, reciprocity often forms the basis for behavior. Homans (1961) found that social relations are often governed by exchanges, mostly unwritten and implicit. For example, when someone helps a coworker, that person expects something in return, maybe gratitude or help in another situation. When these expectations are not met, the person may become angry or change his or her behavior toward the other party. This may explain why a multitasking person is seen as less professional because the multitasker is failing to meet the behavior expectations of his or her counterpart. Another possible explanation is that any behavior that is considered rude may also be perceived as interactionally unfair (Bies and Moag 1986),

and such perceived unfairness likewise provokes an “unfair” reaction. For example, one might try to get the upper hand in a negotiation by using more competitive tactics. It is also possible that the distracted individuals may send a signal of lesser competence because it is clearly disadvantageous to be paying less than full attention during a negotiation. This sense of the other’s incompetence may trigger a sense of opportunity for the observers.

Researchers have produced a considerable amount of literature on the importance of trust and the process of trust-building in negotiation contexts (for reviews, see Butler 1999; Ferrin, Kong, and Dirks 2011). Trust is an important and desirable outcome of negotiations and can even determine whether parties are willing to engage in future interactions (Naquin and Paulson 2003). Parties considered less trustworthy are already at a disadvantage in a negotiation because their motives are generally suspect from the very beginning (see Ferrin, Kong, and Dirks, 2011, for a review). A finding of study 1 is that even when the negotiating partners are relatively unknown to one another, trust takes a beating when one person multitasks in a negotiation. This indicates that, in the absence of prior information about the negotiator, even small cues can hamper trust. It is possible that a negotiator’s multitasking leads the counterpart to doubt his or her motives and sincerity when trust might have otherwise formed. Another possibility is that the nature of the negotiation situation is such that distrust is the more common initial stance (i.e., negotiators begin by distrusting each other), and this context lays fertile ground for trust to be further impeded even for small infractions. In addition, the continuous interruptions themselves may generate distrust because they could offer opportunities to engage in

competitive behavior. What if, for example, the person is using the phone to gather information that will give him or her advantage?

Trust is fragile and is more easily destroyed than built (Meyerson, Weick, and Kramer 1996), and it seems that multitasking may present one such threat to trust in a face-to-face negotiation.

Study 2

While study 1 explored the effects of multitasking on dyads in which one person was multitasking while the other was not, study 2 was designed to understand the effects of multitasking on the above processes and outcomes when both persons in a dyad are multitasking. In study 2 there are 3 conditions: control group with no distractions, one-person receiver group, and both-receiver group. Here, “receiver” refers to the person who was distracted by receiving texts.

Since the primary research question is to understand the effects of distractions from electronic multitasking, it becomes necessary to understand what happens when the multitasking is not in isolation. In an interdependent decision-making task, if both parties are distracted it is possible that there is so much distraction and continuous interruption that neither party can concentrate on their task. Therefore, not only is one person’s cognitive ability hampered, but also efforts to concentrate. When a person is trying to come back to the negotiation from the distraction, since the other person too is distracted, both parties may be unable to keep track of their earlier conversation and at what point they left off. Both parties are cognitively burdened, making it more difficult for both persons to come back to track since thoughts about distraction still persist in the working memory. In contrast, in the one-person receiver condition, since the observer is

completely focused in the task and nothing else, can put the other person on track from where they left off before the distraction. The observer also is completely cognizant of the on-going process as well as the information shared thus far and what additional information is required for the negotiation to proceed and reach conclusion. In the both-receiver condition, however, information shared may be lost without interpretation or without being taken into account by *both* persons and hence valuable information may be lost to the distraction without being processed. Therefore the both-receiver condition is likely to have the worst performance. It is possible that both parties are annoyed at being continuously disrupted, and this emotional state then disrupts their ability to negotiate a better outcome by inhibiting information sharing. To understand the social implications of multitasking, it is necessary to understand different scenarios and their outcomes, thereby necessitating the “both-receiver” condition.

Participants and Research Design

The participants were 104 undergraduates who were recruited from introductory business courses at Rutgers Business School for extra credit. In this study, both members of the negotiating dyads received texts on their mobile phones. Participants were randomly assigned to either the control, one-person text receiver, or both persons receiver conditions. The case study chosen for this negotiation was “New Car” exercise. In this case study, one person is the buyer of a new car and the other person is the seller. There are 8 different items on which an agreement must be reached, including price, financing, warranty, music system, extra features, safety features, delivery date, and color. Points were allocated to each item, and both the buyer and the seller were asked to maximize their total points, which were scored.

Procedure and Materials

After arriving at the venue, participants were given their respective role materials, either that of a buyer or seller. They were then asked to read and prepare for their role in the negotiation. When the participants started negotiating, depending on whether they were in control, one-person receiver, or both-receiver conditions, text messages were sent. The text messages were not relevant to the context of the negotiation, and no negotiation outcome was influenced by the actual information in the messages. In the one-person receiver condition, the participants receiving the text were counterbalanced by role.

After completing the negotiation, participants filled a questionnaire. The following items were measured:

Points. This is an individual participant's total score after adding the points on each of the items mentioned in the case. Similarly, dyad-level points were calculated as the sum of the individual scores of the two members in the dyad.

Satisfaction. Similar to study 1, satisfaction was measured using the modified 5 item measure (Bono & Judge, 2002; Judge, Bono, & Locke, 2000). Cronbach alpha=0.23

Professionalism. Similar to study 1, participants rated their counterparts on professionalism. Specifically, we asked participants to rate the statements, "I am willing to negotiate with my partner again" and "My partner seemed very professional throughout" on a scale of 1 (strongly disagree) to 7 (strongly agree). Cronbach alpha=0.45

Trustworthiness. Again similar to study 1, in order to assess interpersonal trustworthiness in their negotiating partners, we used the Organizational Trust Inventory – Short Form (OTI-SF) developed and validated by Cummings and Bromiley (Cummings & Bromiley, 1996). Cronbach Alpha=0.32

Results:

In order to observe differences in performance among the three groups, ANOVA was conducted to compare the mean of points obtained by participants in each of the conditions. There was a significant difference in the overall performance among members belonging to different conditions. Members of the control group performed best (M=8337.78, S.D.=2354.35), followed by members in the both receiver conditions (M=7373.08, S.D.=2222.62) and members in which only one person received the text (M=6841.48, S.D.=1984.18). This difference was statistically significant ($F(103)=6.19$, $p<0.05$). All the three conditions differ significantly from each other.

At the individual level, there were no significant differences among receivers and observers in the one-person receiver group. There were no significant differences among conditions in the trust, professionalism, and satisfaction. The descriptive statistics are presented in Appendix B in tables 3 and 4.

Discussion

Study 2 reinforces the findings of study 1 i.e. performance in a task is inhibited due to distractions. The argument for this comes from previous studies which suggest that multitasking increases the cognitive burden on the human information processing system (Spier, Vessey & Valacich, 2003), which inhibits the full information and implications to

be taken into account. In this study, the control dyads got the maximum number of points, followed by the dyad in which both participants were receivers of text and then dyads in which only one person was the receiver. Contrary to expectations, the condition with the most distractions, i.e. “both receiver,” performed better than the one-receiver condition. From a cognitive perspective, it is possible that when both parties multitasked they lost their time and attention to the disruptive task, and both parties may have realized the need to come back to the negotiation. The cognitive processing abilities of both parties are affected equally; therefore, they may both get back to the task after that they were distracted. Moreover, since both parties are distracted they may not be apologetic and at the same time may not see a need to judge the other person harshly. Because both individuals are actors as well as observers, per actor-observer theory, they do not misattribute intentions for actions. Therefore, they may even trust each other more and thus share more information and do better than one-person receiver dyads. In fact, in the context of knowledge sharing and transfer, when both persons are in the same affective states, they give and receive information much better than dyads in which one person is in a high-affective state and the other is in a neutral affective state (Levin, Kurtzberg, Phillips & Lount, 2010). This situation may be due to a comfort level that comes from knowing that both are in the same frame of mind, and the argument can also be extended to this context. Since both parties allowed distractions to enter their conversations, neither party would have felt guilty or taken advantage of. It is also possible that the emotional effects are equally felt by both parties and hence are neutralized. The reciprocity norm is another possibility. Because both of them behaved in the exact same way, neither got the upper hand. These are some possible explanations why the both receiver dyad performed

better than the one-receive pair. On the other hand, it may also have been important that the texts were sent to both persons simultaneously, and both participants therefore received and replied to the texts at the same time. The possible explanations of congruence in affective state and break-and-resume may be because of the way this study was conducted.

Regarding the worse outcome of the one-person receiver condition, the receiver's information-processing ability was significantly inhibited. In some ways, this contributes to such dyads' overall lower total score. Also, when the observer is simply waiting on the receiver to finish texting, s/he may perceive that the observer and the negotiation are not important to the receiver. Thus, intentionally, the observer may share less information or may lose interest in the negotiation himself/herself, thereby leading to lower joint gains as well. It is also possible that observers try to get the upper hand and actually do not look for joint gains, such as those elements with integrative potential. Due to these reasons, one-receiver dyads do worse than both-receiver dyads, which in turn do worse than the control group dyads.

The materials for study 2 consisted of a buyer-seller scenario, in which one person plays the role of a buyer and the other person plays the role of a seller. While five out of eight negotiable elements were distributive, i.e. one person gains at the loss of other, three of them were not. Two of the three had integrative potential, which means careful attention needed to be paid to the allocation of points to these categories. There needs to be a give and take in this scenario. If the buyer were to settle for lower points in one of the categories, the seller could do the same in the other category and still both parties would receive higher points in total. This requires collaboration and is possible only

when the focus is on the task at hand. In one of the categories, the points are completely compatible. Therefore, both parties should choose the same option. In the one-person receiver and both-receiver condition, however, fewer dyads did so and therefore their overall score was lower than the control group dyads. This may also be due to insufficient information sharing, which in turn leads to worse decisions.

There are some other aspects of this study worth noting. The students were undergraduates, mostly freshmen, and were very adept at using electronic gadgets. More than 95% of the participants texted more than ten times a day. Since texting was such a common phenomenon for this group, it is likely that we do not see any process effects, meaning there were no significant differences among observers and receivers or among different experimental conditions for trust, affect, or satisfaction. I presume that this group did not consider it “rude” to be interrupted in the middle of a negotiation. The laboratory nature of the experiment may also have contributed to this. Students knew that they were not being graded on their performance and may have chosen not to make any interpretations of the distraction. Furthermore, students may all have viewed each other as being part of the same “student” group, and they may have carried each other through the task, without rating each other harshly. Additionally, even though this case had a buyer-seller scenario, in which a seller who is continuously distracted and neglects the customer might be at a disadvantage, it turns out that the performance did not significantly differ among seller-receivers, seller-observers, buyer-receivers, and buyer-observers.

Study 3

Until now, the negotiations have involved a slightly more distributive approach, requiring negotiators to be competitive or assume that each person's interests are not compatible with those of the other person, as in study 2. In the following studies, the negotiation was modified to be more collaborative, in which the two participants had to jointly decide which of the options (in these cases, companies) was the best choice either for acquisition (study 3) or employment (study 4). Study 3 gave null-results for the negotiation (% of participants who changed their mind) as well as for processes: trust, satisfaction, professionalism, decision quality, and commitment, as reported in Appendix C.

Study 4

Studies 1–3 did not explicitly measure information sharing in the presence of distractions. Study 4 uncovers how distractions affect information sharing in a less distributive but more collaborative negotiation. In this study, all the three conditions were conducted (control, one-person receiver, and both-receiver), instead of only two conditions (control and one-person receiver condition) in study 3. Once again to study the full social implications of multitasking, the both-receiver condition was added. In addition, to understanding the on-going process and thereby unlock the underlying decision-making mechanisms, the main outcome studied here is information-sharing. Furthermore, in order to understand the implications of distractions in different types of decision-making tasks, the case study requires collaboration.

Participants and Research Design

The participants included 137 undergraduates, who were recruited from the behavioral research lab at Rutgers Business School. All participants were randomly assigned to one of the following three conditions: (a) control group with no distractions (n=42 i.e. 21 dyads); (b) one person receiver experiment condition (n=48 i.e. 24 dyads); and (c) two person experiment group, in which both persons are distracted via text (n=46 i.e. 23 dyads).

Instead of a buyer/seller or zero-sum arrangement, the participants engage in a discussion to decide which of the two companies would be ideal for their common friend to accept a job offer from. Thus, the case study is a modified version of ACME, i.e. choosing a job. It provides enough scope to study the effects of distractions on information sharing. There are two different sets of materials. Each person in a dyad is given one set, and each set contains different information about two companies. One set of materials slightly favors choosing company A, and the other slightly favors choosing company B. Critical and important information, such as market share and profitability were among the information that differed between the two sets of material. After reading their own materials and making an individual decision about which company would be a better fit for their friend to accept a job offer from, members of the dyad engaged in a negotiation to arrive at a joint decision on which company they would recommend to their friend.

Procedure

Students in the behavioral lab signed up for the study and arrived in the lab at the requested time. Students were randomly given either the first set or the second set of

materials. They were allowed to read their respective set of materials and then engage in a negotiation to decide which company should be chosen for their friend's employment. Depending on the condition they were assigned to, either no text was sent (control), text messages were sent to only one person in the dyad (counterbalanced by the set of materials they received), or both members received a text. Students were first asked to note their individual pre-discussion decision. Then, after the discussion they were asked to complete a short questionnaire, on which they were specifically asked if their negotiation partner provided information that was missing in their set of materials.

Results

At the individual level, 21.4% who were given role 1 chose A as their individual outcome, while 78.6% chose B as their initial individual outcome. Among those who were given role 2, 74.6% chose B as their initial individual outcome, while 25.4% chose A as their initial individual outcome. Thus, role 1 failed to produce the intended overall preference for A entirely, while even role 2 did not achieve perfect selection of company B.

Whether Individual and Joint Decision are different:

If individual pre-discussion and joint post-discussion decisions are different, it is an indication that the person was more successful in convincing the focal negotiator into believing that his or her chosen company is better. If this is higher among receivers of text, we can conclude that distractions are making the focal employee lose focus from the negotiation and let the other person gain advantage. Chi-squared tests were performed to see if the percentages of participants in each dyad changing their minds, by condition are

statistically different or not. At the individual level, 29.5% of one-person receiver groups had changed their minds, 30.2% of both-receiver group participants changed their minds, and 40.4% of control group participants changed their minds after negotiating. Of those who changed their minds, 54.42% were observers and 45.58% were receivers. In other words, among all the observers, 33.3% changed their minds, and among all the receivers, 29.16% changed their minds. These differences are not statistically significant.

% of information shared:

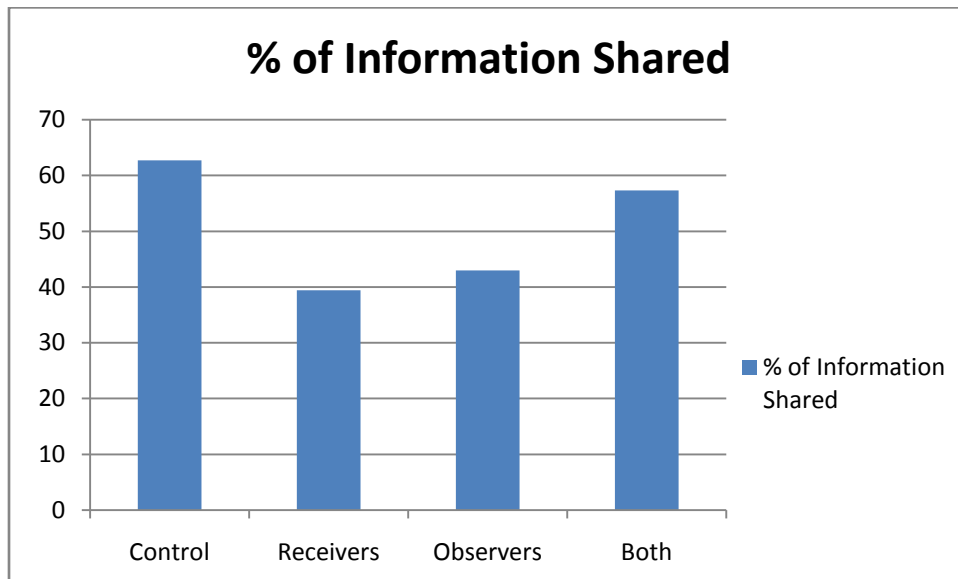
A percentage of the total amount of information shared was measured by asking the participant to mark “Yes” if that particular piece of information was shared and “No” if it was not. An example of such a question would be: “Did you know that company B has been the leader with a market share of 30%?” The number of ‘yes’ answers was then tallied for each participant and then analyzed to see if there are significant differences among receivers, observers, controls, and both-receivers.

Observers noted that receivers shared only 39.4% of the information, while receivers on the other hand noted that observers shared 43% of the information. This difference is not statistically significant. Within the control group, the average percentage of information sharing is 62.7%. Among the condition in which both members of the dyad received texts, the average percentage of information shared is 57.3%. The difference between both-receivers and controls is significant ($t=-2.54$, $p=0.013$). The difference between receivers and both-receivers is significant ($t=-3.68$, $p=0.00$). The difference between observers and both-receivers is significant ($t=-3.83$, $p=0.001$). The difference between receivers and controls is significant ($t=-7.1$, $p=0.00$). The difference

between observers and controls is significant ($t=-6.71$, $p=0.00$). When combining the receivers and observers as one group, the difference between controls and experimental groups with 1 receiver is significant ($t=8.39$, $p=0.00$), and the difference between one-person receiver experimental groups and both-receiver experimental groups is significant ($t=-4.4$, $p=0.00$).

Thus, hypothesis 5 is supported.

Figure 2: Information sharing between conditions (Study 4)



Please see Appendix D for additional analysis that did not yield significant results.

Discussion

In study 4, materials from study 3 (reported in Appendix C) were simplified to make it easier for an undergraduate student population to understand, and the number of companies was reduced to two from three. Instead of acquisition, the two negotiators had to discuss which of the two companies would be a better option for their friend to accept

an offer from. But even in this case, the materials did not seem to work; they did not clearly signal the intended decision to this population.

In study 4, the fact that the highest amount of information was shared in the control group indicates that multitasking does indeed affect interdependent decision-making tasks, not only by limiting cognitive performance but also by inhibiting relevant information sharing. Thus, distraction affects information sharing in that the receivers shared the least amount of information necessary to make an informed decision. From the above studies it is clear that electronic multitasking is detrimental to performance in a number of ways. Due to the load on limited cognitive resources, individuals are unable to focus their attention on a current and on-going task. This lack of attention leads them to miss critical information shared by the other party, inhibiting their critical thinking skills. It furthermore prevents them from diagnosing the issue at hand and asking the right questions. It is also possible that a distracted person finds it inappropriate to seek clarification or additional information when it was s/he who lost attention from the task. When both persons lose focus by multitasking, it is likely that they both miss information. The fact that both parties are distracted creates less guilt and therefore makes it easier to resume the negotiation from where they left off before the distraction. It may also help them seek clarifications or ask relevant questions without being apologetic. Because both persons received the texts simultaneously and replied to the texts at the same time as well, the congruence in affective state as well as the break-and-resume approach could be a result.

General Discussion

The above studies address a contemporary and pressing issue associated with the

rise in the use of smart gadgets, particularly mobile phones. Electronic multitasking has become so common that it calls for research on the cognitive processes as well as outcomes in the presence of distractions. These studies address these issues in an interdependent decision-making context, such as a negotiation or a joint-decision making task.

A consistent finding in all three studies is the detrimental effects of multitasking on performance. It puts a particular cognitive burden on information processing as working memory is impaired. When multitasking, either the same working memory is used to store information about both/multiple tasks or attention is divided back and forth between two or more tasks (2000). What is important to note here is that this happens without realization. A person who is attending to two tasks at the same, whether necessitated by work demands or even for personal reasons, often does not realize that their break leads to attention division.

Distracted individuals perform worse, particularly in comparison with those who do not multitask at all. But when both persons multitask, their performance is still lower than that of those who do not, though it is slightly better than those groups in which only one person is multitasking. One reason could be that since both parties lose time in distractions, they switch back to the original task without any emotional burden of guilt or apology. It appears more as a break-and-resume than a wait-on-your-partner approach. It is therefore likely easier to seek and ask for clarification without feeling apologetic, which is a subject for future research. In the both-receiver condition each loses time, and it may be easier to get back to the original task together. Perhaps the cognitive burden on both persons is the same, making it easier to resume once finished texting. It is also

possible that seeing the other person texting may make the partner realize they have been doing the same thing, and they do not then consider it rude. This simultaneous multitasking also takes away the actor-observer bias because they may not make attributions about the person and instead understand the other person's need to multitask as well.

Another important finding is that information sharing is affected by multitasking. The largest amount comes if information is shared by those with no distractions, while the least amount by the dyads in which one person was a receiver. Both-receivers fall in between these two groups. Control groups perhaps understand the full implications of the decision to be made and weigh the pros and cons of sharing relevant information, thus leading to a more meaningful outcome. An explanation maybe that shared information is taken into account by both parties in the control group, while in the groups with distractions, information shared is lost when one or both persons are busy looking at their cell phones as their partners shared vital information. However, in the both-receiver condition, they may not hesitate to seek clarification since both parties are guilty of being distracted. Therefore, in study 4, though not measured, a more relevant outcome could be decision-quality and commitment, which measures whether decisions were made after considering all implications (this was measured in study 3).

Going forward, study 4 could be modified to understand the mechanisms of trust and perceived conscientiousness as mediators, as well as other outcomes like decision quality. For example, dyads may be able to choose the most appropriate option only if they shared vital information. In studies 3 and 4, significant differences were not observed with respect to whether more receivers, observers, or controls were changing

their minds to comply with the other person's decision. This could be because the negotiation was non-competitive, so there may not have been motivation to outdo the other person. It may also have been because the given materials about roles did not seem to inspire "one right answer." It would be interesting to know, however, whether other situations might cause a different tendency towards being open minded to information and suggestions from the negotiating partner or not.

Implications

Theoretical Implications:

One of the main contributions of the above studies is the attempt to understand the social implications of multitasking. As discussed above, given the prevalence and prominence of smart gadgets in everyday life, the implications for social processes are also necessary. In particular, observers may not always be passive. Therefore, these studies help us understand the implications for the outcomes and, to a certain extent, the perceptions of a person when they use smart gadgets at will. Timmerman (2002) argues that theories on media use could benefit from studying actual behavior and consequences instead of antecedents that lead to certain media choices over another, particularly in the organizational context. Research on media "fails to conceptualize media use as an activity that occurs within a larger, ongoing communication process" (Timmerman, 2002; pp.114). The above studies address these issues by focusing on the process in a negotiation, which itself requires an interdependent on-going communication process.

The focus of these studies is on all participants, not only on the multitasker. According to the social influence model (Fulk et al., 1990), people observe others' behavior (in this case the use of information and communication technology), the consequences, and their emotional reactions, and then they adjust their own behavior accordingly. While the observers' adjustment was not explicitly measured, their perception of their partners and also their satisfaction with the process was measured. Furthermore, regarding the social influence model, group and organizational norms affect not just media selection and use but also successive use. In the above studies, akin to organizational norms is the experimental condition. When students were given instructions that they need to use their mobile devices, perhaps they internalized it and therefore did not question the appropriateness of the usage in a negotiation in themselves or their partners.

Another implication is that all students were of equal power. Therefore, whatever effects are seen can be assumed to be free of pre-existing notions or prejudices about the other person. Perhaps all participants thought their partner was "one of us" and did not perceive any inequality. Had the research included giving one person a smart phone as part of the instructions and initial materials, perhaps resource inequality would have played a role. It may also have been the case that participants did not consider their partners to be outgroup members. According to social identity theory, a person's affiliation to a larger group (religion, ethnic background, community, or any other demographic characteristic) is a core aspect of one's identity, and people tend to attribute favorable characteristics to people of the same category, also called the ingroup. Similarly, they tend to attribute unfavorable characteristics to those who do not belong to

their category, making them the outgroup (Ashforth & Meal, 1989; Tajfel, 1982; Turner et al., 1979). In other words, it is possible that a person may excuse multitasking behavior from an ingroup member but may perceive the outgroup member more negatively.

Another theoretical contribution can be towards fundamental attribution. If the research design were slightly modified, such that in the both-persons distracted condition texts were sent to each person one after the other, instead of simultaneously, then we could observe the effects on attribution. In this case, the first person (say, A) would be distracted. Once A finishes texting, the text would be sent to the other person in the dyad (say, B). Once B finishes texting, the next text would be sent to A and so on. This way, since both persons are distracted they may not make negative attributions about the other person, but their satisfaction with the entire process could be much lower.

Managerial implications:

The implications of the above studies extend to the managerial contexts as well. Organizations routinely employ teams. Therefore, we have learned that in team meetings or in on-going project discussions multitasking affects performance. This holds true irrespective of whether one person is multitasking or multiple persons are multitasking, since performance is inhibited. Managers should consider, however, whether the commonness of such behavior means that when it is not permitted employees may feel that it gives them less freedom and choice. One way to combat this feeling among employees could come from demonstration of the adverse effects of multitasking at work.

In the above studies, most participants were young, undergraduate students, who indicated that they text more than ten times a day. This gives us an insight into

generational issues at the workplace. A demonstration of the negative effects of electronic multitasking may be helpful by way of training. Given the repetitiveness and the adeptness at using gadgets, distraction may become second nature, and individuals may be less mindful of the work itself. But this change is unlikely because even if the mechanics become routine, a person must be cognitively engaged in conversation, requiring detailed information processing for each new message. We must also ask if there might be conflict between multiple generations working together when some employees are continuously distracted while others are less adept at technology and therefore give their full attention to the task. This is likely to happen as early as the year 2020, according to a Forbes magazine report.²

When employees are continuously engaged in electronic multitasking, it has implications on time management and priorities. Perhaps distractions make employees focus on urgent rather than important tasks. It gives us a glimpse into how employees like to “fill” even small amounts of breaks or idle-time when they are at work. One way to reduce distractions could be to have designated areas for cell-phone usage, similar to smoking areas. If a person has to walk out to another room or even outside the work area to attend to calls or texts, the break and therefore the distraction would be even more obvious to the person and everyone else. This multitasking prevention idea could be coupled with information sessions and actual data to show that multitasking can be detrimental to task performance.

Limitations

²<http://www.forbes.com/sites/rawnshah/2011/04/20/working-with-five-generations-in-the-workplace/>

In study 1, the students were MBA students, while in the remaining studies students were undergraduates enrolled in introductory courses who participated in the study for extra credit. Since the samples were largely homogenous, one of the limitations is that various demographic factors have not been taken into account. Future studies could look into differences between agegroups and other demographic factors.

For study 2, participants from introductory management courses were recruited in exchange for extra credit. They had to participate in this study outside of their class hours, during a free period. The location for study 2 was a student center. Though the particular venue was insulated from the cafeteria just outside, the overall location gave it a casual ambience. On the basis of personal observance, the researcher notes that participants were interested only in the extra credit for which participation was necessary, and they did not seem to care about actual performance in the negotiation itself. They were more focused on completing the negotiation and getting done so that they could receive the extra credit. The researcher also observed the lack of conscientiousness in completing the post-negotiation questionnaire. Perhaps the reliability of the scales is relatively low.

A common thread running across all of the studies is that most participants kept their cell phone on "silent" mode. When a text message was sent it may not have caused the observers to take note of the distraction. Perhaps the younger generation is so adept at texting that the replies to the questions posed via text came quickly. One way to modify the studies could be to give a complex task which involves deep thinking or mathematical calculations so that it actually eats into the time allotted for the negotiation itself. Another aspect worth noting is that the observers likely perceived the distractions as exogenous

and therefore beyond the control of the negotiating partner. To study this, the distraction may be made endogenous, meaning the negotiators themselves. For example, students could be instructed to pull out their phones and say they have to make a call/send a text. The distraction could also be ruder by having the distracted participants speak over the phone about an unimportant matter, thereby making it very obvious that the negotiation is only secondary to that person. Perhaps by way of silent and quick texting, the distraction was not obvious enough to the observer. Other limitations are that the survey did not measure whether any observer noticed the distraction, and there is no record of the amount of time it took each of the conditions to reach an agreement. All negotiating dyads completed the task within the allocated time, but the actual time taken by each dyad was not recorded. Thus, it is not possible to conclude if distractions were delaying the process or not.

Moreover, in study 4 some participants started texting even as they were reading their materials. Though explicitly comparing notes was not allowed, students still guessed that they were being given different information and the researcher overheard one student say: "If your information says that company B is better, let us go with it." Participants did not have any qualms accepting other's information. Therefore, while the idea of a non-competitive negotiation worked, participants did not take it as an opportunity to convince the other person to take their stand. Another limitation of study 4 is that while participants were asked to make an initial choice before going into the negotiation, they were not asked to justify it. Doing so would have perhaps made them more confident of their own choice and thereby less willing to concede without reason.

Another limitation is the experimental research design, due to which external

validity is limited. Therefore these effects should be studied in work contexts, particularly when there are power differentials among the individuals. For example, a manager may get away with distracting behavior while the subordinate may not. Overall cultural and organizational norms on multitasking as well as the use of time need to be evaluated as well. Culturally, western countries are generally considered to be more “polychronic,” i.e. a preference for doing more than one thing at a time, while eastern cultures were considered monochronic. These differences can lend an important dimension in understanding not just cognitive but also cultural implications of multitasking.

Future Research

The above studies are about electronic multitasking in a negotiation. Parsing this further, there are two components: electronic multitasking and negotiations. There is ample scope to explore the effects of technology-mediated communication in the managerial context such as how multitasking affects work, teamwork, and even work-life balance. There is also the potential to study under what conditions the prevalence of technology-mediated communication can be beneficial. Communication literature has shown how emails have been used effectively for emergency communication in organizations. This can be extended to study what kinds of messages are more persuasive in urging employees to follow policies in the organization. In the above studies, the focus is not on the content of messages.

In line with the above argument, another future research direction can be the conditions under which a given rule or norm may be questioned or accepted without any resistance. Given that the undergraduate population in the above studies texts more than

ten times a day; this set of participants did not even question its appropriateness when instructions were given to receivers that they may need to use their phones during the task. Thus an interesting opportunity for research is whether the common occurrence or prevalence of a certain behavior makes it acceptable even if detrimental.

Another area of research with respect to mediated communication is virtual teams. In the above studies, I have focused on the conditions that inhibit or prevent knowledge/information sharing. Future research could look at how technology changes knowledge sharing over time in virtual teams when members are multitasking. Perhaps in the absence of co-location, members might rely on communication media solely for communicating and collaborating and may therefore not use technology for distracting purposes. An interesting area of research would be how shared norms about acceptable technology use are created in virtual teams.

The social influence model can be explored further by understand whether people make adjustments their own media use or multitasking behavior based on what other people around them are doing. The above studies measure performance and perceptions, but do not measure a person's willingness as well as the amount of adjustment to behavior on seeing another person.

Having done prior research on the use of twitter during the Egyptian revolution of 2011, another potential area of research is online social media. How do online social relationships hamper or facilitate actual workplace relationships? In the age of blogs and open-source coding, what are the implications for original intellectual property? More specifically, how can individual creativity or originality be recognized and appraised

when the lines between individual and common knowledge are blurred?

Finally, another line of research can be related to distractions and decision-making. I would like to explore how distractions affect ethical decision-making at the individual as well as dyad/group level. I would also like to explore if there are cross-cultural differences in how multitasking is perceived. As cited earlier, cultures vary on whether they are monochronic or polychronic. This may have to do with the perceptions associated with multitasking.

Studying these effects among multiple age-groups is an attractive area of research. I would like to explore how different age-groups and demographics adapt to mediated communication at the workplace and whether their choice of smart gadgets can lead to differences in thinking and working with each other. For example, if a group of younger employees prefers to use smartphones for communicating with their older colleagues, who themselves prefer more traditional approaches to communication, will this lead to less meaningful workplace relationships? This further raises the question of whether the use of smart gadgets can signal “having more resources” or being in the ownership of trendy and expensive technology. In other words, are there other perceptions and misconceptions possible such as concluding that the use of smart gadgets is a signal of power or status? These questions bring to light the fact that the context of the above studies needs to move from a laboratory to organizations, where the effects can be observed across age-groups, hierarchies, and pressing work demands. The concept of social identity can also be brought here to understand if multitasking behavior by ingroup members may be readily excused while that by outgroup members may be viewed unfavorably.

There is also scope to study different types of distractions. An explicitly social task, such as making weekend plans in a meeting clearly signals very low importance and priority for the ongoing work. But a necessary (emergency) or productive use of the devices may be viewed differently. The perceptions as well as performance can be studied with other types of distractions. At the workplace there are already many other possible distractions, such as a colleague stopping by someone's desk for a quick chat. Several companies employ instant messaging services, similar to internet chat tools, within the organization. Through these, team members and even managers can instantly communicate with their teams online. An interesting research question would be to understand what distractions are acceptable at the workplace. In fact, the task itself does not have to be a negotiation. The tasks could be a team meeting or any project planning stage in organizations.

Conclusion

The effects of electronic multitasking have been studied in the above four studies in the context of a negotiation. Findings indicate that being distracted in a negotiation (by way of texting) impacts performance negatively. The person who is distracted is also perceived as less trustworthy and professional. It has also been found that distractions negatively affect information sharing, which is crucial to joint decision-making. In terms of performance as well as information sharing, persons who were texting during the negotiation performed worst, followed by those who were both receivers and observers of text. In all studies, the control group (with no distractions) performed best and shared the most information. Implications for theory and practice are discussed.

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Appendix A

Satisfaction Measures

I am satisfied with the experience I had in this negotiation
This negotiation seemed like it would never end (*reversed scored*)
I found this negotiation to be enjoyable
I considered the negotiation to be unpleasant (*reversed scored*)
I was enthusiastic about the negotiation

Professionalism Measures

I am willing to negotiate with my partner again
My partner seemed very professional throughout

Trustworthiness Measures

I think my partner told the truth in the negotiation
I feel that my partner strongly tried to get the upper hand (*reversed scored*)
I feel that my partner would keep his or her word
I think that my partner took advantage of me (*reversed scored*)
I think my partner did not mislead me
I feel that my partner might try to get out of commitments (*reversed scored*)
I feel that my partner negotiated fairly
I feel that my partner might take advantage of vulnerability (*reversed scored*)
I think that my partner is the type who meets obligations
I feel that my partner negotiated with me honestly
I think that my partner succeeds by stepping on other people (*reversed scored*)
I consider my partner to be reliable

Table 1: Descriptive statistics and correlations for Study 1

Variable	<i>M</i>	<i>SD</i>	1	2	3	4
1. Manipulation ¹			-			
2. Satisfaction	5.53	.66	-.25*	-		
3. Professionalism	5.20	1.13	-.35**	.52**	-	
4. Interpersonal Trust	5.57	.90	-.13	.67**	.559**	-
5. Objective outcome	\$553,930.23	\$120,664.59	-.02	.028	-.084	-.059

* $p < .05$ ** $p < .01$ ¹ The manipulation was coded as either “0” (no mobile device) or “1” (mobile device)**Table 2: Mean and standard deviations by experimental condition for Study 1**

	Mobile Device		No Mobile Device	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1. Satisfaction	5.37	.75	5.72	.52
2. Professionalism	4.81	1.13	5.61	.98
3. Interpersonal Trust	5.46	1.05	5.69	.69
4. Objective outcome	\$551,409.09	\$121,121.08	\$556,571.43	\$121,594.97

Appendix B

Table 3: Descriptive Statistics and Correlations for Study 2

Variable	<i>Mean</i>	<i>S.D.</i>	1	2	3	4
Points	7517.44	2187.05	-			
Trust	5.56	0.91	0.31**	-		
Satisfaction	3.62	0.56	0.32**	0.19	-	
Professionalism	5.87	1.03	0.28*	0.65**	-0.07	-

* $p < .05$

** $p < .01$

Table 4: Mean and Standard Deviation by Experimental Condition for Study 2

Variable	Control		One-person receiver		Both receivers	
	<i>Mean</i>	<i>SD</i>	Mean	SD	Mean	SD
Points	8337.78	2354.35	6841.48	1984.18	7373.08	2222.62
Trust	6.0	1.05	5.37	0.84	5.33	1.01
Satisfaction	3.4	0.06	3.8	0.58	3.67	0.52
Professionalism	6.5	1.15	5.31	0.94	5.8	1.14

Appendix C

An additional study 3 was a major change from the previous 2 studies. The context of a negotiation was changed from a more distributive one to one with no apparent competition. In study 3, participants had to play the role of top management members of an organization called ACME and jointly decide which of the three companies presented to them would be the best for acquisition. There were 2 different roles, each containing different information about two of the three companies. Unique information presented to each role is given below. A total of 98 participants were randomly assigned to control group (n=44) and experimental group (n=54). Within each group, participants were randomly grouped into dyads, creating n=27 dyads in the experimental group and n=22 dyads in the control group. Within each dyad, one member was given role A and another was given role B. In the experimental group, the person receiving the texts was counterbalanced by role.

In this study, a number of outcomes were measured. First, as in study 2, trust, professionalism, and satisfaction were measured. However, a major difference is that 'decision quality and commitment' (scale items presented in Appendix E) was also measured. There were no significant differences between the two groups as well as between receivers and observers. One reason for this could be that this was a non-competitive negotiation. Thus, student participants did not suspect their negotiating partners of engaging in less trustworthy behaviors. Students were also trying to finish the negotiation and be done with it, and they did not take long enough to let the effects of professionalism or satisfaction set in. As far as decision quality and commitment is concerned, again, students may have assumed that the fact that they engaged in a

negotiation means that they did consider all implications, and there were no noticeable effects.

A main drawback of this study was that the materials were not favorable for a manipulation check. The materials should have been more explicit in terms of role A clearly favoring role A and role B clearly favoring role B. To begin with, there were three companies and a lot of information was packed in, perhaps it may have been slightly more difficult for an undergraduate student population to grasp, particularly since they are all from introductory courses. This is perhaps why manipulation checks failed. 52.3% of control group participants chose the initial outcome corresponding to their role, 51.9% of receivers chose the initial outcome corresponding to their role and 59.3% of observers chose the initial outcome, corresponding to their role. These are not statistically significant. In study 2 as well as study 3, Cronbach alpha for the trust scale was relatively low, lower than even 0.5. Thus, the survey items need modification. Another consistent observation has been that students were trying to wrap up the negotiation, complete the questionnaire and leave. Filling up a questionnaire with a number of survey items may have been more of a chore for students.

Since manipulations did not work, it is difficult to say if those negotiators who changed their original decision for a different joint outcome did so because of their experimental condition or simply because they felt that the other person had more information and it was okay to change their initial decision. In any case, 26.2% of control group participants had different individual and joint decisions, 18.5% of receivers had different individual and joint outcomes, 29.6% observers had different individual and joint decisions, while 70.4% had the same individual and joint decisions. These are not

statistically significant in chi-squares or in ANOVAs, but observers seem to change their mind most from their initial opinion. Among the observers who changed their minds, 62.5% changed from their original decision to company B as their final outcome. In a prior study for which these materials were used, it was based on the assumption that company B would be the most ideal choice irrespective of the initial role information given. In this study the manipulations did not work, but most observers still chose B as their final outcome, the most appropriate choice, per earlier versions of the study.

Another aspect is that participants did not have any incentives to perform their best in the negotiation. Quite often in a classroom negotiation exercise, the overall scores/outcomes are presented to the entire class. In this case, if students knew beforehand that their decisions in a negotiation could be presented to the whole class, then this may have motivated them to try and convince the other of their decision.

Additional Information provided to A but not B	Additional information provided to B but not A
<p>About company A:</p> <ul style="list-style-type: none"> • This analyst believes the chances of actually getting the projected return is 70 percent. This company's growth in sales has been positive, early projections indicate an increase to 8% for the next fiscal year. Further, this market is expected to grow in the foreseeable future. • This company is young, and was founded by a group of bright and talented entrepreneurs whose management experience was limited, <i>at the start</i> • The company has an innovative and promising product line. • The company leadership team has been actively developing their professional managerial skills through workshops and close work with experienced consultants. Industry watchers have noted that this group seems to be making more effective decisions, which are probably responsible for the recent sales growth. Analysts anticipate that this growth will continue as the company has room for improvement. • They offer training in a variety of business-related skills ranging from communication to accounting principles. 	<p>About company A:</p> <ul style="list-style-type: none"> • The pricing structure is not suitable for their target customers. The inexperience of the management team led to some early mistakes in marketing and distribution such that customer awareness of the products is low, and so are perceptions of service. The company leadership has been trying to address these issues head-on.

About Company B	About Company B
<p>About company B:</p> <ul style="list-style-type: none"> • External consultants estimate the rate of return to be 5%, and that the chances of getting that return will be 40 percent. Further, SBH expects a 30% chance either way that the return could double (thereby providing a 10% return) or that it could be zero. • It experienced record growth of 15% five years ago. The growth figures since then have been 12%, 10%, 9.3%, and 8%. • Company B has a 30% share of the market • A recent fine and responsibility for some clean-up costs, however, has resulted in a 6% reduction in bottom-line profits over the next 2 years. • The management team's style has evolved to a "maintenance" strategy, and some in the industry view them as being out of touch with current trends in their markets. 	<p>About company B:</p> <ul style="list-style-type: none"> • The external consultants estimated a lower rate of return than did your internal analyst, and they believed there would be a 30 percent chance of doubling their estimated return. Power Energy historically has experienced growth in sales averaging 10% annually. It experienced record growth of 15% five years ago. Last year's growth was 8%. • Company B has been the market leader for over two decades. It dominates the market with 30% share. The company enjoys strong name recognition among the public. The current management team is responsible for moving this company to the top of its market.

Table 5: Descriptive Statistics and Correlations for Study 3

Variable	Mean	SD	1	2	3	4
Trust	5.06	0.66	-			
Decision	5.11	0.86	0.35**	-		
Quality/Commitment						
Satisfaction	5.35	1.04	0.47**	0.48**	-	
Professionalism	5.64	1.11	0.47**	0.36**	0.39**	-

** p < .01

Table 6: Mean and Standard Deviation by condition for Study 3

Variable	Control		Experiment Group	
	Mean	SD	Mean	SD
Trust	4.90	0.58	5.22	0.75
Decision	5.04	0.82	5.19	0.90
Quality/Commitment				
Satisfaction	5.37	1.05	5.34	1.03
Professionalism	5.42	1.17	5.87	1.06

Appendix D

Questionnaire given to participants with role A for Study 4

1. Did you know that Power Energy has been the market leader with 30% market share?
 - a. Yes
 - b. No
2. Did you know that the current management team of Power Energy is responsible for moving this company to the top of its market?
 - a. Yes
 - b. No
3. Did you know Power Energy historically has experienced growth in sales averaging 10% annually? It experienced record sales growth of 15% five years ago. Last year's growth was still an impressive 8%.?
 - a. Yes
 - b. No
4. Did you know that there is a 15 percent chance that Whiz Bang company will have zero profits?
 - a. Yes
 - b. No

Other results pertaining to Study 4

Choosing B as outcome:

Within the control group, 47.6% of dyads chose B as the joint decision and 52.4% chose A as joint outcome. 12.5% of experimental group dyads had an impasse, 58.3% of exp. Group dyads chose B and the remaining 29.2% chose A. Within the both-receiver group, 9.8% had an impasse, 38.1% chose B and the rest (52.4%) chose A. These differences were not statistically significant in a chi-squared test.

At the individual level, 63.5% of receivers chose B as their individual outcome, while 31.8% of receivers chose A as their initial outcome

Among observers, 48% chose B and 52% chose A

Among the both-receiver condition, 51% chose B and 57% chose A as initial outcome

Among the control group, 47.6% chose B and 52.4% chose A as initial outcome.

The above differences are not statistically significant in a chi square test.

% who changed their minds:

Among the receivers who changed their mind, 37.5% changed from A to B and the remaining 62.5% from B to A.

Among observers who changed their mind, 57.1% changed from A to B and the remaining 42.9% from B to A.

Among 'both' who changed their mind, 50% changed their mind from A to B and the other 50% from B to A.

Among controls who changed their minds, 60% changed their mind from A to B and the rest from B to A.

These are not statistically significant in chi-squares or ANOVA.

Questionnaire given to participants with role B for Study 4

1. Did you know that the chances that company WhizBang would actually achieve 15% growth are 70 percent?
 - a. Yes
 - b. No
2. Did you know that there is a 15% chance that Whizbang might actually double the growth rate to an impressive 30%?
 - a. Yes
 - b. No
3. Did you know that lizard.com too had predicted an impressive 80% chance of Whizbang achieving 15% profit rate?
 - a. Yes
 - b. No
4. Did you know that: In response to the Leadership team at WhizBang actively developing their professional managerial skills, Industry watchers have noted that this group has been making much more effective decisions, which are probably responsible for the recent sales growth. Analysts anticipate that this positive growth will continue.
 - a. Yes
 - b. No
5. Did you know that as far as Power Energy is concerned, lizard.com estimates that the profit rate will only be a pitiful 5%, with only a 40 percent chance of this even actually happening?
 - a. Yes
 - b. No
6. Did you know that lizard.com expects a 30 percent chance that profits of Power Energy could be a lackluster 10%. ?
 - a. Yes
 - b. No
7. Did you know that lizard.com estimates an alarmingly high 30 percent chance that profits of Power Energy could actually be zero!
 - a. Yes
 - b. No
8. Did you know that Power Energy's growth figures for the last four years have been declining as follows: 12%, 10%, 9.3%, and 8%.
 - a. Yes
 - b. No

9. Did you know that Power Energy has been stagnating at a 30% share of the market?
- a. Yes
 - b. No

Appendix E

Decision Commitment and Quality Scale Items

My partner is proud to tell others s/he was involved in making this decision.

My partner is willing to put in a great deal of effort to see this decision be successful.

My partner really cares about seeing this decision be successful.

My partner feels there is not much to be gained by sticking with this decision

This decision was based on the best available information

This decision was made based on valid assumptions

This decision helps the University achieve its objectives

This decision makes sense in light of the given circumstances

This decision was made after considering all implications

CURRICULUM VITAE

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1979-Born in Mumbai, India

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Forthcoming Publications:

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