The Impact of Alcohol on Negotiator Behavior: Experimental Evidence¹

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Business-related drinking is an important organizational and managerial activity with particular relevance to the negotiation process. This paper investigates the influence of a moderate amount of alcohol on negotiator behavior and negotiated outcomes. We conducted 2 negotiation studies involving inebriated and sober participants, and found that inebriated negotiators used more aggressive tactics, made more mistakes, and reached less integrative agreements than did sober negotiators. Across both studies, we found that inebriated negotiators were unaware that alcohol had affected their negotiations.

Alcohol consumption is a familiar part of American business practice and is particularly prevalent in negotiations (Schweitzer & Kerr, 2000). Alcohol plays a role in a vast array of negotiation settings, including sales meetings (Bordwin, 1994), labor negotiations (O'Toole, 1996), real-estate transactions, health care agreements, Internet deals (Stossel, 1997), and political negotiations (Rowny, 1992). Often, alcohol exerts considerable influence over the negotiation process. In some cases, alcohol consumption eliminates the possibility of reaching a deal (Ruzicka, 1995), while in others it helps create agreements that probably should not have been reached. In one example, after consuming wine during a negotiation, a real-estate investor agreed to sell a property for half of its actual value (Schapiro, 1993). In a more serious example of alcohol's influence on the negotiation process, senior American generals gave away important secrets after consuming alcohol with Soviet generals during the arms-control negotiations leading to the Start II Treaty (Rowny, 1992).

Alcohol's role in organizational behavior is particularly important in many foreign cultures. In China, for example, negotiations are often preceded by a round of toasts (Kuntz, 1997). In Japan, significant business meetings are

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frequently held after hours over whiskey ("Legless in Tokyo," 1993), where drinking can become more of a duty than a pleasure (DeMente, 1994). In fact, some etiquette guides for American managers recommend that they get drunk with their Japanese counterparts (Rowland, 1993). Similar cases have been made for drinking with business associates in China (Beamer, 1993), Russia, Korea, India, and other foreign countries (Heath, 1995).

Despite the prevalent use of alcohol during negotiations, surprisingly little prior work has examined the influence of alcohol on the negotiation process. The relationship between alcohol and negotiations is complicated by the fact that alcohol operates differently at different quantity levels and at different stages of the negotiation process. We consider one facet of this relationship and explore the influence of a moderate amount of alcohol on the actual bargaining process. The influence that a moderate amount of alcohol exerts on the bargaining process may be particularly important because negotiators are likely to underestimate alcohol's effects as they structure an agreement. This paper describes both outcome and process differences between sober and inebriated negotiators with a focus on aggressive behaviors, integrative behaviors, and mistakes.

Alcohol and Behavior

Alcohol influences behavior by altering the way that individuals process information and evaluate alternatives. Hull (1981) proposed a behavioral model of alcohol suggesting that alcohol decreases self-awareness and sensitivity to cues regarding appropriate behavior. Steele and Josephs (1990) extended this idea and focused on alcohol's role in shifting attention and reducing the amount of information that people can process. Steele and Josephs defined these changes as alcohol myopia. According to their model, alcohol impairs perception and thought and restricts attention to fewer salient cues. As a consequence, people under the influence of alcohol are disproportionately influenced by salient and immediate information. This shift in focus can influence behavior in important ways. For example, Steele and Josephs used their model to explain the link between alcohol and aggressive behavior. In general, response conflict cues (e.g., anticipating the adverse consequences of yelling at your boss) are often more distant than are salient provocative cues (e.g., unfair criticism from your boss). Since sober individuals process and attend to both distant and salient cues, they may behave very differently than inebriated individuals who focus their attention on salient cues.

Prior work has documented a close relationship between alcohol consumption and aggressive behavior. For example, alcohol consumption is associated with violent crime (Dunnegan, 1997), assault (Zhang, Wieczorek, & Welte, 1997), and homicide (Norstroem, 1998). By some estimates, intoxicated perpetrators commit 60% of all murders (Steele & Southwick, 1985). Zeichner and Pihl (1979) examined the relationship between alcohol and aggression in an experiment. They found that inebriated participants administered more severe shocks for longer durations. In their study, participants wore headphones and were subjected to 25 annoying tones. Participants were told that another participant in a different room had administered the tone and that they could stop each tone by shocking the other participant. There were five levels of shocks, and the experiment was repeated 25 times.

Alcohol consumption disrupts information processing with other important consequences as well. Even slight levels of inebriation limit the amount of information that people can process (Fillmore, Carscadden, & Vogel-Sprott, 1998; Moskowitz, Burns, & Williams, 1985) and recall (Jobs, Fiedler, & Lewis, 1990). People learn both more slowly and less effectively while they are inebriated (Maylor, Rabbitt, James, & Kerr, 1990; Rosen & Lee, 1976), in part because alcohol impairs one's ability to organize information (Birnbaum, Johnson, Hartley, & Taylor, 1980). Learning is also a state-dependent process (Weingartner, Adefris, Eich, & Murphy, 1976); information learned in a sober or intoxicated state is more difficult to recall in a different state.

Alcohol's effects are most debilitating in complex environments that require careful and considered judgment. Alcohol impairs our ability to formulate strategy (Streufert et al., 1993) and to think ahead to anticipate negative consequences of current actions (Steele & Southwick, 1985). In one study, Steele, Critchlow, and Liu (1985) found that inebriated individuals were less capable of thinking critically when evaluating alternatives and were more likely to be influenced by external pressures. They asked intoxicated and sober participants to help with both a pleasant and an unpleasant task. Both groups of participants were equally likely to help with the pleasant task, but intoxicated participants were more likely to help with the unpleasant task than were sober participants.

Under the influence of alcohol, however, many people fail to recognize alcohol's effects. Alcohol distorts self-perceptions, and inebriated people tend to be overconfident in their abilities (Banaji & Steele, 1989; Steele & Josephs, 1990). In addition, alcohol distorts risk attitudes. Jobs et al. (1990) found that alcohol consumption increased the degree of business risk that participants were willing to assume, and MacDonald, Zanna, and Fong (1995) found that individuals were more willing to engage in risky activities (e.g., driving under the influence of alcohol) after they had been drinking.

The combination of impaired performance, overconfidence, and a shift in risk attitude can be particularly harmful. A substantial literature has documented the hazards of drinking and driving (see Dennis, 1993, for a review) and drinking and risky sexual behavior (Fromme, D'Amico, & Katz, 1999; Seto & Barbaree, 1995), but surprisingly little work has investigated the influence of alcohol on managerial activities such as negotiation. In the present article, we extend prior work by examining the influence of alcohol on negotiation. Alcohol is frequently present in negotiation settings (Schweitzer & Kerr, 2000), and many of the ways in which alcohol influences behavior are relevant to the bargaining process.

Study 1

Our first study investigates the influence of alcohol on negotiated outcomes. We recruited participants to participate in a negotiation exercise, and we compared the agreements that inebriated and sober dyads reached. The negotiation exercise included two roles, an employer and a placement agent who negotiate over a compensation package for a prospective employee. The negotiation involved five issues and included opportunities to create joint gains.

Hypotheses

Prior work has demonstrated that alcohol influences behavior and perceptions in a number of ways that may be relevant to negotiations. In this section, we develop two hypotheses.

In our first hypothesis, we propose a link between alcohol consumption and the efficiency of negotiated agreements. We define efficiency in terms of the profit that negotiators create, and measure efficiency using both a joint-profit and a Pareto efficiency measure. These measures gauge the extent to which negotiators create value and realize opportunities for joint gains.

We expect alcohol consumption to harm the efficiency of negotiated agreements by interfering with the way that negotiators exchange and process information. Both information exchange and the ability to process information are key components in reaching efficient agreements (Thompson, 1991).

Alcohol consumption is likely to harm the information exchange process for several reasons. Prior work has linked alcohol consumption with aggressive behavior (Dunnegan, 1997; Zeichner & Pihl, 1979), and we posit that alcohol consumption will increase the likelihood that negotiators will employ contentious tactics. While the use of contentious tactics may increase individual gains, these tactics limit opportunities for the truthful exchange of information, increase the likelihood of reaching an impasse, and harm joint gains (Pruitt & Carnevale, 1982). This proposition is consistent with the dual-concern model (see Carnevale & Pruitt, 1992, for a review). Negotiators with individualistic orientations (high self-concern and low other-concern) are more likely to use contentious tactics and are less likely to think creatively about issues than are negotiators with problem-solving orientations (high self-concern and high other-concern).

Alcohol consumption also may harm negotiations by limiting the amount of information that negotiators can process. Previous work has demonstrated that the better negotiators are at integrating information, the more joint gains they can create (Kramer, Newton, & Pommerenke, 1993). In complex environments, a negotiator's ability to process information is likely to be closely related to his or

her ability to reach efficient agreements. For example, Thompson (1990) found that negotiators who proposed and considered multiple offers were able to reach better agreements. Similarly, negotiation strategies for reaching efficient agreements, such as inventing options for mutual gain (Fisher, Ury, & Patton, 1991) and searching for post-settlement settlements (Raiffa, 1982), require high levels of information processing.

Prior work has demonstrated that alcohol interferes with information processing (Fillmore et al., 1998; Moskowitz et al., 1985). In negotiations, impaired information processing may limit a negotiator's ability to explore the interests of others, share information, and create value.

Hypothesis 1. Agreements negotiated by inebriated dyads will be less efficient than those negotiated by sober dyads.

We next consider the influence of alcohol on negotiator perceptions. We expect inebriated negotiators to underestimate the influence of alcohol on their behavior. Prior work has demonstrated that people misperceive cues that would otherwise provide them with feedback regarding their impaired performance (Jaccard & Turrisi, 1987). In general, inebriated people fail to recognize the extent to which they are impaired.

In negotiations, this misperception may have important consequences. Inebriated negotiators are likely to fail to recognize the extent to which alcohol influences their behavior and to be overconfident in their ability to negotiate effectively. As a result, negotiators may overconsume alcohol during negotiations. Ultimately, alcohol's influence on negotiations may be particularly great precisely because inebriated people have such a difficult time recognizing alcohol's effects.

Hypothesis 2. Negotiators will underestimate alcohol's influence on their negotiations.

Method

Participants

We recruited 42 (32 male, 10 female) Master of Business Administration (MBA) students through flyers and class announcements for two replications of the study. All of these participants were over the age of 21 years and reported no history of drinking problems, a willingness to consume beer, and a willingness to participate in an experiment that could last up to 4 hr.

Procedure

Participants who signed up for the experiment were telephoned twice: 1 week prior to the study, and 1 day prior to the study. At both times, participants were

reminded not to consume alcohol before arriving at the study, not to eat for 2 hr prior to the study, and to bring a valid form of identification to verify their age.

Upon arrival at the experiment, each participant completed a consent form, presented his or her identification, and stepped on a scale. The experimenter introduced the experiment and informed the participants that they would participate in a negotiation exercise and would be paid \$5 for showing up, as well as additional money based on their performance in the negotiation.

Participants were then randomly assigned to the role of either agent or employer. To reduce possible gender interactions, we created same-gender dyads, but randomly assigned roles and treatment conditions within each gender group. Eight of the 16 male dyads and 3 of the 5 female dyads were assigned to the alcohol condition. Both participants in the alcohol condition consumed alcohol.

Participants were not informed as to who their negotiating partner would be or whether or not they would consume alcohol while they prepared their role in the case. Participants were given approximately 20 min to prepare their role and were allowed to make notes on their confidential information sheets. This part of the exercise was conducted while all of the participants were sober to unconfound the effects of learning and drinking from those of negotiating and drinking.

The case involved structuring a job offer for a previously interviewed candidate. Confidential instructions for both the agent and the employer emphasized their interest in closing a deal, and gave them broad authority to structure a deal.

The job description and candidate's résumé are included in Appendix A. Both sides of the case contained private information describing each party's interests and how these interests converted to point values. The last page of the case description was a table of point values including one of the two columns of values represented in the payoff table in Appendix B. Participants were informed that the points they earned in the negotiation would be converted to cash at an exchange rate of 10 points to the dollar, and that they would earn 50 points if they failed to reach an agreement. After preparing for the case, participants returned their confidential information sheets to the experimenter.³

We separated participants into four groups (according to their treatment condition) and asked them not to talk about the case until they were paired with their counterpart. Participants then walked from the classroom to a bar on campus, where each participant consumed either beer or soda. To mitigate potential feelings of regret that some participants might experience upon being assigned to the sober condition, we made it clear that all participants would be given the opportunity to consume alcohol after the negotiation exercise.

We poured quantities of beer for each participant in the alcohol condition in proportion to their weight, a target blood alcohol level (BAL) of .06, and a blood

³Participant information sheets were coded with each participant's number so that the sheets could be returned to them prior to the actual negotiation phase of the study.

alcohol conversion chart like the one in Appendix C. The target BAL is a moderate level of intoxication that is below the legal driving limits of .10 (in 35 states and the District of Columbia) and .08 (in 13 states).⁴ For example, a 160-lb (72.54 kg) would be asked to consume about 2.5 beers. Approximately 15 min after they consumed their allotted quantities of alcohol, we measured each participant's BAL with a Breathalyzer (Alco-Sensor III, Intoxometer).

We then returned each participant's confidential information sheet and asked him or her to review his or her case material. At this point, we then introduced each participant to his or her negotiation partner, recorded the start time, and asked participants to begin their negotiation. Once participants reached an agreement, we collected their agreement sheets and recorded the completion time. We then asked participants to remain in the bar and complete a postnegotiation questionnaire. This questionnaire asked participants to assess their negotiation performance and the influence that alcohol had had on their negotiation. Specifically, participants were asked "Do you think that alcohol affected your negotiation?" and to estimate the number of points they had gained or lost. After they completed the postnegotiation questionnaire, we remeasured each participant's BAL and asked those participants with elevated BALs to remain on campus and watch a movie.⁵

Measures of Efficiency

One of our key dependent variables was the efficiency of negotiated agreements. Despite the importance of assessing efficiency in negotiations, no clear consensus regarding a measure of efficiency exists.⁶ Consequently, we measured the efficiency of agreements in two different ways: joint profit and a Pareto efficiency score. The joint-profit measure is the most straightforward and common method of assessing group performance (Tripp & Sondak, 1992), and is calculated by summing individual scores. This measure is widely used, but fails to account for Pareto efficiency. Consequently, we also measured outcomes using a score proposed by Tripp and Sondak and adapted by Weingart, Hyder, and Prietula (1996).⁷

⁴In Massachusetts and South Carolina, driving with a BAL of .10 is evidence of impairment, but is not illegal.

⁵We thank the Human Subjects Committee for this suggestion.

⁶This is partly a result of the fact that no measure of efficiency can be distribution-free, and hence no single measure will be appropriate for all negotiations (Clyman, 1995).

⁷Weingart et al. (1996) proposed the use of an arcsine transformation to reduce negative skewness. In this study, the arcsine transformation reduced skewness from -0.54 to -0.19. Additional measures of efficiency have also been advanced, including the Nash (1953) bargaining solution and the integrativeness quotient (Lax & Sebenius, 1987). Neither of these measures has been adopted widely and, as a practical matter for this study, is very highly correlated with the measures we report.

$$PE_Score(x_i, y_i) = \arcsin\left(1 - \frac{PS(x_i, y_i)}{PS(x_i, y_i) + PI(x_i, y_i)}\right)$$

In this equation, x_i and y_i denote the points or money that each party earns in agreement i, and $PS(x_i, y_i)$ denotes the number of Pareto superior agreements relative to (x_i, y_i) and $PI(x_i, y_i)$ denotes the number of Pareto inferior agreements relative to (x_i, y_i) .

Results

All 42 participants completed the study, and the average BAL of inebriated participants was .074 ($\sigma = .018$). We report correlations for all variables in Table 1. We found no differences between male and female dyads across treatment conditions, and combined data from both groups.

Supporting Hypothesis 1, sober dyads reached more efficient agreements than did inebriated dyads. These results are described in terms of Pareto efficiency and total points in Rows 1 and 4 of Table 2. Pareto efficiency scores were closely correlated with total point scores: ρ (Pareto score, total points) = 0.99, p < .001. The average Pareto efficiency score for sober dyads was significantly higher than it was for inebriated dyads (1.12 vs. 0.71 in two-sided t test, p < .05), and the average total score for sober dyads was higher than it was for inebriated dyads (172.10 vs. 163.00 in two-sided t test, p = .07). Our hypothesis also is supported by a Wilcoxon-Mann-Whitney rank sum test for both the Pareto score, R'(10, 11) = 79, and the total points score, R'(10, 11) = 80, p < .05, in both cases for two-sided tests. We found no differences between the variances of efficiency scores between groups.

While inebriated dyads reached less efficient agreements than did sober dyads, the decline in joint gains was not distributed equally between negotiator roles. Participants in the agent role earned higher average scores under the inebriated condition, and we found a significant role by alcohol interaction. In an ANOVA model with score as the dependent variable, we found main effects for the influence of alcohol consumption (p < .01), negotiator role (p < .05), and an interaction between the two (p < .01). We explore this issue in more detail in Study 2 and offer potential explanations for this result in the General Discussion section.

Supporting Hypothesis 2, inebriated participants were generally unaware of the effect that alcohol had on their negotiations. Most inebriated participants did not feel debilitated at all. Of the 22 inebriated participants, 9 claimed that alcohol had no effect on their negotiation, 8 thought that alcohol helped their side of the negotiation, and only 5 thought that alcohol had hurt their negotiation performance. On average, participants who thought that alcohol had affected their

•									
	1	2	3	4	5	6	2	8	6
1. Alcohol consumption									
2. Length (min)	178								
3. Employer points	604**	050	ł						
4. Agent points	.281	.203	462*						
5. Total points	402	.118	.667**	.352					
6. Pareto efficiency	456*	.086	.767**	.208	.985**	ł			
7. E alcohol effect	.145	.043	900.	860.	089.	111.	I		
8. A alcohol effect	.247	078	035	000	037	020	489*	1	
9. Gender	085	034	.145	044	.116	.112	.085	551*	ł
Note. Alcohol consumption, $1 = alcu female dyads.$ Significance levels ar * $p < .05$. ** $p < .01$.	ohol was con e reported fo	sumed, 0 r two-taile	= otherwise. id tests.	E = empl	oyer role, A	= agent ro	ole. Gender,	l = male d	yads, 0 =

Correlations of Variables in Study 1

Table 1

Table 2

Treatment condition: Agent-employer (study)	No. of dyads	PE score (SD)	Total points (SD)	Agent points	Employer points
Sober-sober (1)	10	1.122 ^a (0.44)	172.1 ^a (14.5)	80.2	91.9
Sober-inebriated (2)	13	0.691 ^b (0.52)	159.8 ^b (22.0)	73.9	85.9
Inebriated-sober (2)	12	0.649 ^b (0.48)	158.4 ^b (21.1)	78.3	80.1
Inebriated– inebriated (1)	11	0.707 ^b (0.41)	163.0 ^b (11.8)	87.4	75.6

Negotiated Outcome Measures

Note. Multiple comparison contrast tests revealed significant group differences for both the Pareto efficiency (PE) and total points scores between the exclusively sober dyads (^a) and the other three treatment conditions (^b). There were no significant group score differences between the three treatment conditions.

negotiation thought that it had enabled them to earn 4.92 additional points. This amount, however, is not significantly different from zero, t(12) = 1.26, p = .23, in a two-sided test.

We found no relationship between participants' perceptions of alcohol's effects and participants' performance. Participants who thought that alcohol aided (impaired) their negotiation were no more likely to earn higher (lower) scores than were other participants. The correlation coefficients between perception and performance were small for participants in the agent role ($\rho = -0.16$, p = .32) and for participants in the employer role ($\rho = 0.22$, p = .26).

We collected only coarse process measures in this experiment. Both treatment groups reached agreement in about the same length of time. On average, inebriated dyads reached agreements in 17.2 min compared to 20.0 min for sober dyads, but this difference was not significant, t(19) = 0.79, p = .44.

Discussion

This experiment described the effects of a moderate amount of alcohol on negotiated outcomes. In this study, even though inebriated participants were generally unaware that alcohol had affected their negotiation performance, they structured different and less efficient agreements than did sober negotiators.

Aside from length of time spent negotiating, we did not collect process measures in Study 1. Alcohol influences behavior in several ways that are relevant to the negotiation process, and while inebriated negotiators reached less efficient agreements than did sober negotiators, results from this study cannot explain what the process differences were. This lack of process measures is a limitation of the study.

A second limitation of the study stems from the combination of expectancy and intoxication effects. When people consume alcohol, their behavior changes both because they expect alcohol to influence their behavior (the expectancy effect; Abrams & Wilson, 1979), and because alcohol actually causes biochemical reactions that change behavior (the intoxication effect; Hull & Bond, 1986). Although expectancy and intoxication effects generally work in tandem, one potential limitation of the study is that we did not disentangle the two effects.

Study 2

We extend our investigation of the influence of alcohol on negotiations in Study 2. The method we employed in Study 2 were similar to those we used in Study 1, with three important differences. First, we paired sober participants with inebriated participants. Second, we tape-recorded the negotiations; and third, we gave sober participants nonalcoholic beer, rather than soda. These differences enable us to identify the influence of a single inebriated negotiator on negotiated outcomes, to investigate the influence of alcohol on the negotiation process, and to disentangle expectancy effects from intoxication effects.

Hypotheses

In Study 2, we develop both process and outcome hypotheses.

Process Hypotheses

Prior work has linked alcohol with assault, violent crime, and other aggressive behavior (Dunnegan, 1997; Norstroem, 1998; Steele & Southwick, 1985; Zeichner & Pihl, 1979; Zhang et al., 1997). In our context, we expect inebriated negotiators to be more likely to initiate and to use aggressive negotiation tactics than sober negotiators. Drawing on previous work in negotiations, we define *aggressive tactics* to include insults, threats, and deception. We describe these measures in more detail in the Method section. The initial use of a tactic may be a particularly important measure of aggression since the introduction of a tactic, such as an insult, may lead to an escalation of hostile behavior.

Hypothesis 3. Inebriated negotiators will be more likely to initiate and to use aggressive tactics than will sober negotiators.

We next investigate negotiators' use of integrative tactics. Prior work has demonstrated that sharing information (Thompson, 1991) and learning about the

other party's interests (Thompson, 1990) help negotiators to create value. In this study, we measure integrative behaviors by counting the frequency with which negotiators provide information, summarize the other party's point of view, and ask questions.

Alcohol disrupts information processing (Fillmore et al., 1998; Steele & Josephs, 1990), and we expect sober negotiators to be more effective in sharing information and learning about the other party's interests than inebriated negotiators. Consequently, we expect sober negotiators to use more integrative tactics than inebriated negotiators.

Hypothesis 4. Sober negotiators will use more integrative behaviors than will inebriated negotiators.

Prior work has demonstrated that alcohol impairs our ability to recall information (Jobs et al., 1990; Rosen & Lee, 1976), focus our train of thought (Steele & Josephs, 1990), and focus our attention (Moskowitz & DePry, 1968). Consequently, we expect inebriated negotiators to be more likely to make mistakes during the negotiation than sober negotiators. We define *mistakes* as statements that contradict one's interests or a prior claim. This definition is similar to Thompson's (1998) conceptualization of misunderstood messages.⁸

Hypothesis 5. Inebriated negotiators will make more mistakes than will sober negotiators.

Outcome Hypotheses

We next consider the influence of alcohol on negotiated outcomes. In Study 2, we paired inebriated negotiators with sober negotiators. While we expect alcohol to influence negotiator behavior in a number of systematic ways, the influence of alcohol on the net profit that an inebriated negotiator earns is unclear. On the one hand, alcohol increases aggression (Pihl, Zeichner, Niaura, Nagy, & Zacchia, 1981), which may enable a negotiator to be more effective in claiming surplus from a negotiation.

On the other hand, an inebriated negotiator may be less effective in creating surplus. Alcohol impairs a negotiator's ability to process information (Steele & Josephs, 1990), which may cause a negotiator to be less integrative and to make more mistakes. Inebriated negotiators are likely to be less effective in communicating their interests and empathizing with their opponent. Further, since alcohol increases aggression (Zeichner & Pihl, 1979), inebriated negotiators

⁸Thompson (1998) defines *misunderstood messages* as those "which are wrongly interpreted by another party" (p. 302).

may be more likely to use threats, and as Shapiro and Bies (1994) found, negotiators who use threats reach less integrative agreements than do negotiators who do not use threats.

If inebriated negotiators become both more assertive and less integrative, they are likely to claim a larger share of a smaller pie. The net effect on an inebriated negotiator's performance is unclear, and we propose two alternative hypotheses.

Hypothesis 6a. Alcohol may improve an individual negotiator's performance.

Hypothesis 6b. Alcohol may harm an individual negotiator's performance.

The use of both more aggressive and less integrative tactics by an inebriated negotiator is likely to harm the performance of the inebriated negotiator's partner. Consequently, we propose the following:

Hypothesis 7. Alcohol consumption will harm the performance of the inebriated negotiator's partner.

In addition, group performance is likely to suffer. We expect agreements reached by dyads that include an inebriated negotiator to be less efficient than agreements reached by dyads that include only sober negotiators.

Hypothesis 8. The group performance of dyads that include an inebriated negotiator will be less efficient than will the group performance of sober dyads.

Method

The methods we used in Study 2 were very similar to the methods we used in Study 1. In this section, we highlight the differences between the two studies.

Pilot Study

We first conducted a pilot study to select the alcoholic and nonalcoholic beverages for Study 2. One of the objectives of Study 2 was to disentangle expectancy effects from the actual intoxication effects of alcohol consumption. Prior work has demonstrated that at low levels of inebriation, participants are unable to differentiate between an alcoholic beverage and a placebo (Hull & Bond, 1986).

We conducted a taste test with 10 participants who sampled 10 different beverages. We asked each participant to identify each beverage as either alcoholic or nonalcoholic. The panel of beverages included 5 alcoholic beers and 5 nonalcoholic beers. From this taste test, we identified an alcoholic beer and a nonalcoholic beer that participants confused most often, and used these beverages in our treatment conditions.

Design

We used the same two-party, agent-employer negotiation case from Study 1. In this study, we paired sober agents with inebriated employers and inebriated agents with sober employers.

Procedure

We recruited a nonoverlapping population of MBA participants from class announcements. We conducted two replications of the study, and recruited a total of 50 participants (38 male, 12 female). As before, we recruited participants who were over the age of 21 years, had no history of drinking problems, were willing to consume beer, and could participate for a study that could last up to 4 hr. All subjects were instructed not to eat for 2 hr prior to the experiment and not to consume alcohol the day of the experiment.

We used the same methods as Study 1 to introduce the experiment, check identification, weigh participants, and have participants prepare the case. As part of the introduction, participants were informed that they would be served drinks in the on-campus bar. The consent form indicated that half of the participants would consume alcohol, but no participants asked about this issue, and the experimenter did not discuss this point.

Once all of the participants had been weighed, and while they were preparing the case, two research assistants went on ahead to the bar to pour assigned quantities of either alcoholic or nonalcoholic beer for each participant. Participants were not informed of their assignment to a treatment condition, and approximately 15 min after participants had finished consuming their drinks, we conducted Breathalyzer tests on everyone and recorded results from each participant. Participants were not provided with their BAL scores, but to be sure that participants would not inadvertently observe a zero BAL reading, the research assistant collected measures from the inebriated participants first, and did not clear the machine during the course of measuring the sober participants. This caused the Breathalyzer to register positive BALs for sober participants, which the research assistant recorded on a sheet.

Participants were then paired in same-gender dyads and negotiated the case. All negotiations in this study were tape-recorded.

Once participants finished their negotiations, they were asked to complete a postnegotiation questionnaire. Participants were asked about the negotiation process, their perceptions of how alcohol had affected their negotiation, and general demographic information. With respect to the influence of alcohol, participants were asked, "How inebriated did you feel during your negotiation?" which was rated on an 11-point scale ranging from 1 (not at all inebriated) to 11 (very inebriated), "Do you think alcohol affected your negotiation?" which was rated on an 11-point scale ranging from 1 (not at all) to 11 (very much), and "Did alcohol consumption help or hurt your side of the negotiation?" If participants thought that alcohol had helped or hurt their side, they were asked to estimate the number of points they had gained or lost. With respect to the negotiation process, participants were asked, "To reach an agreement, both of you made some concessions. In your negotiation, who made most of the concessions?" which was rated on an 11-point scale ranging from 1 (I made all the concessions) to 6 (both about the same) to 11 (the other person made all the concessions). Finally, participants were asked demographic information, including their years of work experience, age, and gender.

At the conclusion of the study, participants were paid \$5 for participating in the study and an additional \$1 for every 10 points they earned in their negotiation. We conducted a second Breathalyzer test (clearing the machine each time), and asked participants with elevated BALs (above .04) to remain on campus to watch a movie.

Outcome and Process Measures

We used the same outcome measures in Study 2 as in Study 1, but in Study 2 we collected a much richer set of process measures. All of the negotiations were recorded, and each recorded negotiation was transcribed and then coded according to a coding scheme adapted from Weingart, Simmons, Robinson, and Brett (1990). The process measures of particular interest for this study were aggressive behaviors, integrative behaviors, and mistakes.

Drawing on previous literature on aggression and unethical behavior (Anton, 1990; Lewicki, 1983; Lewicki & Robinson, 1998), we identify six types of behaviors that we categorize as aggressive. These include *insults* (e.g., "Your client is not outstanding. He doesn't have a lot of experience"), *misrepresentations of facts, misrepresentations of interests* (e.g., "We really need someone who has more experience"), *bluffs* (which include fabricated alternatives or opportunities; e.g., "We have many other candidates who can start right away"), *reservation price claims* (e.g., "I cannot go any higher"), and *threats to terminate the negotiation* (e.g., "We might as well end the negotiation now").

We next identified integrative behaviors. Prior work has demonstrated that negotiators who provide information and ask questions about their own and

Table 3

Correlations of Variables in Study 2

	1	2	3	4	5	6	7
1. E consumed alcohol		· · · · · · · · · · · · · · · · · · ·					
2. E aggressive tactics	.280						
3. E integrative tactics	.138	.668**	—				
4. E mistakes	.290	.333	.458*				
5. A aggressive tactics	052	.186	.417*	.637**	·		
6. A integrative tactics	.203	.439*	.464*	.160	.010		
7. A mistakes	.109	051	.176	.633**	.526**	130	
8. E points	.152	214	135	117	431*	263	.271
9. A points	100	.039	.073	034	.192	158	180
10. Total points	.045	156	053	136	207	383	.075
11. Pareto efficiency	.080	073	.017	042	361	226	.055
12. E felt inebriated	.329	.383	.104	.480*	.283	.165	.139
13. E alcohol effect	.111	.247	.142	.526*	.311	.255	.471*
14. E concession							
perspective	.241	010	065	.005	251	187	008
15. A felt inebriated	363	535**	098	079	.076	393	.207
16. A alcohol effect	370	531**	286	403	166	398	.040
17. A concession							
perspective	.000	.366	.209	.126	.092	.225	.078

Note. E = employer role, A = agent role. For the variable "E consumed alcohol," 1 = consumed alcohol. Significance levels are reported for two-tailed tests. *p < .05. **p < .01.

the other party's interests are more likely to reach integrative agreements (Thompson, 1991). Negotiators also reveal and gather information by making offers (Thompson, 1998). As negotiators make offers, they reveal information about their interests, priorities, and aspirations, and learn information from their negotiation partners' reactions. Listening skills and empathy are also important in reaching integrative agreements (Bazerman & Neale, 1992), and we use the frequency with which negotiators summarized the other party's interests as a proxy for these skills. The integrative behaviors we coded in this study include asking questions; providing information; making an offer; and summarizing another's interests, positions, or preferences.

8	9	10	11	12	13	14	15	16
				*	••••			
461*								
.493*	.544**	k						
.454*	.343	.766**	" <u> </u>					
195	087	230	033					
207	127	273	109	.761**	·			
.298	341	030	036	.122	.035	<u></u>		
001	.014	.010	.193	329	091	.169	_	
042	094	111	.053	373	075	.176	.864**	*
235	.345	.112	.263	.405	.223	147	324	342

dyads in which the employer role consumed alcohol, 0 = dyads in which the agent role

Mistakes were coded as statements that contradicted a negotiator's interest or an earlier claim. For example, the following statement was coded as a mistake: "I propose a start date of 12 weeks ... no, 4 weeks. I'm sorry, I was confused."9

Two coders blind to the hypotheses and the design of the study independently coded each transcript. Interrater reliability between the two coders was high (Cohen's $\kappa = 0.9977$, p < .0001; Fleiss, 1981). A third coder resolved any differences between raters, and produced a single coding sheet for each negotiation. This final coding sheet was used for the process analysis.

9In some cases, negotiators may make mistakes strategically. Raters were asked to use their judgment and to code only nonstrategic mistakes.

Results

All 50 participants completed the study creating 13 sober-agent-inebriatedemployer dyads and 12 inebriated-agent-sober-employer dyads. One dyad in each treatment condition did not reach an agreement. The average participant's age was 24.1 years, and participants had an average of 2.3 years of work experience. We report correlations for our variables in Table 3.

Measures and Perception of Inebriation

One of the objectives of Study 2 was to disentangle the intoxication effects from the expectancy effects of alcohol. Inebriated participants reached a mild level of inebriation (BAL = $.036^{10}$), and both inebriated and sober participants answered postnegotiation questions regarding their beliefs about alcohol's influence.

Participants were asked, "How inebriated did you feel?" with an 11-point response scale ranging from 1 (*not at all inebriated*) to 11 (*very inebriated*). The average rating for inebriated participants was only slightly higher than that for sober participants (3.9 vs. 3.2, *ns*), and standard deviations were roughly equal (2.5 for inebriated participants and 2.0 for sober participants, *ns*).

We also found no difference in perceptions of alcohol's influence on the negotiation process between inebriated and sober participants. Almost half of the participants in both conditions thought that alcohol had had no effect on their negotiation (45.5% of inebriated participants, compared to 46.2% of sober participants). About 17% of participants thought that alcohol had helped their negotiation (18.2% of inebriated participants vs. 15.4% of sober participants), and about 12% of participants thought that alcohol had harmed their negotiation (13.6% of inebriated negotiators, compared to 11.5% of sober negotiators). A total of 22.7% of inebriated negotiators and 23.1% of sober negotiators were unsure of alcohol's effects on their negotiation. These differences in perception were not significant between groups (a chi-square test revealed no significant differences).

If participants thought that alcohol had helped or harmed their negotiation, they were asked to estimate the number of points they had gained or lost. In all cases, these amounts were small. On average, inebriated negotiators thought that they had gained 0.30 points and sober negotiators thought they had gained 0.04 points (ns). Participants who perceived themselves to be inebriated (rating themselves greater than 6 on the question "How inebriated did you feel?") thought they had lost an average of 1.3 points in the inebriated condition and 2.0 points in

¹⁰This BAL was significantly lower than that of the first study (p < .01). Participants in both studies were administered the same quantities of alcohol (in proportion to each participant's weight) to reach a target BAL of .06. In the first study, however, Ice House[®] was used, while in the second study, Bud Light[®] and Buckler[®] were used.

the sober condition (ns). Participants who perceived themselves not to have been inebriated (rating themselves less than 6) thought they had gained 0.61 points in the inebriated condition and 0.35 points in the sober condition (ns).

Both inebriated and sober negotiators thought that both sides had made about the same amount of concessions to reach an agreement. Average scores were 6.3 and 6.1 on an 11-point scale for the inebriated and sober negotiators (*ns*).

Process Results

Aggressive tactics. Table 4 describes the use of aggressive tactics in the negotiation process. Some of these tactics were relatively common, such as misrepresenting facts; while others were relatively rare, such as threats to terminate the negotiation.

We ranked these tactics in order of their first occurrence in the negotiation process. For each negotiation that included an aggressive tactic, we recorded the speaking turn number in which that tactic was first introduced. We divided this speaking turn number by the total number of speaking turns in that negotiation, and calculated the average first occurrence of each tactic. For example, insults, which were introduced about a quarter of the way into the negotiation, were a relatively early stage tactic.

Hypothesis 3 predicted that inebriated negotiators would be more likely to initiate and use aggressive tactics. As Table 4 indicates, inebriated negotiators were more likely than were sober negotiators to initiate the use of all five aggressive tactics (p < .05 in a binomial test). In separate tests, we found that inebriated negotiators were significantly more likely to initiate the following tactics than were sober negotiators: insult their counterpart, misrepresent their interests, bluff, and threaten to terminate the negotiation (p < .01 in chi-square tests in all four cases). Inebriated negotiators: make claims about their reservation price and threaten to terminate the negotiation (p < .05 in chi-square tests in both cases).

We also found that inebriated negotiators used a larger number of aggressive tactics. For example, inebriated negotiators misrepresented material facts more often than did sober negotiators, t(24) = 2.01, p = .05. Overall, inebriated negotiators used an average of 6.12 aggressive tactics per negotiation, compared to 3.88 for sober negotiators. This difference, however, was not statistically significant, t(48) = 1.33, ns.

Integrative tactics. With respect to Hypothesis 4, we found no differences between negotiators' use of integrative tactics. Both sober and inebriated negotiators asked approximately the same number of questions (9.28 vs. 9.56), made a similar number of offers (8.84 vs. 9.24), and made a similar number of statements that provided information (6.96 vs. 6.92). Sober negotiators were more likely to

Table 4

Tactics
ggressive
of A§
Use

	Average position of firet	First use of tactic by inebriated	Negotiators 1	using each (۵۸)	When used number of	average tactics
	occurrence	negotiator		(a.)	orduna) vu
Tactic	(%)	(%) (%)	Inebriated	Sober	Inebriated	Sober
Insults	27	77	32	24	3.63	2.33
Misrepresenting facts	28	55	52	52	5.23	3.15
Misrepresenting interests	29	92	8	8	1.50	1.00
Bluffing	34	73	40	36	1.80	1.67
Reservation price claim	44	57	48	28	2.50	3.43
Threats to terminate	48	83	12	4	1.67	1.00
Note. Aggressive tactics are ranked	in order of their a	iverage first occu	rrence in the nego	tiation process.	In all cases, inchr	iated negotia-

tors were more likely to initiate the use of an aggressive factic. In addition, incbriated negotiators were either equally or more likely to use each tactic. When aggressive tactics were used, inebriated negotiators generally used them more often.

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summarize the other negotiator's point of view (5.60 times vs. 2.72 times), but this difference was not statistically significant.

Making mistakes. Supporting Hypothesis 5, inebriated negotiators were more likely to make mistakes. Inebriated negotiators were more likely than were sober negotiators to make mistakes (90.9% vs. 63.6%, p < .05), and on average, inebriated negotiators made more mistakes than did sober negotiators (1.35 vs. 0.99, p < .05).

Outcome Results

We report outcome results in Table 2. Alcohol consumption was associated with lower scores for both the inebriated negotiator and the inebriated negotiator's partner. Compared to the performance of the sober negotiator in Study 1, inebriated agents' scores declined from 80.2 (Row 1) to 78.3 (Row 3), and inebriated employers' scores declined from 91.9 (Row 1) to 85.9 (Row 2). The decline in performance was even steeper when we compare the performance of the sober negotiators in Study 1 with the performance of the sober negotiators in Study 2 who faced an inebriated partner. In these cases, agents' scores declined from 80.2 (Row 1) to 73.9 (Row 2), and employers' scores declined from 91.9 (Row 1) to 80.1 (Row 3).

We analyzed individual scores in a regression model with the combined data from both studies, and report results in Table 5. We modeled points earned as the dependent variable and negotiator role, own, other, and combined alcohol consumption, and interaction terms as binary independent variables. The parameter estimate for own alcohol consumption was negative, but not significant providing weak support for Hypothesis 6b, suggesting that alcohol may harm one's own performance. The parameter estimate for other negotiator's alcohol consumption is both negative and significant, suggesting that alcohol consumption harms the performance of the inebriated negotiator's partner. This result supports Hypothesis 7.

As in Study 1, group performance is measured both in terms of total points earned and Pareto efficiency.¹¹ Multiple comparison of contrast tests confirmed Hypothesis 8. Sober dyads reached more efficient agreements than did dyads that included an inebriated negotiator. We conducted contrast tests to compare group performance measures between the sober-agent–sober-employer dyads in Study 1 (μ 1) and the sober-agent–inebriated-employer dyads (μ 2) and the inebriated-agent–sober-employer dyads (μ 3) in Study 2. We conducted these contrast tests with both total points and Pareto scores. For the first contrast, $\lambda 1 = \mu 1 - \mu 2$, the total points difference and the Pareto score difference were significant, F(1, 42) = 9.54, p < .01, and F(1, 42) = 4.76, p < .05, respectively. Similarly, for the second contrast, $\lambda 2 = \mu 1 - \mu 3$, the total points difference and the Pareto score difference were significant, F(1, 42) = 9.54, p < .01, and F(1, 42) = 4.76, p < .05, respectively. Similarly, for the second contrast, $\lambda 2 = \mu 1 - \mu 3$, the total points difference and the Pareto score differen

¹¹As in Study 1, the total points and Pareto efficiency scores were highly correlated (r = .766, p < .001).

Table 5

Dependent variable: Points earned	
Independent variable	– Parameter estimate
Intercept	94.97**
Own alcohol consumption	-10.80†
Other negotiator's alcohol consumption	-16.44**
Combined alcohol consumption	9.61
Agent role	-15.94**
Own alcohol consumption * Agent role	11.66†
Other alcohol consumption * Agent role	12.60†

Note. We combined data from both studies and modeled points earned as the dependent variable with own, other, and combined alcohol consumption; negotiator role; and interaction terms as binary independent variables. The model R^2 was .11. p < .10. **p < .01.

were significant, F(1, 42) = 11.14, p < .01, and F(1, 42) = 5.53, p < .05, respectively.¹²

We also used regression analysis to examine the relationship between the process measures we collected and negotiated outcomes. We found that the agent's use of aggressive tactics significantly reduced the employer's profit and the Pareto efficiency of joint agreements. In addition, we found that the more mistakes an agent negotiator made, the more profit the employer negotiator earned. We report these results in Table 6.

Discussion

This study examined the influence of alcohol on the negotiation process and negotiated outcomes. We found that inebriated negotiators used more aggressive tactics and were more likely to make mistakes than were sober negotiators. We did not, however, find support for our fourth hypothesis predicting a difference between sober and inebriated negotiators in their use of integrative behaviors. With respect to outcomes, we found that alcohol consumption harmed the

¹²Confirming results from Study 1, analysis of a third contrast comparing the efficiency of the sober-sober dyads with the inebriated-inebriated dyads (μ 4) also revealed significant results: For the third contrast, $\lambda 3 = \mu 1 - \mu 4$, the total points difference and the Pareto score difference were significant, F(1, 42) = 5.33, p < .05, and F(1, 42) = 4.09, p < .05, respectively.

Table 6

Pareto Dependent variable E points A points efficiency Independent variable E aggressive tactics -0.245-0.062-0.007 E integrative tactics 0.352 0.161 0.019† E mistakes -1.511 -0.322 0.117 A aggressive tactics -4.036** 1.860 -0.087* A integrative tactics -0.279-0.260 -0.017†A mistakes 16.528** -11.101 0.088 Model F statistic 4.275** 0.720 1.870 Adjusted R² 0.461 -0.080 0.192

Regression Models Predicting Outcomes From Negotiation Process Measures

Note. E = employer role, A = agent role.

p < .10. p < .05. p < .01.

outcomes of the inebriated negotiator's partner and the efficiency of joint outcomes, but did not significantly harm the outcomes of the inebriated negotiator.

These results demonstrate that even moderate amounts of alcohol can significantly influence the negotiation process and negotiated outcomes. This study, however, has a number of limitations. First, our study suffers from a relatively small sample. Recruiting participants for alcohol research is difficult, and conducting this type of research requires careful monitoring of inebriated (and sometimes aggressive) participants. A related limitation stems from our use of business students. Task practice moderates the influence of alcohol on behavior, and more experienced drinkers may be less or differently influenced by alcohol than our sample was.

Second, in this study we paired inebriated negotiators with sober negotiators. In this case, sober and inebriated negotiators may have behaved more similarly to each other than if we had observed exclusively sober or exclusively inebriated dyads. Prior work has documented the existence of conflict escalation and reciprocity (Brett, Shapiro, & Lytle, 1998); and in this study, negotiators who encountered a particular type of behavior (e.g., an insult) may have become more likely to respond in kind. This limitation suggests that our results may actually understate the influence that alcohol has on the negotiation process.

A third limitation of this study stems from our attempt to disentangle expectancy effects from intoxication effects. In our study, participants consumed either alcoholic beer or nonalcoholic beer and reported their feelings of inebriation and

their perceptions of the negotiation. For both measures, we found no significant differences between the inebriated and sober negotiators. That is, both sober and inebriated negotiators felt mildly inebriated and were generally unaware that alcohol had influenced their negotiations. Consequently, we attribute process and outcome differences to alcohol's chemical properties. There are, however, substantial expectancy effects, and future work could explore the influence of expectancy effects and intoxication effects more explicitly with exclusively sober dyads.

A fourth limitation of our study stems from our choice of materials. By design, we used a structured case with a limited number of issues and options. Alcohol influences behavior in a number of ways that we may not have been able to observe in this study. For example, future work should explore the relationships between alcohol and creativity, and alcohol and affect in other contexts and with other methods.

Finally, this work is limited by its focus on the influence of a moderate amount of alcohol on the actual bargaining process. In general, different amounts of alcohol are likely to influence different aspects of the negotiation process. For example, alcohol may facilitate negotiations during the relationship-building phase of negotiations prior to actual bargaining. Future work could explore this question with a two-stage negotiation experiment involving a relationshipbuilding stage (with and without alcohol) and a bargaining stage.

General Discussion

We found that a moderate amount of alcohol harmed the bargaining process and negotiated outcomes. Inebriated negotiators used more aggressive tactics, made more mistakes, and reached less efficient agreements. These results suggest that negotiators should avoid alcohol during the bargaining stage of negotiations. The relationship between alcohol and the negotiation process, however, may be complicated. Alcohol's effects are likely to be context dependent and a function of both situational and individual factors.

In some cases, alcohol may actually facilitate agreement. During the early stages of the negotiation process, relationship building is particularly important (Shell, 1999), and alcohol may help negotiators bond, build trust, and share information. Alcohol may also help negotiators reach better agreements by inducing positive moods, which have been linked with better negotiated outcomes (Allred, Mallozzi, Matsui, & Raia, 1997; Kramer et al., 1993).

In many cases, alcohol may confer a relative advantage to a particular negotiator. For example, alcohol may enable a meek negotiator to become more assertive. Alcohol could also shift the balance of power in a negotiation by impairing cognition differently across negotiators. Prior work has demonstrated that intelligent people suffer sharper declines in performance from alcohol than do less intelligent people (Maylor et al., 1990), and intelligent negotiators may be particularly disadvantaged by the introduction of alcohol to a negotiation. Similarly, since alcohol tolerance can be developed by task practice (Vogel-Sprott & Sdao-Jarvie, 1989), negotiators who routinely negotiate over drinks may gain a relative advantage when negotiations involve alcohol. Though we did not find gender differences in this study, alcohol physiologically affects women differently than it does men (Abrams & Wilson, 1979), and gender could represent another source of individual variation in alcohol's influence on the negotiation process.

Alcohol may also confer an advantage to negotiators in different roles or positions. For example, under the influence of alcohol, complex rational arguments may be less persuasive than emotional appeals. In addition, alcohol may confer a strategic advantage by limiting a negotiator's ability to make concessions and consider alternatives. In some instances, limited rationality and stubbornness represent sources of power that may force others to make concessions (Gilboa & Samet, 1989).

In some contexts, negotiators use alcohol strategically (Ruzicka, 1995). With the globalization of business, many managers will face opportunities to consume alcohol in unfamiliar settings. While alcohol may facilitate agreement in some cases, managers should recognize that alcohol impairs both negotiator performance and the ability to perceive alcohol's effects. Ironically, alcohol's effects on negotiations may be large precisely because they are subtle.

Results from this work demonstrate that alcohol represents a hazard to achieving efficient outcomes from a negotiation. In some cases, however, alcohol may offer benefits to the negotiation process or confer a strategic advantage. Future work remains to develop our understanding of alcohol's influence on the negotiation process, its dangers, and its opportunities.

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Appendix A

Résumé and Job Description

Résumé

Bart E. Blackwell 342 19th Avenue Miami, FL 33246 (305) 499-8235

Objective: Position as Junior Geologist

- Education: BS, Geological Sciences, 1995
 Emphasis on Petroleum Geology
 University of Miami, GPA 3.6
 Honors: Departmental Mention for Senior's Project Award: Petroleum
 Drilling Methods; Mineral Sciences Competition Finalist 1993
- Experience: Petroleum Driller Assistant, Getty Industries, Summer 1992, Summer 1993, Construction Worker, Erectors Inc., 1990-1991
- Skills: Familiar with seismic analysis and ore mineralogy

Job Description

Conservation Mining Corporation (CMC)

Seeking qualified applicants for an entry-level geologist. Must be familiar with modern construction and drilling methods. Projects will involve analysis of foundations for large construction projects and will involve a significant amount of travel.

Compensation is competitive, and benefits including health insurance may be available. Total compensation will be matched to candidate qualifications.

Appendix B

······································	Agent:	Employer:
	Placement	Conservation Mining
	representative	Corporation (CMC)
Salary		· · · · · · · · · · · · · · · · · · ·
\$26,000	5	50
\$28,000	10	45
\$30,000	20	40
\$32,000	30	35
\$34,000	40	30
\$36,000	50	25
\$38,000	60	20
\$40,000	70	15
Signing bonus		
\$0	0	0
\$1,000	5	5
\$2,000	10	10
\$4,000	15	8
\$6,000	20	4
\$8,000	25	0
Start date		
4 weeks	0	25
6 weeks	8	10
8 weeks	15	5
12 weeks	17	0
Health insurance		
No Insurance	0	25
High deductible plan	5	15
Comprehensive plan	15	0
Amount of travel		
1 trip a month	25	0
2 trips a month	15	10
3 trips a month	10	25
4 trips a month	0	40

Payoff Schedules for Negotiator Roles

Note. This payoff schedule represents the point schedules for each attribute level for both roles. Negotiators in each role only viewed their own column.

Appendix C

			Body we	ight in po	unds (kg)		
Number of drinks	100 (45.4)	125 (56.7)	150 (68.0)	175 (79.4)	200 (90.7)	225 (102.0)	250 (113.4)
1	.03	.03	.02	.02	.01	.01	.01
2	.06	.05	.04	.04	.03	.03	.03
3	.10	.08	.06	.06	.05	.04	.04
4	.13	.10	.09	.07	.06	.06	.05
5	.16	.13	.11	.09	.08	.07	.06
6	.19	.16	.13	.11	.10	.09	.08
7	.22	.18	.15	.13	.11	.10	.09
8	.26	.21	.17	.15	.13	.11	.10

Blood Alcohol Conversion Chart

Note. This chart describes the approximate relationship between body weight, alcohol consumption, and blood alcohol concentration (BAC) levels. Each hour, BAC levels fall by .015. Several other factors including food intake, body composition, and drinking history also influence BAC levels.