Measuring Negotiation Strategy and Predicting Outcomes: Self Reports, Behavioral Codes, and Linguistic Cues

Abstract

Negotiation strategy has been measured in different ways across a number of studies (Curhan & Pentland, 2007; Putnam & Jones, 1982; Weingart, Thompson, Bazerman & Caroll, 1990; Weingart, Olekalns & Smith, 2004) our study systematically compares the self-report, behavioral coding and linguistic cues to understand the relationship between negotiation strategy and outcomes. We compare data from 68 dyads in the U.S. and Qatar. Results support the influence of culture on negotiation strategy, and the positive relationship between integrative strategy and joint gain. To test our hypothesis about distributive strategy we developed a new measure of outcome distribution: *asymmetry*. Results show a positive relationship between distributive strategy and asymmetry. Mediation analyses suggest that the relationship between culture and outcomes is mediated by strategy in both integrative and distributive dimensions.

Keywords: negotiation strategy, self-reports, behavioral coding and linguistic cues.

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Negotiation is an interpersonal process and the process occurs in a conversation between the parties. Negotiation theory is grounded on the distinction between integrative and distributive strategy (Pruitt, 1983; Walton & McKersie, 1965). Integrative strategy consists of behaviors that maximize the amount of resources available (eg. information sharing and tradeoffs) and distributive strategy consists of behaviors that divide resources between the parties (eg. persuasion and value claiming). Empirical research supports this theoretical distinction (Gunia, Brett, Nandkeolyar, & Kamdar, 2011; Olekalns & Smith, 2003; Pruitt & Lewis, 1975; Putnam & Wilson, 1989; Thompson, 1990; Weingart, Hyder, & Prietula, 1996; Weingart, Thompson, Bazerman, & Carroll, 1990).

Culture has important implications for negotiation strategy – the goal-driven behaviors used, consciously or unconsciously, by negotiators (Weingart, Thompson, Bazerman, & Carroll, 1990). In particular, culture influences four important aspects of negotiation strategy. It affects negotiators' expectations about the other party's intentions before interacting (Friedman, Chi, & Liu. 2006). Culture also affects the way they use offers (Adair & Brett, 2005; Natlandysmir & Rognes, 1989; Rossette, Brett, Barsness & Lytle, 2011). Culture affects the way they use substantiation or influence (Adair, Okumura & Brett, 2001; Gunia, Brett, Nandkeolyar, & Kamdar, 2011). Finally, culture affects whether and how they share information (Adair & Brett, 2005; Adair, Okumura & Brett, 2001; Adair, Weingart & Brett, 2007, Imai & Gelfand, 2010, Kern, Lee, Aytung, & Brett, 2012; Liu, Chua, Stahl, 2010).

Negotiation strategy has been operationalized in three different ways across the negotiation literature: self-report, behavioral observation and linguistic cues (Curhan & Pentland, 2007; Putnam & Jones, 1982; Rahim, 1983; Weingart, Thompson, Bazerman & Caroll, 1990; Weingart, Olekalns & Smith, 2004). Among the three methods described above self-report is the most widely used. We conducted a literature search for negotiation strategy papers and unpublished studies. The result of this search were 109 papers, from these papers 70.7% used self-report measures of strategy, 80.3% included behavioral measures and 12.8% used linguistic cues. We are now at the process of coding the papers to run a meta-analysis of the relationships between the three different measures of strategy and the outcomes. The full literature review and the results of this meta-analysis will be presented at the conference. In this extended abstract we present data from a study systematically comparing three measures of strategy: self-report, behavioral observation and linguistic cues.

Method

A new negotiation simulation, The Sweet Shop, was used to test hypotheses regarding the relationship between culture, negotiation strategy and economic and subjective outcomes. Participants were undergraduate students in the U.S. and Qatar. The American sample consisted of 37 dyads; the mean age was 20.2 years (SD = 1.1, Range = 18 to 24) and 72% were female. The Qatari sample contained 31 dyads; the mean age was 20.0 years (SD = 1.0, Range = 18 to 23) and 72% were female.

Simulation

The Sweet Shop, loosely based on Tower's Market (negotiationexercises.com), is a negotiation between the owner of a bakery and the owner of an ice-cream store. Both owners have small shops but would like to move to a larger space in a more upscale area. Their negotiation is over the opportunity to share larger space in a new location. Six quantified issues had to be negotiated to reach an agreement. Four core issues, staffing, temperature, maintenance, and design, had to be resolved to reach agreement. Two issues were integrative (staffing and design), this means that had different weights for the two parties, and could be traded to create joint value. One issue (maintenance) was completely distributive another issue (temperature) was compatible in that both parties preferred warm store temperatures.

Both negotiators received confidential role information about the point value of options associated with each issue. They were also informed that if they could not reach agreement on core issues, they would stay at their current locations and keep looking for alternative space, and that this alternative was worth 4000 points. Both also were told to negotiate as many points as possible for their businesses

Procedures were carefully calibrated between the U.S. and Qatar data collections. Both sites used a laboratory-type setting with the following procedures: 1) Participants signed a consent form to participate in the study and allow it to be audio recorded. 2) Participants had 10 minutes to respond to a short questionnaire about cultural norms and demographic characteristics. 3) Participants had 30 minutes to prepare for the negotiation by reading their randomly assigned confidential role information as bakery or ice-cream store owner. 4) Participants answered some questions about their aspirations and attitudes. 5) Participants had 30 minutes to negotiate. Pretesting indicated that 30 minutes was sufficient time to discuss these issues and reach

agreement. 6) Participants completed a questionnaire about their attitudes and experiences during the negotiation.

Independent Variable

Culture. We used a selective sampling of university students to generate participants from white American and Muslim Middle Eastern cultures. The U.S. participants were required to be American citizens and ethnically white, but they represented a cross section of the country. Slightly over half the Qatari participants listed Qatar as their home culture, the rest were from different cultures in the Middle East: Saudi Arabia, Kuwait, Egypt, Morocco, Jordan, Oman, U.A.E., and Pakistan.

Dependent Variables

We have three types of measures of negotiation strategy, self-reports, behavioral coding by observers and linguistic cues (LIWC measures).

Self-reports

Aspirations. Just prior to negotiating, we asked participants what percentage of the value in the negotiation they expected to claim for themselves.

Emotional Tactics. The post-negotiation questionnaire asked participants about the tactics used during the negotiation by themselves and by the counterpart.

Information Exchange. We measured information sharing in the post negotiation questionnaire with eight Likert scaled items (α = .71). Sample items included "I didn't ask about his priorities, and "We discussed common interests".

Behavioral Coding & Data Reduction

All negotiations were conducted in English and were transcribed. We developed a 14 item code based on prior negotiation coding schemes (e.g. Adair & Brett, 2005; Gunia et al., 2011; Weingart et al., 1990) to measure participants' use of tactics. Major categories in the code were information, offers, substantiation, negative and positive reactions, and a miscellaneous category. The unit of analysis for coding was the speaking turn – a statement by one negotiator until ended or interrupted by the counterpart. We trained two coders to classify each speaking turn into between one and three of the behavioral categories. Coders were familiar with the simulation, but not the hypotheses. They trained by coding a section of a transcript together with one of the authors, then a section separately, followed by discussion, then another section separately and discussion until their interpretative reliability (Folger, Hewes, & Poole, 1984) was at least .80 (Cohen's kappa 1960). Kappa is the percentage agreement between two coders corrected for chance and Kappa of .80 or above is considered reliably high (Bakeman & Gottman, 1997). Coders recalibrated after every five transcripts by coding a common section to maintain Cohen's kappa at .80 or higher. Average kappa was .81.

Data reduction. We ran correspondence analyses (Greenacre, 1993) to reduce the dimensionality of 14 behavioral codes to a smaller number of interpretable clusters. Like other data-reduction procedures, cluster analysis results are plotted in a reduced dimensional space. For simplicity we chose two dimensions. The quantitative results of the correspondence analysis

are available from the authors. We interpreted four clusters of our 14 behavioral codes and preserved one single item code: single issue offers. Our decisions were based on a visual inspection of the empirical results guided by theory underlying the coding (Weingart, Olekalns, & Smith, 2004). The first cluster represented negotiation behaviors that express negative affect across the table: substantiation, negative reactions, and reject offers. The second cluster represented value creation strategies: multi-issue offers, procedural comments, and accepting offers (Weingart, Brett, Olekalns, & Smith, 2007). The third cluster included behaviors that reflected some of Weingart and colleagues' integrative information behaviors: questions, positive reactions, summarizing. The last one was a cluster of two other *less goal-oriented information sharing codes* which were volunteer information sharing and miscellaneous on task comments.

To construct behavioral variables, we summed the frequency of the use of the codes in the cluster within each dyad. Second, we divided this sum by the number of speaking turns in the transcript (behavioral codes) to generate a proportion. Third, we logged this proportion after first adding the constant 1 so as to avoid trying to log zero.

Linguistic cues

We transcribed all negotiations, in the U.S. and Qatar as they were conducted in English; all participants were educated in this language. Following other studies on negotiation (Brett et al., 2007; Elfenbein, Brown, Curhan, Eisenkraft, Shirako, 2009; Olekalns, Brett and Donohue, 2010; Swaab, Maddux & Sinaceur, 2011; Taylor & Thomas, 2008), we identified linguistic cues using the Linguistic Inquiry Word Count (LIWC) (Pennebaker et al., 2001). LIWC is software that counts and categorizes words as markers of emotional states, social identity, and

cognitive styles (Pennebaker et al., 2003). The program scans text and categorizes 2300 words into broad psychological, affective, and cognitive categories. To construct linguistic cue variables, we fed the transcript of each dyad to the LIWC software; we obtained the frequencies of the use of each category within each dyad. Linguistic categories from LIWC were analyzed using the same logic described above for the behavioral data, first we ran a correspondence analysis, we interpreted the clusters based on two dimensions and reduced the dimensionality based on the theory. The quantitative results of the correspondence analysis are available from the authors. The resulting scales were: *inquiry* (including the LIWC categories: insight, achieve, tentative and impersonal pronouns), *positive reaction* (including: feelings, assent, positive emotions, certain, discrepancy and I), *negative reaction* (including: negate, negative emotions, cause, see, motion, and they), *miscellaneous* (including: work, home, money, leisure, we, inclusive, and quantifiers). We added up the frequencies for each LIWC category, and calculated the proportion by dividing the frequency of each category by the total number of words in the transcript. We logged this proportion after first adding the constant 1 so as to avoid trying to log zero.

Negotiation outcomes

Economic outcomes. We used two measures of negotiation outcome, first joint gains which are the sum of both negotiators individual outcomes. Joint gain has been a classic dependent measure for integrative agreements as it reflects the value created by negotiators, however, a dyad level measure of the distribution of outcomes has not yet been explored. For this study we developed a new measure of *asymmetry*, it reflects the difference between the parties relative to their joint outcomes. To compute this score, we subtracted the ice cream individual

gains from those of the baker in each dyad, we divided the score over the joint outcomes to make the asymmetry proportional to the overall value of the deal, and finally we logged the proportions. We used joint gain and asymmetry as indicators of economic outcomes. All dyads in the U.S. sample (37 dyads) reached agreement. In the Qatari sample (31 dyads) all but two dyads reached agreement, these two dyads were assign the minimum value of agreement (4000 each) as suggested by Kimmel, Pruitt, Magenau, Konar-Goldband, and Carnevale (1980) and were included in our analyses.

Subjective Outcomes. We measured subjective value with negotiators' satisfaction with outcome (3 items, $\alpha = .84$) (Curhan et al., 2006).

Results

Our linguistic cues and behavioral coding were at the dyad level; self-reports were measured at the individual level, therefore we aggregated all measures to the dyad level prior to analysis. Expect when explicitly specified, the dyadic score was computed by computing the dyadic mean. Table 1a and 1b show the intra-correlations of our main dependent variables. The first table focuses on distributive strategy and the second table on integrative strategy.

To explore the hypotheses about culture influences on strategy we analyzed the differences across two cultures, for integrative strategy we found differences in information exchange $F(1,67) = 26.56$, $p < .001$, the self-report scores are higher in the US than in Qatar ($M = 5.53$ $SD = 0.589$ vs. $M = 4.68$ $SD = 0.765$ respectively). From the behavioral codes, seeking information was in the US than Qatar $F(1,67) = 33.88$, $p < .001$ ($M = .411$ $SD = .084$ vs. $M = .337$ $SD = .063$, respectively), multi issue offers were higher in the US than in Qatar $F(1,67) =$

30.21, $p < .001$ ($M = .123$ $SD = .052$ vs. $M = .063$ $SD = .032$, respectively), collaborative moves were higher in the US than in Qatar $F(1,67) = 64.60$, $p < .001$ ($M = .494$ $SD = .039$ vs. $M = .382$ $SD = .073$, respectively), however for providing information there was no statistical difference between the two countries. Finally, from the linguistic cues, inquiry was higher in the US than in Qatar $F(1,67) = 39.25$, $p < .001$ ($M = .136$ $SD = .018$ vs. $M = .111$ $SD = .014$, respectively), positive reactions were higher in the US than in Qatar $F(1,67) = 120.32$, $p < .001$ ($M = .213$ $SD = .026$ vs. $M = .147$ $SD = .023$, respectively).

In terms of distributive strategy we found differences in the self-report scores for emotional tactics $F(1,67) = 49.79$, $p < .001$, scores are higher Qatar than in the US ($M = 3.47$ $SD = 1.08$ vs. $M = 1.87$ $SD = 0.771$ respectively). From the behavioral codes, negative reactions were higher Qatar than in the US $F(1,67) = 48.96$, $p < .001$ ($M = .164$ $SD = .091$ vs. $M = .047$ $SD = .040$, respectively), single issue offers did not show significant differences across the two countries. . Finally, from the linguistic cues, negative reactions were higher in Qatar than in the US $F(1,67) = 104.49$, $p < .001$ ($M = .232$ $SD = .030$ vs. $M = .168$ $SD = .020$, respectively) and miscellaneous comments were higher in Qatar than in the US $F(1,67) = 32.04$, $p < .001$ ($M = .191$ $SD = .026$ vs. $M = .157$ $SD = .023$, respectively). Consistent with our predictions, integrative strategy was mostly used by dignity culture (the US) and distributive strategy was mostly used in honor culture.

To explore the influence of strategy on outcomes, we ran two separate analyses, one for integrative and one for distributive strategy. In table 1a correlational data shows the relationship between joint gains and four measures of integrative strategy: information exchange self-reported, behavioral measures of multi-issue offers and collaboration, and the linguistic cues of

positive reaction. Therefore we tested for the indirect (mediation) effects of strategy on the relationship between culture and negotiation outcomes using the PROCESS macro (Hayes, 2013). For integrative strategy we tested, as mediators our three types of measures, self-report, behavioral and linguistic cues. Results show that information exchange as self-report mediates the effects between culture and joint gains *(indirect effect* = 150.63, *bootstrap 95% C.I.*= 21.86 - 360.86*).* Unfortunately, the behavioral measures and linguistic cues did not mediate the relationship between culture and joint gains.

For distributive strategy, correlational data in Table 1b shows the relationship between outcome asymmetry and four measures of distributive strategy: behavioral codes of single issue offers and negative reactions, linguistic cues of negative reactions and miscellaneous comments. Therefore we tested for the indirect (mediation) effects of strategy on the relationship between culture and asymmetry using the PROCESS macro model 6 (Hayes, 2013). We used the logged value of the asymmetry as DV. Results show that emotional tactics self-reported and the behavioral codes of negative relation mediate the relationship between culture and asymmetry *(indirect effect* = -.133, *bootstrap 95% C.I.= -.267* - -.032).

The complete discussion and conclusion sections will be presented at the conference.

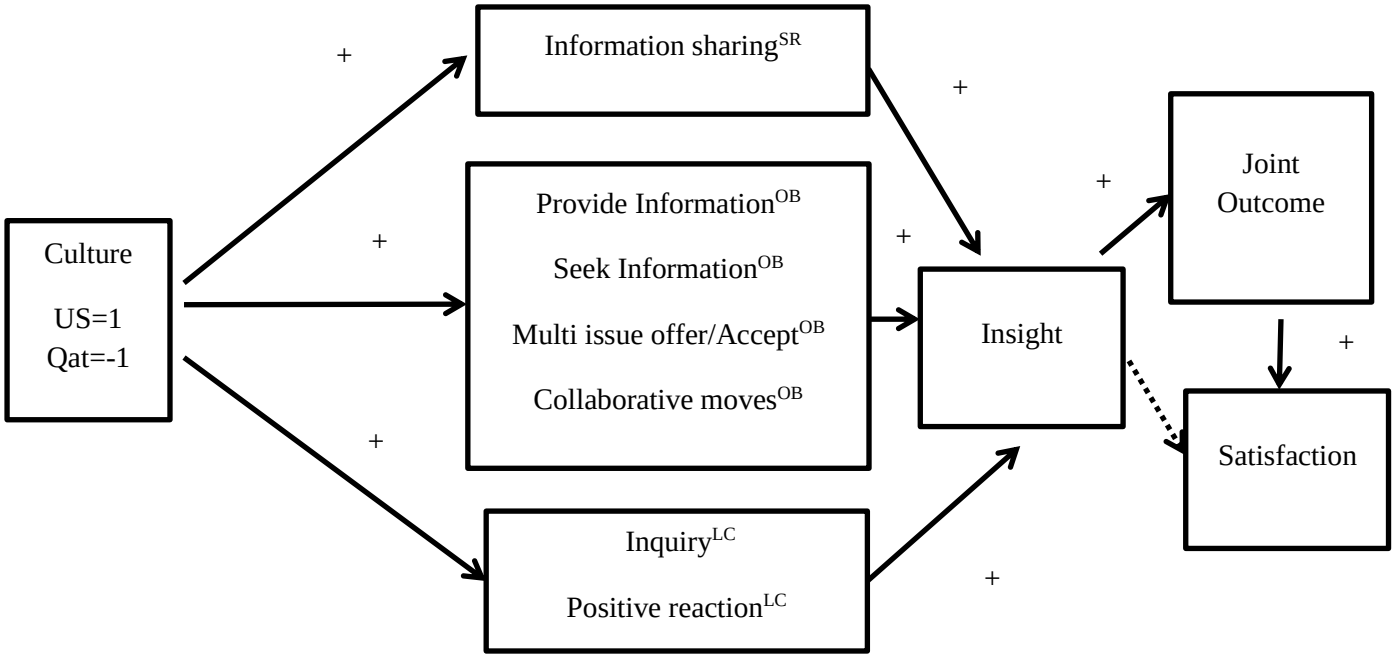

Figure 1a. Model of integrative strategy

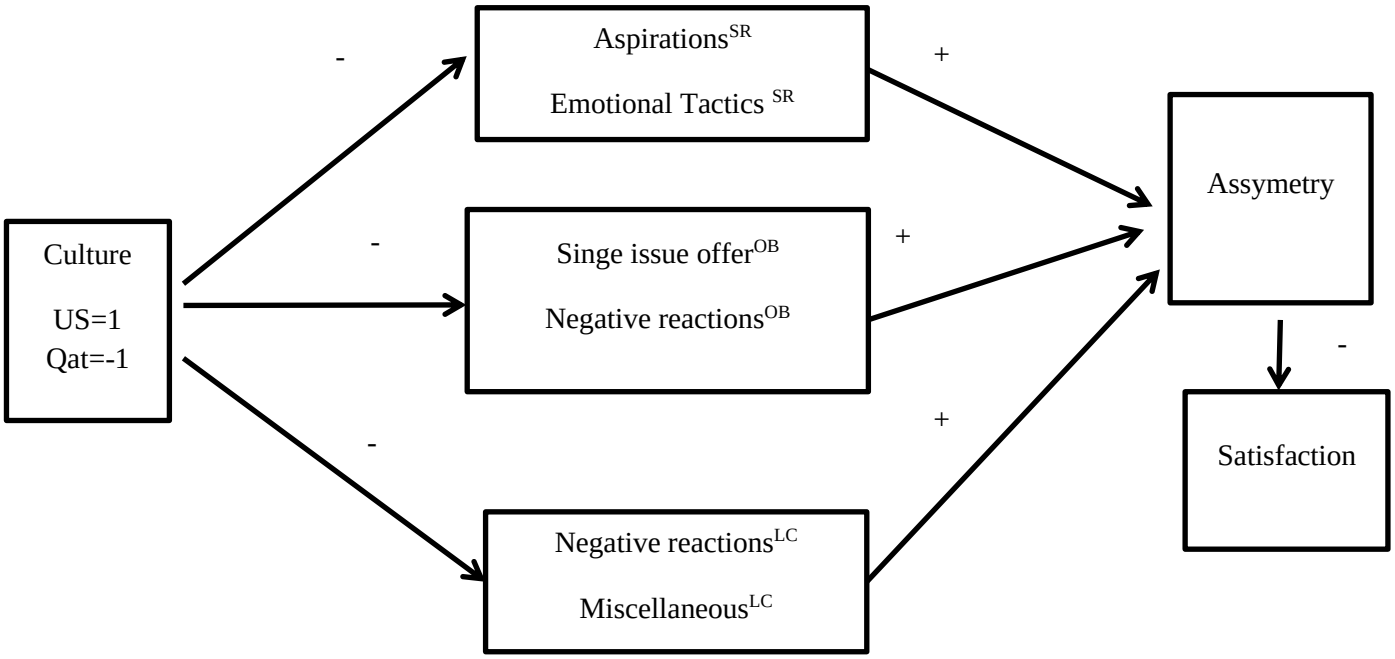

Figure 1b. Model of distributive strategy.

Table 1a Integrative strategy.

	1	2	3	4	5	6	7	8	9
1. Culture	-								
2. Info exchange[SR]	.502*	-							
3. Provide Info[OB]	-.107	-.169	-						
4. Seek Info[OB]	.566**	.406**	.213	-					
5. Multi-issue off.[OB]	.611**	.355**	-.407**	.288*	-				
6. Collaborative[OB]	.697**	.471**	-.388**	.881**	.706**	-			
7. Inquiry[LC]	-.630**	.265*	.124	.480**	.135	.419**	-		
8. Positive react[LC]	.801**	.410**	-.167	.572**	.626**	.729**	.433**	-	
9. Insight	.363**	.215	-.028	.264*	.248*	.323**	.338**	.389**	-
10. Joint Outcomes	.267*	.360**	-.067	.147	.314*	.278*	.112	.317**	.545**
11. Satisfaction	.561**	.567**	-.248*	.524**	.516*	.640**	.359**	.589**	.265*

Pearson correlations for all variables except culture, this variable was correlated using Spearman coefficient. The culture codes are 1=US -1=Qatar

*p<.05 **p<.001

Table 1b Distributive strategy

	1	2	3	4	5	6	7	8	9
1. Culture	-								
2. Aspirations[SR]	.221	-							
3. Emot. Tactics[SR]	-.666*	.340**	-						
4. Single issue[OB]	-.151	.050	.062	-					
5. Neg. Reactions[OB]	-.730**	.277*	.630**	.006	-				
6. Neg Reactions[LC]	-.813**	.233	.655**	.134	.734**	-			
7. Miscellaneous[LC]	-.602**	.270	.416**	.015	.285*	.310*	-		
8. Assymetry	.289**	.095	.159	.360**	.314*	.255*	.250*	-	
9. Joint Outcomes	.267*	-.007	-.225	-.160	-.216	-.153	-.240	.034	-
10. Satisfaction	.561**	-.249	-.680**	-.011	-.530**	-.655**	-.341**	-.032	.201

Pearson correlations for all variables except culture, this variable was correlated using Spearman coefficient. The culture codes are 1=US -1=Qatar
*p<.05 **p<.001

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