Accounting for reciprocity in negotiation and social exchange

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Abstract

People generally adhere to the norm of reciprocity during both tacit and negotiated exchange. Emotional responses generated from profitable and unprofitable exchange facilitate the formation of motives to settle scores with others. In two studies we examine how exchange incidents trigger positive and negative emotional responses, bargaining behavior, and process. In Study 1, we developed measures of emotional response toward the counterpart that can index the state of relational accounts between parties. In a complex, multi-issue negotiation, The measures show that prior profitable or unprofitable exchange experiences shifted affect and individual social motives, as well as initial bargaining positions. In Study 2, shifts in relational accounts altered the bargaining process and subsequent implementation of agreements. The relational accounting concept represents an important link for understanding how negotiation functions as a sub-process in the wider stream of social exchange.

Keywords: negotiation, social motives, emotion, social exchange.

1 Introduction

The norm of reciprocity shapes and constrains how people conduct social exchange in different contexts and cultures around the globe. Exchange often reflects an informal trade of favors worked out over some period of time without any specific conversation about the terms. But sometimes parties do explicitly make commitments to take specified actions at some time in the future by explicitly negotiating terms in advance. During this negotiation process the norm of reciprocity generates predictable behavior patterns. Typically this represents an iterative matching of concessions from initial starting demands that diminish in magnitude as the parties approach an agreement (Esser & Komorita, 1975; Parks & Komorita, 1998; Rhoades & Carnevale, 1999). The pattern is regular enough in form that it has been likened to a dance (Adair, 2008; Adair & Brett, 2005; Raiffa, 1982).

Reciprocity has been observed in contexts ranging from simple bargaining between two people to moves taken by government representatives during complex high stakes treaty negotiations (Beriker & Druckman, 1991; Druckman & Harris, 1990). Less attention has been given to reciprocity from exchange preceding the negotiation process and implications for behaviors following the conclusion of the negotiation. Little to no research has examined the exchange involved in implementation of terms of agreement.

Within another set of fields however, biologists (Trivers, 1971), anthropologists (Boehm, 2012), psychologists (Cosmides & Tooby, 1992; McCullough, Kurzban & Tabak, 2013), and economists (Gintis, Henrich, Bowles, Boyd & Fehr, 2008; Smith, 1998; Fehr, Fischbacher & Gachter, 2002) have argued that evolutionary pressures selected for a constellation of traits that compel most people toward cooperation, repayment of favors, and punishment of violations of fairness. According to this perspective, the norm of reciprocity represents the operation of evolved preferences, shifting predictably with the state of demands for reciprocation. Of course reciprocity may also be explained in other ways, such as cultural transmission of social norms, learning from experience, normal developmental processes, and individual problem solving when faced with the question of how to enforce social norms.

In this paper we introduce the notion of relational accounting, an extension of the mental accounting that describes how individuals evaluate and keep track of financial activities (Cheema & Soman, 2006; Heath, 1995; Thaler, 1985; 1999). Through the processes of relational accounting, decision makers' preferences shift predictably to keep them motivated to repay social debts, to remain aware of those indebted to them, and to settle scores with those who fail to repay debts or otherwise act unfairly as exchange partners. State dependent preferences shift to reflect the state of relational accounts at a given point in time. We further suggest that loss-aversion (Tversky & Kahneman, 1991) magnifies the motive to settle scores, since eliminating losses caused by one party will be valued more greatly than seeking gains in fresh dealings from new exchange partners.

Understanding these relational accounting processes by building around an appropriate set of assumptions should enable us to model negotiation as a distinct phase in an

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ongoing stream of social exchange. An accounting model provides a basis for integrating recent work on the impact of negotiator emotions and motivation with earlier work on negotiator judgment and decision-making. This integration yields new hypotheses about negotiator behavior that are tested here in a pair of experiments.

1.1 The regulatory system for reciprocal altruism

Trivers (1971) argued that selection pressures favored those who selectively engaged in altruistic actions toward unrelated others likely to reciprocate. The proposed system incorporates distinctive emotional response profiles that establish social motives directing actions toward reciprocity in exchange across contexts. It also requires a capacity to extract relevant information from the ongoing stream of experience in order to store, recall, and update the status of social debts and obligations. Trivers characterized this capacity as integral to calculating cost-benefit ratios of potential social exchange but did not fully explain how this feature works.

Calculating, storing, and recalling gains and losses from exchange with various partners, what we call "relational accounting", provides the necessary foundation of this system for regulating exchange. Beneficial acts trigger emotional responses of liking and gratitude that regulate repayment for the benefits received. Feelings of gratitude motivate reciprocity by reflecting perceived costs and benefits of the altruistic act. Mutually beneficial cycles of reciprocated exchange establish the feelings of goodwill and affection that form the basis for trusting friendships. Long-term memory of these feelings provides a simple indicator of counterparty risk that guides rapid future choices on a more efficient basis. Rather than engage in extended information gathering and processing that use up scarce attention (Jia, Dyer & Butler, 1999; Weber & Bottom, 1990), exchange partners rely on their feelings toward each other to determine appropriate action and the need for explicit negotiation of terms (Loewenstein, Weber, Hsee, Welch, 2001; McAllister, 1995; Slovic, Finucane, Peters & MacGregor, 2004).

In contrast to these cycles of positive emotion, losses imposed by a counterpart trigger an emotional response profile that is the basis for anger and "moralistic aggression" to retaliate (Boehm, 1984; Bottom, Gibson, Daniels & Murnighan, 2002; Exline, Worthington, Hill &McCullough, 2003; Kim, Ferrin, Cooper & Dirks, 2004; Tripp, Bies & Aquino, 2002). This emotional response serves the purpose of guiding reciprocators to cease further generous behavior toward the cheater. If the costs are considerable, then having been cheated establishes a sense of disaffection, rancor, and enmity that dampens the willingness to engage in further mutually beneficial exchange with that counterparty. These emotional responses can also fuel revenge behaviors directed at the injustice and "evening the score" (Boehm,

1984; Bies & Tripp, 1996; Price, Cosmides & Tooby 2002) even at some cost to the aggrieved party. Considerable empirical evidence reflects the operation of this system feature (Bottom, Holloway, Miller, Mislin & Whitford, 2006; Cosmides & Tooby, 1992; Fiddick, Spampinato & Grafman, 2005; Stone et al., 2002).

While responses to such cycles may be instant, circumstances may at times prevent people from engaging in immediate actions. Given this constraint, researchers in various fields have referred to the intuitive accounting capabilities that track relational accounts enabling this type of decision-making. Lakoff (1995) analyzed the everyday language of "loss" and "costs" that refers not just to money but to other major events such as "deaths, injuries, suffering, and trauma" while gains can refer to "knowledge, enjoyment, sophistication, or confidence". He demonstrated how common "accounting schemes" including reciprocation, retribution, restitution, turning the other cheek, and work derive from a general metaphor of moral accounting. Kollock (1993) distinguished between the "relaxed and restrictive accounting systems" that people apply to formal versus personalized exchange relations. In the former, debts are carefully tracked and repayment must be made, often right away and in kind. Looser standards apply to exchange with friends and family where precise tabs may not be calculated so imbalances can be maintained much longer. Labianca and Brass (2006) found that members of an organization keep up a "social ledger" tracking both positive and negative relationships with others in a firm.

To tie empirical evidence and theoretical ideas together, we suggest that relational accounts represent ledgers linked to specific emotions that establish social motives. These motives influence subsequent social exchange, including the conduct of negotiations and eventual deal implementation.

1.2 Measuring relational account balance

The specific emotions associated with the social exchange system provide an opportunity to construct graded measures of relational account state. As Aureli and Schaffner (2002, 2013) put it, emotions "can be functionally equivalent to the process of bookkeeping" (p. 16) of past interactions with different partners. Emotions help track and assess relationships to motivate future actions (Aureli & Schaffner, 2002, 2013). "The resulting emotional experience is partner-dependent. Thus, emotional differences can be at the core of the observed variation in social interactions reflecting the variation in relationship quality across partners." (Aureli & Schaffner, 2013, p. 16)

Being "cheated" by a counterpart triggers an emotional response profile that is the basis for anger and "moralistic aggression" to retaliate (Boehm, 1984; Bottom et al., 2002; Exline et al., 2003; Kim et al., 2004; Tripp, Bies & Aquino, 2002), together motivating individuals to impose sufficient

costs on the cheater (Trivers, 1971; Aureli & Schaffner, 2002). Altruistic acts trigger emotional responses of liking and gratitude that motivate reciprocity by reflecting perceived costs and benefits of the altruistic act (Trivers, 1971; Aureli & Schaffner, 2002). By altering the state of relational accounts, as yet unreciprocated events from prior exchange affect the course of later direct negotiations between the same individuals. The cognitive and affective processes comprising relational accounting establish the motives individuals should also carry into discussions about a deal.

Rather than using conventional psychometric scaling practices or self-report measures of internal states, Kuhlman and Marshello (1975) developed a form of quasi-revealed preference to measure social motives. Suitably adapted, their method provides a basis for establishing the predictive validity of an emotion-based scale of social motive. Their method elicited a rough categorical measure of social motives by transforming the payoff matrices from a two person prisoner's dilemma into a series of one person decisions about allocations of points to self and other.[1] Those who consistently prefer more egalitarian allocations are generally referred to as a having "cooperative motives". Those who mostly pick allocations that maximize points for the self are said to be "individualist" in motive, while those who pick allocations maximizing the positive difference in points to the self relative to points for the other are said to have a "competitive" motive. Typically, the method is not truly a revealed preference measure, because in most applications the choices made are purely hypothetical with no real financial consequences for the respondent.

In their original studies, Kuhlman and Marshello led subjects to believe that the other person in the choice dilemmas was another subject in the room. Since then, the identity of "the other person" in hypothetical choice dilemma problems is sometimes specified to be "a hypothetical other" (De Dreu & McCusker, 1997). Sometimes it is stated to be "someone they do not know who they will not knowingly meet in the future" (Van Lange, De Bruin, Otten & Joireman, 1997, p. 746). Through these distancing, somewhat depersonalizing, instructions researchers can then interpret consistent choice patterns as a "social value orientation" or indication of a person's general tendency toward cooperation or competition independent of exchange partner. With this context, dilemma choices in western college samples tend to distribute as roughly 60–65% cooperators or "prosocials" with roughly 25% individualists and only 10–15% competitors (Kelley et al., 2003).

Studies of dilemma choices, an indicator of motives in future exchange, have demonstrated that the general "social

value orientation" toward cooperation predicts joint gains from negotiations with considerable integrative potential (De Dreu, Weingart & Kwon, 2000). Moran and Ritov (2002) found that negotiators who started with a first offer that incorporated logrolling behavior tended to ultimately reach more efficient agreements. These are offers that make an initial concession on issues of less importance to the offeror while standing firm on issues of greater importance. Although it did not lead to greater insight into the nature of the differences in interest between the two parties, the within issue anchoring induced by these asymmetric offers established a reciprocal dynamic tending toward efficient trade-offs. Despite their efficacy, subjects in this and subsequent studies (Ritov & Moran, 2008) have proven reluctant to make these logrolling openings or logrolling counteroffers. Affection stemming from a surplus account balance establishes a generous, cooperative attitude toward the counterpart, which may also increase willingness to use logrolling openings, ultimately resulting in lower initial demands and a more creative approach to bargaining. Disaffection stemming from a negative account balance motivates a competitive social motive directed toward the counterpart. That motive should generate a lower willingness to logroll openings, resulting in higher initial demands, limited concession making, and ultimately more claims intended to even the score.

Here we test whether social motives are endogenous to the exchange, a mechanism by which individuals track the state of relational accounts between parties. When a counterpart is in debt to the focal actor, that actor should have a more competitive motive toward the counterpart. Assuming the counterpart has engaged in similar accounting for prior exchange, that counterpart should have a more cooperative, if not altruistic, motive toward the focal actor, which would compel the counterpart toward behavior that balances the account. According to Aureli and Schaffner (2002; 2013), specific emotions should reveal that state in addition to forming the motive.

Although specific exchange incidents will not alter an individual's overall social value orientation toward generalized others, they should shift motives directed toward *specific* counterparts. The negotiation process provides a means for reciprocating obligations or satisfying a desire to even a score. Although exchange balance determines motives toward that counterpart, there will be no wider effect on behavior directed toward unassociated others in subsequent negotiation.

Hypothesis 1: The effect of an exchange incident on demand level in subsequent negotiations is moderated by whether the negotiation is with that same counterpart or a different party.

Anger and resentment reflecting negative exchange accounts will motivate more aggressive demands during negotiation with more focus on value extraction from bargain-

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[1] Noting the limitations of the categorized scoring scheme, Murphy, Ackermann, and Handgraaf (2011) have since developed a far more sensitive continuous measure of social value orientation at a ratio level of measurement. Because Study One was undertaken before the new measure was published, we validated the emotion based measures of motive with the traditional but lower resolution categorical measure.

ing in order to balance the account. Alternatively, good-will and gratitude reflecting positive exchange accounts will motivate less aggressive demands along with a more open ended orientation toward pursuing opportunities for further mutual gain. In sum, the balance from prior exchange with a given partner should determine the strategy and goals a party pursues in a subsequent negotiation, and the role of this account on behavior should vary by the nature of the relationship. This effect will be mediated by the emotional response profile triggered by the accounting balance.

Hypothesis 2: The emotional responses reflecting relational account balance will determine demand level in subsequent negotiations with a particular counterpart. Specifically: (a) When interacting with the same person from prior exchange, positive (negative) account balance from prior exchange will diminish (raise) demands in a subsequent negotiation. (b) When interacting with a different person from prior exchange, positive (negative) account balance from prior exchange will not diminish (raise) demands in a subsequent negotiation.

Hypothesis 3: The emotional responses reflecting relational account balance will mediate the effect of a prior exchange event on the demand level in subsequent negotiations with that same party.

To test these hypotheses, we start in Study 1 by calibrating a sufficiently sensitive measure of relational account balance. Manipulating treatment and counterpart identity in an ostensible dictator game provided an opportunity to examine effects of prior exchange on emotional responses toward the counterpart as well as social motive and negotiation behavior. In Study 2, we examined the effects on integrative bargaining tactics, negotiated agreement and implementation of the deal.

2   Study 1

We first conduct a scaling study to establish the link between the state of relational accounts and the emotional response of the subject. We then examine whether the emotion resulting from the account balance influences the negotiation behavior directed toward the same but not a different counterpart.

2.1   Method

2.1.1   Subjects and research design

A total of 82 students (age M = 21.68, SD = 3.27, 63% female) from an undergraduate business course at a public university in the northeastern United States participated in a study of "strategic decision making" in exchange for the

opportunity to earn cash. The experiment was completed in seven sessions with 10–12 students each. The between-subjects factorial design manipulated two levels of exchange (profitable, asymmetrically unprofitable) with two levels of counterpart identity (same or different).

2.1.2   Procedure

Subjects were led to believe they would be communicating with other students in the room via computer text messaging. Initially they were provided instructions for the "dictator game" in which Player A is able to divide $5.00 into shares for self and other (Hoffman, McCabe & Smith, 1996). Player B passively observes the distribution of shares but can take no action to affect them. The screen messaging to subjects assigned each of them a personal identification number. It also indicated that they were being randomly assigned to a counterpart who was identified by a different number and to a role as either A or B. In fact all subjects were assigned to be Player B, as there was no other Player A. The program then randomly assigned them to receive either the profitable $2.60 share or the asymmetrically unprofitable 10 cent share from their Player A depending on the condition. The profitable amount just exceeded an even split (i.e., $2.50) which is a common choice by Player A's in experiments with this game. "Hyperfair" offers, exceeding half, are observed in experiments with some frequency but much less often (Henrich et al., 2006). So this result provides an exchange outcome that is more profitable to the subject than expected for reasons ostensibly due to the decision made by the counterpart.

Subjects then completed measures of satisfaction, choice dilemmas, and emotional responses. They were then briefed about a negotiation task in which they would be randomly reassigned to counterparts. Subjects were told that it was possible they could face the same or a different counterpart from the prior exchange. The negotiation task was a three-issue (bonus, start date, and insurance coverage) employment negotiation between a candidate and recruiter. Ostensibly, subjects could be assigned to either role but all were actually assigned to the recruiter role. They were all given a payoff chart representing the nine different levels of payoffs for each issue (see on-line supplement). Their highest payoff would come from agreeing on level A for each issue for a total of 5200 points to themselves. Subjects understood that their counterpart had a different payoff chart but they could not see it. Final point earnings would translate into experiment pay at a rate of $1 per 1000 points.

After answering a brief quiz to insure that they understood the instructions, subjects were prompted to make the first offer. After doing so, the experiment was stopped because the initial demand (i.e., first offer) was the dependent variable of interest and there was no real counterpart with whom to negotiate. Subjects were fully debriefed then paid

the maximum possible payout they could have earned for the experimental tasks ($10.20).

2.1.3 Measures

Choice dilemmas. The identity of "the other person" in choice dilemma problems is sometimes specified to be "a hypothetical other" (De Dreu & McCusker, 1997) or to be someone respondents do not know who they "will not knowingly meet in the future" (Van Lange et al., 1997, p. 746). We instead specify that the other person in this choice dilemma problem is the exchange counterpart from the initial dictator game exchange and recorded subjects behavioral tendency toward the exchange counterpart by searching for the dominant pattern across 12 dilemma problems used by Carnevale & Probst (1998; adapted from Messick & McClintock, 1968). For example, subjects were asked to choose between: a) You get **480** and the other person gets **80**; b) You get **540** and the other person gets **280**; c) You get **480** and the other person gets **480.** Here choosing response a) indicates a preference for competition, b) indicates a preference for individualism, and c) a preference for cooperation. A subject is classified as having a particular social orientation toward her counterpart if the majority of her choices reflect a preference for one orientation: individualism, cooperation or competition. This measure is displayed in Appendix A. To provide financial incentive for subjects to truthfully reveal underlying preference, they were instructed that one of these problems would be randomly selected for actual play. They would earn the number of points they allocated to self and counterpart would earn the number allocated to them from the option chosen.

Emotion measures. We developed measures of emotional response toward the other party from research on other-related moral emotions (Ortony, Clore & Collins, 1988; Tangney, Stuewig & Mashek, 2007). Emotion directed toward the other party was measured by responses to questions about emotions and feelings (see on-line supplement) on 9 point response scales ranging from not at all to very much.

Initial demand. The negotiation behavior measure was point value to self of the initial demand made in the three-issue negotiation. Initial demands greater in value generally reflect more competitive behavior. Those lesser in value reflected more generous or conciliatory behavior.

2.2 Results

Three of the subjects did not complete questionnaires, leaving 79 observations for analysis. Table 1 shows a correlation matrix of the major variables in the study. Two-tailed tests were are reported, unless indicated. One-tailed tests are used when our hypotheses are directional.

2.2.1 Scaling emotional response

From the correlation matrix of the emotional response items, the Kaiser-Meyer-Olkin measure of sampling adequacy was .87, and Bartlett's test of sphericity was significant (χ^2 (66) = 906.93, p < .01) indicating that factor analysis would be appropriate. Parallel analysis indicated a two common factor solution would fit best. Ordinary least squares minimum residual factoring with oblimin rotation resulted in two clearly interpretable factors. The first, which we labeled "disaffection" was defined by items reflecting strong negative affect toward the counterpart (with loadings for angry = .85, desire to punish = .86, dislike =.80, livid = .74, furious = .92, outraged = .91) but no cross loadings from these items on the second factor greater than .20 in absolute magnitude. The second factor, which we labeled "affection", was defined by items reflecting strong positive affect toward the counterpart (like = .64, grateful = .92, desire to reciprocate = .77, guilt = .64, thankful = .89, appreciate = .94) with only the guilt item (at .22) showing a cross loading on factor one at a magnitude greater than .20. Communalities for all items were above .30. The proportion of variance accounted by the rotated disaffection factor was 37% and affection accounted for 34% of variance. The two factors correlated at –.54. Averaging the raw scores from each item defining a common factor generated two emotional response scales with high levels of internal consistency of both affection (α = .91) and disaffection (α = .94).

Emotion from prior exchange tracked motivation for subsequent exchange. Subjects assigned to the asymmetrically unprofitable exchange condition reported less affection (M = 1.19, SD = 1.26 vs. M = 4.24, SD = 1.69, t(74)= 9.24, p < 0.001) and greater disaffection (M = 3.98, SD = 2.12 vs. M = 0.67, SD = 0.89, t(51) = 9.03, p < 0.001) than those in the profitable exchange condition. Emotions from the exchange incident predicted social motives directed toward the counterpart as revealed through preferences on choice dilemmas. Using the categorical scoring scheme that has been used in most past research on social motives, the distribution of consistent motives indicated 52 people with cooperative, 23 with individualistic, and 7 people with competitive motives.

To maintain a link with past practice, we used this categorization in one set of analyses, but also recognize that doing so does not preserve fidelity in the data. Categorizing people into discrete types as recommended by Carnevale and Probst (1998) results in a loss of information, in particular about the extent to which a person is cooperative/individualistic/competitive (e.g., Fitzsimons, 2008). To preserve as much information in the data as possible, we also computed a continuous measure of social motive by subtracting the number of competitive choices from the

Table 1: Correlation matrix of variables in Study 1.

	Same counterpart from prior exchange, N = 41			Different counterpart from prior exchange, N = 41		
	1	2	3	1	2	3
1. Affection						
2. Disaffection	−.62			−.44		
3. Exchange: 1 = Unprofitable, 0 = Profitable	−.78	.75		−.66	−.70	
4. Candidate Initial Demand	−.29	−.22	.26	.11	−.16	−.24

Note: Correlations between Candidate Initial Demand and other variables are calculated using Spearman's rank correlation method, due to the skewed distribution of the variable. All other correlations are based on Pearson's method. In the text, directional hypotheses may require the reporting a one-tailed test, so significance levels may differ in the text and table. Based on the sample size of N = 41, the magnitude of correlation required to be significant (two tailed) at p = .10 is r = .26, at p = .05 is r = .31, and at p = .01 is r = .40.

number of cooperative choices (i.e., higher scores indicate greater extent of cooperative choices), and re-ran analyses using this continuous measure.

Using the categorical measure of social motives, we estimated a multinomial logistic model to assess the relationship between social motives and affection, disaffection, as well as the condition dummies and their interaction. The cooperative response was set as the base outcome. Disaffection increased the probability of individualist and competitive responses. A one point increase in disaffection increases the odds of an individualist response by 1.37 (disaffection B = .32, p = .06), and also multiplies the odds of a competitive choice by 2.44 (disaffection B = .89, p = .02). Affection decreased the probability of individualist and competitive responses. A one point increase in affection multiplies the odds of an individualist response by .71 (affection B = −.35, p = .08), and the odds of a competitive choice by .38 (affection B = −.96, p = .04).

Also when using the categorical measure of social motives, affection mediated between prior exchange and social motives. We conducted mediation analyses, generating confidence intervals using Monte Carlo methods (Preacher & Selig, 2012; Selig & Preacher, 2008) using the data from subjects assigned to the same counterpart for both tasks.[2] With affection as the mediator, the confidence interval of the indirect effect between dictator behavior and the change in category from cooperative to competitive motive excluded zero [average indirect effect = 4.19, 95% CI (.36, 8.49)]. Also with affection as the mediator, the confidence interval of the indirect effect between dictator behavior and the change in category from cooperative to individualist motive

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[2]We use this subgroup approach to combine moderation and mediation (Wegener & Fabrigar, 2000) because using a more complex approach (e.g., Moderated Path Analysis or Moderated Causal Steps Approach) doesn't substantially influence our findings in this instance but does add added complexity to discussing these results.

included zero [average indirect effect = 1.31, 95% CI (−.87, 3.60)]. Disaffection did not mediate between prior exchange and social motives. With disaffection as mediator, the confidence interval of the indirect effect between dictator behavior and the change in category from cooperative to competitive motive included zero [average indirect effect = 2.93, 95% CI (−.26, 6.39)], as did the confidence interval of the indirect effect between dictator behavior and the change in category from cooperative to individualist motive [average indirect effect = 1.10, 95% CI (−.57, 2.87)].

When using the continuous measures of social motives, we obtained similar results. Both affection and disaffection predicted social motives. To estimate how emotion from prior exchange influences subsequent social motives, we ran an ordinary least squares (OLS) regression, with the continuous measure of social motive as the dependent variable, and included the measures of affection, disaffection, as well as the condition dummies and their interaction. Both affection (B = 1.49, p = .002), and disaffection (B = −1.24, p = .007) predicted the extent of cooperative choices vs. competitive choices. Neither the prior exchange dummy (B = 4.79, p = .10), the same counterpart dummy (B = −1.82, p = .37), nor their interaction (B = −.01, p = .99) predicted social motives.

When using the continuous measures of social motives, affection also mediated between prior exchange and social motives. We conducted bootstrapped mediation analyses, with 5000 resamples (Preacher & Hayes, 2008), using the data from subjects assigned to the same counterpart for both tasks. The direct effect of prior exchange on social motive was significant (path c = −5.76, p = .02). Prior exchange predicted the extent of affection experienced (path a = −3.31, p < .001), and in turn, affection predicted the extent of cooperative vs. competitive social motive (path b = 2.36, p = .01). The effect of prior exchange on social motive was fully me-

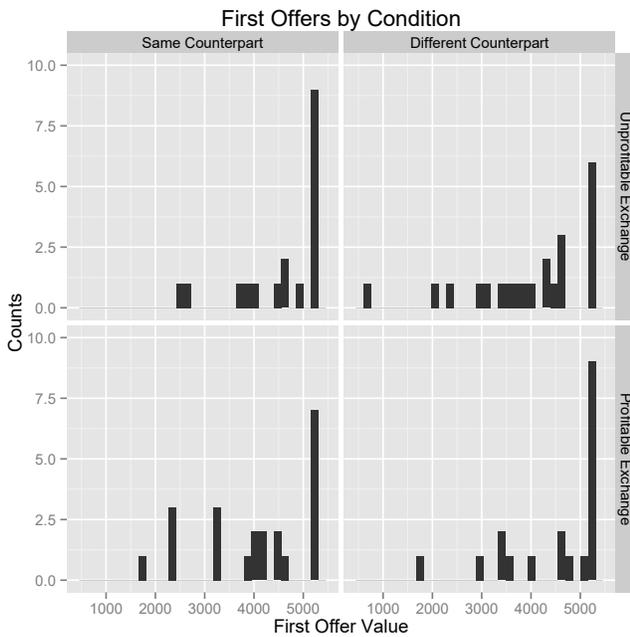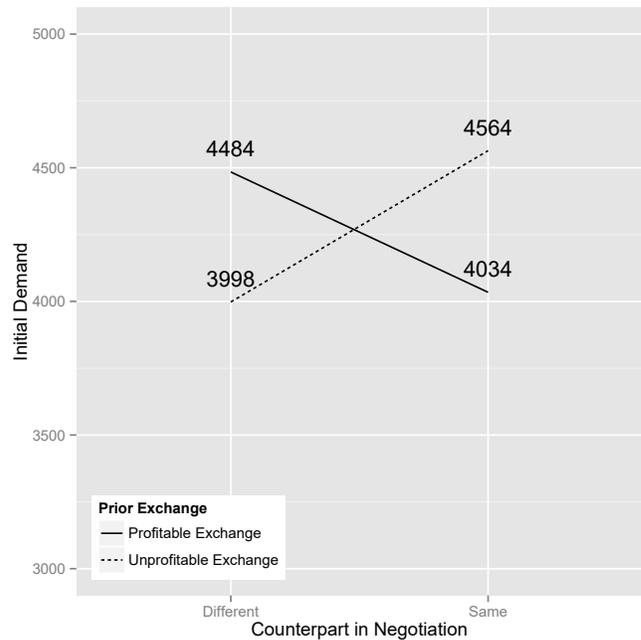Figure 1: Histogram of initial demand by condition in Study 1.

Figure 2: Interaction between dictator behavior and initial demand in Study 1.

diated by affect, with the prior exchange variable dropping to non-significance when controlling for affection (path c' = 2.04, p = .57), and the 95% confidence interval around the indirect mediation effect excluded zero [average indirect effect = –7.80, 95% CI (–13.91, –2.98)].

Disaffection did not mediate between prior exchange and social motives. The direct effect of prior exchange on social motive was almost significant (path c = –4.78, p = .06).[3] Prior exchange predicted the extent of disaffection experienced (path a = 3.23, p < .001), however, disaffection did not quite significantly predict the extent of cooperative vs. competitive social motive (path b = –1.54, p = .07). The prior exchange variable was not significant when controlling for disaffection (path c' = .19, p = .96), and the 95% confidence interval around the indirect mediation effect included zero [average indirect effect = –4.97, 95% CI (–11.13, .62)].

2.2.2 Initial demand level

Hypothesis 1 predicts that the effect of the exchange incident on initial offers in subsequent negotiations would be moderated by whether the negotiation occurs with the same exchange counterpart. Figure 1 shows the distribution of first offers. After regressing the initial demands on treatment variables we found that neither exchange event (B = –486.48, p = 0.15) nor counterpart identity (B = –450.12, p = 0.18) affected the initial offer. But the interaction term was significant (B = 1016.28, p = 0.04). When

facing the same counterpart, initial demands following unprofitable exchange were significantly higher (M = 4563.89, SD = 886.30) than those following profitable exchange (M = 4034.09, SD = 1109.85, t(38)=1.68, p = 0.05, one-tailed).[4] When facing a different counterpart in the negotiation, initial demands did not differ as a function of exchange event (profitable M = 4484.21, SD =997.36 vs. unprofitable M =3997.73, SD = 1203.02, t(39)=1.42, p = .08, one t-tailed) (see Figure 2). Thus Hypothesis 1 was supported.

Hypothesis 2 predicts a relationship between emotion account balance from prior exchange and demands in subsequent negotiation when interacting with the same counterpart (2a) but not with a different counterpart (2b). Subjects demanded less from the same counterparts when affection resulting from the prior exchange was greater (Spearman's ρ = –.29, p = .03, one tailed).[5] Disaffection was not significantly correlated with initial demand (Spearman's ρ = .22, p = .09, one tailed). Thus Hypothesis 2a was supported for a positive account balance. When negotiating with a different counterpart, neither affection (Spearman's ρ = .11, p = .25, one tailed) nor disaffection (Spearman's ρ = –.16, p = .17, one tailed) was correlated with initial demand, supporting Hypothesis 2b.

To assess Hypothesis 3 we tested whether emotional response mediates the effect of the exchange incident on negotiation behavior when interacting with the same counter-

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[3]Due to missing cases of disaffection responses, results vary slightly at this step.

[4]We report one-tailed p-values when our hypotheses are directional.

[5]Because of the non-normal distribution of first offers, we used Spearman's rank correlation coefficient to estimate the relationship between the first offer and the emotion variables.

party, using bootstrapped mediation as above. Neither affection nor disaffection mediated the relationship between the dictator behavior and initial demand. The direct effect between dictator behavior and initial demand was not significant for either mediation model (affection: B = 529.80, p = .22; disaffection: B = 485.15, p =.15). The relationship between dictator behavior and emotions was significant for both variables (affection: B = –3.31, p < .001; disaffection: B = 3.23, p < .001), but the relationships between affection and initial demand were not significant (affection: B = –47.17, p = .70; disaffection: B =23.61, p = .84), nor was the total indirect effect [affection bootstrapped effect = 155.95, 95% CI: (-639.83, 967.96); disaffection bootstrapped effect = 76.32, 95% CI: (-890.44, 864.99)]. Thus, Hypothesis 3 was not supported.

2.3   Discussion

Specific emotional responses toward a counterpart appear to provide an indicator of the state of relational accounts between the two parties. As Aureli and Schaffner (2013) argued, information necessary to enact positive and negative reciprocity over time is stored not merely as event description but as affect toward the counterpart. The affect provides a rapid basis for appraising risks in exchange along with a reliable basis for measuring account balance. The affection and disaffection scales were both internally consistent while varying in the predicted manner as a function of prior social exchange.

The relationship between the emotional response measures and the quasi-revealed preference measures of social motive, derived from transformed prisoner's dilemma choices, provided additional evidence of the validity for the emotion measures. The usual pattern of primarily cooperative choice patterns shifted toward more individualist or competitive revealed preferences following the asymmetrically unprofitable exchange. The affection scale mediated this effect consistent with the emotional response to exchange establishing a motive for reciprocation and account balancing.

Prior exchange also affected initial demands in a subsequent negotiation but only when the exchange partner was believed to be same person. Affection was associated with less demanding initial offers in the subsequent negotiation, though neither affection nor disaffection appeared to mediate between prior exchange and these initial negotiation demands. This predictive failure may reflect limitations in the relational accounting framework or could suggest that first offers elicited a degree of strategic behavior somewhat independent of motive. As Figure 1 illustrates, many subjects across conditions chose to make the very highest initial demands possible. They likely anticipated engaging in a process of give and take in which they would make concessions needed to secure a profitable agreement.

In Study 2, we examine fully interactive dyadic negotiation behavior extending beyond the point of agreement and onward to subsequent implementation of the deal. The aim was to observe how relational accounting from prior exchange shapes the wider process and outcomes of negotiation.

3   Study 2

To provide a foundation for a theory of exchange, the impact of accounting for reciprocity must persist beyond the initial offer to influence the concession making, the agreement reached, and the decision to follow through with terms of the deal. Specifically, the construction and implementation of value creating agreements should be related to the affection stemming from a positive account balance. Reciprocating prior generous acts will necessitate more generous initial offers as well as more cooperative patterns of concession making culminating in greater mutual gains. In contrast, a negative account balance should trigger competitive motives thus yielding fewer concessions and a focus on achieving more disparity in the value of agreement between the parties in order to even the score.

Despite the emphasis on and perceived importance of deal implementation by experienced practitioners (Jang, Bottom & Elfenbein, 2015), negotiation researchers have largely neglected this phase of deal making. Most research simply presumes that promises of action made in the terms of agreement will automatically and costlessly come to pass (Pruitt & Carnevale, 1993). Undertaking one of the few examinations of implementation, Mislin, Campagna and Bottom (2011) found links between positive affect and costly implementation effort. They also found distrust to be a significant impediment to effective implementation. In relational accounting terms, entering negotiations with a positive balance should improve the chances that deals are properly executed. These exchanges should generate more total value, result in more equal distribution, with lower rates of reneging. In contrast, entering with a negative balance should render eventual implementation more problematic. These problems in implementation include the likelihood of reneging—a particularly extreme breakdown of implementation.

Hypothesis 4:   A profitable (unprofitable) exchange incident will determine the level of cooperative behavior in subsequent negotiations with that same counterpart. This will be demonstrated through (a) lower (higher) rates of reneging on agreements, (b) more cooperative (competitive) negotiation outcomes, and (c) more (less) positive cooperative messaging.

Hypothesis 5:   Relational account balance will determine (a) rates of reneging on agreements, (b) cooperative negotia-

tion outcomes, and (c) cooperative messaging in subsequent negotiations with the same counterpart.

Hypothesis 6: Relational account balance will mediate the effect of a prior exchange event on positive cooperative messaging with that same party.

3.1 Method

3.1.1 Subjects and research design

172 individuals (age M = 23.27, SD = 9.30, 40% female), recruited via ads posted on a private Midwestern university website, participated in the study for an opportunity to earn money. Subjects were given $5 to show up with the opportunity to earn more money from strategic decision making during the experiment. We conducted 34 sessions with 4–14 subjects in each. As in Study 1, we used a 2 (incident: profitable vs. unprofitable) x 2 (counterpart identity: same vs. different to initial exchange) between-subjects design.

3.1.2 Procedure

The procedures were similar to those used in Study 1, though modified to incorporate an interactive negotiation between two subjects. Subjects expected to negotiate with a counterpart after first completing an initial task. While led to believe they were interacting anonymously with another study subject, half of the subjects were exposed to a dictator game with a computer-simulated counterpart that made either a highly profitable allocation to the subject or an asymmetrically unprofitable one. The remaining subjects completed a filler task unaware that other people were being exposed to a dictator allocation.

Those exposed to a simulated dictator were assigned to the candidate role in a five-issue (Job type, Salary, Start date, Insurance plan, and Bonus) employment negotiation. A payoff chart (Appendix B) representing the six different levels of payoffs for each issue was assigned to each party. Two of the issues were integrative (Job type and Bonus), two were distributive (Salary and Start date), and one had compatible values (Insurance plan). Potential payout ranged from 0 to 12500 points for each role with a maximally efficient joint deal yielding a total of 17000 combined points. Points translated into compensation at a rate of one dollar per 1000 points.

Those exposed to a simulated dictator learned via subject code numbers that their negotiation counterpart was either the same or different from the dictator they previously faced. Those who completed the filler task were assigned the role of recruiter. Recruiters were merely informed that they would be negotiating with a candidate.

Dyads were given 15 minutes to negotiate. Candidates were required to make the initial demand. Throughout the negotiation, offers could be made by selecting options on a screen with verbal communication possible via selection from a menu of scripted messages from Hilty and Carnevale (1993) and Van Kleef, De Dreu and Manstead (2004) adapted to fit the current context (Appendix C). Communication that could reveal the deception was not possible since subjects could communicate only by selecting one of the scripted messages. If subjects were unable to reach an agreement on the negotiation task, they each had a best alternative to negotiated agreement (BATNA) that was worth 3000 points.

To reflect hazards of deal implementation, candidates were given the opportunity to renege on agreements they reached. After deals were struck, candidates were presented with an alternative contract ostensibly proposed by another employer. The alternative contract was slightly more attractive for the candidates, with the value of the "Start date" issue increased by 200 points, but such a choice by the candidate ostensibly left the recruiter with only their BATNA of 3000 points. The exact value of the recruiter's BATNA was not known by the candidate. Upon making the choice to honor or renege on the agreement reached, a set of posttest questions including demographic and attitudinal information was administered. Subjects were debriefed and received payments ranging from $8.00 to $22.70. Conducted in a University computer lab, the experiment lasted approximately 60 minutes.
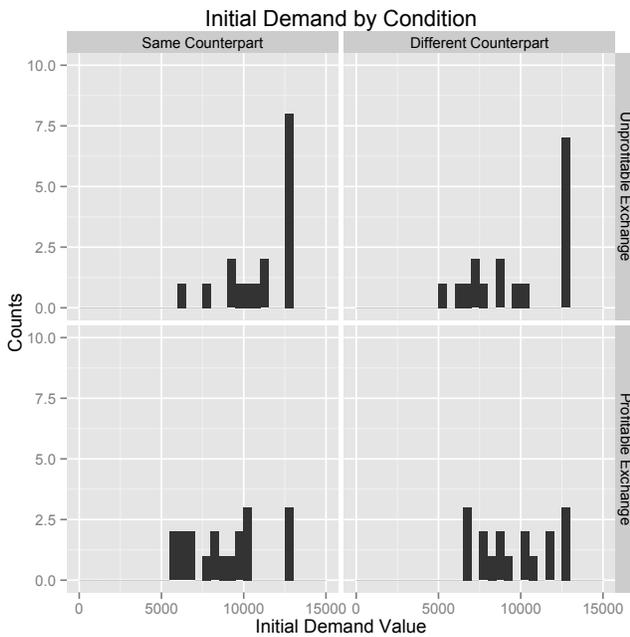
As in Study 1, we manipulated prior exchange incident by using a computer confederate. Those who played the initial dictator game were exposed to a computer confederate that divided $5.00 to the candidate either profitably (by offering $2.60 to the subject) or unprofitably (by offering $0.05 to the subject). We again manipulated the identity of the counterpart in the negotiation to follow, by displaying the ostensible ID number of the counterpart throughout the dictator game and negotiation task. We verified this understanding with a quiz before the negotiation.

3.1.3 Dependent measures.

Emotional response. Candidates completed the same emotion measure used in Study 1 after the dictator game and then after the negotiation for all subjects. This yielded internally consistent measures of affection (α = .95) and disaffection (α = .96).

Initial demand. The computer program asked the candidate to make the initial demand. The value of the initial demand was subject to a log transformation to normalize the distribution because of a tendency to make the highest possible offer across conditions, as in Study 1 (see Figure 3).

Figure 3: Histogram of initial demand by condition in Study 2.

3.2 Results

Eighty-six dyads were recruited but technical problems associated with the computer program forced us to drop 16 from the analysis as those pairs were unable to properly communicate with each other. Table 2 shows a correlation matrix of the major variables in the study. Two-tailed tests unless indicated. One-tailed tests are used when hypotheses are directional.

Responding after the initial exchange incident but before the negotiation instructions, subjects assigned to the unprofitable exchange condition experienced lower levels of affection (M = 0.53; SD = 0.49 vs. M = 4.94; SD = 1.29, t(45)=19.20, p < 0.001) and higher levels of disaffection (M = 4.38; SD = 2.55 vs. M = 0.44; SD = 0.60, t(36)=8.78 p < 0.001) than those assigned to the profitable exchange condition. These results replicate the pattern observed in Study 1. The unprofitable exchange incident led to greater initial demands in the subsequent negotiation but only when the counterpart was believed to be the same subject from the prior exchange. In an OLS regression with the initial demand as the response variable, neither the profitability of the exchange (B = 147.06, p = .85) nor counterpart identity (B = –794.43, p =.30) affected the initial offer, and the interaction term was not significant (B = 2000.31, p = 0.07). However, when faced with the same counterpart as in the dictator game, those who experienced an unprofitable exchange made demands (M = 10900.00, SD = 1896.38) that were significantly higher than those who faced the profitable exchange (M = 8752.63, SD = 2225.70, t(34) = 3.10, p = .002, one-tailed), replicating support for Hypothesis 1. When facing different counterparts, first offers made toward unprofitable exchange partners (M = 9694.12, SD = 2702.19) and profitable exchange partners (M = 9547.06, SD = 2121.65, t(32) = .18, p = .43, one-tailed) were not significantly different. Finally, candidate's emotions following exchange correlated with initial demands. When examining subjects who negotiated with the same counterpart, affection correlated negatively (Spearman's ρ = –.40, p = .007, one tailed) with initial demands, while disaffection positively correlated (Spearman's ρ = .33, p = .02, one tailed) with initial demands, replicating support for Hypothesis 2a and 2b respectively.[6]

Reneging on deal. To study problems arising during implementation we examined the extreme problem of reneging on a deal. After negotiations ended, candidates were given the opportunity to agree to an alternative contract offered by another recruiter. This alternative contract would leave them 200 points better off and would leave the recruiter with a BATNA that was obviously worse than the deal they had struck. In fact, it left the recruiter with a BATNA worth only 3000 points. We measured whether or not the candidate chose to accept the better offer presented to them after the agreement was struck coding this dichotomously as 0=stay with current offer, 1=accept better deal.

Cooperative negotiation outcome. The difference in total point earnings between the parties represents how equally parties divide the total join gain of the negotiation outcome. This provided a measure of cooperative-competitive behavior with a greater difference reflecting a more competitive outcome.

Cooperative messaging. The percentage of cooperative, competitive, positive, and negative messages sent by candidates to recruiters was calculated by dividing the number of each type of message by the total messages sent. Because of the low frequency of the positive and negative messages sent, we summed messages of the same valence type—cooperative and positive, and competitive and negative—to create a composite variable representing positively and negatively valenced messages.

Figure 4 contains a scatterplot of the points earned from the negotiation with different conditions indicated by marker shape and color. The joint profits earned were greatest for pairs when the candidate had experienced a profitable prior exchange and who also believed the recruiter was the same person from that exchange. This pattern reflected differences in integration during the development of agreements. To examine the joint value of terms of agreement reached prior to any decision about reneging, we regressed

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[6]As in Study 1, the non-normality of the initial demand variable is handled using Spearman's rank correlation coefficient.

Table 2: Correlation matrix of variables in Study 2.

	Same counterpart from prior exchange, N = 36							Different counterpart from prior exchange, N = 34						
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
1. Affection														
2. Disaffection	−.78							−.68						
3. Exchange: 1 = Unprofitable, 0 = Profitable	−.92	.78						−.91	.70					
4. Candidate initial demand	−.40	.33	.46					−.09	.03	.05				
5. Cooperative + positive messages	.31	−.41	−.19	−.17				−.21	.13	.24	−.17			
6. Competitive + negative messages	−.29	.43	.26	.20	−.53			.16	−.02	−.07	.13	−.71		
7. Reneging: 1 = Renege, 0 = no reneging	−.23	.23	.26	−.07	−.21	.41		−.25	.21	.13	.21	.15	.01	
8. Difference in outcomes post reneging choice	−.29	.18	.30	.08	−.13	.18	.77	−.28	.15	.19	.44	.15	.04	.71

Note: Correlations between Candidate Initial Demand and other variables are calculated using Spearman's rank correlation method, due to the skewed distribution of the variable. All other correlations are based on Pearson's method. Based on the sample size of N = 36, the magnitude of correlation required to be significant (2 tailed) at p = .10 is r = .28, at p = .05 is r = .33, and at p = .01 is r = .42; based on the sample size of N = 34, the magnitude of correlation required to be significant at p = .10 is r = .29, at p = .05 is r = .34, and at p = .01 is r = .44. In the text, directional hypotheses may require the reporting a one-tailed test, so significance levels may differ in the text and table.

joint value on the condition dummies and their interaction. Negotiating with the same person from the prior exchange resulted in a higher joint value (B = 2034.06, p = .02), as did negotiating with a counterpart that offered an unprofitable exchange during the dictator game (B = 2000.00, p = .03). These main effects were qualified by an interaction, which revealed that negotiating with the same partner from the unprofitable prior exchange resulted in a lower joint value (B = −3398.76, p = .01). When candidates negotiated with the same counterpart, joint value was greater for those who experienced profitable exchange, and the difference was almost significant (same / profitable exchange M = 15010.53, SD = 1211.93, same / unprofitable exchange M = 13611.76, SD = 3393.72, p = .06, one-tailed).

Variable implementation of deals resulted in significant differences in value created and claimed. The joint value following decisions to renege revealed a significant interaction for encountering the same partner from the unprofitable exchange (unprofitable exchange B = 1662.23, p = .09, same counterpart B = 1188.24, p = .23; interaction B = −2909.29, p = .04). When comparing conditions in which candidates

negotiated with the same counterpart, joint value was significantly greater for those who had experienced profitable exchange (same / profitable exchange M = 12321.05, SD = 2941.95, same / unprofitable exchange M = 10600.00, SD = 2760.66, p = .04, one-tailed).

Subjects who believed they were negotiating with the same counterpart from the dictator game but who had a previously unprofitable exchange, reneged with a somewhat greater relative frequency (renege rate: 11 from a total of 15 pairs), than those who experienced a profitable exchange (rate: 9 from a total of 19 pairs) but the difference in defection rates was not significant ($\chi^2(1) = 1.38$, p = .12, one tailed). When examining those who negotiated with the same counterpart, the correlation between affection and reneging was in the predicted direction but not significant (r = −.23, p = .09, one tailed), as was the correlation between the disaffection and reneging (r = .23, p = .09, one tailed), thus not supporting Hypothesis 5a.

Reneging by candidates who experienced the same, unprofitable exchange partner left greater disparities in outcomes. We examined the realized payoffs for the recruiter

Figure 4: Value of agreements prior to and following implementation in Study 2. Large solid markers indicate the centroids of each condition. Whiskers extending from centroid markers indicate the standard error associated with the centroid. Transparent markers indicate data points. Green line indicates equal outcomes for recruiter and candidate. Recruiter points cluster around 3000 due to candidates choosing alternative deal, leaving recruiters with their BATNA of 3000 points. Unprofitable exchange groups (red) lie further from the line of equal outcome than profitable exchange groups (blue).
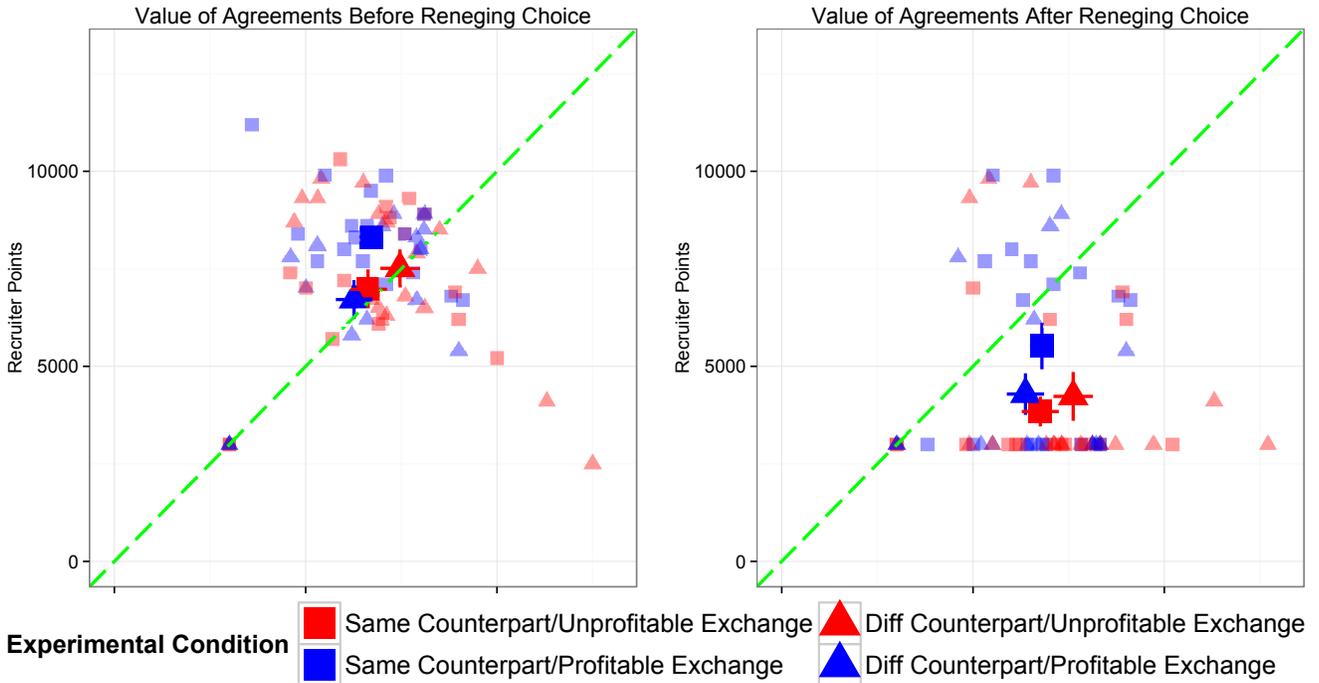
and candidate after implementation. If candidates chose to accept the alternative offer, the value of their outcome increased by 200 points but the recruiter earned only the value of their BATNA which was 3000 points. Candidates in the profitable-same counterpart condition realized agreements that yielded less difference in earnings between the parties (M = 1278.95; SD = 2921.87) than those in the unprofitable-same counterpart condition (M = 2917.65; SD = 2303.59, t(34)=1.88, p < 0.05, one-tailed), supporting Hypothesis 4b. As predicted, those assigned to negotiate with a different counterpart reached agreements that did not vary as a function of prior exchange profitability (M = 2082.35; SD = 2810.08) or unprofitability conditions (M = 3388.24; SD = 3952.20, t(32)=1.11, p = .14, one-tailed). When examining those who negotiated with the same counterpart, the correlation between affection and difference in agreements was significant (r = –.29, p = .04, one tailed) though the correlation between disaffection and difference in agreements was not (r = .18, p = .15, one tailed), supporting Hypothesis 5b only for a positive account balance.

Emotions experienced from prior exchange influenced messages sent during negotiation. Table 3 shows the percentage of each type of message sent during the negotiation. When we examined the subjects who had interacted with the same counterpart as in the dictator game, we found the

prior exchange dummy to be almost significant in predicting the rate of competitive and negative messages sent (t(29) = 1.57, p = .06, one tailed) (Hypothesis 4c). But both affection and disaffection correlated with the sum of cooperative and positive messages sent (affection r = .31, p =.03, one tailed; disaffection r = –.41, p = .007, one tailed), and the sum of competitive and negative messages sent (affection r = –.29, p =.04, one tailed; disaffection r = .43, p = .004, one tailed), thus supporting Hypothesis 5c. The emotion variables mediated between prior exchange and the sum of cooperative and positive messages sent during negotiation. When examining the subgroup of subjects who had interacted with the same counterpart, both affection [bootstrapped total mediation effect = –43.76, 95% CI (–105.81, –1.30)], and disaffection [bootstrapped total mediation effect = –27.17, 95% CI (–53.62, –8.00)] were significant mediators. Finally, unprofitable prior exchange experience resulted in lower affection and higher disaffection, which in turn influences positive messaging conveyed to the counterpart, supporting Hypothesis 6.

3.3 Discussion

Observation of interactions with an actual counterpart, rather than a computer program, yielded further insight into

Table 3: Percentages of cooperative, competitive, positive, and negative messages sent by candidates in Study 2. (Some rows do not sum to 100% because some candidates sent zero messages to their counterpart.)

Counterpart	Exchange type	Cooperative M (SD)	Competitive M (SD)	Positive M (SD)	Negative M (SD)	Cooperative + Positive M (SD)	Competitive + Negative M (SD)
Same	Unprofitable	69.09 (25.61)	17.52 (19.54)	6.60 (9.65)	0.91 (2.64)	75.69 (28.08)	18.43 (20.76)
	Profitable	77.65 (26.22)	8.32 (14.60)	8.29 (12.49)	0.48 (2.09)	85.94 (25.79)	8.80 (15.38)
Different	Unprofitable	76.04 (28.79)	19.11 (27.40)	4.85 (9.76)	0.00 (0.00)	80.89 (27.40)	19.11 (27.40)
	Profitable	61.22 (37.66)	21.48 (28.93)	3.76 (8.00)	1.77 (4.22)	64.98 (37.54)	23.26 (29.80)

the effects of relational accounting on the negotiation process. Past exchange affected emotion directed toward the counterpart and the initial demands in the exchange. Past exchange shaped the pattern of messages conveyed during the negotiation ultimately affecting parts of the value creation and claiming that flowed from the negotiation. The positive account balance produced by prior profitable exchange generated greater affection toward that counterpart. This affection produced more generous initial offers, more equal distribution of value in agreements reached, and more positive and cooperative messaging to the counterpart during negotiation with what subjects believed to be the same person. An asymmetrically unprofitable exchange complicated deal construction when subjects believed they were negotiating with the same counterpart. It further complicated implementation of deals where value was actually created and claimed. Coupling effects on implementation with potential value creation during deal construction led to significant asymmetries in overall value created and claimed through the negotiation process. The asymmetries entailed hurting the counterpart from a prior unprofitable exchange, rather than attempting to increase one's own value from the deal.

4 General discussion

Reciprocity regulates behavior not only within a given negotiation, but also *across* the various phases of social exchange, including the explicit negotiation of terms and deal implementation. A system of relational accounting driven by the formation of specific emotions toward exchange partners appears to motivate people to act in ways that balance accounts over time. Study 1 established two scales for measuring these emotional states—affection reflecting positive accounts and disaffection reflecting negative accounts. The scales then demonstrated the mediation of emotion between prior exchange incidents and social motives as revealed through preferences over choice dilemmas. The measures did not appear to mediate initial demand levels in a subsequent integrative negotiation although emotions were

correlated with demand. In Study 2 the measures correlated with initial demand levels, mediated cooperative messaging, and influenced the value created through the phases of deal construction and implementation.

These effects are generally consistent with the models of evolved preferences and tendencies toward reciprocity emerging from evolutionary biology (Trivers, 1971; de Waal, 2008; Boehm, 2012), evolutionary psychology (Cosmides & Tooby, 1992; McCullough, Kurzban & Tabak, 2013) and behavioral economics (Gintis, 2000; Smith, 1998; Fehr & Henrich, 2003). Reciprocity functions not as a social convention or nicety but as an evolved biological drive sustained and regulated by systems that enable relational accounting with diverse counterparts over extended periods of time. Emotional responses serve as indicators that fluctuate with the changing state of relational accounts. Account dependent preferences parties bring to the negotiation table determine their initial demands, integrative bargaining, and the vigor with which they implement the deals they reach.

This new model of relational accounting can help negotiation researchers tie together exchange before and after the negotiated agreement. It can also explain existing findings about the many distinct facets of the process that have been studied in isolation by researchers. Prominent among these research subfields are negotiator cognition and judgment (Bottom, Kong & Mislin, 2011), emotions (Barry, 2008), motivation (De Dreu & Carnevale, 2003), and social ties between parties (McGinn, 2006). As the present studies demonstrate, the accounting model also yields novel predictions about neglected aspects of the negotiation process. Prior studies treat social motives as exogenous forces, often primed by an experimenter through goal setting instructions (Loewenstein, Thompson & Bazerman, 1989), or measured as a general disposition (De Dreu & Carnevale, 2003). In contrast, we find that emotional responses scaled as affection and disaffection provide graded and useful indicators of the account state. Social motives shift endogenously with the flow of social exchange, both tacit and explicitly negotiated, as the emotional indicators of the relational accounts evolve.

Very few studies have examined the implementation of negotiated agreement, instead presuming that any deal struck will be immediately and perfectly implemented as agreed at no cost to the parties (Mislin, Campagna & Bottom, 2011). As we found in Study 2, emotions indicating the state of relational accounts impacts behavior at the bargaining table but also away from the table after the deal has been struck. Although we did not find significant differences in rates of reneging due to this residual motive to balance accounts, future research should examine this process further. The small sample size may have complicated finding significant differences in a particularly egregious form of contract violation. Testing for more graded differences in willingness to expend costly effort toward implementation as in Mislin, Campagna, and Bottom (2011) would likely provide a clearer test. Subtle forms of shirking or undermining may provide more widely appealing means of account balancing.

Full understanding and modeling of the evolved principles of relational accounting will require additional study. We encourage future research to explore how loss aversion may give rise to asymmetries in accounting for exchange that may result in escalation of conflict into full-blown feuds. Future research should also study the associations between accounting operations and complex social behavior such as explanations, reparations, apologies, and forgiveness. These research extensions together with our work presented here should contribute to the development of negotiation theory that embeds the negotiation process within the wider system of ongoing social exchange between networks of actors, coalitions, and organizations. The establishment of a sound micro foundation for complex behavioral theories of is a necessary step toward enabling researchers in organizational theory, political science, public administration, and international relations to incorporate insights from negotiation research into the modeling of the social processes at work in their fields.

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Appendix A: SVO Measure used by Carnevale & Probst (1998)

INSTRUCTIONS

For this question, we would like you to make a series of decisions about hypothetical point allocations to you and Subject XXX. The decisions you make will not be linked to you and will not be revealed to Subject XXX.

Both you and Subject XXX are making choices among three options (A, B, or C) by selecting one of the options. Each option represents a different point allocation to yourself and Subject XXX. Therefore, your choices determine the number of points you received and the number of points Subject XXX receives. Also, Subject XXX's choices determine the number of points you receive and the number of points s/he receives. The points are important to you and also to Subject XXX. The more points you get, the better off you are. Also, the more points Subject XXX gets, the better off s/he will be.

Please answer the questions below by selecting the options which represent the choice you would make. Keep in mind that there are no right or wrong answers – choose the option that you would find most attractive.

Imagine that the points are valuable – the more you get the better for you. Likewise, the more points Subject XXX gets the better for him/her. But remember that these are just "HYPOTHETICAL" responses that will have no impact at all on how much money you or your counterpart will earn in the experiment. We just want your opinions.

Example of the format used:

1. Which would you prefer most?
a. You get 480 and Subject XXX gets 80
b. You get 540 and Subject XXX gets 280
c. You get 480 and Subject XXX gets 480

Table 4 shows the full set of items, starting with this one.

Table 4: Full set of items and scoring key (with the above item included as #1). The last three columns are, respectively, Cooperation, Individualism, and Competition.

	Items			Scoring		
	a	b	c	Coop.	Indiv.	Comp.
1.	480/80	540/280	480/480	c	b	a
2.	560/300	500/500	500/100	b	a	c
3.	520/520	520/120	580/320	a	c	b
4.	510/510	560/300	510/110	a	b	c
5.	550/300	500/100	500/500	c	a	b
6.	480/100	490/490	540/300	b	c	a
7.	500/100	560/300	490/490	c	b	a
8.	560/300	500/500	490/90	b	a	c
9.	500/500	500/100	570/300	a	c	b
10.	480/480	520/300	480/180	a	b	c
11.	470/300	330/110	440/440	c	a	b
12.	460/100	510/510	530/320	b	c	a

Appendix B: Study 2 negotiation instructions & payoff charts

CANDIDATE NEGOTIATION INSTRUCTIONS

This task involves a negotiation between two people during a job interview. You have been assigned the role of the candidate. Your counterpart, Subject N723 has been assigned the role of the recruiter. There are five remaining issues of concern that need to be worked out in this negotiation:

1. Job Type
2. Salary
3. Start date
4. Insurance coverage
5. Bonus

Your goal is to reach the best possible agreement on all of these issues. To better understand your interests the possible agreements have been translated into the payoff schedule that you see in the lower part of the screen. The five issues are listed separately along with the six different settlement options available for each issue. There are points associated with each option. You may choose any of the six options with any of the five issues. Thus, there are a large number of possible agreements that you and your counterpart could reach.

The total points from the agreement will simply be the sum of the points you receive from the settlement of each issue. Note that this payoff chart provides you with information only about the point totals that you will receive from

Table 5: Pay-off Table (You will always be able to view the table. So, you do not have to memorize it):

Job type	F (0)	E (800)	D (1600)	C (2400)	B (3200)	A (4000)
Salary	$70,000 (0)	$72,000 (600)	$74,000 (1200)	$76,000 (1800)	$78,000 (2400)	$80,000 (3000)
Start Date	1-Jun (0)	15-Jun (200)	1-Jul (400)	15-July (600)	1-Aug (800)	15-Aug (1000)
Insurance Plan	Plan F (0)	Plan E (500)	Plan D (1000)	Plan C (1500)	Plan B (2000)	Plan A (2500)
Bonus	F (0)	E (400)	D (800)	C (1200)	B (1600)	A (2000)

different settlements. Your counterpart may have different point totals. After the experiment has ended, the points you received from any agreement that you reach will be translated into dollars. You will earn $ 1.00 for each 1000 points in the settlement. These earnings will be added to any other earnings from this experiment to determine the total amount you will be paid in today's session.

All communications with your counterpart regarding these issues are to be conveyed via computer messaging. In addition to specifying proposed settlement of each issue you will also be able to select text messages to send to the other party. You may select from a list of 24 prewritten messages to send to your candidate with each offer. (You also have to option to send no message if you prefer.)

You, the candidate, will make the first offer to the recruiter. The recruiter's counter-offers will appear on the left side of your computer screen during the session. You will be able to choose offers from the right side of the screen.

You may also select text messages to accompany your offers.

Below [Table 5] is the pay-off table for the issues. For each issue, you may agree on one of the 6 different options. The attractiveness of each option to you is represented by the amount of profit (points) you would receive if you and the candidate agree to that option. As a negotiator, you need to settle on each issue, though you can do so at any of the nine levels on each issue.

For example, if you agree on Job Type C (2400), Salary $70,000 (0), and 1-Aug Start Date (800), Insurance Plan B (2000), and Bonus A (2000) your total points will be 7200.

RECRUITER NEGOTIATION INSTRUCTIONS

This task involves a negotiation between two people during a job interview. You have been assigned the role of the recruiter. Your counterpart, Subject F704 has been assigned the role of the candidate. There are five remaining issues of concern that need to be worked out in this negotiation:

1. Job Type
2. Salary
3. Start date
4. Insurance coverage
5. Bonus

Your goal is to reach the best possible agreement on all of these issues. To better understand your interests the possible agreements have been translated into the payoff schedule that you see in the lower part of the screen. The five issues are listed separately along with the six different settlement options available for each issue. There are points associated with each option. You may choose any of the six options with any of the five issues. Thus, there are a large number of possible agreements that you and your counterpart could reach.

The total points from the agreement will simply be the sum of the points you receive from the settlement of each issue. Note that this payoff chart provides you with information only about the point totals that you will receive from different settlements. Your counterpart may have different point totals. After the experiment has ended, the points you received from any agreement that you reach will be translated into dollars. You will earn $ 1.00 for each 1000 points in the settlement. These earnings will be added to any other earnings from this experiment to determine the total amount you will be paid in today's session.

All communications with your counterpart regarding these issues are to be conveyed via computer messaging. In addition to specifying proposed settlement of each issue you will also be able to select text messages to send to the other party. You may select from a list of 24 prewritten messages to send to your candidate with each offer. (You also have to option to send no message if you prefer.)

The candidate will make the first offer to you the recruiter. The candidate's offers will appear on the left side of your computer screen during the session. You will be able to choose offers from the right side of the screen.

You may also select text messages to accompany your offers.

Below [Table 6] is the pay-off table for the issues. For each issue, you may agree on one of the 6 different options. The attractiveness of each option to you is represented by the amount of profit (points) you would receive if you and the candidate agree to that option. As a negotiator, you need to settle on each issue, though you can do so at any of the nine levels on each issue.

For example, if you agree on Job Type C (800), Salary $70,000 (3000), and 1-Aug Start Date (200), Insurance Plan B (2000), and Bonus A (0) your total points will be 6000.

Table 6: Pay-off Table (You will always be able to view the table. So, you do not have to memorize it):

Job type	F (2000)	E (1600)	D (1200)	C (800)	B (400)	A (0)
Salary	$70,000 (30000)	$72,000 (2400)	$74,000 (1800)	$76,000 (1200)	$78,000 (600)	$80,000 (0)
Start Date	1-Jun (10000)	15-Jun (800)	1-Jul (600)	15-July (400)	1-Aug (200)	15-Aug (0)
Insurance Plan	Plan F (0)	Plan E (500)	Plan D (1000)	Plan C (1500)	Plan B (2000)	Plan A (2500)
Bonus	F (4000)	E (3200)	D (2400)	C (1600)	B (800)	A (0)

Appendix C: Study 2 messages

Competitive messages

Negotiating with you is a major waste of time.
Improve your offer if you want an agreement.
This is the last offer. Take it or leave it.
You're engaging in unethical bargaining practices.
This offer is a gift. What more do you want?
You are too stubborn—make some concessions.
This is the very best offer that is possible.
If you do not accept this offer, I will find someone else to work with.
You won't see a good deal staring you in the face?

Co-operative messages

Let's try to come up with something mutually acceptable
We should try harder to find a mutually acceptable solution.
Let's try to consider both of our needs and interests.
I hope that this offer is good for you.
We both should make some profit in the agreement.
This is sure to make you happy!
Let's make offers that are good for us both.
Your needs and interests are important.
We should work on having good relations for the future.
It is important that we both are happy with an agreement.
The Job Type issue has the greatest value to me.
The Start Date issue has the greatest value to me.
The Insurance Coverage issue has the greatest value to me.
The Salary issue has the greatest value to me.
The Bonus issue has the greatest value to me.

Positive affect

I am happy with your offer.
This is going pretty well so far.
I feel good about this negotiation.

Negative affect

Your offer makes me really angry.
This is really getting on my nerves.
This negotiation pisses me off.

Competitive and Cooperative messages were adapted from Hilty and Carnevale, 1993, to match this negotiation context. Messages rated by subjects as being over the middle point on the scale (3.5) were classified as being competitive, while messages rated as being below the middle point were classified as being co-operative. Positive and negative affect messages were adapted from Van Kleef et al., 2004, to match this negotiation context.