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A Study of the Triggers of Conflict and Emotional Reactions

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Abstract

We study three triggers of conflict and explore their resultant emotional reactions in a laboratory experiment. Economists suggest that the primary trigger of conflict is monetary incentives. Social psychologists suggest that conflicts are often triggered by fear. Finally, evolutionary biologists suggest that a third trigger is uncertainty about opponent's desire to cause harm. Consistent with the predictions from economics, social psychology, and evolutionary biology, we find that conflict originates from all three triggers. The three triggers differently impact the frequency of conflict, but not the intensity. Also, we find that the frequency and intensity of conflict decrease positive emotions and increase negative emotions, and that conflict impacts negative emotions more than positive emotions.

JEL Classifications: C72, C91, D74

Keywords: conflict, incentives, fear, uncertainty, laboratory experiment, reverse dictator game, joy of destruction game

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1. Introduction

The study of human conflict is old. Hobbes wrote in the 17th Century that “the condition of Man ... is a condition of Warre [*sic*] of everyone against everyone” (2015 [1651], p. 110). The occurrence of human conflict is older. Fatal conflict between warring hunter-gatherers in West Turkana, Kenya occurred around 9,700 BCE (Lahr et al., 2016), but was likely a regular part of life thousands of years earlier (Harari, 2011). Its ubiquity, coupled with the emotions experienced by those involved, makes human conflict a regular topic of discussion in the social and natural sciences – especially economics, social psychology, and evolutionary biology.

There is no dearth of empirical research on conflict and emotions in the aggregated body of economics, social psychology, and evolutionary biology research. However, little empirical work exists about the “triggers” of conflict and their accompanying emotions. Like focusing only on the second and third acts of a three-act play, most conflict management research focuses on conflict dynamics that are mature or already entrenched among warring parties. Studying the first act of conflict – i.e., what triggers it in the first place – may complement our understanding of conflict dynamics and provide practical insights of how to avoid a conflict from progressing to acts two and three.

Conflict may be defined as a situation in which agents choose adversarial costly inputs that (i) negatively impact the payoff of others and (ii) generate no positive externalities for third parties (Garfinkel and Skaperdas, 2007). Economists, social psychologists, and evolutionary biologists emphasize different triggers of conflict. A triggered conflict subsequently produces an emotional reaction – a neurological response – which may result in physical and psychological changes aggravating individual behavior and leading to an even more severe conflict. The current study

examines the interplay between the triggers of conflict and emotional reactions – a gap yet to be addressed across the economic, social psychology, and evolutionary biology literatures.

The purpose of our study is to systematically examine potential triggers of conflict and resultant emotional reactions in a controlled laboratory setting where individuals may engage in destructive activities. Our study makes a priori predictions about the triggers of conflict and explores the resultant emotions post hoc. Consistent with the predictions from economics, social psychology, and evolutionary biology, conflict emerges when there are economic incentives, fear of opponent's behavior, and uncertainty about opponent's desire to cause harm. Further, the three triggers differently impact the frequency of conflict, but not the intensity. Also, we find that the frequency and intensity of conflict decrease positive emotions and increase negative emotions. Finally, we find that conflict impacts negative emotions more than positive emotions.

2. Literature Review

2.1. The Economic Perspective on Conflict

The primary trigger of conflict studies by economists is monetary incentives. Economics research finds that economic agents engage in conflicts when such conflicts bring positive expected returns, often in the form of monetary rewards (Tullock, 1980; Abbink, 2012; Dechenaux et al., 2015). However, ultimately, conflict expenditures are wasteful and agents would be better off if they did not engage in such conflicts (Kimbrough and Sheremeta, 2013, 2014; Sheremeta, 2013, 2015, 2016).

The economic perspective on conflict maintains that as individuals have greater incentive to incite conflict, conflict will emerge (Collier and Hoeffler, 1998). Francisco Pizarro's conquest of the Incan Empire was primarily motivated by the incentives of gold and political power

(Prescott, 2007 [1847]). A more recent example of incentives inciting conflict is the Iraq-Kuwait War that emerged from a multi-billion dollar debt pressure on Iraq from a previous war coupled with Kuwait's competitive petroleum prices against Iraq's (Khadduri and Ghareeb, 2001).

2.2. The Social Psychological Perspective on Conflict

The broad field of social psychology presents several triggers for conflict, including status seeking (Brewer, 1991), greed (Wang and Murnighan, 2011), and fear. We focus on the trigger that has received considerable attention: fear in what others can and will do to cause harm (Deutsch, 1958). A body of work that has examined the role of fear in conflict extensively is about social dilemmas. Social dilemmas are interdependent decisions where individual rationality aggregates to collective irrationality and ruin (Dawes, 1980). A social dilemma that captures the essence of conflict incited by fear is the Hardin's "tragedy of the commons" (Hardin (1968). On a commons meadow, shepherds may graze as many animals of their own herd as wanted for fattening and later sale. The benefits of a fatter animal are internalized to the focal shepherd, while the costs of fattening the animal are spread across the other shepherds. Because the benefits enjoyed by the shepherd is greater than his costs, it is rational for the shepherd to place as many animals on the commons as possible. The commons risks collapse when all (or enough) shepherds add as many animals as they can. Hardin (1974) went on to suggest that even those not opportunistic would oblige to place their entire herd on the commons today in fear that the grass will be gone tomorrow.

The fear that others will opportunistically incite conflict is a powerful motivator to defensively incite conflict (McCarter and Northcraft, 2007; McCarter et al., 2011). Indeed, empirical work on social dilemmas finds that an individual's fear of another's exploitation motivates conflict defensively (Rapoport and Eshed-Levy, 1989; De Cremer, 1999; McCarter et

al., 2010, 2014). The Cold War is often considered a classic example of conflict incited by paranoia between political leaders and among neighbors (Schlesinger, 1967).

2.3. The Evolutionary Biology Perspective on Conflict

Evolutionary biologists suggest the third trigger of conflicts is uncertainty about opponent's ability and desire to cause harm (Smith and Price, 1973). Thus, whereas social psychologists are interested in the uncertainty (or fear) of another party's intentions, evolutionary biologists are interested in the uncertainty of an opponent's ability and desire to win a conflict. When there is perfect information and the costs of conflict are relatively high, settlements are likely to occur according to certain asymmetries between the contestants (Parker, 1974; Smith and Parker, 1976). However, when there is uncertainty and differences are hard to detect, conflicts are more likely to ensue as the contestants uncover who is stronger (or more aggressive) and who is weaker (DeScioli and Wilson, 2011; Kimbrough et al., 2014).

It is well-documented that animals use different signals, evolutionarily designed to reduce uncertainty about opponent's strength, to demonstrate their strength as well as their desire to engage in contests. For example, crickets use songs to signal their ability to win an aggressive contest (Brown et al., 2006). Wood warblers use low-amplitude songs to signal their desire to attack their opponents (Hof and Hazlett, 2010). Moreover, such signaling actions are more likely to take place when contests can be avoided (Laidre, 2009), suggesting that concealing actions (thus increasing uncertainty about opponent's desire to cause harm) could lead to higher frequency of conflict.

3. Methods

3.1. Experimental Design

To test how monetary incentives, fear, and uncertainty trigger conflict, we conduct a simple laboratory experiment. The experimental sessions were conducted in the Experimental Social Science Laboratory (ESSL) at the University of California, Irvine. Participants were seated at one of forty networked computer terminals and separated by privacy screens. All interactions were anonymous and took place through the computer terminals using the software package z-Tree (Fischbacher, 2007). Participants were recruited via email announcement. Each subject participated in only one session, and had not previously participated in a similar experiment. In addition to the earnings from the experiment, each participant received a \$7 payment for showing up on time. There were 310 participants in total. A participant's total earnings was the sum of the two payments. On average, the participants received \$14.90 for approximately 40 minutes of participation. Earnings were paid in cash, privately, at the end of the session.

The experiment consisted of three parts (for detail instructions see the Appendix). First, participants had the opportunity to earn a lump-sum payment by correctly solving math problems. The task entailed repeatedly adding sequences of five randomly generated two-digit numbers over the course of 10 minutes (Niederle and Vesterlund, 2007). This is an appealing real effort task because it does not require previous experience and high performance is not associated with a particular gender, socioeconomic background, or physical conditioning (Cason et al., 2010). Any participant that correctly answered at least $X = 3$ such sequences, where X was unknown to the participants but known to be achievable, received the payment. The purpose of the task was to create a sense of ownership over the lump-sum payment, while making sure that all participants worked as hard as possible (since X was unknown to them) and could successfully complete the

task (since $X = 3$ was a very low threshold). The task has been previously used by Price and Sheremeta (2015). They showed that using an uncertain threshold elicits similar effort from participants as a piece-rate (ensuring that all participants work as hard as possible), yet it results in equal payments to all participants.

Second, participants stated their preferences over five pairs of paintings and were divided into two equal groups based upon these stated preferences (Chen and Li, 2009). Each pair consisted of one painting by Wassily Kandinsky and one painting by Paul Klee. To make the division, we rank-ordered the participants based on the number of Kandinsky paintings they prefer (ties broken randomly), assigning those participants above the median to the *Kandinsky* group, and those participants below the median to the *Klee* group. The grouping created a sense, albeit weak, of group identity, which is the natural case in conflict situations. Lastly, each participant from the Kandinsky group was randomly matched with a participant from the Klee group for a one-shot game.

Third, participants participated in one of the four treatments, see Table 1. Our treatments were based on the modified “Joy of Destruction” game (Abbink and Sadrieh, 2009; Abbink and Herrmann, 2011) and a “Reverse Dictator” game (List, 2007; Bardsley, 2008).

In the *Baseline* treatment, after earning \$10 in the effort task, one participant in each pair was assigned the *Sender* role and the other participant was assigned the *Receiver* role. The Sender had an option to pay \$1 to reduce the Receiver’s earnings (i.e., “destroy” the Receiver’s money). If the Sender opted to pay the \$1 fee, the Sender then decided how much of the Receiver’s earnings to destroy. Any whole dollar amount between \$1 and \$10 could be selected. The Receiver then learned the Sender’s decisions.

In the *Uncertainty* treatment, procedures were similar to the *Baseline* treatment; however, there was a 1/3 chance that “nature” would destroy some money (any amount between \$1 and \$10 was equally likely to be destroyed). Realized destruction was the maximum of the Sender's selection and nature's selection. The Receiver learned the amount destroyed, but not the cause of the damage.

In the *Fear* treatment, procedures were similar to the *Baseline* treatment; however, both participants in each pair were Sender and Receiver. That is, each participant had the opportunity to destroy after paying a fee, and each faced the threat of destruction.

In the *Incentive* treatment, Senders kept whatever they choose to destroy but still had to pay the \$1 fee. Receivers were aware that the Sender kept whatever they destroyed.

There are several differences between our experiment and previous ones (List, 2007; Bardsley, 2008; Abbink and Sadrieh, 2009; Abbink and Herrmann, 2011). First, we incorporate group identity via the preference elicitation procedure, which allows us to create a natural conflict environment. Second, we consider different possible triggers of conflict, thereby identifying whether each does indeed trigger conflict. Finally, all our treatments include a destruction fee, allowing us to provide a systematic comparison between treatments.

3.2. Assessment of Emotions

To better understand how conflict decisions trigger emotional reactions, we issued Watson et al.'s (1988) well-established and validated PANAS (positive and negative affect scales) survey to uncover twenty emotional states of the participants post their resource allocation decision. The survey was conducted right after participants received feedback about the outcome from part three of the experiment. Of the twenty emotional states, nine are classified as positive (appreciative,

happy, content, cheerful, triumphant, inspired, secure, proud, and believable) and ten are classified as negative (disgusted, jealous, aggravated, frustrated, angry, depressed, sad, embarrassed, ashamed, and guilty). The emotional state, surprise, could be either positive or negative, so we exclude it from our analysis.

Following Schniter et al. (2015), we create two categorical variables corresponding to a valence positive-negative perspective of emotional reactions. Of course, more sophisticated categorization of emotions could be used, such as the one following the recalibration perspective (Nesse, 1990; Tooby and Cosmides, 1990); for applications see Schniter and Shields (2013) and Schniter and Sheremeta (2014). However, for our purpose the positive-negative categorization is sufficient.

3.3. Control Variables

Lastly, at the end of the experiment, we elicited various demographic information to assess their impact on conflict frequency and amount destroyed. The control variables included race, religion, level of religious activity, gender, age, level in higher education, degree major, and the number of courses taken in business and economics.

4. Results

4.1. Frequency and Intensity of Conflict

Figure 1 and the first column in Table 2 show the average frequency of conflict, measured as the frequency of destruction amount being positive, by treatment. In the *Baseline* treatment the frequency of conflict is 7%, with only 3 out of 43 participants choosing to destroy any amount. The frequency of conflict in the *Fear* treatment is 18% (10/56) or 11% higher than in the *Baseline*

treatment (Z-test of proportions, $p = 0.056$, $n_1 = 43$, $n_2 = 56$). The frequency of conflict in the *Uncertainty* treatment is 20% (8/41), also higher (by 13%) than in the *Baseline* treatment (Z-test of proportions, $p = 0.044$, $n_1 = 43$, $n_2 = 41$). Finally, the frequency of conflict in the *Incentive* treatment is 72% (31/43) and is 63% higher than in the *Baseline* treatment (Z-test of proportions, $p < 0.001$, $n_1 = 43$, $n_2 = 43$). It is likely that the frequency of conflict is the highest in the *Incentive* treatment because senders get to keep whatever they choose to destroy (in other words, senders steal the spoils of conflict instead of just destroying resources).

Next, we examine the intensity of conflict. The middle column in Table 2 shows the average amount destroyed by treatment. In the *Baseline* treatment the average amount destroyed is \$0.44, in the *Fear* treatment it is \$1.04, in the *Uncertainty* treatment it is \$1.20, and in the *Incentive* treatment it is \$4.28. When comparing against the *Baseline* treatment, we find that the amount destroyed is not statistically different in either the *Fear* treatment (Wilcoxon rank-sum test, $p = 0.121$, $n_1 = 43$, $n_2 = 56$) or the *Uncertainty* treatment (Wilcoxon rank-sum test, $p = 0.092$, $n_1 = 43$, $n_2 = 41$), but it is significantly higher in the *Incentive* treatment (Wilcoxon rank-sum test, p -value < 0.001 , $n_1 = 43$, $n_2 = 43$). It is possible, however, that the differences in the *Incentive* treatment are mainly due to the differences in the frequency of conflict. Indeed, when examining the amount destroyed conditional on the destruction amount being positive (see the last column in Table 2), we find no significant difference in the average amount destroyed among the four treatments: \$6.33 in the *Baseline* treatment, \$5.80 in the *Fear* treatment, \$6.13 in the *Uncertainty* treatment, and \$5.94 in the *Incentive* treatment. Based on the Wilcoxon rank-sum test, all p -values are greater than 0.500.

In summary, consistent with the predictions from economics, social psychology, and evolutionary biology, conflicts originate when there are economic incentives (the *Incentive*

treatment), fear (the *Fear* treatment) or uncertainty (the *Uncertainty* treatment). Also, all three triggers differently impact the frequency of conflict, but not the intensity. It is important to emphasize that direct comparison among our treatments should be done with caution, since our results could be sensitive to the specific parameters that were selected for each treatment. For example, it could be the case that the *Uncertainty* treatment would result in more conflict if the chance of “nature” destroying money was 1/2 instead of 1/3. Similarly, the *Incentive* treatment could have resulted in less conflict if, instead of keeping all that Senders chose to destroy, they could keep only part of it.

4.2. Emotions Resulting from Conflict Decisions

Recall that right after participants engaged in a conflict and received feedback about the outcome of the conflict, we elicited their emotional responses using the PANAS (positive and negative affect scales) survey to uncover twenty emotional states of the participants. Based on these responses, we create two variables: the *Positive Emotion* (the average of all positive emotions, Cronbach’s $\alpha = 0.905$) and *Negative Emotion* (the average of all negative emotions, Cronbach’s $\alpha = 0.887$). Next, we examine how different triggers of conflict impact emotional reactions of participants.

Table 3 reports the estimation results of regressions by treatment in which the dependent variable is either *Conflict* (i.e., whether a participant chose to destroy any amount or not) or *Amount Destroyed* (i.e., the amount that a participant chose to destroy), and the independent variables are both *Positive Emotion* and *Negative Emotion*. When *Conflict* is a dependent variable, we use Probit regressions, and when *Amount Destroyed* is a dependent variable we use OLS regressions.

The estimation results in Table 3 show that the frequency of conflict is negatively correlated with positive emotions and positively correlated with negative ones. Specifically, when the dependent variable is *Conflict*, the coefficient on *Positive Emotion* in all four treatments is negative and jointly significant (Wald test, $p = 0.005$) and the coefficient on *Negative Emotion* in all four treatments is positive and jointly significant (Wald test, $p = 0.001$). Although the relative magnitude of coefficients is different across treatments, we are hesitant to make between-treatments comparisons. The hesitancy is because our results could be sensitive to the specific parameters that were selected for each treatment. Therefore, we focus on a “general trend” of emotional reactions across treatments rather than a specific one.

Another general observation from Table 3 is that the frequency of conflict has a greater impact on negative emotions than on positive ones. When the dependent variable is *Conflict*, the absolute value of the coefficient on *Negative Emotion* is greater than on *Positive Emotion* in all four treatments. Moreover, jointly across treatments, this difference is significant (Wald test, $p = 0.007$).

Next, we examine how the intensity of conflict impacted emotional reactions. Table 3 reports that when the dependent variable is *Amount Destroyed*, the coefficient on *Positive Emotion* is negative in three treatments but it is not significant (Wald test, $p = 0.910$). The coefficient on *Negative Emotion* is negative in all four treatments and jointly significant (Wald test, $p = 0.001$). As with the frequency of conflict, the intensity of conflict has a greater impact on negative emotions than on positive ones. When the dependent variable is *Amount Destroyed*, the absolute value of the coefficient on *Negative Emotion* is greater than on *Positive Emotion* in all four treatments. Moreover, jointly across treatments, this difference is significant (Wald test, $p = 0.004$).

In summary, the frequency and intensity of conflict decreases positive emotions and increases negative emotions. Also, the regression estimation results point out that conflict impacts negative emotions more than positive emotions.

4.3. Effect of Demographics on Conflict Decisions

The regression analysis including our control variables is reported in Table 4. The first regression is a Probit regression in which the dependent variable is *Conflict* and the independent variables are treatment dummies as well as demographics. The second regression is an OLS regression in which the dependent variable is *Amount Destroyed*.

Controlling for demographic differences, we find that the *Incentive* treatment is the strongest practical predictor of destruction decisions, yielding a 54.3% increase in the likelihood of destruction (based on the estimated marginal effects) and a \$4.01 increase in the average (unconditional) level of destruction. Also, we find that the *Fear* treatment increases the likelihood of destruction by 12.3% and the *Uncertainty* treatment increases it by 17.1%. The only demographic characteristic that is statistically significant at the 5% level is *Age*, with older participants exerting lower frequency and magnitude of conflict. However, it is important to emphasize that almost 90% of our participants are between the age of 18 and 22, making it difficult to make general conclusions about how age impacts the frequency and magnitude of conflict.

4. Conclusions

The current paper studies the three triggers of conflict from economics, social psychology, and evolutionary biology, as well as the emotional reactions people experience from those triggers. Consistent with the predictions, we find that conflict originates from all three triggers: economic

incentives, fear, and uncertainty. The most frequent conflicts occur when incentives are strong; however, this is likely due to the fact that participants get to keep whatever they choose to destroy. Perhaps a more surprising finding is that the three triggers differently impact the frequency of conflict, but not the intensity. Also, we find that the frequency and intensity of conflict decrease positive emotions and increase negative emotions, and that conflict impacts negative emotions more than positive emotions.

Our findings have several implications for the disparate academic conversations about conflict. To begin, our experiments suggest that different triggers of conflict may have different kick. In our experiment, incentives mattered more than the other triggers – at least when it came to how often conflict arose and how much resources in total were destroyed. Assuming that most conflicts involve multiple triggers, the reduction of conflict in communities, organizations, governments, and nations might not be accomplished without fundamental change in the incentives faced by potential enemies.

Our second contribution is to conflict process. While our focus was on the triggers of human conflict, many other scholars are interested in its outcomes (e.g., Porter and Lilly, 1996), generated emotions (e.g., Linder, 2006) and physiological effects (e.g., Hardy and Smith, 1988). Our finding that incentives generate the highest frequency of conflict in a reserve dictator game gives scholars, whose research is not trigger dependent, a fertile paradigm for studying social phenomenon. Based on our results, it would seem if a scholar wants to study natural conflict in controlled setting, manipulating incentives is the way to go.

Finally, we contribute to a long-standing question of why some conflicts get out of control (Jervis, 1976). A potential answer is that intense conflicts decrease positive emotions and increase negative emotions. Such emotional reactions may result in physical and psychological changes

aggravating individual behavior and leading to an even more severe conflict. We leave this question for future research.

An assumption of the current paper is that conflict and its elicited emotions are burdensome. Should we relax the second assumption of our earlier definition of conflict, conflict and the emotions that follow may have benefits. For example, work in economics and political science find that conflicting parties can use costly threats to eventually stabilize relationships (Schelling, 1980; Axelrod, 1981). Therefore, a question for future scholarship to address is what triggers are easier to recover from once conflict begins?

In scholarship on affect, emotions can be used strategically (Frank, 1988). For instance, expressing anger can encourage concessions from opponents in a negotiation; but when given opportunity, those who gave the concession will look for ways to get even (Wang et al., 2012). Thus, future scholarship may benefit from looking at how the emotions from triggered conflict change over time.

Future research may also consider the interplay among incentives, fear, and uncertainty as possible triggers of conflict (i.e., what if both incentives and fear are present or fear and uncertainty). Research should also focus on measuring sensitivity of conflict to the magnitude of incentives, fear and uncertainty (i.e., what if incentives are higher or level of fear is lower).

Lastly, the three triggers of conflict studied here are not the only ones to consider. The want for power is just one trigger that may warrant study. Agents can want power because of the monetary incentives they may provide, but some agents can want power to achieve status. Power may be particularly intriguing for future scholarship because while the want for power can trigger conflict, the chance at losing it can also motivate individuals to go through great lengths to preserve their position. And, considering that potential losses often loom larger than potential gains

(Kahneman and Tversky, 1979), future research may ask whether wanting power generates the same amount and type of conflict compared to wanting to preserve power.

References

- Abbink, K. (2012). Laboratory experiments on conflict. In M. R. Garfinkel & S. Skaperdas (Eds.), *Oxford handbook of the economics of peace and conflict* (pp. 532-556). New York, NY: Oxford University Press.
- Abbink, K., & Herrmann, B. (2011). The moral costs of nastiness. *Economic Inquiry*, 49, 631-633.
- Abbink, K., & Sadrieh, A. (2009). The pleasure of being nasty. *Economics Letters*, 105, 306-308.
- Axelrod, R.M. (1981). *The evolution of cooperation*. New York, NY: Basic Books.
- Bardsley, N. (2008). Dictator game giving: Altruism or artifact? *Experimental Economics*, 11, 122-133.
- Brewer, M.B. (1991). The social self: On being the same and different at the same time. *Personality & Social Psychology Bulletin*, 17, 475-482.
- Brown, W.D., Smith, A.T., Moskalik, B., & Gabriel, J. (2006). Aggressive contests in house crickets: Size, motivation and the information content of aggressive songs. *Animal Behaviour*, 72, 225-233.
- Cason, T.N., Masters, W.A., & Sheremeta, R.M. (2010). Entry into winner-take-all and proportional-prize contests: An experimental study. *Journal of Public Economics*, 94, 604-611.
- Chen, Y., & Li, S. X. (2009). Group identity and social preferences. *American Economic Review*, 99, 431-457.
- Collier, P., & Hoeffler, A. (1998). On economic causes of civil war. *Oxford Economic Papers*, 50, 563-573.
- Dawes, R.M. (1980). Social dilemmas. *Annual Review of Psychology*, 31, 169-193.
- De Cremer, D. (1999). Trust and fear of exploitation in a public goods dilemma. *Current Psychology*, 18, 153-164.
- Dechenaux, E., Kovenock, D., & Sheremeta, R.M. (2015). A survey of experimental research on contests, all-pay auctions and tournaments. *Experimental Economics*, 18, 609-669.
- DeScioli, P., & Wilson, B.J. (2011). The territorial foundations of human property. *Evolution and Human Behavior*, 32, 297-304.
- Deutsch, M. (1958). Trust and suspicion. *Journal of Conflict Resolution*, 2, 265-279.
- Fischbacher, U. (2007). z-Tree: Zurich toolbox for ready-made economic experiments. *Experimental Economics*, 10, 171-178.
- Frank, R.H. (1988). *Passions within reason: The strategic role of emotions*. New York, NY: Norton.
- Garfinkel, M.R., & Skaperdas, S. (2007). Economics of conflict: An overview. In M. R. Garfinkel & S. Skaperdas (Eds.), *Handbook of defense economics*, New York, NY: Oxford University Press, pp. 649-709.
- Harari, Y. (2011). *Sapiens: A brief history of humankind*. London, UK: Vintage Press.
- Hardin, G. (1968). The tragedy of the commons. *Science*, 162, 1243-1248.
- Hardin, G. (1974). Living on a lifeboat. *BioScience*, 24, 561-568.
- Hardy, J.D., & Smith, T.W. (1988). Cynical hostility and vulnerability to disease: Social support, life stress, and physiological response to conflict. *Health Psychology*, 7, 447-459.
- Hobbes, T. (2015 [1651]). *Leviathan*. Irvine, CA: Xist Publishing.
- Hof, D., & Hazlett, N. (2010). Low-amplitude song predicts attack in a North American wood warbler. *Animal Behaviour*, 80, 821-828.

- Jervis, R. (1976). *Perception and misperception in international politics*. Princeton, NJ: Princeton University Press.
- Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47, 263-291.
- Khadduri, M., & Ghareeb, E. (2001). *War in the Gulf, 1990-91: The Iraq-Kuwait conflict and its implications*. Oxford, UK: Oxford University Press.
- Kimbrough, E.O., & Sheremeta, R.M. (2013). Side-payments and the costs of conflict. *International Journal of Industrial Organization*, 31, 278-286.
- Kimbrough, E.O., & Sheremeta, R.M. (2014). Why can't we be friends? Entitlements and the costs of conflict. *Journal of Peace Research*, 51, 487-500.
- Kimbrough, E.O., Sheremeta, R.M., & Shields, T. (2014). When parity promotes peace: Resolving conflict between asymmetric agents. *Journal of Economic Behavior and Organization*, 99, 96-108.
- Lahr, M.M., Rivera, F., Power, R.K., Mounier, A., Copsey, B., Crivellaro, F., Edung, J.E., Fernandez, J.M.M., Kiarie, C., Lawrence, J., Leakey, A., Mbua, E., Miller, H., Muigai, A., Mukhongo, D.M., Van Baelen, A., Wood, R., Schwenninger, J.L., Grün, R., Achyuthan, H., Wilshaw, A., & Foley, R.A. (2016). Inter-group violence among early Holocene hunter-gatherers of West Turkana, Kenya. *Nature*, 529, 394-398.
- Laidre, M. E. (2009). How often do animals lie about their intentions? An experimental test. *American Naturalist*, 173, 337-346.
- Lindner, E.G. (2006). Emotion and conflict: Why it is important to understand how emotions affect conflict and how conflict affects emotions. In M. Deutch, P. T. Coleman, & E. C. Marcus (Eds.), *Handbook of conflict resolution*, San Francisco, CA: Jossey-Bass, pp. 268-293.
- List, J.A. (2007). On the interpretation of giving in dictator games. *Journal of Political Economy*, 115, 482-493.
- McCarter, M.W., & Northcraft, G.B. (2007). Happy together? Insights and implications of viewing managed supply chains as a social dilemma. *Journal of Operations Management*, 25, 498-511.
- McCarter, M.W., Mahoney, J.T., & Northcraft, G.B. (2011). Testing the waters: Using collective real options to manage the social dilemma of strategic alliances. *Academy of Management Review*, 36, 621-640.
- McCarter, M.W., Rockmann, K.W., & Northcraft, G.B. (2010). Is it even worth it? The effect of loss prospects in the outcome distribution of a public goods dilemma. *Organizational Behavior and Human Decision Processes*, 111, 1-11.
- McCarter, M.W., Samek, A., & Sheremeta, R.M. (2014). Divided loyalists or conditional cooperators? Creating consensus about cooperation in multiple simultaneous social dilemmas. *Group and Organization Management*, 39, 744-771.
- Merriam-Webster. (2016). "Trigger". In. <http://www.merriam-webster.com/dictionary>: Merriam-Webster.
- Nesse, R.M. (1990). Evolutionary explanations of emotions. *Human Nature*, 1, 261-289.
- Niederle, M., & Vesterlund, L. (2007). Do women shy away from competition? Do men compete too much? *Quarterly Journal of Economics*, 122, 1067-1101.
- Parker, G.A. (1974). Assessment strategy and the evolution of fighting behaviour. *Journal of Theoretical Biology*, 47, 223-243.
- Porter, T.W., & Lilly, B.S. (1996). The effects of conflict, trust, and task commitment on project team performance. *International Journal of Conflict Management*, 7, 361-376.
- Prescott, W.H. (2007 [1847]). *History of the conquest of Peru*. New York, NY: Cosimo Books.

- Price, C.R., & Sheremeta, R.M. (2015). Endowment origin, demographic effects, and individual preferences in contests. *Journal of Economics and Management Strategy*, 24, 597-619.
- Rapoport, A., & Eshed-Levy, D. (1989). Provision of step-level public goods: Effects of greed and fear of being gyped. *Organizational Behavior and Human Decision Processes*, 44, 325-344.
- Schelling, T.C. (1980). *The strategy of conflict*. Cambridge, MA: Harvard University Press.
- Schlesinger, A. (1967). Origins of the Cold War. *Foreign Affairs*, 46, 22-52.
- Schniter, E., & Sheremeta, R.M. (2014). Predictable and predictive emotions: Explaining cheap signals and trust re-extension. *Frontiers in Behavioral Neuroscience*, 8, 1-18.
- Schniter, E., & Shields, T.W. (2013). Recalibrational emotions and the regulation of trust-based behaviors. In *Psychology of trust: New research*, D. Gefen (ed.) New York: Nova Science Publishers.
- Schniter, E., Sheremeta, R.M., & Shields, T.W. (2015). Conflicted emotions following trust-based interaction. *Journal of Economic Psychology*, 51, 48-65.
- Sheremeta, R.M. (2013). Overbidding and heterogeneous behavior in contest experiments. *Journal of Economic Surveys*, 27, 491-514.
- Sheremeta, R.M. (2015). Behavioral dimensions of contests. In Congleton, R.D., Hillman, A.L., (Eds.), *Companion to political economy of rent seeking*, London: Edward Elgar, pp. 150-164.
- Sheremeta, R.M. (2016). Impulsive behavior in competition: Testing theories of overbidding in rent-seeking contests. *Working Paper*, available at SSRN 2676419.
- Smith, J.M., & Parker, G.A. (1976). The logic of asymmetric contests. *Animal Behaviour*, 24, 159-175.
- Smith, J.M., & Price, G.R. (1973). The logic of animal conflict. *Nature*, 246, 15-19.
- Tooby, J., & Cosmides, L. (1990). The past explains the present: Emotional adaptations and the structure of ancestral environments. *Ethology and Sociobiology*, 11, 375-424.
- Tullock, G. (1980). Efficient rent seeking. In J. M. Buchanan, R. D. Tollison & G. Tullock (Eds.), *Toward a theory of rent-seeking society*, College Station, TX: Texas A&M Press, pp. 97-112.
- Wang, L., & Murnighan, J.K. (2011). On greed. *Academy of Management Annals*, 5, 279-316.
- Wang, L., Northcraft, G.B., & Van Kleef, G.A. (2012). Beyond negotiated outcomes: The hidden costs of anger expression in dyadic negotiation. *Organizational Behavior & Human Decision Processes*, 119, 54-63.
- Watson, D., Clark, L.A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54, 1063-1070.

Table 1: Summary of treatments

Treatment	Description of treatment	Number of participants	Number of independent observations
<i>Baseline</i>	Sender can pay \$1 to destroy between \$1 and \$10	86	43
<i>Fear</i>	Both Sender and Receiver can destroy money	56	56
<i>Information</i>	There is a chance that Nature destroys some money	82	41
<i>Incentive</i>	Sender gets to keep whatever he/she chooses to destroy	86	43

Table 2: The average frequency of conflict and amount of destruction by treatment

Treatment	<i>Frequency of Conflict</i>		<i>Amount Destroyed</i>		<i>Amount Destroyed Under Conflict</i>	
	Mean	N	Mean	N	Mean	N
<i>Baseline</i>	0.07 (0.04)	43	\$0.44 (0.27)	43	\$6.33 (1.86)	3
<i>Fear</i>	0.18 (0.05)	56	\$1.04 (0.36)	56	\$5.80 (1.14)	10
<i>Uncertainty</i>	0.20 (0.06)	41	\$1.20 (0.45)	41	\$6.13 (1.23)	8
<i>Incentive</i>	0.72 (0.07)	43	\$4.28 (0.58)	43	\$5.94 (0.57)	31

Note: Standard error of the mean is in the parenthesis. Amount destroyed under conflict is calculated by using only those observations that resulted in positive amount of destruction.

Table 3: Conflict decisions and emotional reactions

Treatment	Baseline	Fear	Uncertainty	Incentive
	<i>Conflict</i>			
<i>Positive Emotion</i> [the average of all positive emotions]	-1.07*** (0.35)	-0.09 (0.21)	-0.17 (0.22)	-0.10 (0.24)
<i>Negative Emotion</i> [the average of all negative emotions]	1.73*** (0.56)	0.57** (0.29)	0.12 (0.37)	5.81** (2.43)
<i>Constant</i> [constant term]	-1.42 (0.94)	-1.62* (0.96)	-0.64 (0.83)	-5.88** (2.66)
	<i>Amount Destroyed</i>			
<i>Positive Emotion</i> [the average of all positive emotions]	-0.40 (0.32)	0.36 (0.27)	-0.03 (0.38)	-0.02 (0.56)
<i>Negative Emotion</i> [the average of all negative emotions]	1.18 (0.86)	1.48** (0.71)	0.73 (1.07)	3.41*** (1.11)
<i>Constant</i> [constant term]	0.19 (1.63)	-2.21 (1.41)	0.33 (1.90)	-0.33 (2.30)

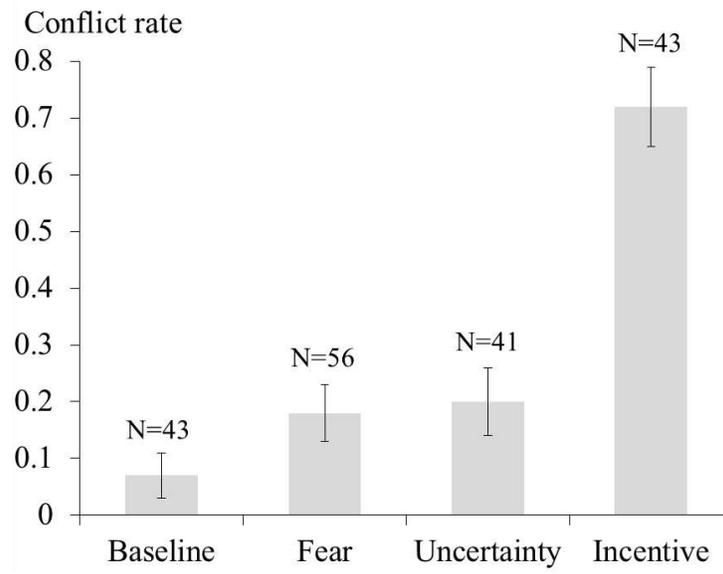
Note: Robust standard error of the mean is in the parenthesis. When *Conflict* is a dependent variable, we use Probit regressions, and when *Amount Destroyed* is a dependent variable we use OLS regressions.

Table 4: Conflict decisions and demographics

	<i>Conflict</i>	<i>Amount Destroyed</i>
<i>Fear</i>	0.52	0.57
[1 if <i>Fear</i> treatment]	(0.36)	(0.44)
<i>Uncertainty</i>	0.73**	0.81
[1 if <i>Uncertainty</i> treatment]	(0.38)	(0.59)
<i>Incentive</i>	2.31***	4.01***
[1 if <i>Incentive</i> treatment]	(0.37)	(0.62)
<i>Male</i>	-0.34	-0.50
[1 if participant is male]	(0.26)	(0.47)
<i>Age</i>	-0.13*	-0.19**
[age of participant]	(0.07)	(0.09)
<i>School Years</i>	0.03	0.12
[years in college]	(0.14)	(0.21)
<i>Business Econ</i>	-0.12	0.19
[1 if business or econ major]	(0.41)	(0.76)
<i>Business Econ Classes</i>	0.01	0.00
[number of business or econ classes]	(0.03)	(0.04)
<i>Caucasian</i>	-0.40	-0.99*
[1 if participant is Caucasian]	(0.42)	(0.59)
<i>Religion</i>	-0.06	-0.27
[how religious is participant]	(0.11)	(0.22)
<i>Christian</i>	-0.37	-0.05
[1 if participant is Christian]	(0.28)	(0.55)
<i>Muslim</i>	0.38	1.46
[1 if participant is Muslim]	(0.52)	(0.98)
<i>Constant</i>	1.49	4.83**
[constant term]	(1.39)	(1.91)

Note: Robust standard error of the mean is in the parenthesis. When *Conflict* is a dependent variable we use Probit regressions, and *Amount Destroyed* is a dependent variable we use OLS regressions.

Figure 1: Frequency of conflict



Appendix – Instructions

Page 1

Welcome to this experiment at UC Irvine. Thank you for participating.

You are about to participate in a study of decision-making, and you will be paid for your participation in cash, privately at the end of this session. What you earn depends on your decisions and on the decisions of others.

Please turn off your cell phone.

The entire session consists of three parts. You will receive further instructions at the beginning of each part.

All three parts will take place through the computer terminals. It is important that you do not talk with any other participants during the session.

When you are ready, please click "Continue" to go to the instructions for part 1.

Page 2

For this part of the experiment you will be asked to calculate the sum of five randomly generated two-digit numbers. You will be given **10 minutes** to calculate the correct sum for a series of these problems. You cannot use a calculator to determine this sum; however, you are welcome to use the supplied scratch paper. You submit an answer by clicking the submit button with your mouse. When you enter an answer, the computer will immediately tell you whether your answer is correct or not and supply another summation problem. I will give notice when 30 seconds remain.

If you correctly solve X problems within the 10 minutes, you will receive \$10. To guarantee that you receive \$10 you have to try to solve as many problems as possible. Although you do not know the exact required number X , we can tell you that it is a very reasonable number which you can achieve.

Please press "Continue" to begin part 1.

Page 3

In Part 2, everyone will be shown 5 pairs of paintings by two artists. You will be asked to choose which painting in each pair you prefer. You will then be classified into one of two groups, based on your choices.

The participants you are grouped with will be the same for the rest of the experiment.

After Part 2 has finished, we will give you instructions for the next part of the experiment.

Please press "Continue" to begin part 2.

Page 4

In Part 3, a participant from the *KLEE* group will be matched with a participant from the *KANDINSKY* group.

One participant will be the *SENDER* and the other participant will be the *RECEIVER*.

First, the *SENDER* must decide whether or not to reduce the *RECEIVER*'s account total. Taking this action costs the *SENDER* \$1, and allows the *SENDER* to choose a reduction amount between \$1 and \$10. If the *SENDER* does not take this action, there is no cost and there is no reduction in the *RECEIVER*'s account total.

Then, the *RECEIVER* leaves feedback for a future group member who will be a *SENDER* in the next session of this experiment.

There is no interaction between the *SENDER* and the *RECEIVER* beyond these two choices and the choices are only made once.

Please press "Continue" to begin part 3.