THE EFFECT OF A CRISIS ON EMOTIONS IN SOCIAL

DILEMMA SETTINGS

A Senior Scholars Thesis

by

TIFFANY SPIVEY

Submitted to the Office of Undergraduate Research
Texas A&M University
in partial fulfillment of the requirements for the designation as

UNDERGRADUATE RESEARCH SCHOLAR

April 2010

Major: Sociology

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Approved by:

Research Advisor: Jane Sell
Associate Dean for Undergraduate Research: Robert C. Webb

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ABSTRACT

The Effect of a Crisis on Emotions in Social Dilemma Settings. (April 2010)

Tiffany Spivey
Department of Sociology
Texas A&M University

Research Advisor: Dr. Jane Sell
Department of Sociology

In the past, research has considered what types of structures and settings influence cooperation and emotions in social dilemmas. However, there is little examination about how a crisis or change in the situation affects emotions. This study predicted that stronger emotions will form when groups are presented with a crisis versus emotions formed in groups that are not presented with a crisis. The groups were comprised of four individuals who participated in a public goods activity. Once group members finished the group activity, they completed a questionnaire measuring their emotions towards their group members. My hypothesis was supported; stronger emotions were present in the groups that were presented with a crisis versus the groups that were not presented with the crisis.

DEDICATION

I would like to dedicate this paper to Dr. Jane Sell. You have inspired me and pushed

me to new levels of success. Without your guidance and support, I would not be where I

am today.

ACKNOWLEDGMENTS

First and foremost, I would like to thank Dr. Jane Sell for guiding me throughout this research project. She chose me to help her with this research and I am very grateful for the opportunity to work with her. Without her unfailing wisdom and support, this would not have been possible.

Next, I would like to thank Bianca Manago. Bianca has not only been a great partner through this research but also a great friend. This research would not have turned out the way it did without her hard work and her wealth of knowledge and ideas. Along with Dr. Sell, she challenged me and pushed me to pursue greater opportunities for the future.

Finally, I would like to thank the rest of the research team. They worked so hard to set up the software and lab along with getting all the research done in time. I am so thankful for all of their dedication.

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CHAPTER I

INTRODUCTION

The study of social dilemmas has been important to most of the social sciences, including sociology, psychology, economics and political science. Social dilemmas occur when an individual is faced with a situation where his or her short term motives conflict with the group's overall motives (Dawes, 1980). Social dilemmas can be broken down into two more specific types: public goods and resource goods. Public goods are where individuals are faced with the decision of whether or not to contribute; where as with resource goods, individuals are faced with the decision of whether to consume or not (Sell, 2007). In this study we examine only public goods. Specifically, we will ask whether crises or events in which situations change quickly lead to higher group identity and affiliation with the group.

Public goods

All public goods have a few very important defining qualities. First, the situation must be non-excludable, meaning that no matter if an individual chooses to cooperate or not, that individual will still benefit from the good in the same way as any other individual in the group. For example, to reduce pollution, members of a community are asked to walk or ride bicycles instead of using motorized vehicles as a means of transportation. In this situation, each individual is left with the decision to defect and continue to use a

_____

This thesis follows the style of the *American Sociological Review*.

motorized vehicle as his or her means of transportation or to cooperate and find another means of transportation that does not contribute pollution. Even if the individual chooses to continue to use motorized vehicles as a means of transportation, that individual will still benefit from the reduction in pollution if others in the community choose to cooperate. In the same sense, if an individual chooses to cooperate and finds another means of transportation, but others in the community do not; the pollution problem is not solved and so the individual that cooperates fails along with the rest of the members in the community. The second defining quality a public good possesses is the fact that all the individuals will receive a higher payoff if all cooperate instead of all the individuals defecting (Dawes, 1980). In the example used above it can be shown that if all members use an alternate form of transportation that does not contribute to the pollution, then all members of the community receive the higher payoff of clean air; where as, if all members choose to defect and continue to use transportation that contributes to the pollution, then all of the members will receive a lower payoff from the ramifications of the high pollution. This example also proves why social dilemmas are important to study. Looking at the big picture, social dilemmas help solve large issues such as the depletion of water or the environment. Social dilemmas are not just large issues; they can also be as small as a community raising money for a new public park. However big or small the dilemma is, it is still important to learn how people come together and solve the problems so that in the future, social dilemmas can be solved more successfully.

Social dilemma structure

In the past, there have been two main structures of focus regarding social dilemmas: the two-person dilemma, also known as the prisoner's dilemma, and the N-person dilemma. Dawes (1980) laid out three characteristics that a two-person dilemma usually does not have in common with an N-person dilemma. First, in an N-person dilemma the harm from defecting is spread out over all the other individuals in the group and therefore harder to identify than in a two-person dilemma where the harm for defection is focused only on the other person. Second, there is the factor of anonymity in an N-person dilemma where as in the two-person dilemma there is no question in how the other individual has behaved. Finally, it is more complicated for an individual to punish or reward another participant's behavior for cooperating or defecting in an N-person dilemma than in a two-person dilemma (Dawes, 1980). For the purpose of this study, individuals will be participating in an N-person dilemma and therefore aspects of a two-person dilemma will not be included any further.

An important aspect of a social dilemma that affects the degree of free-riding is the incentive structure. To measure how payoff properties or incentives affect cooperation, Isaac and Walker (1988) used the marginal per capita return (MPCR). Studies have found that MPCR has been effective in measuring cooperation and that the higher the MPCR for the public good, the more cooperation.

Repeated public goods decisions and one time only public good decisions also create different incentives for participants. In repeated decision situations, participants can punish other members for not contributing in one exchange situation by not contributing in the next exchange situation (Sell 2007). Obviously this is not possible if participants are only acting once. Because we are studying group identity, we will focus on repeated decision making settings.

There is a controversy in the literature about the nature of social identity and how it might affect cooperation (Jin and Yamagishi, 1997; Simpson 2004). We do not have to enter this controversy however, because the question of interest is whether certain definitions of the public good context affect cooperation, when there is no change of the incentive structure.

Cooperation

Social dilemmas are solved and people do choose to cooperate over defect. But why do people cooperate? After reviewing the literature on social dilemmas it has been assumed that participants will focus only on their own outcomes but it has been found that many participants do account for what other participants receive. Brewer (2007) developed the theory of optimal distinctiveness. This theory argues that humans have always had to rely on groups in the past for survival. Two needs have evolved from this reliance on groups: the need for inclusion and assimilation and the need for differentiation. This, according to Brewer, is why people choose to cooperate or defect, depending on which

need the individual chooses to fulfill. In Andreoni's (1995) article *Warm-Glow Versus Cold-Prickle: The Effects of Positive and Negative Framing on Cooperation in Experiments,* he suggests that with public goods there is a positive externality. His experimental study supported the fact that subjects are more willing to cooperate when the externality is positive even though the potential outcomes are the same.

Additionally, we know that individual differences can matter. Simpson (2004) examined the difference between individualists and prosocials in situations that require cooperation. He assigned social values to the terms individualists and prosocials; where individualists focus on their own benefits and prosocials focus on maximizing equality for all the players. He found that consistently, prosocials are more cooperative that individualists. Through these studies, it can be assumed that the best possible situation for cooperation would be where the members of the group focus on their need for inclusion and assimilation, the externality is positive and the members are prosocials. If these situations promote cooperation, then what kinds of situations form emotions and do these emotions lead to cooperation?

Emotion

Lawler and his colleague have developed differing theories connecting emotion to social exchange situations. This area of research has found that successful exchanges lead to positive emotions. In his study in 1996, he establishes the idea of an "emotional down" and an "emotional buzz". An emotional down will occur after there has been a failure to

reach agreements within an exchange and results in emotions such as disappointment, upset and unsatisfactory feelings. An emotional buzz is developed when the participants complete exchanges with one another and these exchanges are successful and they feel energized and happy. Once the participants feel that they have unified with one another through the exchanges, they are more likely to trust each other. This trust then leads them to expect or predict more exchanges that result in cooperation, invest in the relationship that they have built and ultimately engage in risky or costly situations to uphold their relationship (Lawler and Yoon 1996). Therefore, the opportunity for more money is not the only factor responsible for emotions, but just gaining an emotional buzz from a successful exchange with their partner can be enough motivation for cooperation. In Lawler and Yoon's discussion, they conclude that if participants get an emotional uplift from participating in successful joint exchanges, this creates the feeling of joining in something larger. However, this study only looked at negotiated exchange situations between two people. In 2008 Lawler, Thye and Yoon examined whether positive or negative emotions result from N-person groups who experience positive or negative exchanges with one another. They predicted that because each participant now has to focus on two or more people instead of just one, when successful exchanges occur this accomplishment will be perceived as more significant. Therefore, they predicted it might be possible that stronger emotions will result from exchanges that involve more than two participants. They found that the more participants exchanged with each other, the more they expressed positive emotions. Also, contrary to their predictions, they

discovered that positive emotions were lower in multiple actor exchanges than dyadic exchanges.

Uncertainty

The effect of uncertainty has also been investigated in Lawler and Yoon's (1996) study, where they formed the emotional buzz theory. They discovered that the emotional buzz becomes stronger when uncertainty is added in the mix. If participants do not know that he or she is working in a group or do not know anything about those who are in the group, the emotions or feelings that result from completing the task at hand will be stronger and easier to identify. They did this by studying different two-party negotiation settings where the participants did not know each other and were negotiating over a computer. Kollock (1994) also demonstrated how feelings connect with uncertainty. At the end of his experiment, the participants filled out a questionnaire. Participants applied more extreme characteristics to their partners when the exchanges had an element of uncertainty. Kollock observed further that after the study, the participants who participated in exchanges wanted to meet each other and when they did, they interacted as old friends. To continue with the research on what makes emotions stronger or weaker in exchange situations, I plan to look at how a transformative crisis affects emotions in exchange situations. A transformative crisis is an abrupt break where information becomes incomplete and therefore, when present, will create a sense of uncertainty among participants (Sell and Love 2009). Therefore, I hypothesize that the

groups presented with a crisis situation will form stronger positive emotions towards the members of their group than those who do not face a crisis.

CHAPTER II

METHODS

Methods

Texas A&M undergraduate students were recruited for the opportunity to participate in the study. If the student was interested, he or she filled out an information sheet including his or her name, number, classification, age, gender, schedule and a list of studies that they have previously participated in to ensure that they have not participated in similar studies.

Settings and procedures

Once the students had indicated they were interested in participating in the study, they were contacted by telephone and scheduled to come into the lab with 7 other interested students. Once in the lab, each participant was required to read over and sign the informed consent sheet. Along with explaining the procedures, each informed consent sheet also informed the participant that he or she could leave the study at any time and still receive their money compensation (see appendix A for the IRB approval; see appendix B for the informed consent). Participants were also informed that they would receive their compensation for participating privately after the completion of the study.

Before the participants arrived, the researches randomly assigned groups to either the crisis situation or the non-crisis situation. Each group consisted of 4 participants, and to control for anonymity the participants did not know who was in their group out of the 8

participants. Additionally, the researchers ensured that there were not groups that consisted of only one sex. This controls for participants being able to conclude that there group was either all men or all women. (We know this to be an important aspect of public goods studies based on prior research. See Sell et al, 1993 and Sell and Son 1997.) After the participants completed the informed consent they were informed that they would be required to complete a worksheet. Each participant was given his or her own iPod touch. Beforehand, an application that was designed specifically for the study for loaded onto each iPod. All the participants were briefed on how to use the application correctly and then the study was explained. After the explanation, the participants were given the opportunity to do three practice trials to ensure they understood the study and how to use the iPod touch application.

On the iPod touch, each participant would be able to see their own private fund which had 100 tokens deposited each round. Each token was equivalent to 1 cent. Each participant could also see the group fund which started with 0 tokens at the beginning of every round. In each round, each participant would decide whether to contribute any or all of their tokens to the group fund (cooperate) or to keep some or all in their private fund (defect). The tokens that remained in the participant's private fund remained worth 1 cent but the tokens that were transferred to the group fund became worth 3 cents but were divided evenly between all 4 group members at the end of each round. The number of rounds that each group would participate in varied between 4 and 7 (in addition to the

3 practice trials) and was determined randomly at the beginning of the study. At the

beginning of each round, participants were given the following instructions:

> At the beginning of each decision period 100 tokens will
> be placed in your private fund. You have two choices as to
> what you can do with these tokens.

> The first option is to contribute tokens into the group fund.
> Each token contributed to the group fund is worth three
> cents, and each token invested in the group fund is divided
> equally among the members of the group – no matter how
> much they contribute to the group. In summary,
> regardless of your contributions as an individual, you
> always receive ¼ of the group fund.

> The second option is to keep your tokens in the private
> fund. Each token added to the private fund is worth one
> cent. It is added to your earnings and is not shared with
> the other group members.

Throughout the study, each participant would keep his or her own record sheet to keep

track of where they placed their tokens in each round (see appendix C). Along with their

record sheet, the iPod touch kept track of how much was in their private fund, how much

was in the group fund and how much money they had earned total to throughout the

study but were not able to see how much other members contributed. At the end of the

study, each participant was paid, in private, the amount that they had earned in the study.

Independent variables

Groups were assigned to be in either the Crisis or Non-Crisis Condition. If participants

were assigned to the non-Crisis condition, they were simply brought into the lab and

given the group instructions mentioned above.

If participants were assigned to the Crisis condition, they were first told that they would

be in an individual study. They were informed that their compensation at the end of the

study would be based on the accuracy and timeliness of the completion of the worksheet.

The worksheet consisted of a few practice problems to prepare the participants for the

next stage of the study along with various other simple math and verbal problems. After

participants had worked on their individual tasks for about 5 minutes, they were

interrupted and told that they had been randomly selected to be interrupted and would be

working together on a group study instead of the individualized study. They were asked

"Is there anybody who wishes to leave right now? If you leave right now you will be

compensated for your time in the laboratory but lose the opportunity to help others in

your group and potentially earn more money." This is an intervention or crisis because it

changes the definition of the situation and task and also emphasizes changes from

individual group.

Dependent variable and post experimental procedures

Once the groups had completed the total number of rounds for their study, they were

given a questionnaire to fill out (see appendix D for questionnaire). On the

questionnaire, the participants responded to 10 questions that were used to measure their

emotions about the exchanges that took place during the experiment. The questions

were designed using a scale of 1 to 11 to measure participants' emotions during the

study. After completion of the questionnaire, each participant was privately given their

compensation and debriefed.

CHAPTER III

RESULTS

Once all of the data was gathered, I ran a series of tests to determine if individuals in the crisis situations had stronger emotions than the non-crisis situations after the exchanges both participated in. The first test I ran found the mean emotion score for each individual index item for both the crisis and non-crisis situation and is presented in Table 1.

Table 1. Index Items' Mean Emotion Scores
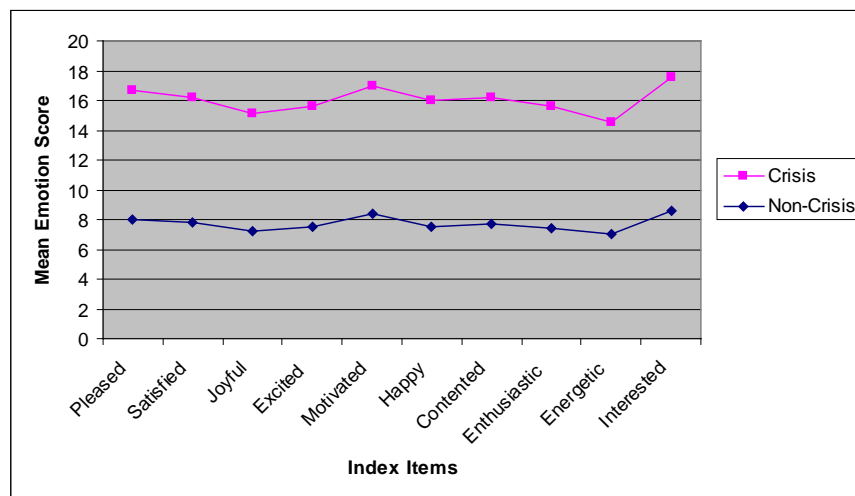
In Table 1, every index item has a higher mean emotion score for the crisis. To determine if all items can be combined in an index, I calculated, Cronbach's Alpha, a measure of consistency. The Cronbach's Alpha was .932 which indicates the 10 items were highly related. Consequently, I could consider all 10 items as one index. The

overall mean was the sum of the individual questions that measured the individual's

feelings regarding his or her exchanges with the group during the experiment. The

individuals received a score ranging between 10 and 110 depending on how he or she

rated his or her feelings. The higher the number, the more positive an individual's

emotions were; the lower the number, the more negative an individual's emotions were.

The means are depicted below in Table 2 and show the predicted pattern: individuals in

the crisis situation reported more positive emotions than those in the non-crisis situation.

Table 2. Comparison of Non-Crisis and Crisis

Condition	Mean	Standard Deviation	t	Probability of t
Non-Crisis	77.2	15.7		
			2.58	.01
Crisis	83.3	15.4		

Those participants who were presented with no change in situation, had an overall mean

of 77.2. Those participants who were presented with the change of the situation or

"crisis," had an overall mean of 83.25. The t-test comparing the means for the non-crisis

versus the means for the crisis conditions 2.58 with an associated probability of .01 in

the predicted direction (shown in Table 2). This means that the participants in the crisis

had significantly more positive emotions than participants in the non-crisis situation.

Therefore, my hypothesis was supported and those participants who were presented with the crisis had stronger positive emotions than those participants who were not presented with the crisis situation.

CHAPTER IV

CONCLUSIONS

I had suggested that sudden changes in the definition of the situation lead to differences in individuals' feelings about the groups with which they interact. When participants thought that they were acting only as individuals, but were interrupted and then interacted with a group on an interdependent task, they seem to have greater positive affect for their group than did participants who were always acting in groups. The results supported my hypothesis. This lends support to the idea that transformations in social dilemma settings lead to more positive affect for group members. In the future, it might be important to investigate how these emotions affect other behaviors. For example, do these positive emotions lead to more effective solutions to social dilemmas?

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APPENDIX

TEXAS A&M UNIVERSITY
DIVISION OF RESEARCH AND GRADUATE STUDIES - OFFICE OF RESEARCH COMPLIANCE

1186 TAMU, General Services Complex
College Station, TX 77843-1186
750 Agronomy Road, #3500

979.458.1467
FAX 979.862.3176
http://researchcompliance.tamu.edu

Human Subjects Protection Program   Institutional Review Board

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DATE: 09-Oct-2009

MEMORANDUM

TO: SELL, JANE

FROM: Office of Research Compliance
                Institutional Review Board

SUBJECT: Request for Continuation

Protocol Number: 2008-0612

Title: Social Delimmas and
                Incomplete Information

Review Category: Expedited

Approval Period: 23-Oct-2009 **To** 22-Oct-2010

Approval determination was based on the following Code of Federal Regulations:

45 CFR 46.110(b)(1) - Some or all of the research appearing on the list and found by the reviewer(s) to involve no more than minimal risk.

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(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation or quality assurance methodologies.

(Note: Some research in this category may be exempt from the HHS regulations for the protection of human subjects. 45 CFR 46.101(b)(2) and (b) (3). This listing refers only to research that is not exempt.)

Provisions:

This research project has been approved for one (1) year. As principal investigator, you assume the following responsibilities

1. **Continuing Review:** The protocol must be renewed each year in order to continue with the research project. A Continuing Review along with required documents must be submitted 30 days before the end of the approval period. Failure to do so may result in processing delays and/or non-renewal.
2. **Completion Report:** Upon completion of the research project (including data analysis and final written papers), a Completion Report must be submitted to the IRB Office.
3. **Adverse Events:** Adverse events must be reported to the IRB Office immediately.
4. **Amendments:** Changes to the protocol must be requested by submitting an Amendment to the IRB Office for review. The Amendment must be approved by the IRB before being implemented.
5. **Informed Consent:** Information must be presented to enable persons to voluntarily decide whether or not to participate in the research project.

This electronic document provides notification of the review results by the Institutional Review Board.

TEXAS A&M UNIVERSITY
DIVISION OF RESEARCH AND GRADUATE STUDIES - OFFICE OF RESEARCH COMPLIANCE

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Human Subjects Protection Program   Institutional Review Board

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DATE:	05-Feb-2010

MEMORANDUM

TO:	SELL, JANE
FROM:	Office of Research Compliance
	Institutional Review Board
SUBJECT:	Initial Review

Protocol Number:	2010-0059
Title:	Public Goods and Change of Expectations
Review Category:	Expedited
Approval Period:	05-Feb-2010 **To** 04-Feb-2011

Approval determination was based on the following Code of Federal Regulations:

45 CFR 46.110(b)(1) - Some or all of the research appearing on the list and found by the reviewer(s) to involve no more than minimal risk.
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(7) Research on individual or group characteristics or behavior (including, but not

limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation or quality assurance methodologies.

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Recruitment Script—In Class

My name is _____ and I am here to tell you about some studies that we are conducting in the Department of Sociology and to invite you to volunteer to participate in these studies. You will have the opportunity to see how sociologists conduct research, and to be paid for your participation. I can not tell you exactly what study you might be in or exactly what you will be paid because we are recruiting for several different studies right now. But I can tell you that some of our studies pay up to $20.00 for as little as one hour of your time. Other studies are short questionnaire studies that may take only half an hour and those usually pay around 7-10 dollars.

In a minute, I will hand out these sign up sheets [HOLD SIGN UP SHEET SO CLASS CAN SEE IT], which ask for your name, telephone number and the times most convenient for you to participate. If you decide to sign up, we will call you sometime in the next few weeks to schedule a time. We can give you information about the specific study, pay and time, location, etc, when we call to schedule you. At that time, you can agree to participate or to be removed from our pool. You will notice that we also ask some other questions about your experiences, for example, if you have any certifications that involve emergency actions (such as EMT or Paramedic training). This is because we are doing a series of studies that involve asking people to remember certain emergency events they have been trained to deal with.

Now, you may have heard stories about experiments that actually caused people to have negative experiences. There is a famous study, for example – the Milgrom study – in which people thought they were sending electric shocks to other people and hurting them. They were not really, but they thought they were. Today, that experiment is considered to have ethical problems because people suffered psychological trauma just from being in the study. I want to assure you that nothing like this is going on in our studies. Partly because of problems in past experiments, new federal guidelines were developed for all studies that use human subjects. Here at A&M, all our studies go through the human subjects review board (called the IRB). Importantly, if you should ever feel uncomfortable while in ANY study, you should just leave.

Another thing I want to make sure you understand is that you are not obligated in any way to sign up. You participation has nothing to do with this class. Dr. (Fill in professor's name) won't know if you come or if you don't come. There is no extra credit for participation. So, just because I show up here in your class, don't feel obligated to sign up. If you are interested and would like to participate, please fill out the form and pass it in to me. If you are not interested, simply hand the form back.

I appreciate your help.

Are there any questions?

[Hand out sign-up sheets.]

Telephone Script for Scheduling

Hello. This is _____, and I am calling from the Social Psychology Lab at Texas A&M University. May I please speak to
_____?

[if speaker is not _____, wait for
_____, then re-identify self as above. If _____ is not available, ask when would be a good time to call back. If information is not available, than answerer and say good bye. On contact info sheet, write time/date of call, and that roommate answered. If time to call back was available write that too.]

Earlier in the semester, in one of your classes, (OR earlier today, last week, yesterday, as appropriate) you were invited to participate our paid research studies and you indicated that you were interested in participating. I am calling to now to follow up on that.

Let me verify, are you an undergraduate student at Texas A&M?

Great.

Let me quickly tell you about this study: It takes place on campus, in the Academic Building, and lasts about (put time in here). You can expect to earn from (put in Amount here). You will be asked to work on (put relevant information here about the study). The research asks no questions that are sensitive or personal. You participation is completely voluntary. If you do volunteer, you may refuse to answer any individual question and you have the right to withdraw your participation at any time.

> [Note: use information from sign up sheet regarding convenient time for subject]

Would you be able to make it at _____(time) on _____(day)?

> [If YES: go to confirmation; if NO . . .]

How about _____(time) on _____(day)?

> [If YES: go to confirmation; if NO . . .]

Could you make it at _____ on _____?

> [If YES: go to confirmation; if NO, continue reading next each available time, in
> order, until you find one that subject can make]

Confirmation: Great! Why don't you get a pencil while I put you on our schedule?

[When subject has pencil and paper]

You have been scheduled to participate in a study that takes place at _____ on _____. The study will take place in room 305 of the Academic Building. That's on the third floor.

Do you know where that is?

[If not, Directions: Academic Building is the one with the big dome, behind Evans Library. If you go to the Ross statute, you'll see the dome on the building right behind it. We are on the third floor. There will be signs posted leading to 305.

Thank you again for agreeing to participate. I, or someone else from the lab will call you the day before your scheduled time to leave a reminder.

We'll see you at _____ on _____.

Thank you.

[Make sure to place the participant's first name only and phone number in the Google calendar. Once two persons are scheduled for a given time, not that in the title of the time block so it is visible without opening the time block. Remove the contact info sheet from the active pool]

Individual or Experimental: You will simply be answering some questions and will be paid according to your responses. This can take different amounts of time, but people do not usually take over an hour. The pay varies from about 5 to about 25 for that amount of time.

Control: you will be working with a group of people. You pay depends on what you and other group members do. This can take different amounts of time, but the study does not usually take more than an hour. The pay varies from about 5 to 25 dollars for that amount of time.

Consent Form

Social Dilemma Study

You have been asked to participate in a study concerning the ways in which people solve problems. You were selected to be a possible participant because you volunteered your contact information when one of our researchers spoke to your class earlier this semester. The study will involve approximately 660 people and will be conducted in rooms located in the Academic Building. The purpose of this study is to examine how people make decisions in group settings.

If you agree to be in this study, you will be asked to work with 3 other people to make decisions. We will also be asking you to fill out some questionnaires concerning the study. Other than the financial compensation, there are no direct risks or benefits to being a participant in this study. You do not have to answer any questions that make you feel uncomfortable.

There is variation in how long this study will take. Most studies take from forty minutes to an hour and a half. Your earnings depend upon how you and your group members make decisions. Therefore, your pay can vary from about 5 dollars to about 25 dollars. If you are uncomfortable during the study you may stop at any time. If you stop, you will earn the amount up to the time you stop.

This study is confidential. Although your first name will be used on decision recording sheet, no identifiers linking you to the study will be included in any sort of report that might be published. Only the researchers associated with this study will have access to your written records.

This study is not associated with any class at Texas A&M University. There will be no class credit involved, and your participation in this study will not affect your grades now or in any future classes at Texas A&M University.

This research study has been reviewed by the Human Subjects' Protection Program and/or the Institutional Review Board at Texas A&M University. For research-related problems or questions regarding your rights as a research participant, you can contact these offices at (979)458-4067 or irb@tamu.edu.

Please be sure you have read the above information, asked questions and received answers to your satisfaction. You will be given a copy of the consent form for your records. By signing this document, you consent to participate in this study.

_____   _____

Signature of Subject   Date

_____

Signature of Researcher
If you have any further questions, feel free to contact Dr. Jane Sell, Sociology Department, TAMU, 845-6120.

G

Practice Worksheet

1. Suppose that you invest 80 tokens in the group fund and keep 20 tokens in your private fund. If the group fund total is 240 (your 80 tokens plus theother members' total group investiment of 160 more), then what would your earnings be?

_____

2. Suppose that you keep all 100 tokens in your private fund. Further, suppose that the group fund total is 90. What would your earnings be?

_____

3. Suppose you keep 60 tokens in your private fund and invest 40 tokens in the group fund. If the group fund totals 120 (your 40 plus the other members' group tokens) then what would your earnings be?

_____

The study in which you will participate concerns how people in groups make decisions. You are one member of a group of **four** people. Everyone in the group will be making the same kinds of decision. The people in your group may be in this room or they may be in another room. You will not be able to speak to the other members of your group. This is because we are interested in how people interact in environments in which they cannot see each other or interact face-to-face. Each member will make a number of decisions and record them on the green sheets we gave you when you came in. At the end of the study you will be paid, in private, the amount that you have earned.

The decision that you will be making concern what to do with 100 tokens that will be put into a PRIVATE FUND for every decision.

You will be working with the same group members for all decisions in this study. At the beginning of each decision period, 100 tokens are put into a private fund. Then, you have 2 choices about what to do with the tokens in the private fund.

The first choice involves INVESTING tokens in the group fund. Each token invested in the group fund is worth **3 cents** and each token in this fund is evenly divided among all members of the group—no matter how much they invest in the group fund. That is, regardless of what you do as an individual, you always receive **¼ share** of the group fund.

The second choice involves KEEPING tokens in the private fund. Every token put in your private fund is worth **1 cent**. This is added directly to your earnings—it is not shared with other group members.

For every decision period, you may invest up to **100** tokens in the group fund and instead keep up to **100** tokens in your private fund.

Let's go through some examples so that it is clear how you make a decision and the outcomes of the decision are determined.

As an example, suppose during one decision you invest no tokens in the group fund and instead keep all **100** tokens in your private fund. (On your record sheet, you would show your decision by putting **0** in the column marked 'Group Fund.'). On the itouch you would enter 100 when asked how much you wish to contribute to the group fund.

After you have made a decision, you will enter your decision on the itouch. After you enter your decision, a computer spread sheet will generate the results and send them back to you. When the results are sent back, please copy down your results on the record sheet in front of you. Based on all the decision by the people in your group, you will find out how many tokens are in which funds, and consequently what everyone will earn.

Suppose the other 3 group members invest a total of **240** tokens in the group fund. How much would you earn? To figure this out, you take the 100 tokens you kept in the private fund and multiply that by **1 cent**. This equals $1.00. Then we take the **240** tokens in the group fund and multiply that by **3 cents**. This equals 720. Since all group members receive an equal share of this, every members share is 720/4 or 180. So, for this decision, you would earn $1.00 + $1.80 = $2.80.

As a second example, suppose during one decision you invest all 100 of your tokens in the group fund. (You would show this decision by marking through the 100 tokens in the private fund and indicating 0. Then you would mark 100 in the **Group Fund** column.) Now, suppose that the other group members invest another 60 tokens to the group fund. Thus the group fund equals 160 tokens. The 160 tokens in the group fund is multiplied by 3 cents to equal 480. Since all group members receive an equal share of this, your share is 480/4, which equals 120 or $1.20. So, for this decision you earn 0 (private fund) and $1.20 in the group fund which equals $1.20.

Just to make sure that you understand the two types of investments, please work through the examples on the yellow piece of paper on your desk. When you are finished, please raise your hand and one of the researchers will collect the sheet. If you have any questions, a researcher will be happy to help you.

(Example)

Now how and what will happen in every decision period?

First, for all trials, mark on your green sheet whether you wish to invest any of your tokens in your private fund to the group fund. You will then ALSO enter in your decision in the itouch.

After all group member have entered their decision, your will be able to see the sum of all members' investment in the group fund, your individual earnings for each trial and your balance. When you get this information, please copy it down on your record sheet. That way, we should have 2 exact copies of your earnings.

So, after each decision, you will enter your decision on the itouch, then after all group members have entered their decision, you will be given information about your earnings for each trial.

Now, how many times will you be asked to make the decisions? Well, we are studying situations where the amount of interaction is uncertain. So, all we can tell you is that you will make more than one decision. You may be making quite a few decisions or you make me making only a few.
Summary

We will begin the study in a moment.

You are working in groups of 4. Some of the people you are working with may be in this room or they may be in another room.

I will announce each period.

You can invest tokens in a group fund in which every group members receive an equal share. Each token in this fund is multiplied by 3 and then divided by 4 to determine individual shares.

You can keep tokens in your private fund in which each token is worth 1 cent and is only yours.

You can mix your tokens in any way you wish.

You will have more than one decision.

Let's begin. This is Decision 1. Please write down on your sheet how many, if any, tokens you want to take from your **Private Fund** and put it in the space where it says **Group Fund.** After you have done this, enter your decision on your itouch. After everyone in your group has responded, you will then be able to see the sum of what other group members have invested in the group fund and your earnings.

Are there any questions?

If you should have any questions about the itouch, raise your hand and one of the researchers can help.

Recording Sheet

First
name
Particip
ant #

You are one member of a group of 4 people

Period	# Tokens I keep in the Private Fund	# Tokens I invest in the Group Fund	My Group fund Earnings	My Total Earnings for this period	Total
Practice	50	50	$1.50	$2.00	$2.00
Practice	30	70	$2.10	$2.40	$4.40
Practice	70	30	$0,90	$1.60	$6.00
1					
2					
3					
4					
5					

Particip
ant #

You are one member of a group of 4 people

Period	# Tokens I keep in the Private Fund	# Tokens I invest in the Group Fund	My Group fund Earnings	My Total Earnings for this period	Total
6					
7					
8					
9					
10					
11					
12					
13					

You are one member of a group of 4 people

Period	# Tokens I keep in the Private Fund	# Tokens I invest in the Group Fund	My Group fund Earnings	My Total Earnings for this period	Total
14					
15					
16					
17					
18					
19					
20					
21					

You are one member of a group of 4 people

Period	# Tokens I keep in the Private Fund	# Tokens I invest in the Group Fund	My Group fund Earnings	My Total Earnings for this period	Total
22					
23					
24					
25					
26					
27					
28					
29					

Questionnaire

These questions are referring to the task which you just completed. When the question asks about the group, it is referring to the group which you were working with through the I touch. Please answer the following questions to the best of your ability. Please take care in considering your answers to each question. Please circle the numbered response that best matches your opinion.
1. For each of the following, please rate from -5 to 5 how you would best describe your group's behavior.

    A. Very Unhelpful   Neutral   Very Helpful
        -5   -4   -3   -2   -1   0   1 2   3   4 5

    B. Very Uncooperative   Neutral   Very Cooperative
        -5   -4   -3   -2   -1   0   1 2   3   4 5

    C. Very Self Oriented   Neutral   Very Team Oriented
        -5   -4   -3   -2   -1   0   1 2 3   4   5

    D. Very Unsupportive   Neutral   Very Supportive
        -5   -4   -3   -2   -1   0   1 2 3   4   5

2. For each of the following, please rate from -5 to 5 how you would best describe your feelings about the exchanges during the experiment.

    A. Very Displeased   Neutral   Very Pleased
        -5   -4   -3   -2   -1   0   1 2 3   4   5

    B. Very Unsatisfied   Neutral   Very Satisfied
        -5   -4   -3   -2   -1   0   1 2 3   4   5

    C. Very Not Joyful   Neutral   Very Joyful
        -5   -4   -3   -2   -1   0   1 2 3   4   5

    D. Very Bored   Neutral   Very Excited
        -5   -4   -3   -2   -1   0   1 2 3   4   5

    E. Very Unmotivated   Neutral   Very Motivated
        -5   -4   -3   -2   -1   0   1 2 3   4   5

    F. Very Unhappy   Neutral   Very Happy
        -5   -4   -3   -2   -1   0   1 2 3   4   5

    G. Very Discontented   Neutral   Very Contented
        -5   -4   -3   -2   -1   0   1 2 3   4   5

    H. Very Unenthusiastic   Neutral   Very Enthusiastic
        -5   -4   -3   -2   -1   0   1 2 3   4   5

    I. Very Tired   Neutral   Very Energetic
        -5   -4   -3   -2   -1   0   1 2 3   4   5

    J. Very Not Interested   Neutral   Very Interested

-5   -4   -3   -2   -1   0   1   2   3   4   5

3. For each of the following, please rate from -5 to 5 how you would best describe the final outcome of your group's efforts.

    A. Very Unsuccessful   Neutral   Very Successful
                        -5   -4   -3   -2   -1   0   1   2   3   4   5

    B. Very Unproductive   Neutral   Very Productive
                        -5   -4   -3   -2   -1   0   1   2   3   4   5

    C. Very Not Rewarding   Neutral   Very Rewarding
                        -5   -4   -3   -2   -1   0   1   2   3   4   5

    D. Very Uncooperative   Neutral   Very Cooperative
                        -5   -4   -3   -2   -1   0   1   2   3   4   5

4. For the following, please use the scale ranging from -5 to 5 to best answer each question.

  A. How important is belonging to this group?
    None   Little   Neutral   Some   A lot
    -5   -4   -3   -2   -1   0   1   2   3   4   5

  B. How much does the outcome of the game matter to you?
    None   Little   Neutral   Some   A lot
    -5   -4   -3   -2   -1   0   1   2   3   4   5

  C. How close do you feel to group members?
    None   Little   Neutral   Some   A lot
    -5   -4   -3   -2   -1   0   1   2   3   4   5

  D. How closely do you identify with group members?
    None   Little   Neutral   Some   A lot
     -5   -4   -3   -2   -1   0   1   2   3   4   5

  E. How much did you trust the members in your group?
    None   Little   Neutral   Some   A lot
     -5   -4   -3   -2   -1   0   1   2   3   4   5

  F. In your opinion, how much do you share in common with the group?
    None   Little   Neutral   Some   A lot
    -5   -4   -3   -2   -1   0   1   2   3   4   5

  G. How common are your goals to those of the group?
    None   Little   Neutral   Some   A lot
     -5   -4   -3   -2   -1   0   1   2   3   4   5

5. A list of statements follow, please indicate the choice that best represents your opinion about the statement.
    A. In the future, I would be willing to work with my group again.

A) Strongly Agree B) Agree C) Neutral D) Disagree E) Strongly Disagree

B. In the future, I would choose to work with another group before working with the same group I worked with today.

A) Strongly Agree B) Agree C) Neutral D) Disagree E) Strongly Disagree

CONTACT INFORMATION

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