

Determining our Destiny: Supplemental Materials

STUDY 1.....	2
Demographics.....	2
Measured Constructs.....	3
Additional Measures.....	5
STUDY 2.....	6
Demographics.....	6
Measured Constructs.....	7
Additional Measures.....	10
STUDY 3.....	11
Experimental Manipulations.....	11
Written Instructions/Background (Year1).....	11
Video Instructions/Background (Year 2).....	13
Meaning of Colors and Charges of COA Generator.....	15
Measured Constructs.....	16
Additional Measures.....	17
STUDY 4.....	18
Verbal Script and Protocol.....	18
Content of Explanatory Videos.....	20
Measured Constructs at Individual Level.....	23
Measured Constructs at Group Level.....	24
Additional Measures.....	25

Study 1 –Materials

Demographics

What is your gender: Male/Female

What is your age?

Where you born in the United States? Yes/No

Which ethnic group do you belong to?

1. African American/Black
2. Asian/Asian American/Pacific Islander
3. Caucasian/White
4. Latino/Hispanic
5. Middle Eastern
6. Native American
7. Biracial/Mixed race (please specify)
8. Other (please specify)

Please indicate your monthly household income before taxes

1. more than \$2,500
2. \$2,000-\$2,500
3. \$1,500-\$2,000
4. \$1,250-\$1,500
5. \$1,000-\$1,250
6. \$750-\$1,000
7. \$500-\$750
8. \$250-500
9. \$250 or less

How would you rate your social class?

1. Upper class
2. Upper middle class
3. Middle class
4. Working class
5. Poor

What is the highest level of education you have completed?

1. No Formal Education
2. Elementary School
3. Some High School
4. Completed High School
5. Some College
6. BA/BS Degree
7. Some Graduate/Professional School
8. Hold Graduation/Professional Degree

Measured Constructs:

Perceived Restrictions to Collective Autonomy: The following are statements about the extent to which Black Americans have been free to determine and practice their own identity and culture. Please indicate how much you agree or disagree with the following statements. You can work quickly; your first feeling is generally best.

- 1) Other groups have tried to control us.
- 2) Other groups have tried to control what we can do.
- 3) Other groups have tried to control what we should value and believe.
- 4) Other groups have tried to control what customs and practices we should follow.
- 5) In general, other groups try to control the extent to which we can act in accordance with our identity.
- 6) In general, other groups try to control the extent to which we can follow our customs and practices.
- 7) In general, other groups try to control the extent to which we can act in accordance with our cultural values.
- 8) Other groups impose aspects of their culture on our culture.

Support for Collective Action: Please indicate how much you agree or disagree with the following statements.

- 1) In order for Black Americans to achieve political gains, they need to close ranks and redouble their efforts.
- 2) Black Americans need to stick together in order to fight against their place in the present social hierarchy.
- 3) Black Americans should work together to ensure progress towards changing their place in the present social hierarchy.

- 4) There's no point in trying to bring all Black Americans together to fight against their place in the present social hierarchy.

Support of Black Panther Party: Please look at the picture above closely and then answer the following questions using the slider ranging from 0 "Not at all" to 100 "Very much so".



- 1) To what extent do you agree with the message being sent by this picture.
- 2) Do you think Blacks Americans should push to create the social reality depicted in this picture?

System Justification: Please indicate how much you agree or disagree with the following statements.

- 1) In general, I find society to be fair.
- 2) Most policies serve the greater good.
- 3) Everyone has a fair shot at wealth and happiness
- 4) Society is set up so that people usually get what they deserve.
- 5) In general, the American political system operates as it should.
- 6) American society needs to be radically restructured.
- 7) The United States is the best country in the world to live in.
- 8) Our society is getting worse every year.

Group Identification: Please indicate how much you agree or disagree with the following statements.

- 1) How strongly do you identify with other members of your ethnic group?
- 2) How important is your ethnicity to your identity?
- 3) I feel a bond with other members of my ethnic group.
- 4) I feel solidarity with other members of my ethnic group.

Illegitimacy of Group Position: Please indicate how much you agree or disagree with the following statements.

- 1) White Americans deserve to be better off than Black Americans in the U.S. today
(Because of low factor loadings with other items, this item was not used in main analyses).
- 2) The fact that White Americans in the U.S. are currently doing better than Black Americans is unjust.
- 3) I think the current balance of power between White Americans and Blacks Americans in the U.S. is unfair.

Additional Measures Beyond the Scope of the Present Research

- 1) Personal Autonomous Need Satisfaction
- 2) Social Dominance Orientation
- 3) System Stability
- 4) System Permeability
- 5) Ingroup bias (feeling thermometer)
- 6) Social ladder
- 7) Ingroup dominance
- 8) Desire to create an egalitarian America.
- 9) Blatant dehumanization of Whites by Blacks
- 10) Perceived police brutality
- 11) Sense of shared reality with other Black group members
- 12) Conservatism
- 13) Religious beliefs
- 14) Self-sacrifice for Black ingroup
- 15) Machiavellianism
- 16) Meta-dehumanization
- 17) Hostility towards Whites
- 18) Support for redistribution of wealth to Blacks
- 19) Affirmative action support
- 20) Muscle size
- 21) Empathy

Study 2 –Materials

Demographics

What is your gender: Male/Female

What is your age?

Where you born in the United States? Yes/No

Which ethnic group do you belong to?

9. African American/Black
10. Asian/Asian American/Pacific Islander
11. Caucasian/White
12. Latino/Hispanic
13. Middle Eastern
14. Native American
15. Biracial/Mixed race (please specify)
16. Other (please specify)

Please indicate your yearly household income before tax

1. Under \$5,000
2. \$5,000-\$9,999
3. \$10,000-\$14,999
4. \$15,000-\$19,999
5. \$20,000-\$24,999
6. \$25,000-\$34,999
7. \$35,000-\$49,999
8. \$50,000-\$74,999
9. \$75,000 - \$99,999
10. \$ 100,000-\$200,000
11. \$200,000-\$300,000
12. \$300,000-\$500,000
13. \$500,000- \$1,000,000
14. Over \$1,000,000

In which region of the United States is your primary residence?

1. Northeast
2. Midwest
3. South
4. West

How would you rate your social class?

6. Upper class
7. Upper middle class
8. Middle class
9. Working class
10. Poor

What is the highest level of education you have completed?

1. No Formal Education
2. Less than 9th grade
3. 9th to 12th grade (no diploma)
4. Completed High School
5. Some College
6. BA/BS Degree
7. Some Graduate/Professional School
8. Hold Graduation/Professional Degree

Measured Constructs:

Collective Autonomy Restriction: The following are statements about the extent to which Black Americans/White Americans have been free to determine and practice their own identity and culture. Please indicate how much you agree or disagree with the following statements. You can work quickly; your first feeling is generally best.

- 1) Other groups have tried to control us (Black Americans/White Americans).
- 2) Other groups have tried to control what we (Black Americans/White Americans) can do.
- 3) Other groups have tried to control what we (Black Americans/White Americans) should value and believe.
- 4) Other groups have tried to control what customs and practices we (Black Americans/White Americans) should follow.
- 5) In general, other groups try to control the extent to which we (Black Americans/White Americans) can act in accordance with our identity.
- 6) In general, other groups try to control the extent to which we (Black Americans/White Americans) can follow our customs and practices.
- 7) In general, other groups try to control the extent to which we (Black Americans/White Americans) can act in accordance with our cultural values.
- 8) Other groups impose aspects of their culture on our Black American/White American culture.

Desire for Group Power: Please indicate how much you agree or disagree with the following statements.

1. We as Black Americans/White Americans would like to have more power as a group in American society.
2. We as Black Americans/White Americans would like to have more influence as a group in American society.
3. We as Black Americans/White Americans would like to have more of a say over how to run American society.
4. We as Black Americans/White Americans want to have greater control as a group in American society.

Support for Collective Action: Please indicate how much you agree or disagree with the following statements.

1. Members of my racial group, Black Americans/White Americans, need to close ranks and redouble their efforts.
2. Members of my racial group, Black Americans/White Americans, need to stick together and act collectively.
3. Members of my racial group, Black Americans/White Americans, should work together to ensure that we have a place in American Society.
4. Members of my racial group, Black Americans/White Americans, need to fight together to protect and claim our rights.

Support for Black Lives Matter (Used with Black Sample Only): Please indicate how much you agree or disagree with the following statements.

1. I support the Black Lives Matter movement.
2. Overall, I think that the Black Lives Matter movement is very harmful to our country.
3. We as a society should do what we can to support the Black Lives Matter movement.
4. I do not agree with the messages put forth by the BLM movement.
5. I stand in solidarity with supporters of the BLM movement.

Support for White Solidarity (Used with White Sample Only): Please indicate how much you agree or disagree with the following statements.

1. I think there are good reasons to have organizations that look out for the interests of Whites.
2. More needs to be done so that people remember that 'White Lives' also matter.
3. Whites need to do more to remind the world about the challenges that White people face.
4. Whites should lobby to repeal laws that give minorities an advantage on the basis of their race, at the expense of Whites.

Protestant Work Ethic: Please indicate how much you agree or disagree with the following statements.

1. Getting ahead is a matter of working hard and relying only on yourself.
2. People are responsible for their own situation in life.
3. People should not count on others to solve their problems for them.
4. A person who blames others for his or her problems is a cop-out.

5. If you want to be successful, all you need to do is work hard and improve yourself.
6. A distaste for hard work usually reflects a weakness of character.
7. Most people spend too much time in unprofitable amusements.
8. Our society would have fewer problems if people had less leisure time.
9. Most people who don't succeed in life are just plain lazy.
10. Anyone who is willing and able to work hard has a good chance of succeeding.
11. People who fail at a job have usually not tried hard enough.
12. Life would have very little meaning if we never had to suffer.
13. The person who can approach an unpleasant task with enthusiasm is the person who gets ahead.
14. If people work hard enough they are likely to make a good life for themselves.
15. I feel uneasy when there is little work for me to do.
16. Money acquired easily is usually spent unwisely.

System Justification: Please indicate how much you agree or disagree with the following statements.

- 1) In general, I find society to be fair.
- 2) Most policies serve the greater good.
- 3) Everyone has a fair shot at wealth and happiness
- 4) Society is set up so that people usually get what they deserve.
- 5) In general, the American political system operates as it should.
- 6) American society needs to be radically restructured.
- 7) The United States is the best country in the world to live in.
- 8) Our society is getting worse every year.

General Discrimination: Please indicate how much you agree or disagree with the following statements.

1. It is common that members of other groups discriminate against Black Americans/White Americans.
2. Black Americans/White Americans have been the target of prejudice.
3. It is rare that Black Americans/White Americans face discrimination.

Relative Deprivation: Please indicate how much you agree or disagree with the following statements.

1. Black Americans/White Americans don't have fair access to education compared to White Americans.
2. Black Americans/White Americans don't have fair representation in government relative to White Americans.
3. Black Americans/White Americans don't have fair access to quality housing relative to White Americans.
4. Black Americans/White Americans don't have fair access to employment opportunities compared to White Americans.

Group Agency: Please indicate how much you agree or disagree with the following statements.

1. We as Black Americans/White Americans feel relatively strong as a group.
2. We as Black Americans/White Americans have a lot of power as a group.
3. We as Black Americans/White Americans have a lot of control as a group.
4. We as Black Americans/White Americans have a lot of influence as a group.

Group Identification:

1. How strongly do you identify with other members of your ethnic group?
2. How important is your ethnic identity to your identity?
3. I feel a bond with other members of my ethnic group.

Additional Measures Beyond the Scope of the Present Research

Social Dominance Orientation

Study 3: Materials

Experimental Manipulations Used When Informing the Ingroup of the Outgroup's Decision for How to Use Its' Power

Control Condition: *“The other group wasn't too sure whether or not they wanted to stay in their room or switch with you. They were divided, but in the end they decided to stay in their room.”*

Collective Autonomy Restriction Condition: *“The other group weren't too sure whether or not they wanted you to keep your own coat of arms design. They were divided, but in the end they decided to modify your coat of arms.”*

Collective Autonomy Support Condition: *“The other group weren't too sure whether or not they wanted you to keep your own coat of arms design. They were divided, but in the end they decided not to make any changes to your coat of arms.”*

Written Instructions of Background Information and Study Explanation Used In Year 1

Even among our most ancient civilizations, humans have used images of animals and nature, and the various colors that appear in our natural environment to symbolize their personal, family and tribal identities. This was a common practice among the people of ancient Israel, Greece, Egypt and the Aboriginal peoples of North America.

The utilization of colours and pictures to symbolize group identity was formalized into the practice of *armory* during the eleventh century in Europe. Armory can be defined as the practice of using distinctive figures and colours on weapons and shields as a means of identification. In medieval Europe the *coat of arms* was a symbol of a family's heritage. The coat of arms has since become associated with larger groups. For example, military units, provinces and countries still use them.

The practice of armory follows a set of established rules and laws in which the different symbols, components, and colours that appear on the coat of arms represent the specific values and traits that make up a group's identity. By combining these colours and symbols, people can represent their group's distinctive identity. Armory has even been considered a *science* by some scholars in which "the rules and the laws govern the use, the display, meaning, and knowledge of the pictured signs and emblems appertaining to shield" (Fox-Davies, 1909, p.1).

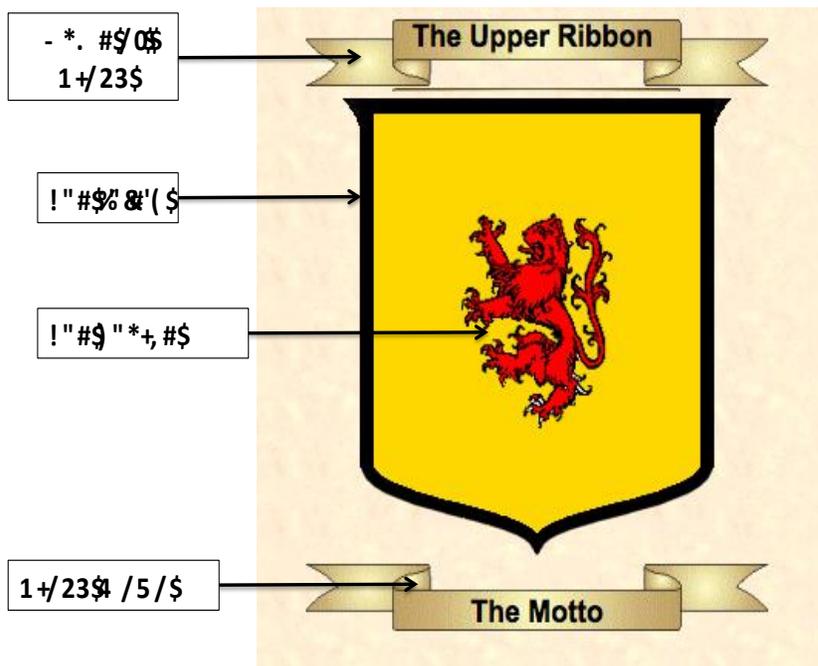
Coat of Arms Components

One of the most important components of the coat of arms is the shield. It is on the shield where the colours and charges that symbolize a group's identity appear. In medieval times, knights would wear their shield on their arm, so that their allies could identify them in battle.

Two important features of the shield are the colour of the shield and the charge that appears on it. They symbolize the values and traits that are most central to the group identity being represented.

Another important feature of the coat of arms is the Motto that appears beneath the shield. The motto is a phrase that states the basic philosophy of the family or group. As well, the coat of arms may contain an Upper Ribbon that displays the name of the group.

Below is a picture illustrating the components of a Coat of Arms:



Today's Study

In today's study you and the other members of your group will play an interactive multiplayer role playing game on the computer called Group Quest. The objective of the game is for your group to complete as many group quests as fast as you can! However, before you begin you will first discuss as a group what it means to be part of your group. In other words, you will develop an identity for your group. Forming a group identity is essential to being able to perform well as a group. This involves determining what you and your group members value collectively, and the distinct characteristics, traits and practices that you all share. These are the unique attributes that make you a meaningful group. To do this, you will create your own coat of arms that represents your own distinct group identity.

As you create your group identity, think wisely about what values and traits you all share together as a group. Depending on the values and attributes that you and your group define as being characteristic of your group identity, the unit which you will control in Group Quest will have different abilities and special characteristics. In other words, your group coat of arms will have a direct impact on how you will play the Group Quest game! While all combinations of charges and colors will provide a different experience in the game, the overall advantage of any combination is the same!

Creating Your Group Coat of Arms

You and your group members will use the interactive coat of arms program to create a coat of arms for your group. This involves determining the 5 key components of your coat of arms.

- 1) Shield Color - This symbolizes the values of your group.
- 2) Group Charge- This symbolizes the common traits that you share with the other members of your group.
- 3) Charge Color- This also symbolizes the values of your group.
- 4) Group Name - This is what your group will be known as.
- 5) Group Motto - The basic philosophy of one's group identity

Instructions for Using the Coat of Arms Generator

- 1) Select a shield colour, charge, and charge colour for your coat of arms.
- 2) Click "Generate Coat of Arms Preview" to see a preview of your group's coat of arms.
- 3) When you have finished creating your group coat of arms you can select the "Finalize Coat of Arms" button to finalize your group coat of arms.
- 4) Let the experimenter know that you are finished so that he/she can print out your group's coat of arms!

Video Instructions of Background Information and Study Explanation Used In Year 2

Welcome to Group Quest. We have prepared audio instructions to tell you all about today's study.

The purpose of today's experiment will be for you all to complete an interactive multiplayer computer game called Group Quest. Your goal will be to beat all the quests as fast as you can!

However, before you play the game, you will be able to form a group identity for your group. Studies have found that forming a group identity is essential for group members to be able to perform well together as a group. To form your group identity you will create a coat of arms!

Before we show you how to do this, let's first take a moment to go over a brief history of coats of arms.

Even amongst our most ancient civilizations, humans have used images of animals and nature, as well as the various colors that appear in our natural environment to symbolize their personal, family and tribal identities. This was a common practice among the peoples of ancient Israel, Greece, Egypt and the Aboriginal peoples of North America.

Using colours and pictures to symbolize group identity was formalized into the practice of *armory* during the eleventh century in Europe. Armory is the practice of using distinctive figures and colours on weapons and shields as a means of identification. In medieval Europe the coat of arms was a symbol of a family's heritage. The coat of arms has since become associated with larger groups. For example, military units, provinces and countries still use them.

The practice of armory follows a set of established rules and laws in which the different symbols, components, and colors that appear on the coat of arms represent the specific values and traits that make up a group's identity. By combining these colors and symbols, people can represent their group's distinctive identity. Armory has even been considered a *science* by some

scholars in which "the rules and the laws govern the use, the display, meaning, and knowledge of the pictured signs and emblems appertaining to shield"

What are the components of a coat of arms?

One of the most important components of the coat of arms is the shield. In medieval times, knights would wear their shield on their arm, so that their allies could identify them in battle. Two important features of the shield are the color of the shield and the charge that appears on it. They symbolize the values and traits that are most central to the group identity being represented.

Another important feature of the coat of arms is the Motto that appears beneath the shield. The motto is a phrase that states the basic philosophy of the family or group. As well, the coat of arms may contain an Upper Ribbon that displays the name of the group.

In today's study, the importance of forming your group identity goes beyond getting to know each other. The identity that you form will have an impact on *everything you do in Group Quest*.

Depending on the values and attributes that you and your group choose, the unit which you will control in Group Quest will have different abilities and special characteristics. In other words, your coat of arms will have a direct impact on how you will play the Group Quest game! While all combinations of charges and colors will provide a different experience in the game, the overall advantage of any combination is the same! Think carefully about what values and traits you all share together as a group as you create your arms.

(Explanation Given To Participants Assigned to the Collective Autonomy Support or Collective Autonomy Threat Conditions)

For the purpose of our study, we need one of the two groups to be able to review the other group's coat of arms and make changes to their coat of arms if they choose.

At the beginning of the experiment, your group picked one of two envelopes out of the hat. The message contained in your envelope will tell you whether your group gets to look at the other group's coat of arms, or whether the other group has this ability. If the winning group dislikes the other group's coat of arms, they are allowed to make changes to it.

The experimenter will now open the envelope and show you its contents.

(Explanation Given To Participants Assigned to the Collective Autonomy Support or Collective Autonomy Threat Conditions)

For the purpose of our study, we need one of the two groups to be able to decide where they would like to play Group Quest, right before the game starts.

At the beginning of the experiment, your group picked one of two envelopes out of the hat. The message contained in your envelope will tell you whether your group gets to decide in which room they want to play GroupQuest, or whether the other group has this ability. If the winning group dislikes the room to which they have been assigned, they are allowed to switch rooms with the other group before playing the video game.

The experimenter will now open the envelope and show you its contents.

Meanings of Colors and Charges of Coat of Arms Generator

Colour Meanings

- **Gold:** The colour gold on a group's shield or charge signifies that group members value being generous towards others. As well, the colour gold symbolizes that the group values engaging in behaviours that lead to self-improvement.
- **Silver:** The colour silver on a group's shield or charge signifies that group members value working towards establishing peace and tranquility in the world. As well, the colour silver symbolizes that the group values being sincere and honest towards others.
- **Red:** The colour red on a group's shield or charge signifies that group members value having a warrior's strength. As well, the colour red symbolizes that the group values being gregarious and having a larger than life personality.
- **Blue:** The colour blue on a group's shield or charge signifies that group members value wisdom and knowledge. As well, the colour blue symbolizes that the group values being loyal to their friends and family, and they are able to form valuable alliances through life.
- **Black:** The colour black on a group's shield or charge signifies that group members value being stable and constant over time. As well, the colour black symbolizes that the group values being able to overcome grief and hardship.
- **Green =** The colour green on a group's shield or charge signifies that the group values being hopeful and joyous throughout life. As well, the colour green symbolizes that the group values committed romantic relationships, and are able to resist temptations.

Charge Meanings

- **Boar:** A boar on a group's shield symbolizes that group members are physically strong and courageous. They enjoy feats that challenge their physical strength and their ferocity of spirit.
- **Griffin:** A griffin on a group's shield symbolizes that group members have an optimal combination of agility, swiftness and mental strength. They use their cunningness and versatility to overcome the obstacles that arise in life.
- **Tiger:** A tiger on a group's shield symbolizes that group members are fearless and proud. They take pride in whatever they do and are achievement oriented.
- **Trefoil:** A trefoil on a group's shield symbolizes that group members are able to endure through life. They are able to make their own luck and find good fortune wherever life takes them.

- **Stag:** A stag on a group's shield symbolizes that group members are able to grow and improve themselves even in the face of adversity. They are constantly growing as individuals, and are able to recuperate when they struggle.
- **Spider:** A spider on a group's shield symbolizes that group members are intelligent, have a sharp wit and tend to use their minds over their muscles. They are tenacious and their actions are always calculated and purpose driven.

Measured Constructs

Collective Autonomy Restriction: The following questions pertain to how you feel that your group was treated by the other group partaking in the study when you created your Coat of Arms and determined your group's identity. You may disagree or agree with these statements and there are no right or wrong answers. Please use the following 7-point scale to indicate the extent to which you agree with each of these statements on a scale of 1 "strongly disagree" to 7 "strongly agree".

- 1) The other group pressured our group to adopt values that were not our own.
- 2) The other group imposed things onto our group's identity.
- 3) The other group told our group what we could and could not do.
- 4) We felt pressured by the other group.
- 5) We felt controlled by the other group.

Note: We also included other items assessing general perceptions of autonomy as a group, which we do not include when assessing collective autonomy restriction specifically.

1. We were free to determine our own group identity.
2. We were free to determine what attributes we share as a group.
3. We were able to determine our own group identity - we determined who we are as a group.
4. We felt that we could make decisions about our group's identity independently from the other group.
5. We were able to decide our group's actions- we determined what we did as a group.

Desire for Group Power: On a scale of 1 to 7, how much do you agree with the following statements?

- 1) During this study, our group would have liked to have had more influence as a group.
- 2) During this study, our group would have liked to have had more say during our interactions with the other group.
- 3) During this study, our group would have liked to have had a greater level of control over the interactions between ourselves and the other group.
- 4) During this study, our group would have liked to have had more power as a group.

Group identification: Below are statements regarding how you felt during the study as a member of your group. You may disagree or agree with these statements and there are no right or wrong answers. Please use the following 7-point scale to indicate the extent to which you agree with each of these statements on a scale of 1 "strongly disagree" to 7 "strongly agree".

- 1) I felt strong ties to the other members of my group .
- 2) I found it difficult to form a bond with the other members of my group.
- 3) I didn't feel good about being a member of my group.
- 4) I had a lot in common with the other members of my group.
- 5) Being a member of my group had very little to do with how I felt about myself.
- 6) In general, I was glad to be a member of my group.
- 7) During the study, being a member of my group was an important part of my self-image.
- 8) I felt good thinking about myself as a member of my group.
- 9) During the study, I often thought of myself as a member of my group.

Feeling of group agency: On a scale of 1 to 7, how much do you agree with the following statements?

- 1) During the study we felt relatively strong as a group.
- 2) During the study we had a lot of control over what we did.
- 3) During the study we had a lot of influence on what we did.

Additional Measures Beyond the Scope of the Present Research

1. Group Identification During Game Play (assessed at T=7, 14, and 21 minutes ; included during both years).
2. Feelings of Pressure During Game Play (assessed at T=7, 14, and 21 minutes ; included year 2 only).
3. Feeling of Positive Affect During Game Play (assessed at T=7, 14, and 21 minutes ; included year 2 only)
4. Personal Autonomy (assessed during both years).
5. Intrinsic Motivation Felt When Creating Coat of Arms (Intrinsic Motivation Inventory – included both year).
6. Intrinsic Motivation When Playing Group Quest (Intrinsic Motivation Inventory included both years).
7. Measure of Collective Autonomy which *does not* make reference to the outgroup (For student honors thesis; second half of year 1 only).
8. Self-report scale of enjoyment when playing Group Quest and Controlling the Ingame Avatar (Second year only).
9. Free choice paradigm and follow-up questions to assess intrinsic motivation to play Group Quest (Year one only).
10. Wellbeing Assessed Via Positive Affect and Self-Esteem (included Year 1 only)

11. Outgroup Bias: Hypothetical scenario assessing how group members would divide 100 dollars between their group and the outgroup (Year 1 only).
12. Outgroup Retaliation: Series of hypothetical vignettes assessing behavior intent to retaliate towards the outgroup (For honors thesis: year 2 only).
13. Perception of size of coins (For honors thesis: used as an implicit measure of need for personal power; year 2 only).
14. Subjective perceptions of the room in which participants engaged in the study (For honors thesis: both years).
15. Participants' subjective memory of the shade of colors depicted in the coat of arms generator (For student honors thesis; Year 2 only).
16. Group Distinctiveness (Measured during Year 1 only)

Study 4: Materials

Verbal Scripts and Protocol Used by Experimenters to Conduct Study 4

Introduction to all participants: “Hi, welcome to the group quest study. Today’s study will involve working in small groups of three to four people. As you can see, we are more than that number of people so we need to break you up into three groups. To do this you will draw slips out of this hat. You will draw a slip with a A, B, or C on it. The other important thing to note is that on each slip you will see a P and then a number. This is your participant ID number that you will write on all your questionnaires so that your data remains anonymous. “If your slip has a A on it follow....”

(Each group will follow one of the three experimenters into one of three separate experimental rooms.)

Instructing participants to provide consent and fill out pre-measures used in study: “Before we begin, we need you to read over and sign this consent form indicating that you agree to participate in this study. We will pass out two copies. You only need to fill out one copy and the other is for your records if you would like to keep it. Once you have done that we want you to fill out all the questions in this packet and remember to write your participant ID on it.”

(Experimenter hands 2 copies of consent form to participant and then pre-measures.)

Power assignment and identity formation “We will now ask you to work together to form a group identity. We have a video to for you to watch that will explain how to do this and explain the background of the study and tell you more about the world of Grabodia. Please watch and listen to this video carefully.”

(Experimenter plays the first video. Once the video terminates the experimenter briefly summarizes the key points of the video.)

“So as you heard in the video, you belong to the Hoye group. The other two groups are the Arado and the Suebla, and the Arado have the power crystal. I’ll show you how to use the Coat of Arms program (*explain how program works*). After you create your coat or arms you will select your group’s national food and customary greeting/gesture from the custom sheet (*hand identity formation sheet*). Keep in mind there will be food involved in the experiment so pick something you would want to eat. Once you have finished this or if you have any questions you can come get me in the hallway.”

(Experimenter leaves room)

Experimental Manipulations: *Once participants complete the identity formation task the experimenter returns into the room. The experimenter first prints out the coat of arms and then says the following:* “Now, we will play the video which explains the next part of the experiment”.

(The experiment will then say the following depending on condition)

“As the video explained, the Arado will determine how many beads each group will be responsible for sorting in each round.

- **For work inequality:** There will be a total of 120 beads to be sorted in each round.
- **For work equality:** There will be a total of 180 beads to be sorted in each round.

Furthermore, as the video explained, the Arado can regulate how each group practices their culture. We will show them your coat of arms, your chosen food, and your chosen gestures. We’ll then ask them if they want to make any changes to these aspects of your culture.”

(The experimenter then leaves the room to retrieve the materials and food needed for the work task and then returns after having ostensibly spoken to the high-power group. What the experiment says next will vary depending on condition.

- **For CA support:** “Ok, we asked the Arado if each group could practice their culture. They decided that your group and the Suebla can practice your culture during the experiment. Here is your chosen food. Also, you can feel free to practice your chosen custom when you begin and end each round.”
- **For CA Restriction:** “Ok, we asked the Arado if each group could practice their culture. They decided to regulate the extent to which your group and the Suebla can practice your culture. They made these changes to your coat of arms. They also decided to provide you with this food, and said that you should engage in the _____ custom when you begin and end your work rounds. They also decided to change the culture of the Suebla.”
- **Work Inequality:** “For the first work round the Arado decided that your group should sort **60** beads. They also want the Suebla to sort **60**. And the Arado chose **not to sort any beads this round.**”
- **Work Equality:** “For the first work round the Arado decided that each group should sort **60 beads.**”

Transition to the Second Round of Work: *Once the group completes the first work round the experimenter says the following.*

“Ok, great – the other groups have finished also – we can start the next round, I’ll go ask the Arado what they want to do for this round.”

(The experimenter leaves the room for 1 minute to ostensibly ask the high-power group how many beads they would like each group to sort during the second round. The experimenter then re-enters and says the following.)

- **Work Inequality:** “For the second work round the Arado decided that your group should sort again sort 60 beads. They also want the Suebla to sort 60 beads again. And the Arado chose not to sort any beads again this round.”
- **Work Equality:** The Arado again decided that each group should sort 60 beads.

Individual Questionnaire (*After the group finishes the second round the experimenter re-enters and says the following*).

“Ok – a sufficient amount of mana beads have now been sorted to power Grabodia. Next – we ask that you fill out a brief **paper survey** about your impressions of the experiment so far”

(The experimenter has each participant each individually complete a measure of collective action support and system justification).

Communication to Other Groups (Beyond Scope of the Present Research): After participants completed their individual questionnaire they were provided the option of writing a letter to either the high-power Arado outgroup or the other low-power Suebla group. This data was beyond the scope of the present research and will be used to examine coalition formation between low-power groups.

Group Questionnaire: Once participants completed the letter, the experimenter provided them with the same questionnaire they completed individually. This time however, the participants completed one questionnaire as a group.

Second Phase of Experiment (Beyond Scope of Present Research): After the work task, there was a distinct second phase of the experiment testing different hypotheses unrelated to the first phase of the experiment.

Final Questionnaire: In a final questionnaire at the very end of the experiment, participants individually completed some last questions about their impressions of the experiment. This survey included our manipulation checks.

Content of Explanatory Videos Used in Study 4

Video 1 – Introduction + Identity Formation

Welcome to the Group Quest Study and the world of Grabodia. We have prepared audio instructions to tell you all about today’s study.

The purpose of today's experiment will be for you to complete interactive group tasks so that we can study the dynamic processes of intragroup and intergroup relations.

To study these processes, we want you to imagine that you are a descendent of another group of people known as the Grabodians. The Grabodians inhabit the far off planet of Grabodia which has many parallels to the planet earth. You can picture the geographical landscape and climate of Grabodia as being very similar to that of the planet Earth. As such, the Grabodian people have been evolving on Grabodia under very similar conditions to what humans have evolved under on Earth. On Grabodia there are **THREE DIFFERENT GROUPS OF GRABODIANS: THE HOYE, THE ARADO, and THE SUEBLA**. We know that the three groups often interact, but we don't know much about the precise nature of these interactions.

Please flip over the piece of paper next to the computer in front of you to see what group you are a part of!

Brief pause so the participants can see what group they belong to

On Grabodia there exists an ancient power crystal that gives off large amounts of natural energy. The Arado group has had possession of the power crystal for many years. As a result, the Arado group has over the years had a great deal of power over the structure of life on Grabodia. In today's study, there will be a number of group tasks and decisions about these tasks that need to be made. Individuals who belong to the *ARADO group will make these decisions*. If you instead belong to the Hoye group or the Suebla group will receive directions from the Arado group.

Before beginning these group tasks however, each of your groups will form a meaningful group identity. You will create an identity for your group in three different ways:

This will Involve:

- Creating a group Coat or Arms
- Determining the cultural food of your group
- Selecting a custom for your group

Before we show you how to do this, let's first take a moment to go over a brief history of coats of arms.

Even amongst our most ancient civilizations, humans have used images of animals and nature, as well as the various colors that appear in our natural environment to symbolize their personal, family and tribal identities. This was a common practice among the peoples of many ancient civilizations.

Using colours and pictures to symbolize group identity was formalized into the practice of *armory* during the eleventh century. Coats of arms use distinctive figures and colours as a means of identification. Originally coats of arms were used to symbol a family's heritage. The coat of arms has since become associated with larger groups. For example, many provinces and countries still use them.

The practice of armory follows a set of established rules and laws in which the different symbols, components, and colours that appear on the coat of arms represent the specific values and traits that make up a group's identity. By combining these colours and symbols, people can represent their group's distinctive identity.

What are the components of a coat of arms?

One of the most important components of the coat of arms is the shield. Two important features of the shield are the colour of the shield and the charge that appears on it. They symbolize the values and traits that are most central to the group identity being represented.

Another important feature of the coat of arms is the Motto that appears beneath the shield. The motto is a phrase that states the basic philosophy of the family or group. As well, the coat of arms may contain an Upper Ribbon that displays the name of the group.

Think carefully about what values and traits you all share together as a group as you create your coat of arms, as your coat of arms will represent your culture and identity as a group!

Beyond having symbols that represent your shared traits and values as a group, it is also important to have cultural food. For example, even the earliest civilizations have left traces of their own distinctive food. In today's study you will be able to choose between six different foods. In terms of food, your group can decide whether your national food is: "cookies" "chocolate," "chips," "vegetables," "fruits," or "seeds".

It is also important to have group customs. Like food, greeting customs can be traced back to our earliest civilizations. In today's study, you will be able to choose between different greeting customs to determine the custom that represents your group's culture. During the study, your group will be able to perform the greeting custom you select.

Instructions for how to create your coat of arms and choose your food and customs will be provided to you by the experimenter.

Video 2 – Work Task

One important part of life on Grabodia is for the three groups to ensure that they can obtain enough energy to power their homes, factories, and Grabodian transportation units. Beyond the power crystal that is controlled by one group on Grabodia, the basic and common source of energy on Grabodia are **mana beads**.

Mana-beads are light grey beads that can be found in the Grabodian quarries. However, mana-beads are mixed among unstable "dark energy beads" which look similar to the mana-beads. Dark energy beads look similar to mana beads, but are a much darker shade of grey. These dark energy beads can explode and cause great damage if used accidentally to generate power. Thus, Grabodians must pay careful attention and care when sorting and collecting the light grey mana-beads from the unstable dark energy beads.

Now, your three groups will spend time collecting mana-beads in order to power Grabodia. During each work round, your three groups will have to sort out a certain number of light grey mana-beads from the dark energy beads. Because the Arado group has the power crystal, members of the Arado group will have the ability to decide how many mana-beads each group will be responsible for sorting in each round. The round will last for as long as it takes for all groups to contribute their assigned number of beads for that round. If your group finishes before the other groups, you will be able to relax and talk to your group members, or play some games that we have loaded on the computers.

It is customary for Grabodians to eat food while they do their work. As well, it is customary for Grabodians to begin and end each work round with their customary greeting. The high power Arado group has the power to determine what cultural practices are permissible on Grabodia. Thus, the Arado group will look over the customary food and customary greeting selected by each the Hoye and the Suebla, and will then decide if each group can keep its culture or should eat food and use greetings that are different from what they selected initially.

Measured Constructs Assessed at the Individual Level

Instructions: Respond to each question based on your experiences in the study so far, and by imagining that you really are living on Grabodia.

Collective action support:

- 1) My people need to act in solidarity in order to improve how we are treated on Grabodia.
- 2) My people need to stick together and act collectively.
- 3) My people need to come together and fight against the injustices on Grabodia.
- 4) We need to "stand up" against unfair policies on Grabodia, to ensure that our rights as a people are respected.
- 5) We need to rise up together to ensure that we are not pushed around.

System Justification Support:

- 1) In general, Grabodian society is fair.
- 2) Grabodian society needs to be radically restructured.
- 3) Most policies on Grabodia serve the greater good.
- 4) Grabodian society is set up so that people usually get what they deserve.

Hostile Emotions: Please rate to what extent you felt the following emotions towards **the Arado group** during the study, from “1”, not at all, to “7”, very much.

1. Anger
2. Disgust
3. Contempt

Collective Autonomy Restriction: Please indicate how much you agree or disagree with the following statements, thinking about what the experiment was like when the ARADO Group had control of the power crystal. Please base your responses assuming that your experiences in this study are representative of what life is like on Grabodia.

- 1) I felt that my Hoye people could maintain our cultural customs and practices when the Arado group was in power.
- 2) I felt that my Hoye people were prevented from practicing our culture when the Arado group was in power.

Exploitation: Please indicate how much you agree or disagree with the following statements, thinking about what the experiment was like when the ARADO Group had control of the power crystal. Please base your responses assuming that your experiences in this

study are representative of what life is like on Grabodia.

- 1) I felt that my people were taken advantage of when the Arado were in power.
- 2) I felt that my people were exploited when the Arado were in power.

Group Identification:

1. In general, I am glad to be a member of my group
2. I feel strong ties to the other members of my group
3. I think of myself as a member of my group

Group Agency (Measured during Year 1 Only):

1. I felt powerful as a group
2. I felt strong as a group

Constructs Assessed at the Group Level

Instructions: Respond to each question based on your experiences in the study so far, and by imagining that you really are Hoye people living on Grabodia.

Collective Action Support (Measured Year 1 Only at Group Level):

- 1) Our people need to act in solidarity in order to improve how we are treated on Grabodia.
- 2) Our people need to stick together and act collectively.
- 3) Our people need to come together and fight against the injustices on Grabodia.
- 4) We need to "stand up" against unfair policies on Grabodia, to ensure that our rights as a people are respected.
- 5) We need to rise up together to ensure that we are not pushed around.

System Justification (Measured Year 1 Only at Group Level):

- 1) In general, Grabodian society is fair.
- 2) Grabodian society needs to be radically restructured.
- 3) Most policies on Grabodia serve the greater good.
- 4) Grabodian society is set up so that people usually get what they deserve.

Hostile Emotions (Measured Year 2 Only at Group Level):

Please rate to what extent you felt the following emotions towards **the Arado group** during the study, from "1", not at all, to "7", very much.

1. Anger
2. Disgust
3. Contempt

Additional Measures Beyond the Scope of the Present Research

- 1) Social Dominance Orientation
- 2) Ingroup Dominance
- 3) Regulatory Style for Identifying with Social Groups
- 4) Individual differences in assertiveness
- 5) Baseline measures of hunger, positive and negative affect
- 6) Baseline interest in video games / role playing games
- 7) Other emotions: Envy, Pity, Sympathy, Fear, Compassion
- 8) Ingroup bias (difference on feeling thermometer)
- 9) Hostile emotions towards both outgroups
- 10) Trust/common bond felt towards both outgroups
- 11) Categorization of outgroups as distinct groups
- 12) Perceptions of other ingroup members as suitable leaders