Cooperation

Instructor Manual

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This instructor's manual includes discussion questions, activities, and links to videos to help you teach about cooperation, and it includes links to other resources that may help you further personalize this portion of your course. The accompanying PowerPoint presentation provides material for your class, including activities and videos, which are designed to help keep your students engaged in the material.

Learning Objectives

Content Specific Learning Objectives

- Explain the different types of social value orientation and how they affect cooperation.
- Explain how empathy, communication, and trust impact cooperation.
- Explain how group identification impacts cooperation.
- Explain how culture affects cooperation.

Relevant APA Learning Objectives (Version 2.0)

- Describe key concepts, principles, and overarching themes in psychology (1.1)
- Develop a working knowledge of psychology's content domains (1.2)
- Describe applications of psychology (1.3)
- Engage in innovative and integrative thinking and problem solving (2.3)

Abstract

Humans are social animals. This means we work together in groups to achieve goals that benefit everyone. From building skyscrapers to delivering packages to remote island nations, modern life requires that people cooperate with one another. However, people are also motivated by self-interest, which often stands as an obstacle to effective cooperation. This module explores the concept of cooperation and the processes that both help and hinder it.

Class Design Recommendations

This material can be covered in one class (50 to 75-minute) period. This information could be expanded to cover two days, if you add some activities from the Noba Instructor Manual or if you extend the amount of time in the current activities. Please refer to the Noba PowerPoint and the Lecture Framework below for specific details.

Topic Outline

- Prisoner's Dilemma
    - Rational Self-Interest
- Individual Differences in Cooperation
    - Social Value Orientation (SVO)
        - Cooperative
        - Individualistic
        - Competitive
        - Common's Dilemma and SVO
    - Empathic Ability
- Situational Influences of Cooperation
    - Communication and Commitment
    - Trust

    - Group Identification
        - Social Identity

- Culture and Cooperation

Module Outline

- **Introduction:** The discussion of cooperation, "the coordination of multiple individuals toward a goal that benefits the entire group," begins with the example of the Chunnel, a tunnel under the sea that connects England and France. Cooperation is natural, but it can also be difficult to achieve.
- **The Prisoner's Dilemma:**In the prisoner's dilemma, the participant has a choice between cooperating or not with another person. If they both cooperate, they receive a reward ($5). If one of the participants cooperates and the other does not, the person who defected get the biggest reward ($8), and the person who cooperated gets no reward at all ($0). If both participants defect, they both get a small reward ($2).
    - The name of the prisoner's dilemma is in reference to the hypothetical scenario in which two people have committed a crime and are now in police custody. The police have separated them for questioning. The two people can choose to confess (get a moderate sentence), rat out their accomplice (get a reduced sentence), or cooperate (with their accomplice) and remain silent.
    - This dilemma highlights the tension between choosing *personal reward* or choosing *gains for the group*. If someone is interested in personal rewards, the rational choice would be not to cooperate. If someone is interested in the gains for the group, then cooperating yields the highest combined reward.
    - **Rational self-interest** is the idea that people will always make choices that involve personal gain. However, many people cooperate during the prisoner's dilemma, which would not be predicted by rational self-interest.

- **Individual Differences in Cooperation:**It is tempting to see cooperation simply as a behavior that one can choose but this also suggests the possibility that there are individual

differences in cooperation. This section describes some individual differences that can affect cooperation, including *social value orientation* and *empathic ability*.

- **Social Value Orientation (SVO):**SVO describes a person's general tendencies when dividing resources between themselves and others. There are three categories of SVO: cooperative (desiring positive outcomes for all), individualistic (being less concerned by others' outcomes), or competitive (seeking to undermine others' outcomes).

  - **Decomposed games**are exercises where individuals choose between options that are cooperative, individualistic, or competitive. Figure 2 is one example of such a game.
  - A person's SVO can predict how they will solve a **commons dilemma game**. A commons dilemma game mimics a **common-pool resource** for the group. Such a resource, such as farm land or ground water) remains accessible for everyone if individuals don't overuse the resource. If people take too much of the resource, it can eventually deplete it. People with a cooperative SVO tend to take less of a common-pool resource than those with a cooperative or individualistic SVO. People with a cooperative SVO are also more likely to use public transportation, volunteer, and give money to charity.
  - A **common-pool resource dilemma** is sometimes referred to as **tragedy of the commons**, the idea that a common resource is at a high risk for depletion if every person overuses it without being concerned about conserving it or sharing it with others. The flip side of this phenomenon is referred to as the **tragedy of the anticommons**, the idea that there are some resources which only a few individuals use and have access to and where making that resource available to many others would lead to vast societal benefits. Examples of such resources include data (some scientists are reluctant to share their data even when their research is tax-payer funded), or patents (which may have several owners, with each having the power to restrict the other's use of it, which leads to no one being able to use the resource in the end). For more information on this topic, please visit:
  - **https://en.wikipedia.org/wiki/Tragedy_of_the_antic...**
  - And Noba module – Replication Crisis: **http://noba.to/q4cvydeh**

- **Empathic Ability:**is "the ability to feel and understand another's emotional experience." Empathy taking the perspective of another person. When people empathize with a partner, then they are more likely to cooperative and engage in altruism, a "the desire to help the partner, even at potential cost to the self." In experimental studies, participants who were encouraged to be empathetic with a person were more likely to

be cooperative with that person than were participants who were told to remain objective. Some research suggests, however, that being empathetic with one person can mean that individuals are not cooperative with the entire group.

- **Situational Influences of Cooperation:**This section of the module describes from situational influences on cooperation, including communication and commitment, trust, and group identification.

    - **Communication and Commitment:**Open communication can promote cooperation. Cooperation includes a **state of vulnerability** in which a person could be exploited or harmed. Further, people who make commitments to cooperate with others during communication tend to follow through on those commitments.
    - **Trust:**Cooperating with others requires trust that others will follow through and not act in a self-interested manner. Students' group projects highlight some of the issues with trust, especially with respect to social loafing and the **free rider problem,**when individuals benefit from the group while contributing little or nothing. However, a free rider will earn a reputation for not cooperating, which makes it less likely that others will cooperate with that person in the future. Meanwhile, people will likely cooperate with individuals who have a reputation for cooperating, even earning higher rewards in experimental studies.
    - **Group Identification:**A person's **social identity**, or how much they identify with a social group, can impact their cooperative behavior. The groups that people belong to that they highly value can affect their **identity**, their view of themselves. As a result, their identity is shaped in part by what the group values. People who identify with a group are more likely to be cooperative and make sacrifices for the group's benefit.

- **Culture:**Culture very likely affects people's cooperative behavior. A study using the **ultimatum game**, similar to the prisoner's dilemma, was conducted in 15 different societies. Overall, people in all cultures seemed to maintain a sense of fairness during the game. There were, however, some differences in how much people cooperated across the cultures. People from cultures where interdependence was a key to survival were more likely to cooperate than people from cultures that were industrialized and more independent.

- **Conclusion:**Cooperation is important in our lives. It can be difficult to achieve, but it is

necessary to assure that groups have optimal outcomes.

Difficult Terms

Commons dilemma game
Decomposed games
Interindividual-intergroup discontinuity
Prisoner's Dilemma
Rational self-interest
Situational influences of cooperation
Social identity
Social value orientation (SVO)
Ultimatum game

Lecture Frameworks

Overview: This material can be covered in one (75-minute) class period. If you have a very interactive class or a 50-minute class period, then you may need to separate this into two class periods.

Warm-Up Activity:Ultimatum Game: This is a version of the ultimatum game that has half the students in the class pick reward options and the other half either accept or reject them. The purpose of this activity is to get students thinking about cooperation as well as understand the ultimatum game. This is described in more detail in the Noba PowerPoint and in “Activities/ Demonstrations" section below.

Prisoner’s Dilemma

- *Video* of the Prisoner’s Dilemma: This video introduces the concept of the prisoner’s dilemma, gives an example of companies competing or cooperating, and discusses the idea of people being rational agents, which the modules discusses as rational self-interest. See ‘Activities/Demonstrations’ below and/or the Noba PowerPoint for more information.
- *Direct Instruction of Rational Self-Interest*: Rational self-interest is the idea that people will always make choices that involve personal gain. However, many people cooperate during

the prisoner's dilemma and during the ultimatum game, which would not be predicted by rational self-interest.

- *Activity: Repeated Prisoner's Dilemma:* The purpose of this activity is to illustrate through a series of choices how the prisoner's dilemma works. In addition, it highlights the repeated or iterated prisoner's dilemma that is not in the module. This type of prisoner's dilemma will allow you to discuss how these types of dilemmas might work in on-going relationships versus in interactions with strangers.

Individual Differences in Cooperation

- *Direct Instruction of Social Value Orientation:* Social value orientation (SVO) describes a person's general tendencies when dividing resources between themselves and others. There are three categories of SVO: cooperative (desiring positive outcomes for all), individualistic (being less concerned by others' outcomes), or competitive (seeking to undermine others' outcomes).

    - *Discussion questions*: Show Figure 2 from the module and ask what each of the SVO categories would choose (See also Noba PowerPoint). Students might be surprised to learn about their own SVO. Ask them to generate real life examples that illustrate their SVO.
    - C*ommon's Dilemma and SVO*: Common's dilemma was named from a time when people would let their animals graze on the town commons. Some resources, such as farm land or ground water, remain available for everyone if individuals don't overuse the resource. If people take too much of the resource, it can eventually deplete it. People with a cooperative SVO tend to take less of a common-pool resource than those with a cooperative or individualistic SVO.

        - *Video:* The Tragedy of the Commons

            - This approximately 2 minute video gives some concrete examples of the commons dilemma. See "Activities/Demonstrations" below or the Noba PowerPoint for more details.

- *Direct Instruction of Empathic Ability*: Empathy is "the ability to feel and understand another's emotional experience." Empathy is also taking the perspective of another

person. When people empathize with a partner, then they are more likely to cooperative and engage in altruism, a "the desire to help the partner, even at potential cost to the self."

Situational Influences of Cooperation

- *Direct Instruction of Communication and Commitment:* Communication positively impact cooperation. Cooperation includes a state of vulnerability in which a person could be exploited or harmed. Further, people who make commitments to cooperate with others during communication tend to follow through on those commitments.
- *Direct Instruction of Trust*: Cooperating with others requires trust that others will follow through and not act in a self-interested manner. Students' group projects highlight some of the issues with trust, especially with respect to social loafing and the free rider problem, when individuals benefit from the group while contributing little or nothing.
- *Direct Instruction of Group Identification and Social Identity*: A person's social identity, or how much they identify with a social group, can impact their cooperative behavior. The groups that people belong to that they highly value can affect their identity, their view of themselves. People who identify with a group are more likely to be cooperative and make sacrifices for the group's benefit.

- **Direct Instruction of Culture and Cooperation:** Culture affects people's cooperative behavior. A study using the ultimatum game was conducted in 15 different societies: Overall, people in all cultures seemed to maintain a sense of fairness during the game. There were, however, some differences in how much people cooperated across the cultures. People from cultures where interdependence was a key to survival were more likely to cooperate than people from cultures that were industrialized and more independent.
- Classroom Assessment Activity (CAT): One-minute Paper: The purpose of this activity is to assess student's learning with a CAT.

Activities & Demonstrations

Ultimatum Game Activity

- Purpose: This activity gets students to play the ultimatum game, which illustrates some

components of cooperation.

- Time: 15-20 minutes
- Materials: Handouts for half of your class with options for payouts. The ones used in the Noba PowerPoint are:

Proposer gets:	Responder gets:
$9	$1
$8	$2
$7	$3
$6	$4
$5	$5
$4	$6
$3	$7
$2	$8
$1	$9

- There is a slightly different version of this activity – including handouts – available as a link (click Activity 5 Guide.doc file) on **http://www.fte.org/teacher-resources/lesson-plans/...**

    - Other options include giving actual rewards to students. This could include candy or extra credit points. It could also be pennies instead of dollars, depending on the size of your class.
    - Directions:

- Collect the proposals from the proposers. Randomly hand out proposals to the responders, in such a way that they do not know whose proposal they received.
- The other half of the class will be the responders. They choose whether to accept or reject the offer. Accepting means both the proposer and responder get the rewards. Rejecting means that neither get the rewards.

- Discussion Question: What do you think the most common proposal is? Why?
    - This discussion will likely bring up some elements of cooperation and cooperative relationships. It may also bring up the issue of rational self-interest. As seen in **http://www.fte.org/teacher-resources/lesson-plans/...** the most common proposal is 50%-50%, which is $5/$5 in this example. The average proposal is 60%-40%, which is $6/$4 in this example.
- Discussion Question: How many do you think are rejected by the responder?
    - This discussion question will also likely bring up issues of cooperation. The finding (see **http://www.fte.org/teacher-resources/lesson-plans/...** that 20% of low offers are rejected will bring up issues of rational self-interest. If people were operating under rational self-interest, they would accept all offers. However, 20% of the lowest offers are rejected, so there appear to be norms of cooperation that are influencing people's behaviors.

Repeated Prisoner's Dilemma

- Purpose: This activity illustrates the prisoner's dilemma. In addition, it illustrates the repeated or iterated prisoner's dilemma (not discussed in the module), including how another's response can influence a person's subsequent choices.
- Materials: Computer with internet connection
- Time: 5-10 minutes
- Source: **http://www.gametheory.net/Mike/applets/PDilemma/Pd...**
- Directions: This activity can be completed in class, as the instructor plays in front of the class (with student input). It could also be given as part of an assignment for students to complete outside of class.
    - This demonstration allows you to play 25 rounds each against 5 different opponents. Not all opponents play alike, and playing each of the 5 opponents can illustrate what happens when 1) you as a player use different strategies, and 2) your opponent uses different strategies. Overall rewards can be compared after playing all 5 opponents.
    - In discussing the activity, it would be nice to highlight issues from the modules such as communication and trust. This activity also allows you to discuss how cooperation may be different with people we expect to need to cooperate with in the future versus

strangers we will never see again.

Tragedy of Commons Video: The purpose of showing this video is to give more examples on the commons dilemma via an interesting video.

- Materials: Ability to show a video in class
    - You will either need an Internet connection to watch this video on YouTube or you will need to download the video before class (using a website such as keepvid.com).
- Time: 3-5 minutes
    - The video is 1 minute, 51 seconds
- Directions: Show the video (**https://www.youtube.com/watch?v=KZDjPnzoge0)** in class. The video is an animated "chalk talk," and it gives some concrete examples of the commons dilemma.

Prisoner's Dilemma Video: The purpose of showing this video is to show students some specific, vivid examples of prisoner's dilemma

- Materials: Ability to show a video in class. You will either need an Internet connection to watch this video on YouTube or you will need to download the video before class (using a website such as keepvid.com).
- Time: 6-10 minutes. The video is 5 minutes, 44 seconds long
- Show the video (**https://www.youtube.com/watch?v=t9Lo2fgxWHw)** in class. This animated video introduces the concept of prisoner's dilemma with the classic example of two people deciding whether or not they should confess to the police. It also gives an example of companies competing or cooperating, and it discusses the idea of people being rational agents, which the modules discusses as rational self-interest.

CAT: One-minute Paper: This is a classroom assessment technique (CAT), and the purpose is to assess student's learning

- Materials: None. Students can hand in the answers on their own paper.
- Time: 3-5 minutes
- Directions:

    - Have students answer these two questions:

        - What was the most important thing you learned during this class?
        - What important question remains unanswered?

- After class, assess students' responses. At the beginning of the next class, go over any misunderstandings or relevant questions.
- If you do not conclude with this Classroom Assessment Technique (CAT), it would helpful to use another CAT. For more information on CATs click here: **http://cft.vanderbilt.edu/guides-sub-pages/cats/**

Additional Activities

Isbell, L. M., & Tyler, J. M. (2003). Teaching students about in-group favoritism and the minimal groups paradigm. *Teaching of Psychology, 30*, 127-130. doi:**http://dx.doi.org/10.1207/S15328023TOP3002_10**

- This article outlines an activity that further explores social identity and social identity theory. Specifically, the activity helps students understand minimal group paradigm and in-group favoritism and bias.

Team-Based Prisoner's Dilemma

- This website (**http://workshopbank.com/prisoners-dilemma)** outlines a version of prisoner's dilemma you could use with your class. The activity has you split your class into two teams who cannot talk with each other, and the object is to maximize their points. The activity is explained in detail on the webpage. A PowerPoint file is available if you give them your email address. The webpage does say that the activity takes an hour, although it could probably be completed in less time (perhaps 15-20 minutes, depending on the size of your class).

Discussion Points

- *Rational self-interest* says that people behave in ways that benefit themselves. However,

when people play games such as the ultimatum game and the prisoner's dilemma, many people act more cooperatively that rational self-interest would predict. Why do you think that is? Why do individuals act in cooperative ways, even if it doesn't directly benefit themselves?

    - These questions are designed to get students thinking about why we act cooperatively. Cooperation can benefit others, and it can benefit the group. So, acting in cooperative ways can benefit us indirectly, because it benefits our group.

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Outside Resources

Article: Weber, J. M., Kopelman, S., & Messick, D. M. (2004). A conceptual review of decision making in social dilemmas: Applying a logic of appropriateness. Personality and Social Psychology Review, 8(3), 281-307.
http://psr.sagepub.com/content/8/3/281.abstract

Video: A clip from a reality TV show, "Golden Balls", that pits players against each other in a high-stakes Prisoners' Dilemma situation.
https://www.youtube.com/watch?v=p3Uos2fzIJ0

Video: Describes recent research showing how chimpanzees naturally cooperate with each other to accomplish tasks.
https://www.youtube.com/watch?v=fME0_RsEXiI

Video: The Empathic Civilization - A 10 minute, 39 second animated talk that explores the topics of empathy.
https://www.youtube.com/watch?v=xjarMIXA2q8

Video: Tragedy of the Commons, Part 1 - What happens when many people seek to share the same, limited resource?
https://www.youtube.com/watch?v=KZDjPnzoge0

Video: Tragedy of the Commons, Part 2 - This video (which is 1 minute, 27 seconds) discusses how cooperation can be a solution to the commons dilemma.
https://www.youtube.com/watch?v=IVwk6VIxBXg

Video: Understanding the Prisoners' Dilemma.
https://www.youtube.com/watch?v=t9Lo2fgxWHw

Video: Why Some People are More Altruistic Than Others - A 12 minute, 21 second TED talk about altruism. A psychologist, Abigail Marsh, discusses the research about altruism.
https://www.youtube.com/watch?v=m4KbUSRfnR4

Web: Take an online test to determine your Social Values Orientation (SVO).
http://vlab.ethz.ch/svo/index-normal.html

Web: What is Social Identity? - A brief explanation of social identity, which includes specific examples.
http://people.howstuffworks.com/what-is-social-identity.htm

Evidence-Based Teaching

Carroll, D. W. (1986). Use of the jigsaw technique in laboratory and discussion classes. *Teaching of Psychology, 13*, 208-210. doi:http://dx.doi.org/10.1207/s15328023top1304_9

- This article discusses how to use the jigsaw technique, a cooperative learning technique, in discussion classes and labs. This could be used as an activity during this section of the course to discuss the role of cooperation in learning.

Larsen, J. D. (1987). Prisoner's dilemma as a model for understanding decisions. *Teaching of Psychology, 14*, 230-231. doi:http://dx.doi.org/10.1207/s15328023top1404_10

- This article outlines two versions of the prisoner's dilemma that can be used for classroom activities.

Links to ToPIX Materials

Emotion in the News: Is empathy a purely human quality? - This is a link to a Radio Lab segment, which explores whether empathy is primarily a human emotion.
http://topix.teachpsych.org/w/page/24993705/Emotion%20in%20the%20News

Language Video: How Language Transformed Humanity - A TED talk by a biologist who argues that the development of language helped humans cooperate.
http://topix.teachpsych.org/w/page/19981012/Language%20Video

Social Psychology: The Age of Empathy: Nature's Lesson for a Kinder Society - • This is a link to the book, The Age of Empathy: Nature's Lesson for a Kinder Society
http://topix.teachpsych.org/w/page/39236320/Social%20Psychology

Teaching Topics

Teaching The Most Important Course
https://nobaproject.com/documents/1_Teaching_The_Most_Important_Course.pdf

Content Coverage
https://nobaproject.com/documents/2_Content_Coverage.pdf

Motivating Students
https://nobaproject.com/documents/3_Motivating_Students_Tips.pdf

Engaging Large Classes
https://nobaproject.com/documents/4_Engaging_Large_Classes.pdf

Assessment Learning
https://nobaproject.com/documents/5_Assessment_Learning.pdf

Teaching Biological Psychology
https://nobaproject.com/documents/6_Teaching_Bio_Psych.pdf

PowerPoint Presentation

This module has an associated PowerPoint presentation. Download it at https://nobaproject.com//images/shared/supplement_editions/000/000/316/Cooperation.ppt?1576426090.

About Noba

The Diener Education Fund (DEF) is a non-profit organization founded with the mission of re-inventing higher education to serve the changing needs of students and professors. The initial focus of the DEF is on making information, especially of the type found in textbooks, widely available to people of all backgrounds. This mission is embodied in the Noba project.

Noba is an open and free online platform that provides high-quality, flexibly structured textbooks and educational materials. The goals of Noba are three-fold:

- To reduce financial burden on students by providing access to free educational content
- To provide instructors with a platform to customize educational content to better suit their curriculum
- To present material written by a collection of experts and authorities in the field

The Diener Education Fund is co-founded by Drs. Ed and Carol Diener. Ed is the Joseph Smiley Distinguished Professor of Psychology (Emeritus) at the University of Illinois. Carol Diener is the former director of the Mental Health Worker and the Juvenile Justice Programs at the University of Illinois. Both Ed and Carol are award- winning university teachers.

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