

Supplementary materials for “Cognitive Load Selectively Interferes with Utilitarian Moral Judgment” *Cognition* 2008

Joshua D. Greene
Sylvia A. Morelli
Kelly Lowenberg
Leigh E. Nystrom
Jonathan D. Cohen

Correspondence: jgreene@wjh.harvard.edu

Data for Impersonal Dilemmas and Low-Conflict Personal Dilemmas

The present study concerns the tension between utilitarian and non-utilitarian (characteristically deontological) judgments. For this reason, we have focused on the subset of “high-conflict” personal moral dilemmas (Greene et al., 2004; Koenigs et al., 2007) in which these two philosophical perspectives conflict. These high-conflict dilemmas share a similar structure in which one person can be harmed in order to achieve a greater benefit. To avoid repetition, we presented these “high-conflict” dilemmas along with the rest of our standard battery of moral dilemmas (Greene et al., 2001, 2004), which includes “impersonal” and “low-conflict” personal moral dilemmas that have different structures. These dilemmas are not suitable for testing our hypothesis because they typically involve no clear conflict between utilitarian and non-utilitarian moral principles. We present data for these dilemmas here.

There were no significant effects for the low-conflict personal dilemmas. For the impersonal dilemmas there was a significant main effect of load and no other significant effects. (See below)

Results from the impersonal dilemmas allow us to address a concern about the results featured in the main article. In the “high-conflict” dilemmas, the utilitarian response is always the affirmative response. Thus, one might propose that the controlled cognitive processing that we’ve attributed to utilitarian judgment is in fact associated with affirmative judgments more broadly. The data from the impersonal dilemmas (which, unlike the low-conflict personal dilemmas, elicit a substantial number of affirmative as well as negative responses) indicate that this is not so. Here, affirmative judgments did not take any longer than negative judgments, and there was no interaction between load and judgment type (affirmative vs. negative). (See below)

Analysis methods follow those described in the main article, with “utilitarian” and “non-utilitarian” judgments replaced by “affirmative” and “negative” judgments.

Low-Conflict Personal dilemmas:

LS Means and SEM in ms.

	No load	load
Affirmative Judgment	4818 (359)	4602 (324)
Negative Judgment	4110 (139)	4415 (138)

Main effect of load: $F(1, 131.5) = .04, p = .85$

Main effect of judgment: $F(1, 31.49) = 3.37, p = .08$

Interaction: $F(1, 161.2) = 1.25, p = .27$

Affirmative Judgments: 7%

Load: 8%

No load: 6%

Effect of load on judgment: $(\chi^2(1, N = 82) = .79, p = .38)$

Impersonal Dilemmas

LS Means and SEM in ms.

	No load	load
Affirmative Judgment	4307 (173)	4532 (173)
Negative Judgment	4258 (168)	4618 (169)

Main effect of load: $F(1, 81.34) = 4.8, p = .03$

Main effect of judgment: $F(1, 80.47) = .04, p = .85$

Interaction: $F(1, 78.06) = .40, p = .53$

Affirmative Judgments: 47%

Load: 47%

No load: 46%

Effect of load on judgment: $(\chi^2(1, N = 82) = .13, p = .72)$

Participant instructions

(presented on computer)

General instructions

In this experiment, you will read through 40 moral dilemmas. They will be broken up into 2 sections of 20 dilemmas. In one section, you will simply have to read moving text and respond to the question at the end of the dilemma. In the other section, you will have to perform an additional task. So, please read the direction for each section carefully.

At the end of each paragraph, you will be asked whether or not it is morally acceptable to perform the described action. At this point you must respond by pressing one of two buttons to indicate your answer.

After you have answered the question by pressing the appropriate key, the next dilemma will immediately begin to scroll across the screen. So, remember to start reading right away.

Moral judgments can be difficult to make, and we understand that people sometimes change their minds about moral questions or feel conflicted about the answers they're given. Don't think of your answers as "written in stone." All we want from you is a thoughtful first response.

While we want your answers to be thoughtful, you may find that in some cases the right answer seems immediately obvious. If that happens, it's okay to answer quickly. There are no trick questions, and in every case we have done our best to make the relevant information as clear as possible.

Note, however, that no two questions are the same, although many questions are similar to each other. To answer a question properly you will have to read it carefully because it will always be different in some way from the questions you have already answered.

When you are done with this screen you will see the directions for the first section. Please read them carefully and then begin the first section. Thank you.

Load block only

In this section, the text of the moral dilemma will scroll across the screen. Please read the text OUT LOUD. The microphone will begin recording at the beginning of the task. At the end of the dilemma, you will be asked whether or not the suggested action is morally acceptable.

To say YES (that is, to indicate that this action IS morally acceptable) press j on

the keyboard. To say NO (that is, to indicate that this action IS NOT morally acceptable) press k. You must respond by pressing one of these two buttons.

Once you have pressed a button there is no way to go back to the previous screen. If you press the wrong button or if you press a button too soon, don't worry. Just move on to the next question.

In addition to answering the question at the end of the dilemma, you will be asked to do another task.

While the text is scrolling by, a line immediately underneath the text will contain digits. As you read, you must simultaneously search for the digit 5.

Each time you see the digit 5 come onto the screen please hit the letter f on the keyboard. You only need to press f once for each 5 you see.

Although you are searching for the digit 5, you must simultaneously read the moral dilemma. Please do BOTH tasks at the same time. If you make a mistake and forget to press f when you see five, don't worry. Just continue on and try to press the button for the next five :)

Most importantly, if you are still deliberating over your answer after the text of the moral dilemma is done, CONTINUE to press f when you see a 5. Continue doing this until you have answered yes or no.

Non-load block only

In this section, the text of the moral dilemma will scroll across the screen. Please read the text OUT LOUD. The microphone will begin recording at the beginning of the task. At the end of the dilemma, you will be asked whether or not the suggested action is morally acceptable.

To say YES (that is, to indicate that this action IS morally acceptable) press j on the keyboard. To say NO (that is, to indicate that this action IS NOT morally acceptable) press k. You must respond by pressing one of these two buttons.

Once you have pressed a button there is no way to go back to the previous screen. If you press the wrong button or if you press a button too soon, don't worry. Just move on to the next question.

Note: Dilemmas were originally used in Greene et al. (2001, 2004). Personal dilemmas were designated as high-conflict or low-conflict by Koenigs et al. (2007).

High-Conflict Personal Dilemmas

Crying Baby

Percent utilitarian judgments: 60%

Mean RT (ms): 5651

Enemy soldiers have taken over your village. They have orders to kill all remaining civilians. You and some of your townspeople have sought refuge in the cellar of a large house. Outside you hear the voices of soldiers who have come to search the house for valuables.

Your baby begins to cry loudly. You cover his mouth to block the sound. If you remove your hand from his mouth his crying will summon the attention of the soldiers who will kill you, your child, and the others hiding out in the cellar. To save yourself and the others you must smother your child to death.

Is it appropriate for you to smother your child in order to save yourself and the other townspeople?

Euthanasia

Percent utilitarian judgments: 63%

Mean RT (ms): 5101

You are the leader of a small group of soldiers. You are on your way back from a completed mission deep in enemy territory when one of your men has stepped in trap that has been set by the enemy and is badly injured. The trap is connected to a radio device that by now has alerted the enemy to your presence. They will soon be on their way.

If the enemy finds your injured man they will torture him and kill him. He begs you not to leave him behind, but if you try to take him with you your entire group will be captured. The only way to prevent this injured soldier from being tortured is to shoot him yourself.

Is it appropriate for you to shoot this soldier in order to prevent him from being tortured by the enemy?

Footbridge (Adapted from Thomson, 1985)

Percent utilitarian judgments: 21%

Mean RT (ms): 4288

A runaway trolley is heading down the tracks toward five workmen who will be killed if the trolley proceeds on its present course. You are on a footbridge over the tracks, in between the approaching trolley and the five workmen. Next to you on this footbridge is a stranger who happens to be very large.

The only way to save the lives of the five workmen is to push this stranger off the bridge and onto the tracks below where his large body will stop the trolley. The stranger will die if you do this, but the five workmen will be saved.

Is it appropriate for you to push the stranger on to the tracks in order to save the five workmen?

Lawrence of Arabia

Percent utilitarian judgments: 82%

Mean RT (ms): 6881

You are the leader of a small army that consists of warriors from two tribes, the hill tribe and the river tribe. You belong to neither tribe. During the night a hill tribesman got into an argument with a river tribesman and murdered him. The river tribe will attack the hill tribe unless the murderer is put to death, but the hill tribe refuses to kill one of its own warriors.

The only way for you to avoid a war between the two tribes that will cost hundreds of lives is to publicly execute the murderer by cutting off his head with your sword.

Is it appropriate for you to cut off this man's head in order to prevent the two tribes from fighting a war that will cost hundreds of lives?

Modified Bomb

Percent utilitarian judgments: 90%

Mean RT (ms): 7073

You are negotiating with a powerful and determined terrorist who is about to set off a bomb in a crowded area. Your one advantage is that you have his teen-age son in your custody.

There is only one thing that you can do to stop him from detonating his bomb, which will kill thousands of people if detonated. To stop him, you must contact him over the satellite hook-up that he has established and, in front of the camera, break one of his son's arms and then threaten to break the other one if he does not give himself up.

Is it appropriate for you to break the terrorist's son's arm in order to prevent the terrorist from killing thousands of people with his bomb?

Modified Lifeboat

Percent utilitarian judgments: 71%

Mean RT (ms): 4526

You are on a cruise ship when there is a fire on board, and the ship has to be abandoned. The lifeboats are carrying many more people than they were designed to carry. The lifeboat you're in is sitting dangerously low in the water—a few inches lower and it will sink.

The seas start to get rough, and the boat begins to fill with water. If nothing is done it will sink before the rescue boats arrive and everyone on board will die. However, there is an injured person who will not survive in any case. If you throw that person overboard the boat will stay afloat and the remaining passengers will be saved.

Is it appropriate for you to throw this person overboard in order to save the lives of the remaining passengers?

Modified Safari

Percent utilitarian judgments: 22%

Mean RT (ms): 5442

You are part of a group of ecologists who live in a remote stretch of jungle. The entire group, which includes eight children, has been taken hostage by a group of paramilitary terrorists. One of the terrorists takes a liking to you. He informs you that his leader intends to kill you and the rest of the hostages the following morning.

He is willing to help you and the children escape, but as an act of good faith he wants you to kill one of your fellow hostages whom he does not like. If you refuse his offer all the hostages including the children and yourself will die. If you accept his offer then the others will die in the morning but you and the eight children will escape..

Is it appropriate for you to kill one of your fellow hostages in order to escape from the terrorists and save the lives of the eight children?

Sacrifice

Percent utilitarian judgments: 51%

Mean RT (ms): 6139

You, your husband, and your four children are crossing a mountain range on your return journey to your homeland. You have inadvertently set up camp on a local clan's sacred burial ground.

The leader of the clan says that according to the local laws, you and your family must be put to death. However, he will let yourself, your husband, and your three other children live if you yourself will kill your oldest son.

Is it appropriate for you to kill your oldest son in order to save your husband and your other three children?

Sophie's Choice

Percent utilitarian judgments: 62%

Mean RT (ms): 6133

It is wartime and you and your two children, ages eight and five, are living in a territory that has been occupied by the enemy. At the enemy's headquarters is a doctor who performs painful experiments on humans that inevitably lead to death.

He intends to perform experiments on one of your children, but he will allow you to choose which of your children will be experimented upon. You have twenty-four hours to bring one of your children to his laboratory. If you refuse to bring one of your children to his laboratory he will find them both and experiment on both of them.

Is it appropriate for you to bring one of your children to the laboratory in order to avoid having them both die?

Submarine

Percent utilitarian judgments: 91%

Mean RT (ms): 5983

You are the captain of a military submarine traveling underneath a large iceberg. An onboard explosion has caused you to lose most of your oxygen supply and has injured one of your crew who is quickly losing blood. The injured crew member is going to die from his wounds no matter what happens.

The remaining oxygen is not sufficient for the entire crew to make it to the surface. The only way to save the other crew members is to shoot dead the injured crew member so that there will be just enough oxygen for the rest of the crew to survive.

Is it appropriate for you to kill the fatally injured crew member in order to save the lives of the remaining crew members?

Vaccine Test

Percent utilitarian judgments: 79%

Mean RT (ms): 7125

A viral epidemic has spread across the globe killing millions of people. You have developed two substances in your home laboratory. You know that one of them is a vaccine, but you don't know which one. You also know that the other one is deadly.

Once you figure out which substance is the vaccine you can use it to save millions of lives. You have with you two people who are under your care, and the only way to identify the vaccine is to inject each of these people with one of the two substances. One person will live, the other will die, and you will be able to start saving lives with your vaccine.

Is it appropriate for you to kill one of these people with a deadly injection in order to identify a vaccine that will save millions of lives?

Vitamins

Percent utilitarian judgments: 35%

Mean RT (ms): 6352

You are the leader of a mountaineering expedition that is stranded in the wilderness. Your expedition includes a family of six that has a genetically caused vitamin deficiency. A few people's kidneys contain large amounts of this vitamin.

There is one such person in your party. The only way to save the lives of the six members of this family is to remove one of this man's kidneys so that the necessary vitamins may be extracted from it. The man will not die if you do this, but his health will be compromised. The man is opposed to this plan, but you have the power to do as you see fit.

Is it appropriate for you to forcibly remove this man's kidney in order to save the lives of the six vitamin-deficient people?

Low-Conflict Personal Dilemmas

Architect

Percent affirmative judgments: 1%

Mean RT (ms): 4224

You are a young architect visiting one of your construction sites with your boss. Your boss is a despicable individual who makes everyone around him miserable including you.

It occurs to you that if you were to push him off of the building you are inspecting he would fall to his death and everyone would think it was an accident.

Is it appropriate for you to push your boss off of the building in order to get him out of your life?

Country Road (Adapted from Unger, 1996)

Percent affirmative judgments: 3%

Mean RT (ms): 5027

You are driving along a country road when you hear a plea for help coming from some roadside bushes. You pull over and encounter a man whose legs are covered with blood. The man explains that he has had an accident while hiking and asks you to take him to a nearby hospital.

Your initial inclination is to help this man, who will probably lose his leg if he does not get to the hospital soon. However, if you give this man a lift, his blood will ruin the leather upholstery of your car.

Is it appropriate for you to leave this man by the side of the road in order to preserve your leather upholstery?

Plane Crash

Percent affirmative judgments: 2%

Mean RT (ms): 5027

Your plane has crashed in the Himalayas. The only survivors are yourself, another man, and a young boy. The three of you travel for days, battling extreme cold and wind. Your only chance at survival is to find your way to small a village on the other side of the mountain, several days away.

The boy has a broken leg and cannot move very quickly. His chances of surviving the journey are essentially zero. Without food, you and the other man will probably die as well. The other man suggests that you sacrifice the boy and eat his remains over the next few days.

Is it appropriate to kill this boy so that you and the other man may survive your journey to safety?

Grandson

Percent affirmative judgments: 1%

Mean RT (ms): 3610

A young boy is visiting his grandmother for the weekend. Usually she gives him a gift of a few dollars when he arrives, but this time she doesn't. He asks her why not and she says something about how he doesn't write her as many letters as he used to. Angered by this, the boy decides to play a trick on her.

While his grandmother is busy cooking he removes a handful of pills from the medicine cabinet and puts them in his grandmother's teapot. Later that night, she makes her tea, and the dissolved pills make her sick. In the morning she is dead.

Was it appropriate for this boy to put pills in his grandmother's teapot in order to play a trick on her?

Hard Times

Percent affirmative judgments: 9%

Mean RT (ms): 5262

You are the head of a poor household in a developing country. Your crops have failed for the second year in a row, and it appears that you have no way to feed your family. Your sons, ages eight and ten, are too young to go off to the city where there jobs, but your daughter could fare better.

You know a man from your village who lives in the city and who makes sexually explicit films featuring small children such as your daughter. He tells you that in one year of working in his studio your daughter could earn enough money to keep your family fed for several growing seasons.

Is it appropriate for you to employ your daughter in the child pornography industry in order to feed your family?

Hired Rapist

Percent affirmative judgments: 4%

Mean RT (ms): 4792

You have been dissatisfied with your marriage for several years. It is your distinct impression that your wife no longer appreciates you. You remember how she appreciated you years ago when you took care of her after she was mugged. You devise the following plan to regain your wife's affection.

You will hire a man to break into your house while you are away. This man will tie up your wife and rape her. You, upon hearing the horrible news, will return swiftly to her side, to take care of her and comfort her, and she will once again appreciate you.

Is it appropriate for you to hire a man to rape your wife so that she will appreciate you as you comfort her?

Infanticide

Percent affirmative judgments: 5%

Mean RT (ms): 2879

You are a fifteen-year-old girl who has become pregnant. By wearing loose clothing and deliberately putting on weight you have managed to keep your pregnancy a secret. One day, while at school, your water breaks. You run to the girls' locker room and hide for several hours while you deliver the baby. You are sure that you are not prepared to care for this baby.

You think to yourself that it would be such a relief to simply clean up the mess you've made in the locker room, wrap the baby in some towels, throw the baby in the dumpster behind the school, and act as if nothing had ever happened.

Is it appropriate for you to throw your baby in the dumpster in order to move on with your life?

Smother for dollars

Percent affirmative judgments: 7%

Mean RT (ms): 4242

You are in hospital lounge waiting to visit a sick friend. A young man sitting next to you explains that his father is very ill. The doctors believe that he has a week to live at most. He explains further that his father has a substantial life insurance policy that expires at midnight.

If his father dies before midnight, this young man will receive a very large sum of money. He says that the money would mean a great deal to him and that no good will come from his father's living a few more days. He offers you half a million dollars to go up to his father's room and smother his father with a pillow.

Is it appropriate for you to kill this man's father in order to get money for yourself and this young man?

Transplant (Adapted from Thomson, 1985)

Percent affirmative judgments: 12%

Mean RT (ms): 3047

You are a doctor. You have five patients, each of whom is about to die due to a failing organ of some kind. You have another patient who is healthy.

The only way that you can save the lives of the first five patients is to transplant five of this young man's organs (against his will) into the bodies of the other five patients. If you do this, the young man will die, but the other five patients will live.

Is it appropriate for you to perform this transplant in order to save five of your patients?

Impersonal Moral Dilemmas

Donation (Adapted from Unger, 1996)

Percent affirmative judgments: 63%

Mean RT (ms): 4830

You are at home one day when the mail arrives. You receive a letter from a reputable international aid organization. The letter asks you to make a donation of two hundred dollars to their organization.

The letter explains that a two hundred-dollar donation will allow this organization to provide needed medical attention to some poor people in another part of the world.

Is it appropriate for you to not make a donation to this organization in order to save money?

Environmental Policy A1

Percent affirmative judgments: 75%

Mean RT (ms): 2381

You are a member of a government legislature. The legislature is deciding between two different policies concerning environmental hazards.

Policy A has a 90% chance of causing no deaths at all and has a 10% chance of causing 1000 deaths. Policy B has a 92% chance of causing no deaths and an 8% chance of causing 10,000 deaths.

Is it appropriate for you to vote for Policy A over Policy B?

Environmental Policy A2

Percent affirmative judgments: 84%

Mean RT (ms): 4139

You are a member of a government legislature. The legislature is deciding between two different policies concerning environmental hazards.

Policy A has a 90% chance of causing no deaths at all and has a 10% chance of causing 1000 deaths. Policy B has an 88% chance of causing no deaths and a 12% chance of causing 10 deaths.

Is it appropriate for you to vote for Policy B over Policy A?

Environmental Policy B1

Percent affirmative judgments: 24%

Mean RT (ms): 3571

You are a member of a government legislature. The legislature is deciding between two different policies concerning environmental hazards.

Policy A has a 90% chance of causing no deaths at all and has a 10% chance of causing 1000 deaths. Policy B has a 92% chance of causing no deaths and an 8% chance of causing 10,000 deaths.

Is it appropriate for you to vote for Policy B over Policy A?

Environmental Policy B2

Percent affirmative judgments: 25%

Mean RT (ms): 3943

You are a member of a government legislature. The legislature is deciding between two different policies concerning environmental hazards.

Policy A has a 90% chance of causing no deaths at all and has a 10% chance of causing 1000 deaths. Policy B has a 88% chance of causing no deaths and a 12% chance of causing 10 deaths.

Is it appropriate for you to vote for Policy A over Policy B?

Eyes (Adapted from Unger, 1996)

Percent affirmative judgments: 3%

Mean RT (ms): 4967

In the future, you are a veteran of a war during which both of your eyes were destroyed. Due to recent medical advances, it is now possible to perform eye transplants, but, much to your anger and amazement, there are no willing donors.

A sympathetic black-market surgeon offers to help you. If you hire him, he and his associates will kidnap a randomly selected stranger, carve out one of his eyes, and transfer it to you.

Is it appropriate for you to hire this surgeon to carve out a stranger's eye in order to help restore your vision?

Five-for-Seven Trolley (Adapted form Thomson, 1985)

Percent affirmative judgments: 5%

Mean RT (ms): 4669

You are at the wheel of a runaway trolley quickly approaching a fork in the tracks. On the tracks extending to the left is a group of five railway workmen. On the tracks extending to the right is a group of seven railway workmen.

If you do nothing the trolley will proceed to the left, causing the deaths of the five workmen. The only way to save these workmen is to hit a switch on your dashboard that will cause the trolley to proceed to the right, causing the deaths of the seven workmen on the other side.

Is it appropriate for you to hit the switch in order to avoid the deaths of the five workmen?

Guarded Speedboat (Adapted from Unger, 1996)

Percent affirmative judgments: 91%

Mean RT (ms): 5672

While on vacation on a remote island, you are fishing from a seaside dock. You observe a group of tourists board a small boat and set sail for a nearby island. Soon after their departure you hear over the radio that there is a violent storm brewing, a storm that is sure to intercept them.

The only way that you can ensure their safety is to warn them by borrowing a nearby speedboat. The speedboat belongs to a miserly tycoon who has hired a fiercely loyal guard to make sure that no one uses his boat without permission. To get to the speedboat you will have to lie to the guard.

Is it appropriate for you to lie to the guard in order to borrow the speedboat and warn the tourists about the storm?

Illegal Lunch

Percent affirmative judgments: 9%

Mean RT (ms): 3983

You are a lawyer working on a big case. The judge presiding over the trial happens to be someone you knew from law school. The two of you were rather friendly back then, but now, decades later, it seems that your old friend barely remembers you.

You're quite sure that if you were to talk to him over lunch, you could jog his memory and he would begin to see you as an old buddy, which would be very good for your work on this case. It's illegal for judges and lawyers working on the same case to meet socially.

Is it appropriate for you to meet with this judge socially in order to help you win your case?

Lost Wallet

Percent affirmative judgments: 16%

Mean RT (ms): 5171

You are walking down the street when you come across a wallet lying on the ground. You open the wallet and find that it contains several hundred dollars in cash as well the owner's driver's license.

From the credit cards and other items in the wallet it's very clear that the wallet's owner is wealthy. You, on the other hand, have been hit by hard times recently and could really use some extra money. You consider sending the wallet back to the owner without the cash, keeping the cash for yourself.

Is it appropriate for you to keep the money you found in the wallet in order to have more money for yourself?

Resume

Percent affirmative judgments: 9%

Mean RT (ms): 3619

You have a friend who has been trying to find a job lately without much success. He figured that he would be more likely to get hired if he had a more impressive resume.

He decided to put some false information on his resume in order to make it more impressive. By doing this he ultimately managed to get hired, beating out several candidates who were actually more qualified than he.

Was it appropriate for your friend to put false information on his resume in order to help him find employment?

Sculpture (Adapted from Unger, 1996)

Percent affirmative judgments: 96%

Mean RT (ms): 2955

You are visiting the sculpture garden of a wealthy art collector. The garden overlooks a valley containing a set of train tracks. A railway workman is working on the tracks, and an empty runaway trolley is heading down the tracks toward the workman.

The only way to save the workman's life is to push one of the art collector's prized sculptures down into the valley so that it will roll onto the tracks and block the trolley's passage. Doing this will destroy the sculpture.

Is it appropriate for you to destroy the sculpture in order to save this workman's life?

Speedboat (Adapted from Unger, 1996)

Percent affirmative judgments: 99%

Mean RT (ms): 4638

While on vacation on a remote island, you are fishing from a seaside dock. You observe a group of tourists board a small boat and set sail for a nearby island. Soon after their departure you hear over the radio that there is a violent storm brewing, a storm that is sure to intercept them.

The only way that you can ensure their safety is to warn them by borrowing a nearby speedboat. The speedboat belongs to a miserly tycoon who would not take kindly to your borrowing his property.

Is it appropriate for you to borrow the speedboat in order to warn the tourists about the storm?

Standard Trolley (Adapted form Foot, 1978; Thomson, 1985)

Percent affirmative judgments: 82%

Mean RT (ms): 4335

You are at the wheel of a runaway trolley quickly approaching a fork in the tracks. On the tracks extending to the left is a group of five railway workmen. On the tracks extending to the right is a single railway workman.

If you do nothing the trolley will proceed to the left, causing the deaths of the five workmen. The only way to avoid the deaths of these workmen is to hit a switch on your dashboard that will cause the trolley to proceed to the right, causing the death of the single workman.

Is it appropriate for you to hit the switch in order to avoid the deaths of the five workmen?

Standard Fumes (Adapted form Thomson, 1985)

Percent affirmative judgments: 76%

Mean RT (ms): 4417

You are the late-night watchman in a hospital. Due to an accident in the building next door, there are deadly fumes rising up through the hospital's ventilation system. In a certain room of the hospital are three patients. In another room there is a single patient. If you do nothing the fumes will rise up into the room containing the three patients and cause their deaths.

The only way to avoid the deaths of these patients is to hit a certain switch, which will cause the fumes to bypass the room containing the three patients. As a result of doing this the fumes will enter the room containing the single patient, causing his death.

Is it appropriate for you to hit the switch in order to avoid the deaths of the three patients?

Stock Tip

Percent affirmative judgments: 12%

Mean RT (ms): 4451

You are a management consultant working on a case for a large corporate client. You have access to confidential information that would be very useful to investors. You have a friend who plays the stock market. You owe this friend a sizable sum of money.

By providing her with certain confidential information you could help her make a lot of money, considerably more than you owe her. If you did this, she would insist on canceling your debt. Releasing information in this way is strictly forbidden by federal law.

Is it appropriate for you to release this information to your friend so that she will cancel your debt?

Taxes

Percent affirmative judgments: 24%

Mean RT (ms): 5868

You are the owner of a small business trying to make ends meet. It occurs to you that you could lower your taxes by pretending that some of your personal expenses are business expenses.

For example, you could pretend that the stereo in your bedroom is being used in the lounge at the office, or that your dinners out with your wife are dinners with clients.

Is it appropriate for you to pretend that certain personal expenses are business expenses in order to lower your taxes?

Three-for-Seven Fumes (Adapted from Thomson, 1985)

Percent affirmative judgments: 10%

Mean RT (ms): 4440

You are the late-night watchman in a hospital. Due to an accident in the building next door, there are deadly fumes rising up through the hospital's ventilation system. In a certain room of the hospital are three patients. In another room there are seven patients. If you do nothing the fumes will rise up into the room containing the three patients and cause their deaths.

The only way to save these patients is to hit a certain switch, which will cause the fumes to bypass the room containing the three people. As a result of doing this the fumes will enter the room containing the seven patients, causing their deaths.

Is it appropriate for you to hit the switch in order to avoid the deaths of the three patients?

Vaccine Policy (Adapted from Baron, 1998)

Percent affirmative judgments: 85%

Mean RT (ms): 6164

You work for the Bureau of Health, a government agency. You are deciding whether or not your agency should encourage the use of a certain recently developed vaccine. The vast majority of people who take the vaccine develop an immunity to a certain deadly disease, but a very small number of people who take the vaccine will actually get the disease that the vaccine is designed to prevent.

All the available evidence, which is very strong, suggests that the chances of getting the disease due to lack of vaccination are much higher than the chances of getting the disease by taking the vaccine.

Is it appropriate for you to direct your agency to encourage the use of this vaccine in order to promote national health?

References

- Baron, J. (1998). *Judgment misguided : intuition and error in public decision making*. New York: Oxford University Press.
- Foot, P. (1978). The problem of abortion and the doctrine of double effect. In *Virtues and Vices*. Oxford: Blackwell.
- Greene, J. D., Nystrom, L. E., Engell, A. D., Darley, J. M., & Cohen, J. D. (2004). The neural bases of cognitive conflict and control in moral judgment. *Neuron*, 44(2), 389-400.
- Greene, J. D., Sommerville, R. B., Nystrom, L. E., Darley, J. M., & Cohen, J. D. (2001). An fMRI investigation of emotional engagement in moral judgment. *Science*, 293(5537), 2105-2108.
- Koenigs, M., Young, L., Adolphs, R., Tranel, D., Cushman, F., Hauser, M., et al. (2007). Damage to the prefrontal cortex increases affirmative moral judgments. *Nature* 446(7138), 908-911.
- Thomson, J. (1985). The Trolley Problem. *Yale Law Journal*, 94(6), 1395-1415.
- Unger, P. K. (1996). *Living high and letting die : our illusion of innocence*. New York, NY: Oxford University Press.