

Online Supplemental Materials for:

Pushing Moral Buttons: The Interaction Between Personal Force and Intention in  
Moral Judgment

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## Contents

This file contains testing materials as presented to subjects in all four experiments. Names of dilemmas were not seen by subjects, and subjects in Experiments 1a-b and 2a responded to only one dilemma. Original versions of the *standard footbridge* and *loop* dilemmas appear in Thomson (1985). The original version of the *loop weight* dilemma appears in Mikhail (2000). (See also Mikhail (2007, in press) and Hauser, Cushman, Young, Jin, & Mikhail (2007).) A version of the *footbridge switch* dilemma was developed independently by Cushman, Young, & Hauser (2006). Additionally, the *obstacle* dilemmas are structurally similar to ones developed by this research team (the “Rubble” dilemmas).

Dilemmas developed by the authors (Experiments 1a and 2a) include text and diagrams aimed at maximizing clarity and consistency while minimizing the influence of extraneous factors. For example, we used neutral wording (“cause the death of” as opposed to “kill” or “save”) and a third person perspective rather than a second person perspective (Greene, Nystrom, Engell, Darley, & Cohen, 2004; Greene, Sommerville, Nystrom, Darley, & Cohen, 2001) to discourage participants from focusing on idiosyncratic concerns. For the *standard footbridge* dilemma and variations thereof we, following Mikhail (2000), replaced the

conventional “fat man” (Cushman et al., 2006) or “large stranger” (Greene et al., 2004; Greene et al., 2001) with a railway workman wearing a large, heavy backpack in order to minimize the influence of attitudes concerning body size/shape.

## **Directions for Experiments 1a and 2a**

## Moral Judgment Survey

Directions (Please read carefully)

Thank you for participating in our survey. The data we collect from you will be anonymous and completely confidential. If you have already participated in this study, please tell the experimenter now.

On the following page you will be presented with a description of a situation and an action that a person in that situation (Joe) might perform in response to that situation. Your job is to tell us (1) whether you think it would be morally acceptable for Joe to perform this action, (2) how morally acceptable/unacceptable this action would be, and (3) why you think this action is acceptable/unacceptable.

Note that you will NOT be asked to say whether you think Joe, yourself, or anyone else would actually perform this action in this situation. The questions concern the action's moral acceptability, and not what Joe, yourself, or anyone else would actually do in the situation described.

You might feel that the situation as we describe it is not realistic. For example, it might say that if Joe does X, then Y will happen, and you might think that this is not realistic, that Y might not necessarily happen if Joe does X. If you find yourself having these sorts of doubts, "suspend disbelief" just as you would at an unrealistic movie and assume that this situation really is the way it's described.

Likewise, you may feel that you need more information than is provided about the situation before you can give your answer. If this happens, you should make your best guess about what you think the situation is like without making any unnecessary assumptions. For example, if it doesn't say that the other person in the situation is related to Joe, then you should assume that Joe and the other person are unrelated.

Do you have any questions? If so, please ask the experimenter now. Otherwise, please proceed to the next page.

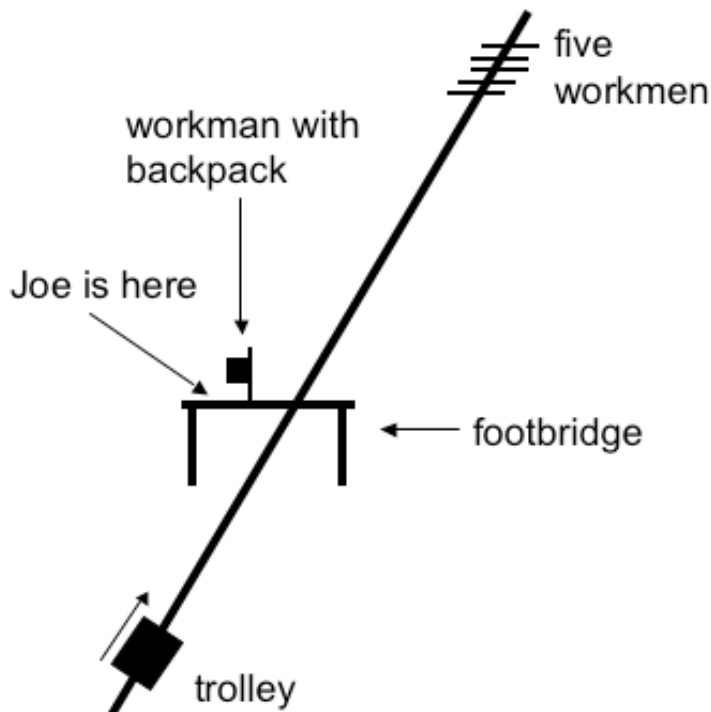
## **Experiment 1a Dilemmas**

**standard footbridge**

An empty runaway trolley is speeding down a set of tracks toward five railway workmen. There is a footbridge above the tracks in between the runaway trolley and the five workmen. On this footbridge is a railway workman wearing a large, heavy backpack. If nothing is done, the trolley will proceed down the main tracks and cause the deaths of the five workmen. (See diagram below)

It is possible to avoid these five deaths. Joe is a bystander who understands what is going on and who happens to be standing right behind the workman on the footbridge. Joe sees that he can avoid the deaths of the five workmen by pushing the workman with the heavy backpack off of the footbridge and onto the tracks below. The trolley will collide with the workman, and the combined weight of the workman and the backpack will be enough to stop the trolley, avoiding the deaths of the five workmen. But the collision will cause the death of the workman with the backpack.

Note: Joe cannot avoid the deaths of the five workmen by jumping himself because he is not heavy enough to stop the trolley. There is also not enough time to remove the backpack from the workman.





Is it morally acceptable for Joe to push the workman off of the footbridge in order to avoid the deaths of the five workmen, causing the death of the single workman instead?

Please circle one answer: YES                      NO

To what extent is this action morally acceptable?

Please circle one number:

(Completely unacceptable) 1 2 3 4 5 6 7 8 9 (Completely acceptable)

Please briefly explain why you think this action is morally acceptable/unacceptable:

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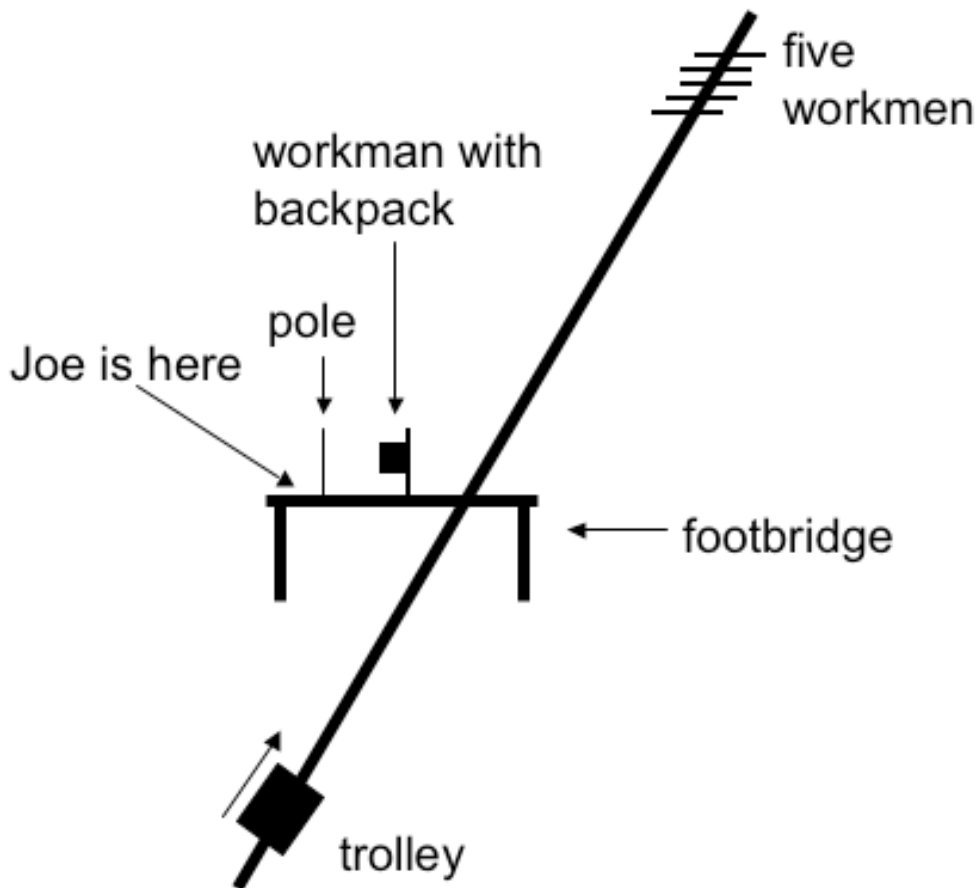
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**footbridge pole**

An empty runaway trolley is speeding down a set of tracks toward five railway workmen. There is a footbridge above the tracks in between the runaway trolley and the five workmen. On this footbridge is a railway workman wearing a large, heavy backpack. If nothing is done, the trolley will proceed down the main tracks and cause the deaths of the five workmen. (See diagram below)

It is possible to avoid these five deaths. Joe is a bystander who understands what is going on and who happens to be standing right behind the workman on the footbridge. Joe is near a six-foot long pole. Joe sees that he can avoid the deaths of the five workmen by using the pole to push the workman with the heavy backpack off of the footbridge and onto the tracks below. The trolley will collide with the workman, and the combined weight of the workman and the backpack will be enough to stop the trolley, avoiding the deaths of the five workmen. But the collision will cause the death of the workman with the backpack.

Note: Joe cannot avoid the deaths of the five workmen by jumping himself because he is not heavy enough to stop the trolley. There is also not enough time to remove the backpack from the workman.



Is it morally acceptable for Joe to use the pole to push the workman off of the footbridge in order to avoid the deaths of the five workmen, causing the death of the single workman instead?

Please circle one answer: YES                      NO

To what extent is this action morally acceptable?

Please circle one number:

(Completely unacceptable) 1 2 3 4 5 6 7 8 9 (Completely acceptable)

Please briefly explain why you think this action is morally acceptable/unacceptable:

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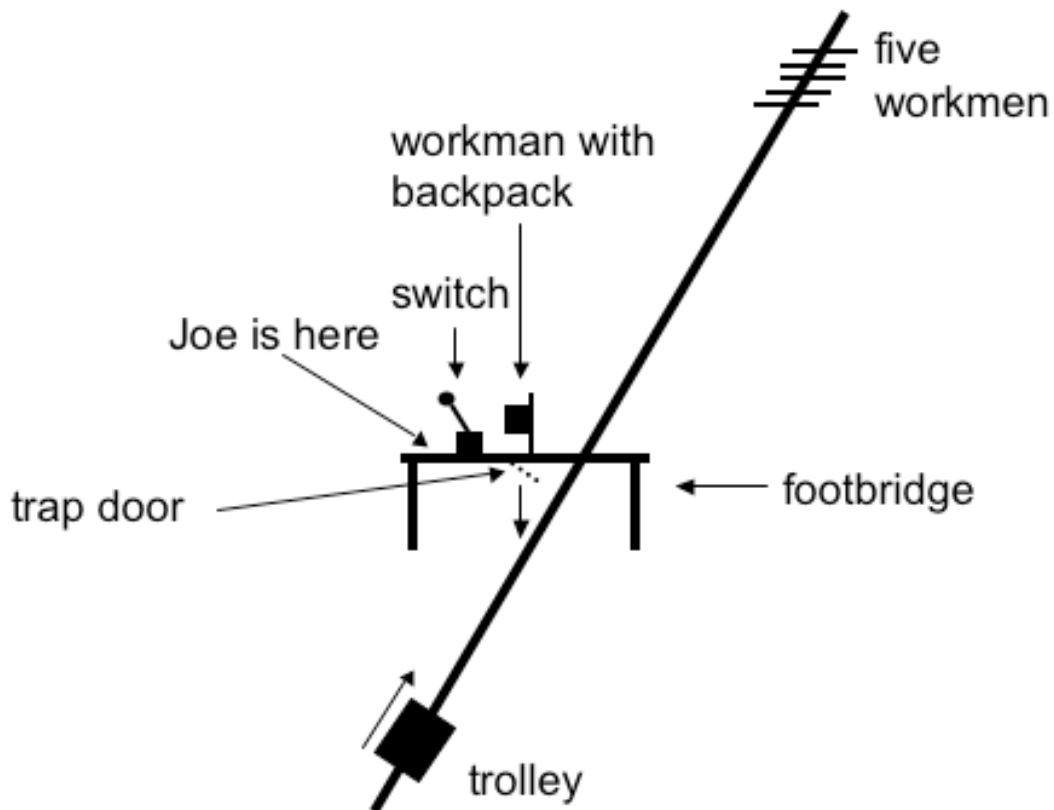
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**footbridge switch**

An empty runaway trolley is speeding down a set of tracks toward five railway workmen. There is a footbridge above the tracks in between the runaway trolley and the five workmen. On this footbridge is a railway workman wearing a large, heavy backpack. If nothing is done, the trolley will proceed down the main tracks and cause the deaths of the five workmen. (See diagram below)

It is possible to avoid these five deaths. Joe is a bystander who understands what is going on and who happens to be standing right behind the workman on the footbridge. Joe is near a switch that opens the footbridge's trap door, on which the workman with the backpack is standing. Joe sees that he can avoid the deaths of the five workmen by hitting the switch, which will drop the workman with the backpack onto the tracks. The trolley will collide with the workman, and the combined weight of the workman and the backpack will be enough to stop the trolley, avoiding the deaths of the five workmen. But the collision will cause the death of the workman with the backpack.

Note: Joe cannot avoid the deaths of the five workmen by jumping through the trap door himself because he is not heavy enough to stop the trolley. There is also not enough time to remove the backpack from the workman.



Is it morally acceptable for Joe to hit the switch in order to avoid the deaths of the five workmen, causing the death of a single workman instead?

Please circle one answer: YES NO

To what extent is this action morally acceptable?

Please circle one number:

(Completely unacceptable) 1 2 3 4 5 6 7 8 9 (Completely acceptable)

Please briefly explain why you think this action is morally acceptable/unacceptable:

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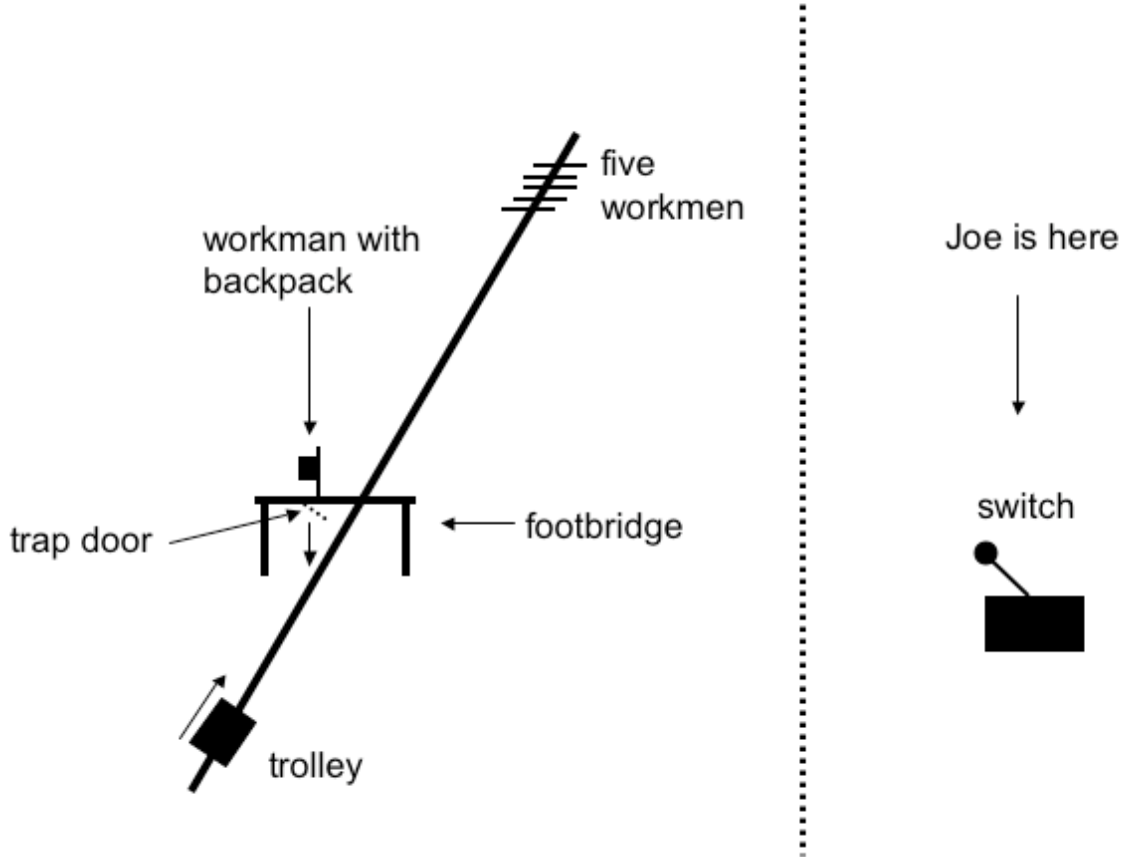
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**remote footbridge**



An empty runaway trolley is speeding down a set of tracks toward five railway workmen. There is a footbridge above the tracks in between the runaway trolley and the five workmen. On this footbridge is a railway workman wearing a large, heavy backpack. If nothing is done, the trolley will proceed down the main tracks and cause the deaths of the five workmen. (See diagram below)

It is possible to avoid these five deaths. Joe is a bystander who understands what is going on and who happens to be near a switch that opens the footbridge's trap door, on which the workman with the backpack is standing. Joe sees that he can avoid the deaths of the five workmen by hitting the switch, which will drop the workman with the backpack onto the tracks. The trolley will collide with the workman, and the combined weight of the workman and the backpack will be enough to stop the trolley, avoiding the deaths of the five workmen. But the collision will cause the death of the workman with the backpack.



Is it morally acceptable for Joe to hit the switch in order to avoid the deaths of the five workmen, causing the death of a single workman instead?

Please circle one answer: YES NO

To what extent is this action morally acceptable?

Please circle one number:

(Completely unacceptable) 1 2 3 4 5 6 7 8 9 (Completely acceptable)

Please briefly explain why you think this action is morally acceptable/unacceptable:

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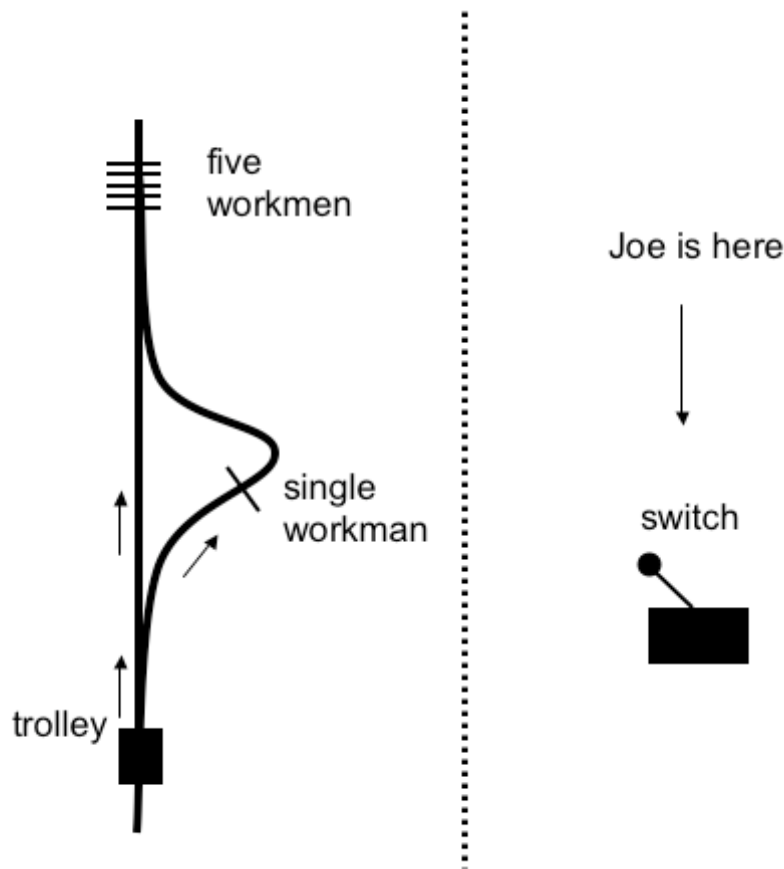
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## **Experiment 2a Dilemmas**

**loop**

An empty runaway trolley is speeding down a set of tracks toward five railway workmen. There is also a set of tracks branching off to the right of the main tracks with a single workman working on them. These tracks join up with the main tracks at a point before the group of five workmen. If nothing is done, the trolley will proceed down the main tracks and cause the deaths of the five workmen. (See diagram below)

It is possible to avoid these five deaths. Joe is a bystander who understands what is going on and who happens to be near a switch that can turn the trolley onto the side tracks. Joe sees that he can avoid the deaths of the five workmen by hitting the switch, which will turn the trolley onto the side tracks. The trolley will collide with the single workman, causing the trolley to stop, avoiding the deaths of the five workmen. But the collision will cause the death of the single workman. If the single workman were not on the side tracks, the trolley would return to the main tracks and cause the deaths of the five workmen.



Is it morally acceptable for Joe to hit the switch in order to avoid the deaths of the five workmen, causing the death of a single workman instead?

Please circle one answer: YES NO

To what extent is this action morally acceptable?

Please circle one number:

(Completely unacceptable) 1 2 3 4 5 6 7 8 9 (Completely acceptable)

Please briefly explain why you think this action is morally acceptable/unacceptable:

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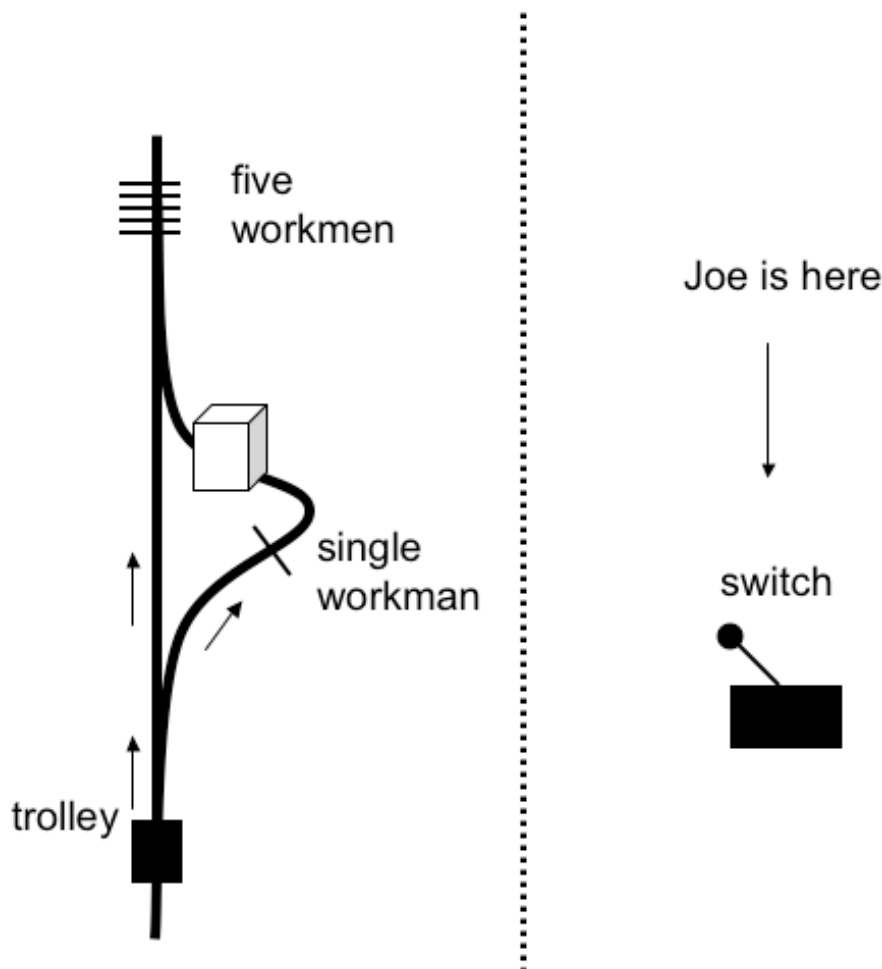
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**loop weight**

An empty runaway trolley is speeding down a set of tracks toward five railway workmen. There is also a set of tracks branching off to the right of the main tracks with a single workman working on them. There is also a large, heavy crate sitting on the side tracks, further down the side tracks from the single workman. The side tracks join up with the main tracks at a point before the group of five workmen. If nothing is done, the trolley will proceed down the main tracks and cause the deaths of the five workmen. (See diagram below)

It is possible to avoid these five deaths. Joe is a bystander who understands what is going on and who happens to be near a switch that can turn the trolley onto the side tracks. Joe sees that he can avoid the deaths of the five workmen by hitting the switch, which will turn the trolley onto the side tracks. The trolley will collide first with the single workman and then with the heavy crate. The collision with the heavy crate will cause the trolley to stop, avoiding the deaths of the five workmen. But the trolley's collision with the single workman will cause his death. If the heavy crate were not on the side tracks, the trolley would return to the main tracks and cause the deaths of the five workmen as well as the single workman on the side tracks. If the single workman were not on the side tracks, the heavy crate would still stop the trolley.





Is it morally acceptable for Joe to hit the switch in order to avoid the deaths of the five workmen, causing the death of a single workman instead?

Please circle one answer: YES NO

To what extent is this action morally acceptable?

Please circle one number:

(Completely unacceptable) 1 2 3 4 5 6 7 8 9 (Completely acceptable)

Please briefly explain why you think this action is morally acceptable/unacceptable:

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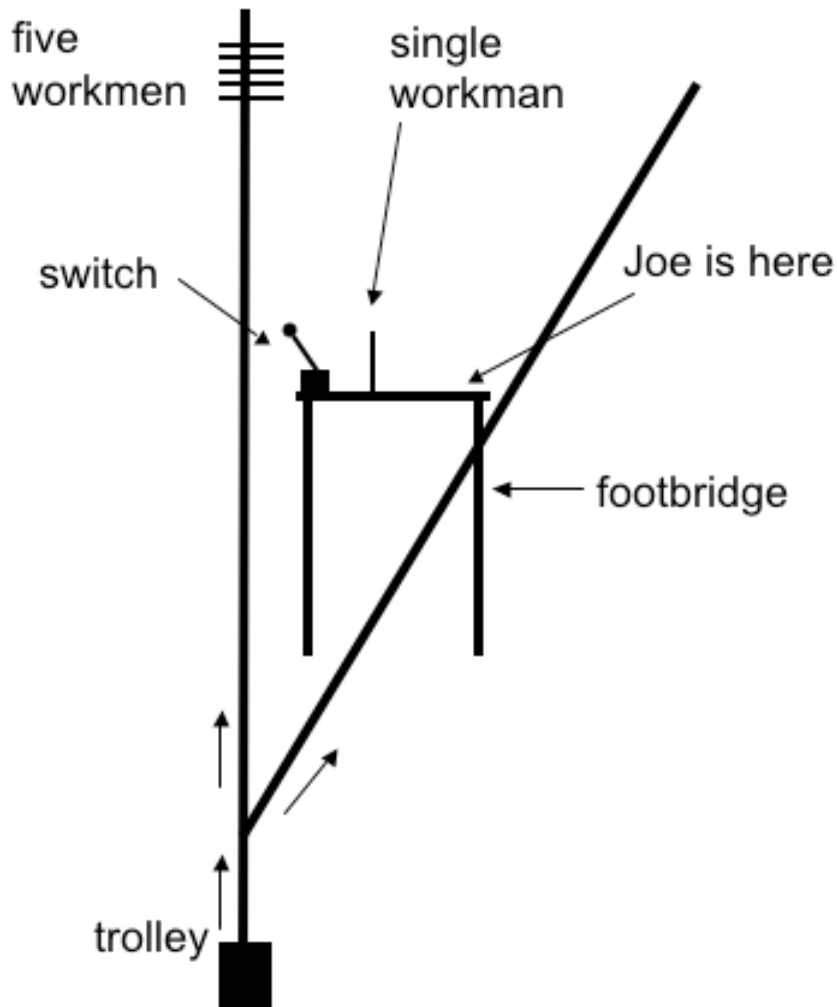
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**obstacle push**

An empty runaway trolley is speeding down a set of tracks toward five railway workmen. There is also a set of tracks branching off to the right of the main tracks. Above these side tracks is a footbridge. On this footbridge is a single railway workman. If nothing is done, the trolley will proceed down the main tracks and cause the deaths of the five workmen. (See diagram below)

It is possible to avoid these five deaths. Joe is a bystander who understands what is going on and who happens to be on the footbridge. Across the footbridge from Joe is a switch that can turn the trolley onto the side tracks. The single railway workman is in between Joe and the switch. Joe sees that he can avoid the deaths of the five workmen by running across the footbridge and hitting the switch, which will turn the trolley onto the side tracks. Because the footbridge is narrow and because there is no time to explain, Joe cannot get to the switch in time to avoid the deaths of the five workmen without pushing the single workman out of the way. But doing this will cause the single workman to fall off of the footbridge and onto the ground next to the tracks, causing his death.



Is it morally acceptable for Joe to push the workman off of the footbridge in order to avoid the deaths of the five workmen, causing the death of the single workman instead?

Please circle one answer: YES                      NO

To what extent is this action morally acceptable?

Please circle one number:

(Completely unacceptable) 1 2 3 4 5 6 7 8 9 (Completely acceptable)

Please briefly explain why you think this action is morally acceptable/unacceptable:

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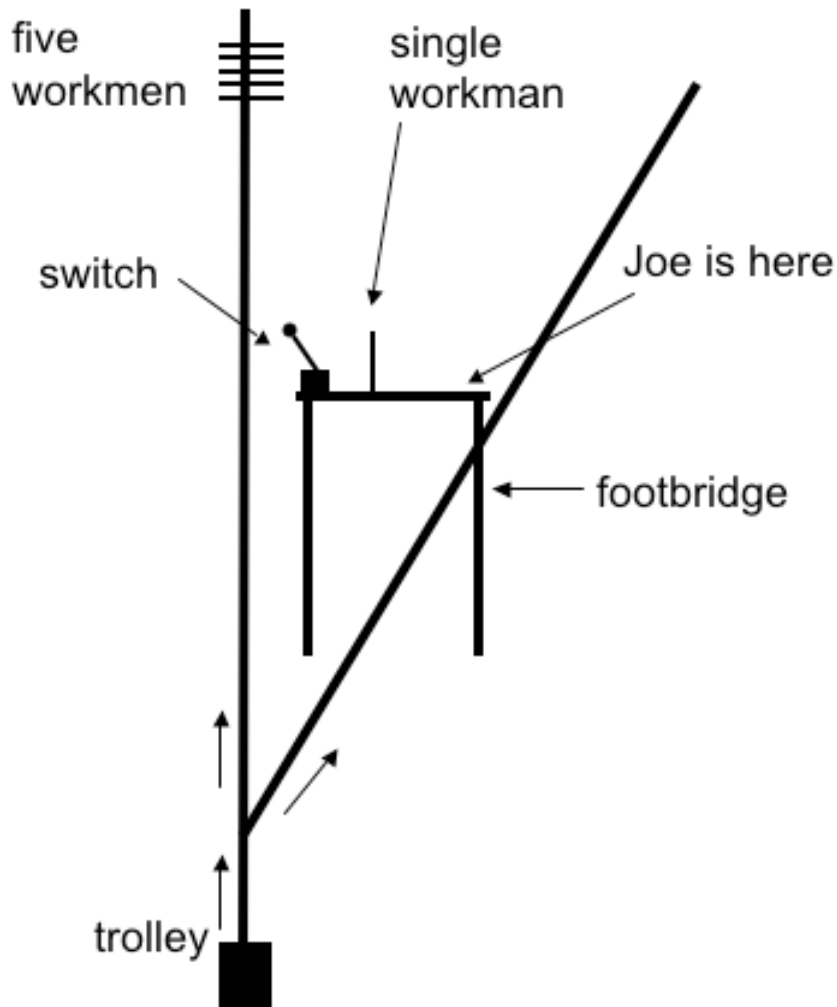
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**obstacle collide**

An empty runaway trolley is speeding down a set of tracks toward five railway workmen. There is also a set of tracks branching off to the right of the main tracks. Above these side tracks is a footbridge. On this footbridge is a single railway workman. If nothing is done, the trolley will proceed down the main tracks and cause the deaths of the five workmen. (See diagram below)

It is possible to avoid these five deaths. Joe is a bystander who understands what is going on and who happens to be on the footbridge. Across the footbridge from Joe is a switch that can turn the trolley onto the side tracks. The single railway workman is in between Joe and the switch. Joe sees that he can avoid the deaths of the five workmen by running across the footbridge and hitting the switch, which will turn the trolley onto the side tracks. Because the footbridge is narrow and because there is no time to explain, Joe cannot get to the switch in time to avoid the deaths of the five workmen without colliding with the single workman. But doing this will cause the single workman to fall off of the footbridge and onto the ground next to the tracks, causing his death.



Is it morally acceptable for Joe to run across the footbridge (and collide with the workman) in order to avoid the deaths of the five workmen, causing the death of the single workman instead?

Please circle one answer: YES                      NO

To what extent is this action morally acceptable?

Please circle one number:

(Completely unacceptable) 1 2 3 4 5 6 7 8 9 (Completely acceptable)

Please briefly explain why you think this action is morally acceptable/unacceptable:

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## **Follow-up Questions for Experiments 1a and 2a**



Please circle the answer below that best applies to you:

- a. I did not find the material on the preceding pages confusing.
- b. I found some of the material on the preceding pages confusing at first, but after reading the material carefully and examining the diagram I felt that I understood the material well enough to give reasonable answers to the questions I was asked.
- c. By the time I answered the questions on the preceding page, I was still somewhat confused by the material. I do not think I understood this material well enough to give reasonable answers to the questions I was asked.

Please circle the answer below that best applies to you:

- a. I found the description from the preceding pages to be rather realistic.
- b. I did not find the description from the preceding pages to be completely realistic, but I “suspended disbelief” and responded under the assumption that it was completely accurate. More specifically, I assumed that Joe’s action (or inaction) would affect the situation as the description said it would.
- c. I did not find the description from the preceding pages to be realistic, and my answers reflect my inability to take seriously the description that was given.

How realistic is the description from the preceding pages?

If Joe were actually in the situation described and he performed the action described, what are the chances that things would turn out the way the description said they would? In other words, what are the chances that this action would really prevent the deaths of the five workmen while causing the death of the single workman?

\_\_\_\_\_ (Answer from 0% to 100%. Be as precise as you like)

What are the chances that things would actually turn out *worse* than the description said they would? In other words, what are the chances that this action would cause the death of (or serious harm to) the single workman *without* preventing the deaths of the five workmen?

\_\_\_\_\_ (Answer from 0% to 100%. Be as precise as you like)

What are the chances that things would actually turn out *better* than the description said they would? In other words, what are the chances that this action would prevent the deaths of the five workmen *without* causing the death of (or serious harm to) the single workman?

\_\_\_\_\_ (Answer from 0% to 100%. Be as precise as you like)

## **Dilemmas for Experiment 1b**

(Taken/Adapted from Cushman et al., 2006)

These dilemmas were evaluated using the following scale:

1	2	3	4	5	6	7
Forbidden		Permissible				Obligatory

### **PcPf (Physical contact and personal force)**

John is driving a small speedboat when he notices five swimmers drowning in the distance. If John does not drive toward them at top speed, he will not arrive in time, and all five will die. In order to drive at top speed, John must lighten the load on his boat. The only way to lighten the load is to push his passenger with his hands, causing the passenger to tumble off the back of the boat. This passenger cannot swim and will drown. If John pushes the passenger, the one passenger will drown, but John will save the five drowning swimmers. If John does not push the passenger, the one passenger will not drown, but the five swimmers will drown.

Pushing the passenger off the boat is:

### **NoPc-Pf (No physical contact, but with personal force)**

John is driving a small speedboat when he notices five swimmers drowning in the distance. If John does not drive toward them at top speed, he will not arrive in time, and all five will die. In order to drive at top speed, John must lighten the load on his boat. The only way to lighten the load is to push his passenger with an oar, causing the passenger to tumble off the back of the boat. This passenger cannot swim and will drown. If John pushes the passenger, the one passenger will drown, but John will save the five drowning swimmers. If John does not push the passenger, the one passenger will not drown, but the five swimmers will drown.

Pushing the passenger off the boat is:

### **NoPc-NoPf (No physical contact and no personal force)**

2 = "John is driving a small speedboat when he notices five swimmers drowning in the distance. If John does not drive toward them at top speed he will not arrive in time, and all five will die. In order to drive at top speed, John must lighten the load on his boat. The only way to lighten the load is to accelerate quickly, causing the passenger to tumble off the back of the boat. This passenger cannot swim and will drown. If John accelerates quickly, the one passenger will drown, but John will save the five drowning swimmers. If John does not accelerate quickly, the one passenger will not drown, but the five swimmers will drown.; (likert text) Accelerating quickly is"

## **Dilemmas for Experiment 2b**

(Taken from Cushman et al. (2006) and recoded for the presence/absence of personal force)

These dilemmas were evaluated using the following scale:

1	2	3	4	5	6	7
Forbidden		Permissible				Obligatory

All dilemmas originally coded by Cushman et al. as involving physical contact are here coded as involving personal force. Two dilemmas originally coded as not involving physical contact are here coded as involving personal force. These are marked with a \*. The original codes from Cushman et al. are in parentheses.

## Means + Personal Force Dilemmas

### Boxcar-Means-Pf (ciBox)

Standing on a footbridge spanning the railroad tracks, Frank sees an empty, out-of-control boxcar about to hit five people. Frank's leg is stuck in the railing, but next to Frank is one person who he can push, causing the one person to fall off the footbridge and onto the main track where he will be hit by the boxcar. The boxcar will slow down because of the one person, therefore preventing the five from being hit. If Frank pushes the one person, the one person will fall and be hit by the boxcar, and therefore the boxcar will slow down and not hit the five people. If Frank does not push the one person the boxcar will continue down the tracks and hit five people, and the one person will remain safe above the main track.

Pushing the one person is:

### Burning-Means-Pf (ciBur)

Peter is a fireman trying to help five children out of a burning house. There is only one window from which the children can be safely evacuated, and it is jammed shut. Peter must immediately use an object to smash open this large, heavy window or else all five children will die. The only sufficiently large object is a man on his way towards safely escaping the burning house. Crashing through the window is certain to kill the man. If Peter pushes the man into the window and breaks it open, the man will fall out and die, but the five children will be safely evacuated. If Peter does not push the man into the window the man will safely escape, but the five children will die.

Pushing the man is:

### **Speedboat-Means-Pf (ciSpe)**

John is driving a motorboat when he notices five swimmers drowning in the distance. If John does not drive toward them at top speed, he will not arrive in time, and all five will die. In order to drive at top speed, John must lighten the load on his boat. The only way to lighten the load is to push his passenger with his hands and cause the passenger to tumble off the back of the boat. This passenger cannot swim and will drown. If John pushes the passenger, the one passenger will drown, but John will save the five drowning swimmers. If John does not push the passenger, the one passenger will not drown, but the five swimmers will drown.

Pushing the one passenger is:

## **Means + No Personal Force Dilemmas**

### **Boxcar-Means-noPf (ikBox)**

Standing by the railroad tracks, Evan sees an empty, out-of-control boxcar about to hit five people. Next to Evan is a lever that can be pulled, lowering the railing on a footbridge that spans the main track, and causing one person to fall off the footbridge and onto the main track, where he will be hit by the boxcar. The boxcar will slow down because of the one person, therefore preventing the five from being hit. If Evan pulls the lever the one person will fall and be hit by the boxcar, and therefore the boxcar will slow down and not hit the five people. If Evan does not pull the lever the boxcar will continue down the tracks and hit the five people, and the one person will remain safe above the main track.

Pulling the lever is:

### **Burning-Means-noPf (ikBur)**

Andy is a fireman trying to help five children out of a burning house. There is only one window from which the children can be safely evacuated, and it is jammed shut. Andy must immediately use an object to smash open this large, heavy window or else all five children will die. The only sufficiently large object is a man on his way towards safely escaping the burning house. Andy can break open the window by swinging a piece of burning debris towards the man, which will cause the man to jump out of the way, lose his balance and crash into the window. Falling out of the window is certain to kill the man. If Andy swings the burning debris the man will break open the window, fall out and die, but the five children will be safely evacuated. If Andy does not swing the burning debris, causing the man to break open the window, the man will safely escape, but the five children will die.

Swinging the burning debris is:

### **Pond-Means-noPf (ikPon)**

James is hiking through a foreign land when he comes across a remote village. James learns that one of the villagers fell into a cursed pond but, contrary to local superstition, did not die. If the one villager does not die by sunrise, five other innocent and unwilling villagers will be sacrificed to the gods to thank them for sparing the one. James, who has some medical training, realizes that he can prevent the sacrifice of the five villagers if he secretly poisons the one villager. If James poisons the one, the one will be dead by sunrise, and the five will not be sacrificed. If James does not poison the one, the one will not be dead by sunrise, and the five will be sacrificed as planned.”;

Poisoning the one is:

### **Ship-Means-noPf (ikShi)**

Mark receives a communication that the captain of a cargo ship has contracted a highly infectious disease. The captain himself is only a carrier of the disease and is immune to the symptoms, but anybody who comes into contact with him will die. No passengers are on the ship. The ship is headed for a remote island where the captain will hand-deliver the cargo to the five islanders. The captain does not know that he is carrying the disease and has no radio on board to receive a warning. Mark takes off in a helicopter to intercept the ship, but from a distance he sees the ship about to dock. The only way Mark can stop the captain from transmitting the disease is to use a missile to blow up the ship. If Mark fires the missile, the captain will die and the five islanders will live. If Mark does not fire the missile, the captain will live and the five islanders will die.”;



Firing the missile is:

### **Speedboat-Means-noPf (ikSpe)**

Dave is driving a motorboat when he notices five swimmers drowning in the distance. If Dave does not drive toward them at top speed he will not arrive in time, and all five will die. In order to drive at top speed, Dave must lighten the load on his boat. The only way to lighten the load is to accelerate quickly and cause a passenger to tumble off the back of the boat. This passenger cannot swim and will drown. If Dave accelerates quickly, the one passenger will drown, but Dave will save the five drowning swimmers. If Dave does not accelerate quickly, the one passenger will not drown, but the five swimmers will drown.

Accelerating quickly is:

## **Side-Effect + Personal Force Dilemmas**

### **Aquarium-SE-Pf-1 (cfAqu)**

Connor is at a new aquarium exhibit when he sees a visitor slip on a wet floor, fall down, and break his neck. The visitor is still alive and can be safely evacuated by medics so long as he is not moved. He has fallen, however, on top of the oxygen supply line servicing five other visitors in an underwater observation pod. Without oxygen, the five visitors will soon die. If Connor does nothing the one visitor will be safely evacuated, but the five visitors in the pod will die. If Connor pushes the one visitor off the supply line this one visitor will die, but the five visitors in the pod will have their oxygen restored and will live.

Pushing the one visitor is:

### **Aquarium-SE-Pf-2 (fkAqu)\***

Mike is at a new aquarium exhibit when he sees a visitor slip on a wet floor, fall down, and break his neck. The visitor is still alive and can be safely evacuated by medics so long as he is not moved. He has fallen, however, on top of the oxygen supply line servicing five other visitors in an underwater observation pod. Without oxygen, the five visitors will soon die. If Mike does nothing the one visitor will be safely evacuated, but the five visitors in the pod will die. If Mike pulls the supply line out from under the one visitor this one visitor will die, but the five visitors in the pod will have their oxygen restored and will live.

Pulling the supply line is:

### **Burning-SE-Pf (cfBur)**

Rick is a fireman trying to help five children out of a burning house. There is only one window from which the children can be safely evacuated, and it is jammed shut. Rick must immediately smash open this large, heavy window or else all five children will die. Outside the window, on the sill, is a man safely awaiting evacuation who Rick cannot help hitting with his fist if he breaks the window, causing the man to fall off the sill. Falling off the sill is certain to kill the man. If Rick breaks open the window he will hit the man with his fist, the man will fall off and die, but the five children will be safely evacuated. If Rick does not break open the window the man will be safely evacuated, but the children will die.

Breaking open the window is:

### **Rubble-SE-Pf-1 (cfRub)**

Fred is working on the top floor of a construction project when he sees a gearbox at the end of a steel beam is about to break. Suspended from the gearbox is an elevated platform with five workers on it, and if the gearbox breaks the five workers will fall to their deaths. Fred can save the five if he rushes across the steel beam immediately to engage the backup mechanism on the gearbox. In between Fred and the gearbox there is a worker standing on the beam. Fred knows that if he rushes across the narrow beam he is certain to bump into the other worker, causing this worker to fall to his death. The construction site is too noisy for Fred to warn the other worker. If Fred does nothing, the gearbox will break and the five workers will fall to their deaths, but the one worker will remain safe. If Fred rushes to engage the backup mechanism, the five workers will be saved but Fred will bump into the one worker, who will fall to his death.

Rushing to engage the backup mechanism is:

### **Rubble-SE-Pf-2 (cfRub)\***

Ethan is working on the top floor of a construction project when he sees a gearbox at the end of a steel beam is about to break. Suspended from the gearbox is an elevated platform with five workers on it, and if the gearbox breaks the five workers will fall to their deaths. Ethan can save the five if he rushes across the steel beam immediately to engage the backup mechanism on the gearbox. In between Ethan and the gearbox there is a gate and a worker standing next to the gate. Ethan knows that if he rushes through the gate, the gate is certain to bump into the other worker, causing this worker to fall to his death. The construction site is too noisy for Ethan to warn the other worker. If Ethan does nothing, the gearbox will break and the five workers will fall to their deaths, but the one worker will remain safe. If Ethan rushes to engage the backup mechanism, the five workers will be saved but Ethan will cause the gate to bump into the one worker, who will fall to his death.

Rushing to engage the backup mechanism is:

## **Side-Effect + No Personal Force Dilemmas**

### **Boat-SE-noPf (fkBoa)**

Justin is driving his motorboat in the bay when he notices some swimmers in trouble. There are five swimmers drowning at the end of a narrow channel in front of Justin. In between Justin and the drowning swimmers is another swimmer who is safe and not in trouble. If Justin takes the narrow channel to the five drowning swimmers and saves them, the wake from Justin's boat will wash over the safe swimmer, drowning him. If Justin does nothing, the five swimmers will drown and the one swimmer will remain safe.

Taking the narrow channel is:

### **Boxcar-SE-noPf (fkBox)**

Standing by the railroad tracks, Dennis sees an empty, out-of-control boxcar about to hit five people. Next to Dennis is a lever that can be pulled, sending the boxcar down a side track and away from the five people. But pulling the lever will also lower the railing on a footbridge spanning the side track, causing one person to fall off the footbridge and onto the side track, where he will be hit by the boxcar. If Dennis pulls the lever the boxcar will switch tracks and not hit the five people, and the one person to fall and be hit by the boxcar. If Dennis does not pull the lever the boxcar will continue down the tracks and hit five people, and the one person will remain safe above the side track.

Pulling the lever is:

### **Burning-SE-noPf (fkBur)**

Ken is a fireman trying to help five children out of a burning house. There is only one window from which the children can be safely evacuated, and it is jammed shut. Ken must immediately smash open this large, heavy window or else all five children will die. Outside the window, on the ground below, is a man safely awaiting evacuation who Ken cannot help hitting with heavy falling glass if he breaks the window. The falling glass is certain to kill the man. If Ken breaks open the window, he will hit the man with the glass, the man will die, but the five children will be safely evacuated. If Ken does not break open the window, the man will be safely evacuated, but the five children will die.

Breaking open the window is:

### **Car-SE-noPf (fkCar)**

Ed is driving five sick people to the hospital. They are in critical condition and will die if Ed makes any stops along the way. In his hurry to pack them in the car Ed slams the door on a few feet of thick cord that is now dangling beside the car. Ed takes the fastest route to the hospital, which is a narrow, unpaved mountain pass. On his way, Ed sees a rock climber hanging onto the side of the mountain beside the road. The rock climber is safe and in control, but if Ed drives by the thick cord dragging along the side of his car will dislodge the rock climber, causing him to fall to his death. If Ed slows to a stop and waits, the rock climber will be able to reach a stable landing where the cord will not dislodge him, but it will be too late to save the five people. If Ed continues to drive, the one person will fall to his death and the five will be saved.

Continuing to drive is:

### **Speedboat-SE-noPf (fkSpe)**

Matt is driving a motorboat when he notices five swimmers drowning in the distance. If Matt does not drive toward them at top speed he will not arrive in time, and all five will die. In order to drive at top speed, Matt must accelerate quickly. Accelerating quickly will also cause a passenger to tumble off the back of the boat. This passenger cannot swim and will drown. If Matt accelerates quickly, the one passenger will drown, but Matt will save the five drowning swimmers. If Matt does not accelerate quickly, the one passenger will stay safely on the boat, but the five swimmers will drown.

### **Switch-SE-noPf (fkSwi)**

Luke is operating the switch at a railroad station when he sees an empty, out of control boxcar coming down the tracks. It is moving so fast that anyone it hits will die immediately. The boxcar is headed towards five repairmen on the track. If Luke does nothing, the boxcar will hit the five repairmen on the track. Luke can pull a lever redirecting the boxcar to an empty sidetrack. However, pulling the lever will cause the switch to crush one other repairman working on the switch, who will die immediately.

Pulling the lever is:

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