Materials

***Background*:**

Tom has a huge garden and loves flowers. Because he has less and less time for gardening lately, he employed two gardeners who take care of the plants on his 30 flower beds: Alex and Benni.

Both can independently decide on their working hours and arrange who cares for which flower beds. They decided that there will be some flower beds which only one of them will take care of and others that they will both take care of, but on alternate days.

Alex and Benni are very reliable and Tom is satisfied with their work. Nevertheless he wants to optimize the plant growth.

Since Tom has read in a magazine that plants grow better when they are fertilized, he decides to let Alex and Benni fertilize his plants. The magazine recommends the use of the chemicals **A X200®** or **B Y33®**, since both are especially effective.

However, Tom also read that it can damage plants when they are exposed to multiple different types of chemicals. Tom therefore decides that he only wants to use one fertilizer. He goes for **A X200®**.

Standard Norm Violation:

Tom instructs Alex and Benni to buy the chemical A X200® and to use only this fertilizer.

Alex volunteers for buying several bottles of this chemical for Benni and himself.

After a few weeks, Tom goes for a walk in his garden. **He realizes that some of his plants are much prettier and bigger than before. However, he also realizes that some of his plants have lost their beautiful color and are dried up.**

That makes Tom very sad and reflective. He wonders whether the drying of his plants might have something to do with the fertilization. He wants to investigate this matter and talks to Alex and Benni.

Alex tells him that he followed Tom's instructions and only bought and used the chemical **A X200®**.

However, Benni tells him that he had used the chemical **B Y33®** instead. He still had some bottles of this chemical in stock at home and wanted to use them up.

Since some flower beds were only fertilized by Alex or only fertilized by Benni, but others by both, Tom asks Alex and Benni to make a detailed plan about which of his 30 flower beds had been fertilized by whom in the last few weeks. Afterwards, he takes a closer look at the flower beds.

He realizes that the plants were bigger and more beautiful where only one single chemical had been used (i.e., only A X200® or only B Y33®).

They were dried up in the flower beds on which both A X200® and B Y33® were applied by the gardeners.

***Unintended Norm Violation*:**

Tom instructs Alex and Benni to buy the chemical A X200® and to use only this fertilizer.

Alex volunteers for buying several bottles of this chemical for Benni and himself.

After a few weeks, Tom goes for a walk in his garden. **He realizes that some of his plants are much prettier and bigger than before. However, he also realizes that some of his plants have lost their beautiful color and are dried up.**

That makes Tom very sad and reflective. He wonders whether the drying of his plants might have something to do with the fertilization. He wants to investigate this matter and talks to Alex and Benni.

Alex tells him that he followed Tom's instruction: "I only bought and used the chemical A X200® which I had funneled into the blue can."

Benni suddenly is startled and says to Alex: "What? You funneled A X200® into the *blue* can? But you told me you had funneled it into the *green* can! That's why I always used the green can!"

Alex replies: "Did I? Then I am sorry!"

Tom remembers that he had filled B Y33® in a green can - long before he had read about the chemicals in his magazine. He had never used it. **So Benni must have accidentally, without knowing it, applied the chemical B Y33®, whereas only Alex applied A X200®.**

Since some flower beds were only fertilized by Alex or Benni, but others by both, Tom asks Alex and Benni to make a detailed plan about which of his 30 flower beds had been fertilized by whom in the last weeks. Afterwards, he takes a closer look at the flower beds.

He realizes that the plants were bigger and more beautiful where only one single chemical had been used (i.e., only A X200® or only B Y33®).

They were dried up in the flower beds on which both A X200® and B Y33® were applied by the gardeners.

***Ignorant norm violation*:**

When Tom meets Alex in the garden shortly afterwards, he instructs him to buy the chemical A X200® and to use only this fertilizer. He also explicitly instructs him to tell Benni to only use A X200®.

Alex volunteers to buy several bottles of this chemical for Benni and himself and to tell Benni about Tom's instruction.

After a few weeks, Tom goes for a walk in his garden. **He realizes that some of his plants are much prettier and bigger than before. However, he also realizes that some of his plants have lost their beautiful color and are dried up.**

That makes Tom very sad and reflective. He wonders whether the drying of his plants might have something to do with the fertilization. He wants to investigate this matter and talks to Alex and Benni.

Alex immediately starts apologizing: "I am sorry! I completely forgot to tell Benni about the rule! I bought and used the chemical **A X200®** but Benni must have used something else because he did not know about the new rule."

Benni tells Tom that Alex had not told him that they were only supposed to use A X200®. He explains: "I have used the fertilizer I previously used; it is called **B Y33®**!"

Tom remembers that he had filled B Y33® in a green can - long before he had read about the chemicals in his magazine. He had never used it. **So Benni must have accidentally, without knowing it, applied the chemical B Y33®, whereas only Alex applied A X200®.**

Since some flower beds were only fertilized by Alex or Benni, but others by both, Tom asks Alex and Benni to make a detailed plan about which of his 30 flower beds had been fertilized by whom in the last weeks. Afterwards, he takes a closer look at the flower beds.

He realizes that the plants were bigger and more beautiful where only one single chemical had been used (i.e., only A X200® or only B Y33®).

They were dried up in the flower beds on which both A X200® and B Y33® were applied by the gardeners.

Deceived Norm Violation:

When Tom meets Alex in the garden shortly afterwards, he instructs him to buy the chemical A X200® and to use only this fertilizer. He also explicitly instructs him to tell Benni to only use A X200®.

Alex volunteers to buy several bottles of this chemical for Benni and himself and to tell Benni about Tom's instruction.

After a few weeks, Tom goes for a walk in his garden. **He realizes that some of his plants are much prettier and bigger than before. However, he also realizes that some of his plants have lost their beautiful color and are dried up.**

That makes Tom very sad and reflective. He wonders whether the drying of his plants might have something to do with the fertilization. He wants to investigate this matter and talks to Alex and Benni.

After some interrogation, Alex finally confesses that he had told Benni that Tom wanted them to buy and use the chemical B Y33® instead of A X200®. He wanted Benni to use the wrong fertilizer and to get fired because he wanted to have more working hours to earn more money. He himself only used **A X200®**.

Benni tells Tom that Alex had told him that they were only supposed to use B Y33®. He therefore only used **B Y33®** without knowing that Tom actually intended both gardeners to use A X200®.

Since some flower beds were only fertilized by Alex or Benni, but others by both, Tom asks Alex and Benni to make a detailed plan about which of his 30 flower beds had been fertilized by whom in the last weeks. Afterwards, he takes a closer look at the flower beds.

He realizes that the plants were bigger and more beautiful where only one single chemical had been used (i.e., only A X200® or only B Y33®).

They were dried up in the flower beds on which both A X200® and B Y33® were applied by the gardeners.

Control Questions

Which chemical(s) were actually applied by each gardener? (you may select one, both, or neither for each gardener)

	Chemical A X200®	**Chemical B Y33®**
Alex	□	□
Benni	□	□

Which chemical(s) did Tom WANT each of the gardeners to use? (you may select one, both, or neither for each gardener)

	Chemical A X200®	Chemical B Y33®
Alex	□	□
Benni	□	□

Please estimate what percentage of the flowers dried up in each of the categories below (0% = none of the flowers dried up, 100% = all of the flowers dried up). We are looking for an estimate based on the story, you were not given exact numbers.

- Plants that were ONLY fertilized with chemical A X200® (0 – 100)
- Plants that were ONLY fertilized with chemical B Y33® (0 – 100)
- Plants that were fertilized with BOTH chemicals (0 – 100)

Primary Dependent Variables

Causation:

Agent Condition

Who caused the plants to be dried out? (select one or more)

- o Alex
- o Benni

Action Condition

What caused the plants to be dried out? (select one or more)

- o The fertilization by Alex
- o The fertilization by Benni

Object Condition

What caused the plants to be dried out? (select one or more)

- The application of chemical A X200®
- The application of chemical B Y33®

***Counterfactual Relevance*:**

Agent Condition

Now suppose that some people are discussing the fact that the flowers dried up and wondering how things could have been different. In thinking about who could have acted differently, please tell us whether it would be relevant or irrelevant to focus on the following people:

	Relevant	**Irrelevant**
Alex	□	□
Benni	□	□

Action Condition

Now suppose that some people are discussing the fact that the flowers dried up and wondering how things could have been different. In thinking about what could have happened differently, please tell us whether it would be relevant or irrelevant to focus on the following things:

	Relevant	**Irrelevant**
The fertilization by Alex	□	□
The fertilization by Benni	□	□

Object Condition

Now suppose that some people are discussing the fact that the flowers dried up and wondering how things could have been different. In thinking about what could have happened differently, please tell us whether it would be relevant or irrelevant to focus on the following things:

	Relevant	**Irrelevant**
The application of chemical A X200®	□	□
The application of chemical B Y33®	□	□

Probability Estimates We did not observe an effect of condition on participants' estimates of the percentage of flowers that dried, this was true of estimates when only A X200® was applied, $F(3,435) = 0.06$, $p = 0.981$, when only B Y33® was applied, $F(3,435) = 0.09$, $p = 0.966$, and when both were applied, $F(3,435) = 0.64$, $p = 0.588$. This pattern precisely replicates the one observed in S&W.

Experiment 2

No Norm Violation

A philosophy department at a small university bought a vending machine to dispense and keep track of office supplies. Currently, the machine has pencils, which you can get by pulling a black lever or a red lever, and erasers, which you can get from the machine by pulling a white lever.

The white lever on the vending machine frequently malfunctions. When pulled, it produces both an eraser and a pencil, but breaks the pencil in the process.

Pencils are often needed by students who are taking tests, but there are usually plenty of pencils and erasers in the vending machine, so both the administrative assistants and the professors are allowed to take pencils and erasers from the machine.

Professor Smith was recently hired at the department. He was told that he is allowed to take pencils and erasers from the vending machine. However, he was not told that the white lever almost always malfunctions.

One morning, Professor Smith and an administrative assistant both go to the vending machine and pull a lever at the same time. The administrative assistant wanted a pencil, so he pulled the black lever. Professor Smith also wanted a pencil and so he pulled the red lever. Both levers worked like they were supposed to, and they both got a pencil from the vending machine.

These were the last two pencils in the vending machine.

Not long after, a student desperately needs a pencil for a test, but when she goes to the vending machine, there are no more pencils. This leads to a serious problem.

Moral Norm Violation

A philosophy department at a small university bought a vending machine to dispense and keep track of office supplies. Currently, the machine has pencils, which you can get by pulling a black lever or a red lever, and erasers, which you can get from the machine by pulling a white lever.

The white lever on the vending machine frequently malfunctions. When pulled, it produces both an eraser and a pencil, but breaks the pencil in the process.

Pencils are often needed by students who are taking tests, so to make sure there are always enough pencils, the philosophy professors are told to buy their own pencils and not take them from the vending machine. Only the administrative assistants are allowed to take pencils from the vending machine. There are plenty of erasers though, so both administrative assistants and professors are allowed to take erasers from the machine.

Professor Smith was recently hired at the department. He was told that he was not allowed to take pencils from the vending machine, but that he was allowed to take erasers. However, he was not told that the white lever almost always malfunctions.

One morning, Professor Smith and an administrative assistant both go to the vending machine and pull a lever at the same time. The administrative assistant wanted a pencil, so he pulled the black lever. Professor Smith also wanted a pencil and so he pulled the red lever. Both levers worked like they were supposed to, and they both got a pencil from the vending machine.

These were the last two pencils in the vending machine.

Not long after, a student desperately needs a pencil for a test, but when she goes to the vending machine, there are no more pencils. This leads to a serious problem.

Functional Norm Violation

A philosophy department at a small university bought a vending machine to dispense and keep track of office supplies. Currently, the machine has pencils, which you can get by pulling a black lever or a white lever, and erasers, which you can get from the machine by pulling a red lever.

The red lever on the vending machine almost always malfunctions. When pulled, it produces both an eraser and a pencil, but breaks the pencil in the process.

Pencils are often needed by students who are taking tests, but there are usually plenty of pencils and erasers in the vending machine, so both the administrative assistants and the professors are allowed to take pencils and erasers from the machine.

Professor Smith was recently hired at the department. He was told that he is allowed to take pencils and erasers from the vending machine. However, he was not told that the red lever almost always malfunctions.

One morning, Professor Smith and an administrative assistant both go to the vending machine and pull a lever at the same time. The administrative assistant wanted a pencil, so he pulled the black lever. Professor Smith wanted an eraser and so he pulled the red lever. The black lever worked like it was supposed to and the administrative assistant got a pencil. However, the red lever malfunctioned, and the professor got an eraser and a completely broken pencil.

These were the last two pencils in the vending machine.

Not long after, a student desperately needs a pencil for a test, but when she goes to the vending machine, there are no more pencils. This leads to a serious problem.

Control Questions

What are each of the levers **supposed** to deliver?

	Pencil	Eraser
Red lever	□	□
Black lever	□	□

What did each person actually receive from the vending machine after they pulled the lever? (Check all boxes that apply.)

	Pencils	Erasers
Professor Smith	□	□
The administrative assistant	□	□

According to the department's rules, which office supplies was each person allowed to take from the vending machine? (Check all boxes that apply.)

	Pencils	Erasers
Professor Smith	□	□
The administrative assistant	□	□

Manipulation Check Questions

One of the levers could be used to get erasers. How likely was this lever to malfunction?

Please indicate your answer using the scale below (with 0 meaning maximally unlikely and 100 meaning maximally likely)

[Scale from 0 – 100]

Please tell us whether you agree or disagree with this statement about Professor Smith:

It was morally wrong for Professor Smith to pull the red lever.

[Scale from 1 (‘Strongly agree’) to 7 (‘Strongly disagree’) with a midpoint of 4 (‘Neither agree nor disagree’)]

Primary Dependent Variables

Causation:

Agent Condition

Who caused the problem? (select one or more)

- The administrative assistant
- Professor Smith

Object Condition

What caused the problem? (select one or more)

- The black lever
- The red lever

Counterfactual Relevance

Agent Condition

Now suppose that some people are discussing the problem the student had and wondering how things could have been different. In thinking about who could have acted differently, please tell us whether it would be relevant or irrelevant to focus on the following people:

	Relevant	**Irrelevant**
The administrative assistant	□	□
Professor Smith	□	□

Object Condition

Now suppose that some people are discussing the problem the student had and were wondering how things could have been different. In thinking about what could have happened differently, please tell us whether it would be relevant or irrelevant to focus on the following things:

	Relevant	**Irrelevant**
The black lever	□	□
The red lever	□	□

Results of Manipulation Check Questions

Moral check

Participants in the Moral Norm Violation condition much more strongly agreed that it was immoral for Professor Smith to pull the red lever (M = 3.69, SD = 1.71), than participants in the No Norm Violation condition (M = 5.88, SD = 1.31), $t(247.01) = -11.57$, $p < .001$, $d = 1.43$, or

the Functional Norm Violation condition (M = 5.81, SD = 1.52), $t(277) = -10.95$, $p < .001$, d = 1.31. The No Norm Violation and Functional Norm Violation conditions did not differ significantly from one another, $t(266) = 0.41$, $p = .685$, d = 0.04.

Probability Check

Participants in all three conditions estimated the probability that the lever that gave erasers would malfunction to be significantly above 50%, and thus not a descriptive norm violation. Most critically, this was observed in the Functional Norm Violation condition (M = 85.32, SD = 21.39), $t(130) = 18.90$, $p < .001$. It was additionally observed in the Moral Norm Violation condition (M = 72.21, SD = 22.63), $t(126) = 11.06$, $p < .001$, and the No Norm Violation condition (M = 75.19, SD = 22.86), $t(114) = 11.82$, $p < .001$.

Experiment 3

Vignette: No Norm Violation

A philosophy department at a small university bought a vending machine to dispense and keep track of office supplies. Currently, the machine has pencils, which you can get by pulling a black lever or a red lever, and erasers, which you can get from the machine by pulling a white lever.

The white lever on the vending machine frequently malfunctions. When pulled, it produces both an eraser and a pencil, but breaks the pencil in the process.

Pencils are often needed by students who are taking tests, but there are usually plenty of pencils and erasers in the vending machine, so both the administrative assistants and the professors are allowed to take pencils and erasers from the machine.

Professor Smith was recently hired at the department. He was told that he is allowed to take pencils and erasers from the vending machine. However, he was not told that the white lever almost always malfunctions.

One morning, Professor Smith and an administrative assistant both go to the vending machine and pull a lever at the same time. The administrative assistant wanted a pencil, so he pulled the black lever. Professor Smith also wanted a pencil and so he pulled the red lever. Both levers worked like they were supposed to, and they both got a pencil from the vending machine.

These were the last two pencils in the vending machine.

Not long after, a student desperately needs a pencil for a test, but when she goes to the vending machine, there are no more pencils. This leads to a serious problem.

No Counterfactual Manipulation

Now we would like you to consider everything that happened in the story your read.

Please write a description of what actually happened in the story your read.

(Please write at least a couple of sentences.)

Agent Counterfactual Manipulation

We would like you to think about Professor Smith's decision to take a pencil from the vending machine. Please consider and describe one relevant way that things could have gone differently such that the professor would not have taken one of the pencils from the vending machine.

How could things have gone differently such that Professor Smith would not have taken a pencil from the vending machine? What would have happened if Professor Smith had not taken a pencil?

(Please write at least a couple of sentences.)

Object Counterfactual Manipulation

We would like you to think about the way the red lever functioned to produce a pencil from the vending machine. Please consider and describe one relevant way that things could have gone differently such that the red lever would not have functioned to produce one of the pencils from the vending machine.

How could things have gone differently such that the red lever would not have functioned to produce a pencil from the vending machine? What would have happened if the red lever had not produced a pencil?

(Please write at least a couple of sentences.)

Outcome Change Question

Consider what you just wrote about how things could have gone differently. In the case you described, would the problem still have arisen for the student who needed a pencil?

- Definitely yes
- Probably yes
- Probably not
- Definitely not

Agent Causation Question

Please tell us whether you agree or disagree with the following statement about the original story you read:

Professor Smith caused the problem.

[Agreement scale from 0 (‘Completely disagree’) to 100 (‘Completely agree’)]

Object Causation Question

Please tell us whether you agree or disagree with the following statement about the original story you read:

The red lever caused the problem.

[Agreement scale from 0 (‘Completely disagree’) to 100 (‘Completely agree’)]

Control Questions

Which levers were actually pulled in the original story you read?

(Please mark all that apply).

- The red lever
- The black lever
- The white lever

Who actually received a pencil in the original story you read?

(Please mark all that apply).The red lever

- Professor Smith
- The administrative assistant
- The student