

## **Preregistration Report (10/20/2017)**

**Title:** The A/B Illusion: Pilot Testing (Tech, Poverty, Medicine, Retirement, Education)

**Authors:** Michelle N. Meyer, Patrick R. Heck, Geoffrey S. Holtzman, Christopher F. Chabris, Duncan J. Watts, Will Cai, Stephen Anderson

### ***Research Questions:***

The A/B illusion is a hypothesized phenomenon in which individuals perceive the decision to run a randomized, controlled experiment (e.g., comparing two interventions, policies, or practices) on human subjects as less appropriate than simply implementing one of those alternatives without testing its effects. The A/B Illusion was previously anecdotally observed and described (Meyer, 2015), but it had never been experimentally investigated until our pilot research. The research questions we are asking include:

1. Can we demonstrate the A/B illusion in naive research participants?
2. Assuming we are able to detect an effect, do any demographic variables or other individual differences either amplify or attenuate the A/B illusion?
3. What kinds of reasons do participants give for endorsing the A/B illusion, and what kinds of reasons do participants give for approving of unilateral implementation of untested policies?

### **Pilot Testing Vignette Scenarios**

The purpose of pilot testing our new vignettes is to determine whether participants object to the scenarios in any unforeseen ways, as well as to check for general clarity. These pilot tests are conducted as exploratory as we construct new vignettes in different domains where the A/B Illusion may emerge.

Each of the vignettes we are pilot testing has been constructed to have an A condition and a B condition. After testing these separate policy conditions in this pilot, we will proceed by creating A/B conditions to be pilot tested in the future. Our goal is to determine whether our own intuitions about the appropriateness of policy decisions are also held by laypeople. We have not previously tested these vignettes. This round of pilot testing is to determine how appropriate participants view each policy in isolation.

The domains being tested in this round include Technology, Poverty, Medicine, Retirement, Education. A within-subjects design will be used to increase speed and efficiency during pilot testing. Each participant will rate five scenarios, which have been grouped together in blocks designed to avoid exposing participants to two or more similar vignettes. These blocks are available in the Qualtrics export that will be uploaded alongside this preregistration. Each MTurk participant will be paid \$0.80.

Survey materials are below.

**In all scenarios, participants are asked to rate the appropriateness of the decision (1-5 Likert scale from very inappropriate to very appropriate), and to provide “a few sentences” on why they chose that response. Red text denotes variations from A, B vignettes.**

**New A and B Conditions to Pilot 10/20/17:**

**Resident Duty Hours**

**A:** “First-year residents” are new doctors who practice medicine under the supervision of more experienced doctors. The body that accredits U.S. hospital residency programs has already determined that first-year residents must work no more than 80 hours per week, averaged over 4 weeks. Now it must decide, within that constraint, how long first-year residents may work in any one shift. Second-year and later residents may work up to 24 hours at a time. The accrediting body is concerned that residents working longer hours might get less sleep and that sleep-deprived residents might make errors that hurt patients. The accrediting body wants to adopt the policy that will best protect patients, so it decides that first-year residents at all hospitals it accredits may work no more than 16 hours at a time.

**B:** “First-year residents” are new doctors who practice medicine under the supervision of more experienced doctors. The body that accredits U.S. hospital residency programs has already determined that first-year residents must work no more than 80 hours per week, averaged over 4 weeks. Now it must decide, within that constraint, how long first-year residents may work in any one shift. Second-year and later residents may work up to 24 hours at a time. The accrediting body is concerned that shorter work hours mean more patient hand-offs, which are dangerous because it is easy for important patient information not to be relayed between care teams. Shorter hours might also mean less education, or socialization into a kind of “shift mentality” that reduces professionalism—either of which might result in less competent and less committed doctors for patients in the future. The accrediting body wants to adopt the policy that will best protect patients, so it decides that first-year residents at all hospitals it accredits may work no more than 24 hours at a time.

**Non-Teaching Best Drug**

**A:** Several drugs have been approved by the U.S. Food and Drug Administration as safe and effective for treating high blood pressure. Doctor Jones wants to provide good treatment to his patients, so he decides to prescribe drug A for high blood pressure. It is affordable and patients can tolerate its side effects.

**B:** Several drugs have been approved by the U.S. Food and Drug Administration as safe and effective for treating high blood pressure. Doctor Jones wants to provide good treatment to his patients, so he decides to prescribe drug B for high blood pressure. It is affordable and patients can tolerate its side effects.

## **Best Drug**

**A:** Several drugs have been approved by the U.S. Food and Drug Administration as safe and effective for treating high blood pressure. Doctor Jones works in a multi-doctor walk-in clinic where patients see whichever doctor is available. Some doctors in the clinic prescribe drug A for high blood pressure, while others prescribe drug B. Both drugs are affordable and patients can tolerate their side effects. Doctor Jones wants to provide good treatment to his patients, so he decides that whenever his patients need blood pressure medication, they will be prescribed drug A.

**B:** Several drugs have been approved by the U.S. Food and Drug Administration as safe and effective for treating high blood pressure. Doctor Jones works in a multi-doctor walk-in clinic where patients see whichever doctor is available. Some doctors in the clinic prescribe drug A for high blood pressure, while others prescribe drug B. Both drugs are affordable and patients can tolerate their side effects. Doctor Jones wants to provide good treatment to his patients, so he decides that whenever his patients need blood pressure medication, they will be prescribed drug B.

## **Simple SUPPORT**

**A:** In order to survive, babies born very prematurely need special machines that control how much oxygen is in their blood. Doctors know that both too little and too much oxygen can hurt these babies. They know that oxygen levels *below* 85% are too low, and they know that oxygen levels *above* 95% are too high. However, doctors do not know what level is best *between* 85% and 95%. The head of a hospital unit that cares for premature babies wants to give the babies the best chance of survival possible, so he decides to set all of the machines in his unit to keep these babies' oxygen levels between 85% and 89%.

**B:** In order to survive, babies born very prematurely need special machines that control how much oxygen is in their blood. Doctors know that both too little and too much oxygen can hurt these babies. They know that oxygen levels *below* 85% are too low, and they know that oxygen levels *above* 95% are too high. However, doctors do not know what level is best *between* 85% and 95%. The head of a hospital unit that cares for premature babies wants to give the babies the best chance of survival possible, so he decides to set all of the machines in his unit to keep these babies' oxygen levels between 91% and 95%.

## **Poverty Assistance**

**A:** A state government's department of human services is tasked with distributing welfare and unemployment resources to struggling families. The head of this department wants to reduce poverty and unemployment, so he decides to increase welfare services offered to the poorest families in the state: those who are the farthest below the poverty line.

**B:** A state government's department of human services is tasked with distributing welfare and unemployment resources to struggling families. The head of this department wants to reduce poverty and unemployment, so he decides to increase welfare services equally to everyone in the state below the poverty line.

### **Teacher Effectiveness**

**A:** Research has shown that increasing teacher happiness and well-being can result in better student outcomes. The superintendent of a school district wants to improve how well his elementary school students do, so he decides to give all of the school's teachers a yearly bonus.

**B:** Research has shown that increasing teacher happiness and well-being can result in better student outcomes. The superintendent of a school district wants to improve how well his elementary school students do, so he decides to give all of the school's teachers additional vacation days during summer and winter breaks.

### **Global Health**

**A:** A poor nation with a severe shortage of nurses and doctors is creating a new civil service position: Health Assistant. These Health Assistants will undergo one year of training, then become the first line of healthcare for people living in the most remote regions of the country. The nation's congress wants to recruit the best people it can to become Health Assistants, so it decides to have recruitment posters made that emphasize the social benefits of becoming a Health Assistant, such as serving the public and being a leader in one's community.

**B:** A poor nation with a severe shortage of nurses and doctors is creating a new civil service position: Health Assistant. These Health Assistants will undergo one year of training, then become the first line of healthcare for people living in the most remote regions of the country. The nation's congress wants to recruit the best people it can to become Health Assistants, so it decides to have recruitment posters made that emphasize the career benefits of becoming a Health Assistant, such as opportunities for promotion and professional development.

### **Colonoscopies**

**A:** The American Cancer Society recommends that starting at age 50, healthy adults should get colonoscopies every 10 years. Colonoscopies can save lives by detecting colon cancer early, but they are not fun and many people avoid them. The CEO of a health system would like to increase patients' likelihood of having a potentially life-saving colonoscopy, so he decides to send every patient a birthday card on their 50<sup>th</sup> birthday, which reads "It's your 50<sup>th</sup> birthday – treat yourself to a colonoscopy!" The card will come with coupons for a bowel cleanser that patients need to drink before a colonoscopy,

and a book of crossword puzzles to entertain them while they're on the toilet. The idea is that this little bit of whimsy might make the procedure seem less "icky" and lead more patients to get colonoscopies.

**B:** The American Cancer Society recommends that starting at age 50, healthy adults should get colonoscopies every 10 years. Colonoscopies can save lives by detecting colon cancer early, but they are not fun and many people avoid them. The CEO of a health system would like to increase patients' likelihood of having a potentially life-saving colonoscopy, so he decides to send every patient a birthday card on their 50<sup>th</sup> birthday, which reads "It's your 50<sup>th</sup> birthday – treat yourself to a colonoscopy!" The card will come with a notice of a pre-scheduled colonoscopy appointment, with options for selecting a more convenient time. Patients won't be charged if they don't show up. The idea is that removing the chore of scheduling will lead more patients to get colonoscopies.

### **Global Poverty 1**

**A:** Last year, a charity received a large number of donations. The director of this charity wants to help people in a low-income country escape extreme poverty. So he decides to spend this money to provide everyone below a certain income level with one piece of livestock (such as a donkey or a goat).

**B:** Last year, a charity received a large number of donations. The director of this charity wants to help people in a low-income country escape extreme poverty. So he decides to spend this money to provide everyone below a certain income level with a sturdy roof for their home.

### **Global Poverty 2**

**A:** Last year, a charity received a large number of donations. The director of this charity wants to help people in a low-income country escape extreme poverty. So, he decides to spend this money to provide all adults below a certain income level with a cash payment equal to the cost of three months of food.

**B:** Last year, a charity received a large number of donations. The director of this charity wants to help people in a low-income country escape extreme poverty. So, he decides to spend this money to provide all adults below a certain income level with one month of training in a trade of their choice.

### **Unemployment Benefits**

**A:** The congress of a small country wants to provide support for citizens who are unable to find work, while also encouraging those citizens to find and take on jobs. To do this, the congress decides on a plan. All citizens who have been out of work for at least 12 months will receive the equivalent of \$1000 per month for 6 months, or until they find a

job, whichever comes first. To be eligible for these payments, unemployed citizens must attend monthly job fairs run by the government.

**B:** The congress of a small country wants to provide support for citizens who are unable to find work, while also encouraging those citizens to find and take on jobs. To do this, the congress decides on a plan. All citizens who have been out of work for at least 12 months will receive the equivalent of \$500 per month for 6 months, even if they find a job during that time. To be eligible for these payments, unemployed citizens must attend monthly job fairs run by the government.

### **Retirement 1**

**A:** Most people in the U.S. save too little for retirement, causing them financial problems later in life. Company retirement plans are a good way to save, but too few employees choose to enroll in them. The CEO of a company wants to encourage his employees to enroll in the company retirement savings plan, so he decides to increase the number of available investment funds from 10 to 15, in the hope that employees will find some of the new options more attractive.

**B:** Most people in the U.S. save too little for retirement, causing them financial problems later in life. Company retirement plans are a good way to save, but too few employees choose to enroll in them. The CEO of a company wants to encourage his employees to enroll in the company retirement savings plan, so he decides to decrease the number of available investment funds from 10 to 5, in the hope that employees won't be overwhelmed by too many choices and suffer from "decision paralysis."

### **Retirement 2**

**A:** Most people in the U.S. save too little for retirement, causing them financial problems later in life. Company retirement plans are a good way to save, but too few employees choose to enroll in them. The CEO of a company wants to encourage newly hired employees to enroll in the company retirement savings plan, so he decides that the enrollment paperwork will highlight the most popular of the three investment funds the company currently offers.

**B:** Most people in the U.S. save too little for retirement, causing them financial problems later in life. Company retirement plans are a good way to save, but too few employees choose to enroll in them. The CEO of a company wants to encourage newly hired employees to enroll in the company retirement savings plan, so he decides to give them enrollment paperwork in which they are automatically enrolled in the most popular of the three investment funds the company offers. Employees are then free to make a different choice or to decline the program entirely.

### **Spotify 1**

**A:** The CEO of a music-streaming company wants to increase the likelihood that users of the company's free service will pay to upgrade to its Premium service. So, he decides to increase the number of advertisements that run on the free service.

**B:** The CEO of a music-streaming company wants to increase the likelihood that users of the company's free service will pay to upgrade to its Premium service. So, he decides to remove several of the most popular songs from the free service.

### Spotify 2

**A:** The CEO of a music-streaming company wants to increase the likelihood that users of the company's free service will pay to upgrade to its Premium service. He thinks that running short but frequent advertisements will encourage users to upgrade, so he decides to place a short, 30 second advertisement after every 2nd song users listen to.

**B:** The CEO of a music-streaming company wants to increase the likelihood that users of the company's free service will pay to upgrade to its Premium service. He thinks that running infrequent but long advertisements will encourage users to upgrade, so he decides to place a long, 2 minute block of advertisements after every 8th song users listen to.