Supplemental Materials:

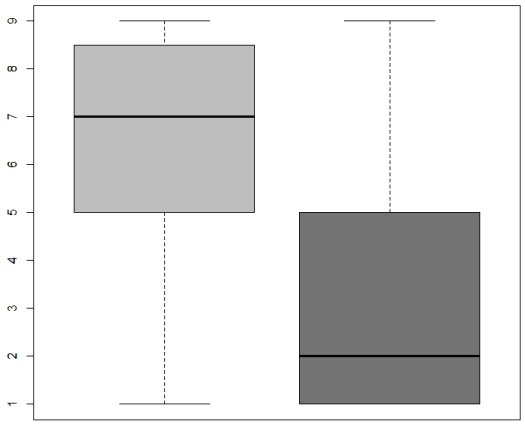
What's wrong with using steroids?

Exploring whether and why people oppose the use of performance enhancing drugs

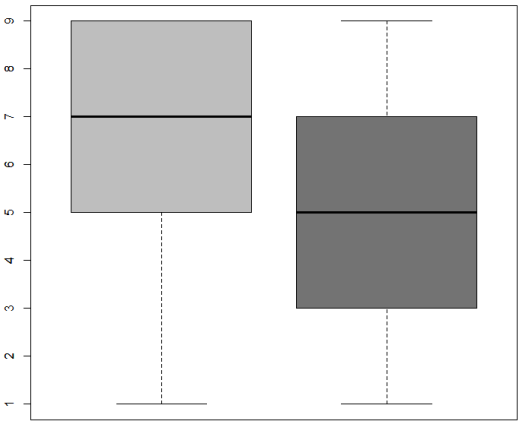
Justin F. Landy, Daniel K. Walco, and Daniel M. Bartels

University of Chicago Booth School of Business

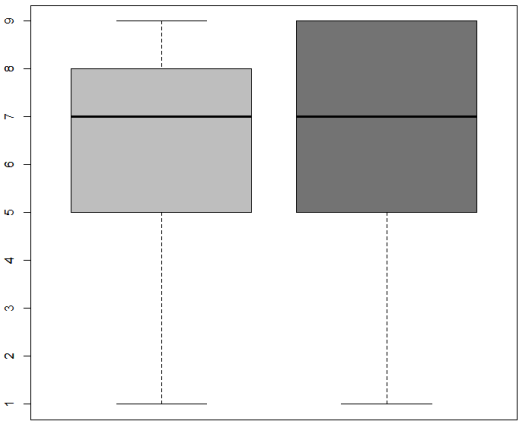
Study 2: Laws and League Rules



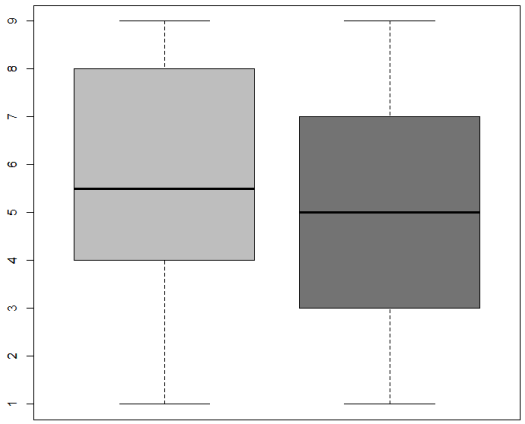
Study 3: Prudence



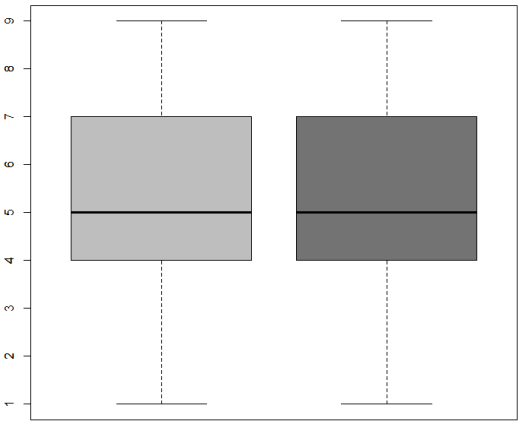
Study 4: Punishment



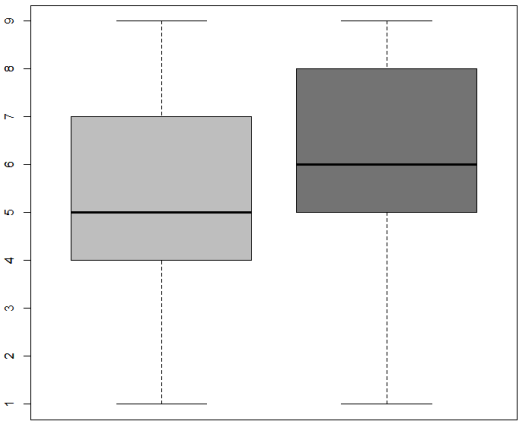
Study 5: Naturalness



Study 6: Tampering with the Body



Study 7: Effort



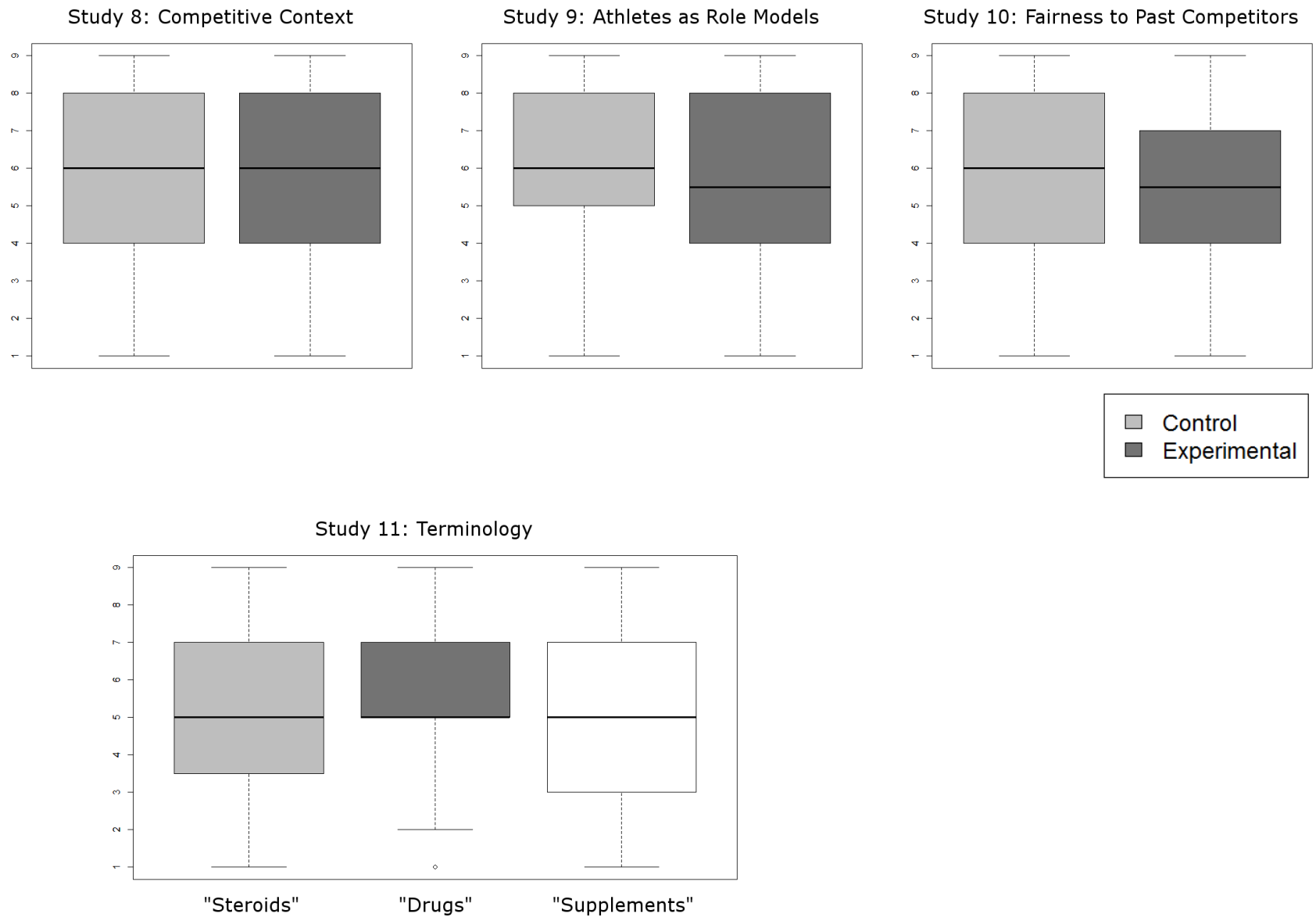


Figure S1. Distributions of wrongness ratings, Studies 2-11.

Scenarios from Studies 1-13

Study 1

Advantage condition. Joe is a professional baseball player. Joe has never used performance-enhancing substances such as anabolic steroids during his career, but he is considering starting to use steroids to improve his performance. Joe is fully aware that *no one* in his entire league is currently using steroids to improve their performance. *No other player* in Joe's league is currently using steroids. Knowing this, Joe decides to start using steroids.

No advantage condition. Joe is a professional baseball player. Joe has never used performance-enhancing substances such as anabolic steroids during his career, but he is considering starting to use steroids to improve his performance. Joe is fully aware that he is the *only* player in his entire league who is not currently using steroids to improve their performance. *Every other player* in Joe's league is currently using steroids. Knowing this, Joe decides to start using steroids.

Study 2 – Laws and League Rules

Control condition. Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the *only* competitor in his competitive weightlifting circuit who is not currently using steroids. *All of the people Joe competes against* are currently using steroids that are illegal and are banned by their competitive circuit's rules. Knowing this, Joe decides to start using anabolic steroids to improve his performance, even though it violates the law and the rules of his circuit.

Experimental condition. Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the *only* competitor in his competitive weightlifting circuit who is not currently using steroids. *All of the people Joe competes against* are currently using steroids that are legal and are permitted by their competitive circuit's rules. Knowing this, Joe decides to start using anabolic steroids to improve his performance, since it does not violate the law or the rules of his circuit.

Study 3 – Prudence

Control condition. Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the *only* competitor in his competitive weightlifting circuit who is not currently using steroids. *All of the people Joe competes against* are currently using steroids. Knowing this, Joe decides to start using anabolic steroids to improve his performance. The steroid he decides to start using, like most steroids, has potential side effects, and poses some threat to Joe's health.

Experimental condition. Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the *only* competitor in his competitive weightlifting circuit who is not currently using steroids. *All of the people Joe competes against* are currently using steroids. Knowing this, Joe decides to start using anabolic steroids to improve his performance. The steroid he decides to start using is specially formulated to avoid the typical side effects of steroids, and poses no threat to Joe's health, in the short term or the long term.

Study 4 – Punishment

Control condition. Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the *only* competitor in his competitive weightlifting circuit who is not currently using steroids. *All of the people Joe competes against* are currently using steroids. Knowing this, Joe decides to start using anabolic steroids to improve his performance. The steroid he decides to start using, like most steroids, poses some risk of detection, and therefore there is a chance that Joe will be caught and punished.

Experimental condition. Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the *only* competitor in his competitive weightlifting circuit who is not currently using steroids. *All of the people Joe competes against* are currently using steroids. Knowing this, Joe decides to start using anabolic steroids to improve his performance. The steroid he decides to start using is specially formulated to avoid detection, and therefore there is no chance that Joe will be caught and punished.

Study 5 – Naturalness

Control condition. Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the *only* competitor in his competitive weightlifting circuit who is not currently using steroids. *All of*

the people Joe competes against are currently using steroids. Knowing this, Joe decides to start using anabolic steroids that were derived from chemicals developed in a laboratory to improve his performance.

Experimental condition. Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the *only* competitor in his competitive weightlifting circuit who is not currently using steroids. *All of the people Joe competes against* are currently using steroids. Knowing this, Joe decides to start using anabolic steroids that were derived from chemicals that naturally occur in the human body to improve his performance.

Study 6 – Interfering with the body

Control condition. Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the *only* competitor in his competitive weightlifting circuit who is not currently using steroids. *All of the people Joe competes against* are currently using steroids. Knowing this, Joe decides to start using anabolic steroids to improve his performance.

Experimental condition. Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the *only* competitor in his competitive weightlifting circuit who is not currently using steroids. *All of the people Joe competes against* are currently using steroids. Knowing this, Joe decides to start

using banned gloves that will improve his grip, improving his performance to the same extent that using steroids would.

Study 7 – Effort

Control condition. Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the *only* competitor in his competitive weightlifting circuit who is not currently using steroids. *All of the people Joe competes against* are currently using steroids. Knowing this, Joe decides to start using anabolic steroids to improve his performance.

Experimental condition. Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the *only* competitor in his competitive weightlifting circuit who is not currently using steroids. *All of the people Joe competes against* are currently using steroids. Knowing this, Joe decides to start using anabolic steroids to improve his performance. The steroids work by allowing Joe's body to recover more quickly from workouts, so that he can lift more often, allowing him to get stronger, faster.

Study 8 – Competitive context

Control condition. Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the *only* competitor in his competitive weightlifting circuit who is not currently using steroids. *All of*

the people Joe competes against are currently using steroids. Knowing this, Joe decides to start using anabolic steroids to improve his performance.

Experimental condition. Joe is a recreational, non-competitive weightlifter. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance-enhancing substance to improve his performance. Joe is fully aware that he is the *only* person in his gym who is not currently using steroids. *All of the other people in Joe's gym* are currently using steroids. Knowing this, Joe decides to start using anabolic steroids to improve his performance.

Study 9 – Athletes as role models

Control condition. Joe is a professional competitive weightlifter. Joe is a fairly well-known athlete. He is active on social media, and has a large following. He is considered to be a role model for many young athletes.

Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the *only* competitor in his competitive weightlifting circuit who is not currently using steroids. *All of the people Joe competes against* are currently using steroids. Knowing this, Joe decides to start using anabolic steroids to improve his performance.

Experimental condition. Joe is a professional competitive weightlifter. Joe is a not a very well-known athlete. He is active on social media, and but only his family and close friends follow him. He is not considered to be a role model for any young athletes.

Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully

aware that he is the *only* competitor in his competitive weightlifting circuit who is not currently using steroids. *All of the people Joe competes against* are currently using steroids. Knowing this, Joe decides to start using anabolic steroids to improve his performance.

Study 10 – Fairness to past competitors

Control condition. Joe is a professional competitive weightlifter. He competes in an event that originated 15 years ago. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the *only* competitor in his competitive weightlifting circuit who is not currently using steroids. *All of the people Joe competes against* are currently using steroids. Knowing this, Joe decides to start using anabolic steroids to improve his performance.

Experimental condition. Joe is a professional competitive weightlifter. He competes in an event that originated 15 years ago. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the *only* competitor in his competitive weightlifting circuit who is not currently using steroids. *All of the people Joe competes against* are currently using steroids. In addition, every other competitor in the 15-year history of Joe's event has used steroids. Knowing this, Joe decides to start using anabolic steroids to improve his performance.

Study 11 – Terminology

Control condition. Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the *only*

competitor in his competitive weightlifting circuit who is not currently using anabolic steroids. *All of the people Joe competes against* are currently using steroids. Knowing this, Joe decides to start using anabolic steroids to improve his performance.

Experimental condition 1 – "drugs". Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the *only* competitor in his competitive weightlifting circuit who is not currently using performance-enhancing drugs. *All of the people Joe competes against* are currently using performance-enhancing drugs. Knowing this, Joe decides to start using drugs to improve his performance.

Experimental condition 2 – "supplements". Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the *only* competitor in his competitive weightlifting circuit who is not currently using performance-enhancing supplements. *All of the people Joe competes against* are currently using performance-enhancing supplements. Knowing this, Joe decides to start using supplements to improve his performance.

Study 12

Advantage/risk/illegal/banned condition. Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that no one in his competitive weightlifting circuit is currently using steroids. *None of the people Joe competes against* are currently using steroids, which are illegal,

and are banned under their competitive circuit's rules. Knowing this, Joe decides to start using anabolic steroids to improve his performance, even though it is against the law and it violates the rules of his circuit. The steroid he decides to start using, like most steroids, has potential side effects, and poses some threat to Joe's health.

Advantage/safe/illegal/banned condition. Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that no one in his competitive weightlifting circuit is currently using steroids. *None of the people Joe competes against* are currently using steroids, which are illegal, and are banned under their competitive circuit's rules. Knowing this, Joe decides to start using anabolic steroids to improve his performance, even though it is against the law and it violates the rules of his circuit. The steroid he decides to start using is specially formulated to avoid the typical side effects of steroids, and poses no threat to Joe's health, in the short term or the long term.

Advantage/risk/illegal/permitted condition. Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that no one in his competitive weightlifting circuit is currently using steroids. *None of the people Joe competes against* are currently using steroids, which are illegal, but are permitted under their competitive circuit's rules. Knowing this, Joe decides to start using anabolic steroids to improve his performance, even though it is against the law, since it does not violate the rules of his circuit. The steroid he decides to start using, like most steroids, has potential side effects, and poses some threat to Joe's health.

Advantage/safe/illegal/permitted condition. Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that no one in his competitive weightlifting circuit is currently using steroids. *None of the people Joe competes against* are currently using steroids, which are illegal, but are permitted under their competitive circuit's rules. Knowing this, Joe decides to start using anabolic steroids to improve his performance, even though it is against the law, since it does not violate the rules of his circuit. The steroid he decides to start using is specially formulated to avoid the typical side effects of steroids, and poses no threat to Joe's health, in the short term or the long term.

Advantage/risk/legal/banned condition. Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that no one in his competitive weightlifting circuit is currently using steroids. *None of the people Joe competes against* are currently using steroids, which are legal, but are banned under their competitive circuit's rules. Knowing this, Joe decides to start using anabolic steroids to improve his performance, since it is not against the law, even though it violates the rules of his circuit. The steroid he decides to start using, like most steroids, has potential side effects, and poses some threat to Joe's health.

Advantage/safe/legal/banned condition. Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that no one in his competitive weightlifting circuit is currently using

steroids. *None of the people Joe competes against* are currently using steroids, which are legal, but are banned under their competitive circuit's rules. Knowing this, Joe decides to start using anabolic steroids to improve his performance, since it is not against the law, even though it violates the rules of his circuit. The steroid he decides to start using is specially formulated to avoid the typical side effects of steroids, and poses no threat to Joe's health, in the short term or the long term.

Advantage/risk/legal/permitted condition. Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that no one in his competitive weightlifting circuit is currently using steroids. *None of the people Joe competes against* are currently using steroids, which are legal, and are permitted under their competitive circuit's rules. Knowing this, Joe decides to start using anabolic steroids to improve his performance, since it is not against the law, and it does not violate the rules of his circuit. The steroid he decides to start using, like most steroids, has potential side effects, and poses some threat to Joe's health.

Advantage/safe/legal/permitted condition. Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that no one in his competitive weightlifting circuit is currently using steroids. *None of the people Joe competes against* are currently using steroids, which are legal, and are permitted under their competitive circuit's rules. Knowing this, Joe decides to start using anabolic steroids to improve his performance, since it is not against the law, and it does not violate the rules of his circuit. The steroid he decides to start using is specially formulated to

avoid the typical side effects of steroids, and poses no threat to Joe's health, in the short term or the long term.

No advantage/risk/illegal/banned condition. Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the only competitor in his competitive weightlifting circuit who is not currently using steroids. *All of the people Joe competes against* are currently using steroids, which are illegal, and are banned under their competitive circuit's rules. Knowing this, Joe decides to start using anabolic steroids to improve his performance, even though it is against the law and it violates the rules of his circuit. The steroid he decides to start using, like most steroids, has potential side effects, and poses some threat to Joe's health.

No advantage/safe/illegal/banned condition. Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the only competitor in his competitive weightlifting circuit who is not currently using steroids. *All of the people Joe competes against* are currently using steroids, which are illegal, and are banned under their competitive circuit's rules. Knowing this, Joe decides to start using anabolic steroids to improve his performance, even though it is against the law and it violates the rules of his circuit. The steroid he decides to start using is specially formulated to avoid the typical side effects of steroids, and poses no threat to Joe's health, in the short term or the long term.

No advantage/risk/illegal/permitted condition. Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances like steroids, but he is

considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the only competitor in his competitive weightlifting circuit who is not currently using steroids. *All of the people Joe competes against* are currently using steroids, which are illegal, but are permitted under their competitive circuit's rules. Knowing this, Joe decides to start using anabolic steroids to improve his performance, even though it is against the law, since it does not violate the rules of his circuit. The steroid he decides to start using, like most steroids, has potential side effects, and poses some threat to Joe's health.

No advantage/safe/illegal/permitted condition. Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the only competitor in his competitive weightlifting circuit who is not currently using steroids. *All of the people Joe competes against* are currently using steroids, which are illegal, but are permitted under their competitive circuit's rules. Knowing this, Joe decides to start using anabolic steroids to improve his performance, even though it is against the law, since it does not violate the rules of his circuit. The steroid he decides to start using is specially formulated to avoid the typical side effects of steroids, and poses no threat to Joe's health, in the short term or the long term.

No advantage/risk/legal/banned condition. Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the only competitor in his competitive weightlifting circuit who is not currently using steroids. *All of the people Joe competes against* are currently using steroids, which are legal, but are banned under their competitive circuit's rules. Knowing this,

Joe decides to start using anabolic steroids to improve his performance, since it is not against the law, even though it violates the rules of his circuit. The steroid he decides to start using, like most steroids, has potential side effects, and poses some threat to Joe's health.

No advantage/safe/legal/banned condition. Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the only competitor in his competitive weightlifting circuit who is not currently using steroids. *All of the people Joe competes against* are currently using steroids, which are legal, but are banned under their competitive circuit's rules. Knowing this, Joe decides to start using anabolic steroids to improve his performance, since it is not against the law, even though it violates the rules of his circuit. The steroid he decides to start using is specially formulated to avoid the typical side effects of steroids, and poses no threat to Joe's health, in the short term or the long term.

No advantage/risk/legal/permitted condition. Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the only competitor in his competitive weightlifting circuit who is not currently using steroids. *All of the people Joe competes against* are currently using steroids, which are legal, and are permitted under their competitive circuit's rules. Knowing this, Joe decides to start using anabolic steroids to improve his performance, since it is not against the law, and it does not violate the rules of his circuit. The steroid he decides to start using, like most steroids, has potential side effects, and poses some threat to Joe's health.

No advantage/safe/legal/permitted condition. Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the only competitor in his competitive weightlifting circuit who is not currently using steroids. *All of the people Joe competes against* are currently using steroids, which are legal, and are permitted under their competitive circuit's rules. Knowing this, Joe decides to start using anabolic steroids to improve his performance, since it is not against the law, and it does not violate the rules of his circuit. The steroid he decides to start using is specially formulated to avoid the typical side effects of steroids, and poses no threat to Joe's health, in the short term or the long term.

Study 13

Advantage/risk/illegal/banned condition. Anne is a student in a very competitive pre-med biology class. Anne has heard that students sometimes use prescription stimulants like Adderall or Ritalin to sharpen their attention and memory, and improve their academic performance. Doctors prescribe these drugs to people with Attention Deficit Disorder (ADD), and similar disorders where a person's inability to focus on tasks significantly interferes with their life. Unlike other stimulants like caffeine, this type of drug improves a person's ability to focus and concentrate, in addition to increasing alertness. Anne does not have ADD or any similar disorder, but she decides to start taking a stimulant to do better in her biology class.

Anne buys some prescription stimulants from another student in her dorm. Anne knows that the stimulant she bought has possible side effects, and poses some risk to her health. Anne is fully aware that no other students in her biology class are using prescription stimulants as performance enhancers. *None of her classmates* are currently taking drugs like this. She also

knows that taking this particular stimulant without a prescription is against the rules of her university, and is illegal.

The stimulants pose some risk to her health, will give her an advantage over her classmates, are against the rules of the university, and are against the law. Knowing all of this, Anne starts taking the prescription stimulant she bought to improve her academic performance.

Advantage/safe/illegal/banned condition. Anne is a student in a very competitive pre-med biology class. Anne has heard that students sometimes use prescription stimulants like Adderall or Ritalin to sharpen their attention and memory, and improve their academic performance. Doctors prescribe these drugs to people with Attention Deficit Disorder (ADD), and similar disorders where a person's inability to focus on tasks significantly interferes with their life. Unlike other stimulants like caffeine, this type of drug improves a person's ability to focus and concentrate, in addition to increasing alertness. Anne does not have ADD or any similar disorder, but she decides to start taking a stimulant to do better in her biology class.

Anne buys some prescription stimulants from another student in her dorm. Anne knows that the stimulant she bought does not have any side effects, and poses no risk to her health, in the short or long term. Anne is fully aware that no other students in her biology class are using prescription stimulants as performance enhancers. *None of her classmates* are currently taking drugs like this. She also knows that taking this particular stimulant without a prescription is against the rules of her university, and is illegal.

The stimulants pose no risk to her health, will give her an advantage over her classmates, are against the rules of the university, and are against the law. Knowing all of this, Anne starts taking the prescription stimulant she bought to improve her academic performance.

Advantage/risk/illegal/permitted condition. Anne is a student in a very competitive pre-med biology class. Anne has heard that students sometimes use prescription stimulants like Adderall or Ritalin to sharpen their attention and memory, and improve their academic performance. Doctors prescribe these drugs to people with Attention Deficit Disorder (ADD), and similar disorders where a person's inability to focus on tasks significantly interferes with their life. Unlike other stimulants like caffeine, this type of drug improves a person's ability to focus and concentrate, in addition to increasing alertness. Anne does not have ADD or any similar disorder, but she decides to start taking a stimulant to do better in her biology class.

Anne buys some prescription stimulants from another student in her dorm. Anne knows that the stimulant she bought has possible side effects, and poses some risk to her health. Anne is fully aware that no other students in her biology class are using prescription stimulants as performance enhancers. *None of her classmates* are currently taking drugs like this. She also knows that taking this particular stimulant without a prescription is not against the rules of her university, but is illegal.

The stimulants pose some risk to her health, will give her an advantage over her classmates, are not against the rules of the university, and are against the law. Knowing all of this, Anne starts taking the prescription stimulant she bought to improve her academic performance.

Advantage/safe/illegal/permitted condition. Anne is a student in a very competitive pre-med biology class. Anne has heard that students sometimes use prescription stimulants like Adderall or Ritalin to sharpen their attention and memory, and improve their academic performance. Doctors prescribe these drugs to people with Attention Deficit Disorder (ADD), and similar disorders where a person's inability to focus on tasks significantly interferes with

their life. Unlike other stimulants like caffeine, this type of drug improves a person's ability to focus and concentrate, in addition to increasing alertness. Anne does not have ADD or any similar disorder, but she decides to start taking a stimulant to do better in her biology class.

Anne buys some prescription stimulants from another student in her dorm. Anne knows that the stimulant she bought does not have any side effects, and poses no risk to her health, in the short or long term. Anne is fully aware that no other students in her biology class are using prescription stimulants as performance enhancers. *None of her classmates* are currently taking drugs like this. She also knows that taking this particular stimulant without a prescription is not against the rules of her university, but is illegal.

The stimulants pose no risk to her health, will give her an advantage over her classmates, are not against the rules of the university, and are against the law. Knowing all of this, Anne starts taking the prescription stimulant she bought to improve her academic performance.

Advantage/risk/legal/banned condition. Anne is a student in a very competitive pre-med biology class. Anne has heard that students sometimes use prescription stimulants like Adderall or Ritalin to sharpen their attention and memory, and improve their academic performance. Doctors prescribe these drugs to people with Attention Deficit Disorder (ADD), and similar disorders where a person's inability to focus on tasks significantly interferes with their life. Unlike other stimulants like caffeine, this type of drug improves a person's ability to focus and concentrate, in addition to increasing alertness. Anne does not have ADD or any similar disorder, but she decides to start taking a stimulant to do better in her biology class.

Anne buys some prescription stimulants from another student in her dorm. Anne knows that the stimulant she bought has possible side effects, and poses some risk to her health. Anne

is fully aware that no other students in her biology class are using prescription stimulants as performance enhancers. *None of her classmates* are currently taking drugs like this. She also knows that taking this particular stimulant without a prescription is against the rules of her university, but is legal.

The stimulants pose some risk to her health, will give her an advantage over her classmates, are against the rules of the university, and are not against the law. Knowing all of this, Anne starts taking the prescription stimulant she bought to improve her academic performance.

Advantage/safe/legal/banned condition. Anne is a student in a very competitive pre-med biology class. Anne has heard that students sometimes use prescription stimulants like Adderall or Ritalin to sharpen their attention and memory, and improve their academic performance. Doctors prescribe these drugs to people with Attention Deficit Disorder (ADD), and similar disorders where a person's inability to focus on tasks significantly interferes with their life. Unlike other stimulants like caffeine, this type of drug improves a person's ability to focus and concentrate, in addition to increasing alertness. Anne does not have ADD or any similar disorder, but she decides to start taking a stimulant to do better in her biology class.

Anne buys some prescription stimulants from another student in her dorm. Anne knows that the stimulant she bought does not have any side effects, and poses no risk to her health, in the short or long term. Anne is fully aware that no other students in her biology class are using prescription stimulants as performance enhancers. *None of her classmates* are currently taking drugs like this. She also knows that taking this particular stimulant without a prescription is against the rules of her university, but is legal.

The stimulants pose no risk to her health, will give her an advantage over her classmates, are against the rules of the university, and are not against the law. Knowing all of this, Anne starts taking the prescription stimulant she bought to improve her academic performance.

Advantage/risk/legal/permitted condition. Anne is a student in a very competitive pre-med biology class. Anne has heard that students sometimes use prescription stimulants like Adderall or Ritalin to sharpen their attention and memory, and improve their academic performance. Doctors prescribe these drugs to people with Attention Deficit Disorder (ADD), and similar disorders where a person's inability to focus on tasks significantly interferes with their life. Unlike other stimulants like caffeine, this type of drug improves a person's ability to focus and concentrate, in addition to increasing alertness. Anne does not have ADD or any similar disorder, but she decides to start taking a stimulant to do better in her biology class.

Anne buys some prescription stimulants from another student in her dorm. Anne knows that the stimulant she bought has possible side effects, and poses some risk to her health. Anne is fully aware that no other students in her biology class are using prescription stimulants as performance enhancers. *None of her classmates* are currently taking drugs like this. She also knows that taking this particular stimulant without a prescription is not against the rules of her university, and is legal.

The stimulants pose some risk to her health, will give her an advantage over her classmates, are not against the rules of the university, and are not against the law. Knowing all of this, Anne starts taking the prescription stimulant she bought to improve her academic performance.

Advantage/safe/legal/permitted condition. Anne is a student in a very competitive pre-med biology class. Anne has heard that students sometimes use prescription stimulants like Adderall or Ritalin to sharpen their attention and memory, and improve their academic performance. Doctors prescribe these drugs to people with Attention Deficit Disorder (ADD), and similar disorders where a person's inability to focus on tasks significantly interferes with their life. Unlike other stimulants like caffeine, this type of drug improves a person's ability to focus and concentrate, in addition to increasing alertness. Anne does not have ADD or any similar disorder, but she decides to start taking a stimulant to do better in her biology class.

Anne buys some prescription stimulants from another student in her dorm. Anne knows that the stimulant she bought does not have any side effects, and poses no risk to her health, in the short or long term. Anne is fully aware that no other students in her biology class are using prescription stimulants as performance enhancers. *None of her classmates* are currently taking drugs like this. She also knows that taking this particular stimulant without a prescription is not against the rules of her university, and is legal.

The stimulants pose no risk to her health, will give her an advantage over her classmates, are not against the rules of the university, and are not against the law. Knowing all of this, Anne starts taking the prescription stimulant she bought to improve her academic performance.

No advantage/risk/illegal/banned condition. Anne is a student in a very competitive pre-med biology class. Anne has heard that students sometimes use prescription stimulants like Adderall or Ritalin to sharpen their attention and memory, and improve their academic performance. Doctors prescribe these drugs to people with Attention Deficit Disorder (ADD), and similar disorders where a person's inability to focus on tasks significantly interferes with their life. Unlike other stimulants like caffeine, this type of drug improves a person's ability to

focus and concentrate, in addition to increasing alertness. Anne does not have ADD or any similar disorder, but she decides to start taking a stimulant to do better in her biology class.

Anne buys some prescription stimulants from another student in her dorm. Anne knows that the stimulant she bought has possible side effects, and poses some risk to her health. Anne is fully aware that all of the other students in her biology class are using prescription stimulants as performance enhancers. *All of her classmates* are currently taking drugs like this. She also knows that taking this particular stimulant without a prescription is against the rules of her university, and is illegal.

The stimulants pose some risk to her health, will not give her an advantage over her classmates, are against the rules of the university, and are against the law. Knowing all of this, Anne starts taking the prescription stimulant she bought to improve her academic performance.

No advantage/safe/illegal/banned condition. Anne is a student in a very competitive pre-med biology class. Anne has heard that students sometimes use prescription stimulants like Adderall or Ritalin to sharpen their attention and memory, and improve their academic performance. Doctors prescribe these drugs to people with Attention Deficit Disorder (ADD), and similar disorders where a person's inability to focus on tasks significantly interferes with their life. Unlike other stimulants like caffeine, this type of drug improves a person's ability to focus and concentrate, in addition to increasing alertness. Anne does not have ADD or any similar disorder, but she decides to start taking a stimulant to do better in her biology class.

Anne buys some prescription stimulants from another student in her dorm. Anne knows that the stimulant she bought does not have any side effects, and poses no risk to her health, in the short or long term. Anne is fully aware that all of the other students in her biology class are

using prescription stimulants as performance enhancers. *All of her classmates* are currently taking drugs like this. She also knows that taking this particular stimulant without a prescription is against the rules of her university, and is illegal.

The stimulants pose no risk to her health, will not give her an advantage over her classmates, are against the rules of the university, and are against the law. Knowing all of this, Anne starts taking the prescription stimulant she bought to improve her academic performance.

No advantage/risk/illegal/permitted condition. Anne is a student in a very competitive pre-med biology class. Anne has heard that students sometimes use prescription stimulants like Adderall or Ritalin to sharpen their attention and memory, and improve their academic performance. Doctors prescribe these drugs to people with Attention Deficit Disorder (ADD), and similar disorders where a person's inability to focus on tasks significantly interferes with their life. Unlike other stimulants like caffeine, this type of drug improves a person's ability to focus and concentrate, in addition to increasing alertness. Anne does not have ADD or any similar disorder, but she decides to start taking a stimulant to do better in her biology class.

Anne buys some prescription stimulants from another student in her dorm. Anne knows that the stimulant she bought has possible side effects, and poses some risk to her health. Anne is fully aware that all of the other students in her biology class are using prescription stimulants as performance enhancers. *All of her classmates* are currently taking drugs like this. She also knows that taking this particular stimulant without a prescription is not against the rules of her university, but is illegal.

The stimulants pose some risk to her health, will not give her an advantage over her classmates, are not against the rules of the university, and are against the law. Knowing all of

this, Anne starts taking the prescription stimulant she bought to improve her academic performance.

No advantage/safe/illegal/permitted condition. Anne is a student in a very competitive pre-med biology class. Anne has heard that students sometimes use prescription stimulants like Adderall or Ritalin to sharpen their attention and memory, and improve their academic performance. Doctors prescribe these drugs to people with Attention Deficit Disorder (ADD), and similar disorders where a person's inability to focus on tasks significantly interferes with their life. Unlike other stimulants like caffeine, this type of drug improves a person's ability to focus and concentrate, in addition to increasing alertness. Anne does not have ADD or any similar disorder, but she decides to start taking a stimulant to do better in her biology class.

Anne buys some prescription stimulants from another student in her dorm. Anne knows that the stimulant she bought does not have any side effects, and poses no risk to her health, in the short or long term. Anne is fully aware that all of the other students in her biology class are using prescription stimulants as performance enhancers. *All of her classmates* are currently taking drugs like this. She also knows that taking this particular stimulant without a prescription is not against the rules of her university, but is illegal.

The stimulants pose no risk to her health, will not give her an advantage over her classmates, are not against the rules of the university, and are against the law. Knowing all of this, Anne starts taking the prescription stimulant she bought to improve her academic performance.

No advantage/risk/legal/banned condition. Anne is a student in a very competitive pre-med biology class. Anne has heard that students sometimes use prescription stimulants like

Adderall or Ritalin to sharpen their attention and memory, and improve their academic performance. Doctors prescribe these drugs to people with Attention Deficit Disorder (ADD), and similar disorders where a person's inability to focus on tasks significantly interferes with their life. Unlike other stimulants like caffeine, this type of drug improves a person's ability to focus and concentrate, in addition to increasing alertness. Anne does not have ADD or any similar disorder, but she decides to start taking a stimulant to do better in her biology class.

Anne buys some prescription stimulants from another student in her dorm. Anne knows that the stimulant she bought has possible side effects, and poses some risk to her health. Anne is fully aware that all of the other students in her biology class are using prescription stimulants as performance enhancers. *All of her classmates* are currently taking drugs like this. She also knows that taking this particular stimulant without a prescription is against the rules of her university, but is legal.

The stimulants pose some risk to her health, will not give her an advantage over her classmates, are against the rules of the university, and are not against the law. Knowing all of this, Anne starts taking the prescription stimulant she bought to improve her academic performance.

No advantage/safe/legal/banned condition. Anne is a student in a very competitive pre-med biology class. Anne has heard that students sometimes use prescription stimulants like Adderall or Ritalin to sharpen their attention and memory, and improve their academic performance. Doctors prescribe these drugs to people with Attention Deficit Disorder (ADD), and similar disorders where a person's inability to focus on tasks significantly interferes with their life. Unlike other stimulants like caffeine, this type of drug improves a person's ability to

focus and concentrate, in addition to increasing alertness. Anne does not have ADD or any similar disorder, but she decides to start taking a stimulant to do better in her biology class.

Anne buys some prescription stimulants from another student in her dorm. Anne knows that the stimulant she bought does not have any side effects, and poses no risk to her health, in the short or long term. Anne is fully aware that all of the other students in her biology class are using prescription stimulants as performance enhancers. *All of her classmates* are currently taking drugs like this. She also knows that taking this particular stimulant without a prescription is against the rules of her university, but is legal.

The stimulants pose no risk to her health, will not give her an advantage over her classmates, are against the rules of the university, and are not against the law. Knowing all of this, Anne starts taking the prescription stimulant she bought to improve her academic performance.

No advantage/risk/legal/permitted condition. Anne is a student in a very competitive pre-med biology class. Anne has heard that students sometimes use prescription stimulants like Adderall or Ritalin to sharpen their attention and memory, and improve their academic performance. Doctors prescribe these drugs to people with Attention Deficit Disorder (ADD), and similar disorders where a person's inability to focus on tasks significantly interferes with their life. Unlike other stimulants like caffeine, this type of drug improves a person's ability to focus and concentrate, in addition to increasing alertness. Anne does not have ADD or any similar disorder, but she decides to start taking a stimulant to do better in her biology class.

Anne buys some prescription stimulants from another student in her dorm. Anne knows that the stimulant she bought has possible side effects, and poses some risk to her health. Anne

is fully aware that all of the other students in her biology class are using prescription stimulants as performance enhancers. *All of her classmates* are currently taking drugs like this. She also knows that taking this particular stimulant without a prescription is not against the rules of her university, and is legal.

The stimulants pose some risk to her health, will not give her an advantage over her classmates, are not against the rules of the university, and are not against the law. Knowing all of this, Anne starts taking the prescription stimulant she bought to improve her academic performance.

No advantage/safe/legal/permitted condition. Anne is a student in a very competitive pre-med biology class. Anne has heard that students sometimes use prescription stimulants like Adderall or Ritalin to sharpen their attention and memory, and improve their academic performance. Doctors prescribe these drugs to people with Attention Deficit Disorder (ADD), and similar disorders where a person's inability to focus on tasks significantly interferes with their life. Unlike other stimulants like caffeine, this type of drug improves a person's ability to focus and concentrate, in addition to increasing alertness. Anne does not have ADD or any similar disorder, but she decides to start taking a stimulant to do better in her biology class.

Anne buys some prescription stimulants from another student in her dorm. Anne knows that the stimulant she bought does not have any side effects, and poses no risk to her health, in the short or long term. Anne is fully aware that all of the other students in her biology class are using prescription stimulants as performance enhancers. *All of her classmates* are currently taking drugs like this. She also knows that taking this particular stimulant without a prescription is not against the rules of her university, and is legal.

The stimulants pose no risk to her health, will not give her an advantage over her classmates, are not against the rules of the university, and are not against the law. Knowing all of this, Anne starts taking the prescription stimulant she bought to improve her academic performance.

Participants' Justifications in Study 1

Coding Scheme

Three research assistants read a brief description of the study procedure, and were instructed to assign each justification (198 in total) to one of the following categories, developed by the first author after an initial reading of participants' responses. Each response could be assigned to only one category.

No Explanation: The participant simply asserts that Joe's use of steroids is wrong or not wrong, without giving a reason why they think this.

Health: The participant mentions health consequences that steroid use will or will not have for Joe.

Rules: The participant mentions that steroid use is or is not against the law, or against the rules of professional baseball.

Dishonest: The participant mentions that steroid use is or is not dishonest, deceitful, etc.

Role Model: The participant mentions that Joe should or should not use steroids because he is a role model, or his behavior is likely to be emulated by other people (not including other baseball players).

Unnatural: The participant mentions that steroids are or are not "natural," "unnatural", "artificial", etc.

Fairness: The participant mentions that using steroids will or will not give Joe an unfair competitive advantage, that steroid use is or is not a form of cheating, etc.

Character: The participant mentions something about Joe's character or principles – that is, they explain their judgment by saying something about Joe *himself*, rather than *what he did.*

Punishment: The participant mentions that Joe's actions will or will not result in some kind punishment for him.

Consensus: The participant mentions that there is general agreement among players that steroid use is or is not wrong.

Harm to Others: The participant mentions that Joe's actions will or will not have harmful consequences for other people, including other baseball players. These consequences might be direct or indirect.

Intuition: The participant mentions making their decision based on "instinct," "feelings", "their gut", or other such intuitive methods.

Other: None of the above classifications seem appropriate to describe this response. In this case, please briefly describe the participant's reasoning in the adjacent column labeled "Other (Briefly Explain)".

Uninterpretable: The participant's response is unrelated, unintelligible, or otherwise impossible to code. This is NOT the same as saying that the answer is interpretable, but none of the above classifications seems appropriate; in cases like that, code the response as "Other".

Coding Results

The classifications made by all three coders are presented in Table S1. As noted in the main text, based on the consensus codings, the most common non-fairness-related justifications among participants in the no advantage condition who still considered Joe's steroid use to be at

least “moderately wrong” cited a rule or law or argued that consensus is insufficient to make steroid use permissible. According to Coder 1, the frequencies of these justifications were 23 and 9 participants out of 66, respectively. According to Coder 2, they are 13 and 33. According to Coder 3, they are 21 and 23. Therefore, though there is some variability in the coding results, the substantive results of this analysis do not depend on which coder’s classifications are examined.

Table S1. Coding results from Study 1, by condition and coder.

	Advantage Condition			No Advantage Condition			Total		
Justification Category	**Coder 1**	**Coder 2**	**Coder 3**	**Coder 1**	**Coder 2**	**Coder 3**	**Coder 1**	**Coder 2**	**Coder 3**
No Explanation	6	2	6	15	5	15	21	7	21
Health	2	3	3	4	5	2	6	8	5
Rules	16	18	21	23	13	22	39	31	43
Dishonest	0	0	1	1	1	0	1	1	1
Role Model	1	1	2	0	1	1	1	2	3
Unnatural	3	1	1	1	0	0	4	1	1
Fairness	56	50	47	28	18	8	84	68	55
Character	4	4	1	2	2	3	6	6	4
Punishment	1	1	1	2	2	0	3	3	1
Consensus	4	7	9	14	45	40	18	52	49
Harm to Others	3	3	0	0	1	0	3	4	0
Intuition	1	1	8	0	0	5	1	1	13
Other	2	10	1	6	3	1	8	13	2
Uninterpretable	2	0	0	1	1	0	3	1	0
Total	101	101	101	97	97	97	198	198	198

Failed Pretests for Studies 2-11

Study 9: Athletes as Role Models

One failed pretest was run for this study, prior to the successful manipulation reported in the main text. As can be seen below, the manipulation was fairly subtle, and the manipulation check question was very specific, in that it asked about the likelihood that young athletes would begin to use steroids. In hindsight, we think that this concern is actually broader than that; when prominent athletes use steroids, people may believe that this could encourage more risky or counter-normative behaviors of various types among young athletes and non-athletes alike. We revised the scenario and manipulation check in light of this, and developed the successful manipulation reported in the main text on our second attempt.

Materials.

Control condition: Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the only competitor in his competitive weightlifting circuit who is not currently using steroids. *All of the people Joe competes against* are currently using steroids. Knowing this, Joe decides to start using anabolic steroids to improve his performance, even though he is aware that he is a role model for many young amateur weightlifters around the country.

Experimental condition: Joe is a professional competitive weightlifter. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the only competitor in his competitive weightlifting circuit who is not currently using steroids. *All of*

the people Joe competes against are currently using steroids. Knowing this, Joe decides to start using anabolic steroids to improve his performance, as he is aware that he is not a role model for any young amateur weightlifters around the country.

Manipulation check. How likely is Joe's decision to use anabolic steroids to encourage other people to start using steroids as well? (Answered on a 1-9 scale; 1 = "Not at all likely"; 5 = "Somewhat likely"; 9 = "Extremely likely")

Results

Participants in the experimental condition (n = 8, M = 6.13, SD = 2.47) considered it slightly *more* likely that young athletes would start using steroids because of Joe's decision to do so than did participants in the control condition (n = 11, M = 5.55, SD = 2.34). We therefore abandoned this manipulation and manipulation check in favor of those reported in Study 9.

Study 10: Fairness to past competitors

Fairness to past competitors was the most difficult variable to successfully manipulate, other than disgust, which we ultimately abandoned (see General Discussion in the main text). We conducted seven pretests, detailed below, before developing the successful manipulation reported in Study 10. Although we strongly considered abandoning this manipulation after so many failed attempts, it is mentioned with such frequency in the popular press that we felt our exploration of why people condemn steroid use would be incomplete without its inclusion.

Pretest 1.

Materials.

Control condition. Joe is a professional competitive weightlifter. He competes in an event that has existed for over 100 years, which has had many prominent stars and longstanding records. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the only competitor in his competitive weightlifting circuit who is not currently using steroids. All of the people Joe competes against are currently using steroids. Knowing this, Joe decides to start using anabolic steroids to improve his performance.

Experimental condition. Joe is a professional competitive weightlifter. He competes in a very new event that has only existed for a few years, and has not yet had any prominent stars or longstanding records. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the only competitor in his competitive weightlifting circuit who is not currently using steroids. All of the people Joe competes against are currently using steroids. Knowing this, Joe decides to start using anabolic steroids to improve his performance.

Manipulation check. How unfair is Joe's steroid use to weightlifters who competed in the past, and did not use steroids? (Answered on a 1-9 scale; 1 = “Not at all unfair”; 3 = “A little bit unfair”; 5 = “Somewhat unfair”; 7 = “Very unfair”; 9 = “Extremely unfair”)

Results. Participants in the experimental condition (n = 11, M = 6.36, SD = 3.23) rated Joe’s steroid use as somewhat more wrong than did participants in the control condition (n = 10, M = 5.40, SD = 2.59). In the next pretest, we tried to strengthen the manipulation by specifying that Joe’s event was entirely new, and there were no past competitors at all.

Pretest 2.

Materials.

Control condition. Joe is a professional competitive weightlifter. He is training to compete in a classic event that has been contested for over 100 years, and which has had many prominent stars and records. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the only competitor in his competitive weightlifting circuit who is not currently using steroids. All of the people Joe competes against are currently using steroids. Knowing this, Joe decides to start using anabolic steroids to improve his performance.

Experimental condition. Joe is a professional competitive weightlifter. He is training to compete in a brand-new event that has never been contested before, and which has not had any prominent stars or records. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the only competitor in his competitive weightlifting circuit who is not currently using steroids. All of the people Joe competes against are currently using steroids. Knowing this, Joe decides to start using anabolic steroids to improve his performance.

Manipulation check. How unfair is Joe's steroid use to weightlifters who competed in the past, and did not use steroids?

Results. We initially ruled this pretest a success, as we observed a clear effect on the manipulation check in the predicted direction: participants in the experimental condition (n = 10, M = 5.10, SD = 3.14) considered Joe's steroid use to be less unfair to past competitors than participants in the control condition (n = 10, M = 6.20, SD = 2.94). We therefore ran a full

version of this study, with a total sample of $N = 252$. However, we observed no reliable effect on the manipulation check, $t(250) = 0.65$, $p = .514$, $d = .08$. Participants in the experimental condition rated Joe's steroid use as only slightly less unfair to past competitors ($M = 6.10$, $SD = 2.54$) than did participants in the control condition ($M = 6.31$, $SD = 2.47$). In light of this, we attempted to further strengthen the manipulation in Pretest 3.

Pretest 3.

Materials.

Control condition. Joe is a professional competitive weightlifter. He is training to compete in a classic event that many people have competed in before. Weightlifters have done this particular exercise professionally for many years, and it has a long history as a competitive event. This event has had many prominent stars and records. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the only competitor in his competitive weightlifting circuit who is not currently using steroids. All of the people Joe competes against are currently using steroids. Knowing this, Joe decides to start using anabolic steroids to improve his performance.

Experimental condition. Joe is a professional competitive weightlifter. He is training to compete in a brand-new event that no one has competed in before. Weightlifters did this particular exercise for recreation for many years, but it is now becoming a competitive event. This event has not had any prominent stars or records. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the only competitor in his competitive

weightlifting circuit who is not currently using steroids. All of the people Joe competes against are currently using steroids. Knowing this, Joe decides to start using anabolic steroids to improve his performance.

Manipulation check. To what extent is Joe's steroid use unfair to weightlifters who competed in the past, and did not use steroids? (Answered on a 1-9 scale; 1 = "Not at all"; 5 = "Somewhat"; 9 = "Extremely")

Results. This pretest showed the expected directional difference between the experimental condition (n = 10, M = 6.10, SD = 2.64) and the condition condition (n = 10, M = 7.10, SD = 1.45). However, the magnitude of the difference was comparable to that observed in Pretest 2, which was not statistically reliable in a fully-powered study. Moreover, the mean rating was quite high in the experimental condition. We speculated that participants may have inferred from the structure of the manipulation check question that Joe's steroid use was at least somewhat unfair, i.e., a demand effect. To attempt to alleviate this, in Pretest 4 we used the same materials as Pretest 3, but modified the manipulation check question to convey to participants that Joe's steroid use may not be unfair at all.

Pretest 4.

Materials. The experimental and control scenarios in this pretest were identical to those in Pretest 3. The manipulation check was modified slightly to read "To what extent is Joe's steroid use unfair to weightlifters who competed in his event in the past, and did not use steroids, if at all?". This question was answered on the same 1-9 scale used in Pretest 3.

Results. Participants in the experimental condition (n = 10, M = 6.70, SD = 3.27) rated Joe's steroid use as more wrong than participants in the control condition (n = 7, M = 5.57, SD =

0.77). In other words, the manipulation failed again. In the next pretest, we employed a dichotomous manipulation check, reasoning that a yes/no response scale might make participants in the experimental condition more willing to express that steroid use was not unfair, in this particular circumstance.

Pretest 5.

Materials. The materials were again the same as in Pretests 3 and 4. The manipulation check question simply read "Is Joe's use of steroids unfair to other weightlifters who competed in the past?". Participants could respond yes or no.

Results. Two participants out of ten in the experimental condition (20.0%) answered that Joe's steroid use was unfair to past competitors, while three out of nine in the control condition (33.3%) did so. This difference is in line with our predictions, but given the coarseness of the response scale, we judged it too small to warrant running a larger study. In Pretest 6, we piloted three different manipulation check questions, to better understand what judgments this manipulation influenced, if any.

Pretest 6.

Materials. The scenarios in Pretest 6 were identical to those in Pretests 3-5.

Manipulation checks. This pretest included three manipulation check questions: Q1, "Did Joe gain an unfair advantage over anyone?", Q2, "Is Joe's use of steroids unfair to any record-holders, past or present?", and Q3, "Would record-holder in Joe's sport consider his use of steroids to be unfair?". All were answered on a 1-9 scale ranging from "Definitely no" to "Definitely yes".

Results. Results are presented in Table S2. Overall, the second manipulation check question showed the largest effect. This pretest was run concurrently with Pretest 7, below, which used a different manipulation, and showed clearer results overall, so we abandoned this manipulation in favor of a modified version of the manipulation from Pretest 7 for our final materials.

Table S2. Descriptive statistics for Pretest 6.

Condition	*n*	Q1 *M* (*SD*)	Q2 *M* (*SD*)	Q3 *M* (*SD*)
Control	10	3.40 (2.41)	7.70 (1.49)	7.20 (2.15)
Experimental	13	3.62 (2.79)	6.46 (2.70)	6.85 (2.51)

Pretest 7. In Pretests 1-6, we manipulated the age of Joe's event, reasoning that in a brand-new event, steroid use could not be unfair to past competitors, because there are none. However, we met with little success. In Pretest 7, we used a different manipulation, more akin to our manipulation of fairness in Study 1. Specifically, we indicated, in the experimental conditions, that every competitor in the 15-year history of Joe's event had used steroids. Pretest 7 was run concurrently with Pretest 6.

Materials.

Control condition. Joe is a professional competitive weightlifter. He competes in an event that originated 15 years ago. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the only competitor in his competitive weightlifting circuit who is not currently using steroids. All of the people Joe competes against are currently using steroids. Knowing this, Joe decides to start using anabolic steroids to improve his performance.

Experimental condition. Joe is a professional competitive weightlifter. He competes in an event that originated 15 years ago. Joe does not use performance-enhancing substances like steroids, but he is considering starting to use a performance enhancing substance to improve his performance. Joe is fully aware that he is the only competitor in his competitive weightlifting circuit who is not currently using steroids. All of the people Joe competes against are currently using steroids. In addition, every other competitor in the 15-year history of Joe's event has used steroids. Knowing this, Joe decides to start using anabolic steroids to improve his performance.

Manipulation checks. The manipulation checks in this pretest were identical to those in Pretest 6.

Results. We observed clear effects on all three manipulation checks, in the directions that we anticipated, as summarized in Table S3. We retained Q2 ("Is Joe's use of steroids unfair to any record-holders, past or present?") in the final version of Study 10.

Table S3. Descriptive statistics for Pretest 7.

Condition	*n*	Q1 *M* (*SD*)	Q2 *M* (*SD*)	Q3 *M* (*SD*)
Control	10	3.70 (2.50)	5.90 (2.77)	5.50 (3.57)
Experimental	9	2.56 (2.35)	2.22 (1.86)	4.22 (2.91)

Pretests for Study 13

In developing Study 13, we were concerned that off-label use of prescription stimulants may not be as familiar to laypeople as anabolic steroid use by athletes, which has been widely publicized in the media. We therefore ran several pretests to ensure that the final scenario employed in Study 13 was intelligible to participants on Amazon Mechanical Turk and that our manipulations of fairness, prudence, legality, and university rules were effective. For each pretest, we presented participants with either the advantage/risk/illegal/banned condition or the no advantage/no risk/legal/permitted condition of the current iteration of the "Anne" scenario, followed by a series of comprehension checks (in Pretests 1-3), then manipulation checks modeled after those in Study 12 (in Pretests 2-4). We refined the scenario based on the results of each pretest until arriving at the materials that we pre-registered.

Pretest 1

Pretest 1 employed a simple version of the "Anne" scenario, and a 13-point bipolar normative judgment scale. We manipulated whether the scale ranged from "the right thing to do" (on the left) to "the wrong thing to do" (on the right), or vice versa. The midpoint was always labeled "neither right nor wrong". We randomly assigned participants to view one version of the scenario and one version of the scale, between-subjects. The purpose of the pretest was to examine whether the directionality of the scale affected the validity of the normative judgment ratings, and to serve as an initial check on the comprehensibility of the scenario.

Materials.

Advantage/risk/illegal/banned condition. Anne is a student in a very competitive pre-med biology class. Anne has heard that students sometimes use prescription stimulants like Adderall or Ritalin to sharpen their attention and memory, and improve their academic performance. These stimulants are prescribed to people with Attention Deficit Hyperactivity Disorder (ADHD). Anne has never been diagnosed with ADHD, and she has never used prescription stimulants as performance enhancers, but she decides to start doing so, to do better in her biology class.

Anne buys some prescription stimulants from another student in her dorm. Anne knows that the stimulant she bought has possible side effects, and poses some risk to her health. Anne is fully aware that no other students in her biology class are using prescription stimulants as performance enhancers. *None of her classmates* are currently taking drugs like this. She also knows that taking prescription stimulants that are not prescribed to her is against the rules of her university, and is illegal. Knowing all of this, Anne starts taking the prescription stimulant she bought to improve her academic performance.

No advantage/no risk/illegal/banned condition. Anne is a college student in a very competitive pre-med biology class. Anne has heard that students sometimes use prescription stimulants like Adderall or Ritalin to sharpen their attention and memory, and improve their academic performance. These stimulants are prescribed to people with Attention Deficit Hyperactivity Disorder (ADHD). Anne has never been diagnosed with ADHD, and she has never used prescription stimulants as performance enhancers, but she decides to start doing so, to do better in her biology class.

Anne buys some prescription stimulants from another student in her dorm. Anne knows that the stimulant she bought does not have any side effects, and poses no risk to her health, in

the short or long term. Anne is fully aware that all of the other students in her biology class are using prescription stimulants as performance enhancers. All of her classmates are currently taking drugs like this. She also knows that taking this particular stimulant without a prescription is not against the rules of her university, and is legal. Knowing all of this, Anne starts taking the prescription stimulant she bought to improve her academic performance.

Comprehension checks. Comprehension checks were presented on a separate page from the scenario and normative judgment scale. We first asked a dichotomous normative judgment question, "Was what Anne did good or bad?". This was followed by several multiple-choice questions tapping memory for the content of the scenario: "What kind of drug did Anne take?" ("type of drug"; correct answer: a stimulant), "Did Anne have a prescription from a doctor for the drug she took?" ("prescription"; correct answer: no), "What did Anne believe the drug would do?" ("anticipated effect"; correct answer: "sharpen her attention and memory"), and "What did Anne hope to accomplish by taking the drug?" ("goal"; correct answer: do better in a class).

Results.

Validity of normative judgment measure. The bipolar normative judgment scale was highly correlated with the dichotomous normative judgment question, whether the scale ranged from "the right thing to do" to "the wrong thing to do", $r(47) = .71$, $p < .001$, or vice versa, $r(47) = .72$, $p < .001$. These correlations are essentially identical, and therefore the direction of the scale does not affect the validity of this measure. We therefore used only one direction in the subsequent pretests and Study 13, for simplicity.

Comprehension checks. At least 95% of participants correctly answered each of the four comprehension questions (type of drug: 95.9%; prescription 95.9%; anticipated effect: 98.0%;

goal: 96.9%), and 89.8% correctly answered all four. This indicates that our new scenario is reasonably comprehensible to participants on Amazon Mechanical Turk.

Pretest 2

In this pretest, we introduced a new, more detailed introduction to the scenario that was intended to make the effects of prescription stimulants clearer, and to make more explicit the fact that these drugs are typically prescribed by doctors to treat medical conditions. Half of the participants in this pretest received one of the two scenarios from Pretest 1, while the other half received one of the two revised scenarios below. The normative judgment scale was the same as in Pretest 1, but we did not manipulate the direction of the scale. The comprehension check questions were identical to those in Pretest 1, but we dropped the dichotomous normative judgment question, which we had only included in Study 1 to examine effects of scale direction. On the page following the comprehension checks, participants responded to manipulation checks modeled after those in Study 12, to ensure that our manipulations, which were somewhat different from those in Study 12, were effective.

Revised Scenarios.

Advantage/risk/illegal/banned condition. Anne is a student in a very competitive pre-med biology class. Anne has heard that students sometimes use prescription stimulants like Adderall or Ritalin to sharpen their attention and memory, and improve their academic performance. Doctors prescribe these drugs to people with Attention Deficit Disorder (ADD), and similar disorders where a person's inability to focus on tasks significantly interferes with their life. Unlike other stimulants like caffeine, this type of drug improves a person's ability to

focus and concentrate, in addition to increasing alertness. Anne does not have ADD or any similar disorder, but she decides to start taking a stimulant to do better in her biology class.

Anne buys some prescription stimulants from another student in her dorm. Anne knows that the stimulant she bought has possible side effects, and poses some risk to her health. Anne is fully aware that no other students in her biology class are using prescription stimulants as performance enhancers. *None of her classmates* are currently taking drugs like this. She also knows that taking prescription stimulants that are not prescribed to her is against the rules of her university, and is illegal. Knowing all of this, Anne starts taking the prescription stimulant she bought to improve her academic performance.

No advantage/no risk/legal/permitted condition. Anne is a student in a very competitive pre-med biology class. Anne has heard that students sometimes use prescription stimulants like Adderall or Ritalin to sharpen their attention and memory, and improve their academic performance. Doctors prescribe these drugs to people with Attention Deficit Disorder (ADD), and similar disorders where a person's inability to focus on tasks significantly interferes with their life. Unlike other stimulants like caffeine, this type of drug improves a person's ability to focus and concentrate, in addition to increasing alertness. Anne does not have ADD or any similar disorder, but she decides to start taking a stimulant to do better in her biology class.

Anne buys some prescription stimulants from another student in her dorm. Anne knows that the stimulant she bought does not have any side effects, and poses no risk to her health, in the short or long term. Anne is fully aware that all of the other students in her biology class are using prescription stimulants as performance enhancers. *All of her classmates* are currently taking drugs like this. She also knows that taking this particular stimulant without a

prescription is not against the rules of her university, and is legal. Knowing all of this, Anne starts taking the prescription stimulant she bought to improve her academic performance.

Results.

Comprehension checks. The percentage of participants correctly answering each comprehension check with each version of the introduction is presented in Table S4. In general, participants did nominally, though non-significantly, better with the revised introduction than the original one. We therefore retained this introduction going forward.

Table S4. Percentage of participants correctly answering comprehension checks, Pretest 2.

Comprehension Check	Original Introduction	New Introduction	χ^2	*df*	*p*	*V*
Type of drug	95.6%	96.0%	3.00	3	.392	.12
Prescription	93.9%	95.0%	0.22	2	.898	.03
Anticipated effect	94.9%	95.0%	5.20	3	.158	.16
Goal	99.0%	98.0%	3.00	2	.224	.12

Manipulation checks. Participants in the advantage/risk/illegal/banned condition rated Anne's use of stimulants as more unfair (M = 6.67, SD = 2.15) and more dangerous to her health (M = 6.05, SD = 1.90) than did participants in the no advantage/no risk/legal/permitted condition (Ms 4.22, 3.44, SDs 2.64, 2.32, respectively), $t(190.02) = 7.18$, $p < .001$, $d = 1.02$, and $t(190.31) = 8.67$, $p < .001$, $d = 1.23$, respectively). Similarly, a majority of participants in the former condition correctly answered that Anne had violated the law (80.8%) and the rules of her university (86.9%), and a majority of participants in the latter condition stated that she had not violated a law (59.0%) or university rule (70.0%), $\chi^2(2) = 70.35$, $p < .001$, $V = .60$, and $\chi^2(2) = 102.59$, $p < .001$, $V = .72$, respectively. This provides some initial assurance that our new manipulations are functioning as intended.

Pretest 3

In Pretest 3, we presented participants with the revised scenarios from Pretest 2, and randomly assigned them to make normative judgments using either the 13-point Likert scale from Pretest 2, or the non-numeric sliding scale that we ultimately employed in Study 13. We reasoned that thinking about a scale with 13 distinct points might be cognitively taxing for participants, in that discriminating between the points may be challenging (e.g., "is taking prescription stimulants 9 points bad, or 10 points bad?"). A sliding scale might be simpler to understand, freeing up cognitive resources to attend to the information presented in the scenario. We included the same comprehension and manipulation checks as in Pretest 2.

Results. Consistent with our reasoning, participants generally did directionally, though not significantly, better on the comprehension checks and categorical manipulation checks when they made their normative judgments on the sliding scale (see Table S5). Moreover, we saw greater differentiation between the advantage/risk/illegal/banned condition and the no advantage/no risk/legal/permitted condition on the continuous manipulation checks among participants who responded to the sliding scale (see Table S6). We therefore employed the sliding scale in Study 13.

Table S5. Performance on comprehension checks and categorical manipulation checks, Pretest 3.

Comprehension Check	**Likert Scale**	**Sliding Scale**	χ^2	***df***	***p***	***V***
Type of drug	99.0%	98.0%	2.97	3	.397	.12
Prescription	94.8%	97.0%	0.64	2	.725	.06
Anticipated effect	94.8%	96.0%	1.72	3	.633	.09
Goal	97.9%	100.0%	2.10	2	.349	.10

Categorical Manipulation Check	**Likert Scale**	**Sliding Scale**	χ^2	***df***	***p***	***V***
Broke law?	75.2%	76.2%	0.37	2	.832	.04
Broke university rule?	77.3%	89.1%	4.95	2	.084	.16

Table S6. Descriptive and inferential statistics for continuous manipulation checks, Pretest 3.

	How Unfair?			How Dangerous?	
	Likert Scale	**Sliding Scale**		**Likert Scale**	**Sliding Scale**
Advantage	6.68 (2.28)	6.85 (2.12)	**Risk**	5.50 (1.92)	5.47 (1.83)
No Advantage	3.92 (3.04)	3.93 (2.58)	**No Risk**	3.00 (2.48)	2.67 (1.91)
t	5.09	6.14	***t***	5.58	7.50
df	94.08	87.12	***df***	94.55	99
p	< .001	< .001	***p***	< .001	< .001
d	1.01	1.23	***d***	1.11	1.50

Pretest 4

Pretest 3 showed reasonably high levels of correct responding on the manipulation checks, but they were not quite as high as we observed in Study 12. We therefore ran a final pretest, in which we introduced a revised version of the scenario that included a brief "recap" at the end, summarizing the story. Participants were randomly assigned to view one of the scenarios from Pretest 13, or one of the revised scenarios printed below. Normative judgments were made on the sliding scale from Pretest 3. Because the purpose of this pretest was to examine responses to the manipulation check questions, we dropped the comprehension checks, which elicited quite high rates of successful responding in the three prior pretests.

Revised Scenarios.

Advantage/risk/illegal/banned condition. Anne is a student in a very competitive pre-med biology class. Anne has heard that students sometimes use prescription stimulants like Adderall or Ritalin to sharpen their attention and memory, and improve their academic performance. Doctors prescribe these drugs to people with Attention Deficit Disorder (ADD), and similar disorders where a person's inability to focus on tasks significantly interferes with their life. Unlike other stimulants like caffeine, this type of drug improves a person's ability to

focus and concentrate, in addition to increasing alertness. Anne does not have ADD or any similar disorder, but she decides to start taking a stimulant to do better in her biology class.

Anne buys some prescription stimulants from another student in her dorm. Anne knows that the stimulant she bought has possible side effects, and poses some risk to her health. Anne is fully aware that no other students in her biology class are using prescription stimulants as performance enhancers. *None of her classmates* are currently taking drugs like this. She also knows that taking prescription stimulants that are not prescribed to her is against the rules of her university, and is illegal.

The stimulants pose some risk her health, will give her an advantage over her classmates, are against the rules of the university, and are against the law. Knowing all of this, Anne starts taking the prescription stimulant she bought to improve her academic performance.

No advantage/no risk/legal/permitted condition. Anne is a student in a very competitive pre-med biology class. Anne has heard that students sometimes use prescription stimulants like Adderall or Ritalin to sharpen their attention and memory, and improve their academic performance. Doctors prescribe these drugs to people with Attention Deficit Disorder (ADD), and similar disorders where a person's inability to focus on tasks significantly interferes with their life. Unlike other stimulants like caffeine, this type of drug improves a person's ability to focus and concentrate, in addition to increasing alertness. Anne does not have ADD or any similar disorder, but she decides to start taking a stimulant to do better in her biology class.

Anne buys some prescription stimulants from another student in her dorm. Anne knows that the stimulant she bought does not have any side effects, and poses no risk to her health, in the short or long term. Anne is fully aware that all of the other students in her biology class are

using prescription stimulants as performance enhancers. *All of her classmates* are currently taking drugs like this. She also knows that taking this particular stimulant without a prescription is not against the rules of her university, and is legal.

The stimulants pose no risk to her health, will not give her an unfair advantage over her classmates, are not against the rules of the university, and are not against the law. Knowing all of this, Anne starts taking the prescription stimulant she bought to improve her academic performance.

Results. As can be seen in Tables S7 and S8, performance on the continuous manipulation checks (fairness and danger to Anne's health) was very similar with and without the recap, but performance on the categorical manipulation checks (laws and university rules) as significantly better with the recap than without it. We therefore retained this version of the scenario for Study 13.

Table S7. Performance on categorical manipulation checks, Pretest 4.

Categorical Manipulation Check	**No Recap**	**Recap**	χ^2	***df***	***p***	***V***
Broke law?	67.6%	86.7%	10.28	2	.006	.28
Broke university rule?	68.6%	86.7%	9.55	2	.008	.22

Table S8. Descriptive and inferential statistics for continuous manipulation checks, Pretest 4.

How Unfair?			**How Dangerous?**		
	No Recap	**Recap**		**No Recap**	**Recap**
Advantage	6.76 (1.91)	6.79 (2.59)	**Risk**	6.57 (1.45)	5.71 (1.85)
No Advantage	3.65 (2.66)	3.35 (2.70)	**No Risk**	3.33 (2.37)	2.75 (2.38)
t	6.49	6.36	***t***	8.54	6.90
df	99.92	96	***df***	98.47	96
p	< .001	< .001	***p***	< .001	< .001
d	1.31	1.31	***d***	1.52	1.48

Analyses of Manipulation Checks from Studies 12 and 13

Study 12

Here, we report the effects of all manipulations, and their interactions, on all manipulation checks in Study 12. Briefly, manipulations showed much larger effects on their intended manipulation check than others, and interactions were generally small and inconsistent.

Fairness manipulation check. In a 2 (fairness) x 2 (prudence) x 2 (legality) x 2 (league rules) between-subjects ANOVA, fairness showed a very large effect on the question "did Joe an unfair advantage over anyone", $F(1, 808) = 524.69$, $p < .001$, $\eta_p^2 = .394$. The effects of prudence, $F(1, 808) = 5.86$, $p = .016$, $\eta_p^2 = .007$, legality, $F(1, 808) = 18.56$, $p < .001$, $\eta_p^2 = .022$, and league rules, $F(1, 808) = 47.86$, $p < .001$, $\eta_p^2 = .056$, were also significant, but were much smaller. Only two interactions emerged as significant in this analysis, between fairness and league rules, $F(1, 808) = 4.87$, $p = .028$, $\eta_p^2 = .006$, and legality and league rules, $F(1, 808) = 5.19$, $p = .023$, $\eta_p^2 = .006$, but these were also very small. We can therefore be confident that the effect of our fairness manipulation on wrongness ratings was exerted primarily through perceptions of unfair advantage.

Prudence manipulation check. In an ANOVA analogous to the one above, prudence showed a very large effect on the question "how dangerous to Joe's health is the steroid that he took?", $F(1, 808) = 665.11$, $p < .001$, $\eta_p^2 = .451$. Legality and league rules showed significant, but much smaller, effects, $F(1, 808) = 17.47$, $p < .001$, $\eta_p^2 = .021$, and $F(1, 808) = 5.31$, $p = .021$, $\eta_p^2 = .007$, respectively, while fairness showed no effect, $F(1, 808) = 0.08$, $p = .782$, $\eta_p^2 = .000$. No interaction emerged as significant in this analysis. We can therefore be confident that the

effect of our prudence manipulation on wrongness ratings was exerted primarily through perceptions of danger to the steroid user.

Legality manipulation check. In a multinomial logistic regression predicting responses to the question "did Joe break any law by taking anabolic steroids", with all four manipulations and all interactions entered as predictors, only the legality manipulation emerged as significant, $\chi^2(2) = 108.30$, $p < .001$.

League rules manipulation check. In a multinomial logistic regression analogous to the one above, predicting responses to the question, "did Joe break any rules of his competitive circuit by taking anabolic steroids", league rules emerged as a significant predictor, $\chi^2(2) = 113.00$, $p < .001$. The two-way interaction between league rules and prudence was also significant, but relatively insubstantial, $\chi^2(2) = 7.06$, $p = .029$.

Study 13

As above, we report here the effects of all manipulations, and their interactions, on all manipulation checks in Study 13.

Fairness manipulation check. . In a 2 (fairness) x 2 (prudence) x 2 (legality) x 2 (league rules) between-subjects ANOVA, fairness showed a very large effect on the question "did Anne an unfair advantage over anyone", $F(1, 1003) = 582.59$, $p < .001$, $\eta_p^2 = .37$. Legality and university rules showed much smaller, though significant, effects, $F(1, 1003) = 24.73$, $p = .030$, $\eta_p^2 = .005$ and $F(1, 1003) = 24.74$, $p = .030$, $\eta_p^2 = .005$, respectively. Prudence did not significantly affect this manipulation check, $F(1, 1003) = 0.25$, $p = .620$, $\eta_p^2 = .000$. Interactions between fairness and legality, $F(1, 1003) = 5.64$, $p = .018$, $\eta_p^2 = .006$, fairness and league rules, $F(1, 1003) = 8.55$, $p = .004$, $\eta_p^2 = .008$, legality and league rules, $F(1, 1003) = 4.16$, $p = .042$, η_p^2

= .004, legality and prudence, $F(1, 1003) = 7.89$, $p = .005$, $\eta_p^2 = .008$, and league rules and prudence, $F(1, 1003) = 6.40$, $p = 012$, $\eta_p^2 = .006$ also emerged as significant, though the effects were quite small.

Prudence manipulation check. In an ANOVA analogous to the one above, only prudence showed a significant effect on the question "how dangerous to Anne's health is the steroid that she took", $F(1, 1003) = 699.12$, $p < .001$, $\eta_p^2 = .411$.

Legality manipulation check. In a multinomial logistic regression predicting responses to the question "did Anne break any law by taking a prescription stimulant", with all four manipulations and all interactions entered as predictors, only the legality manipulation emerged as significant, $\chi^2(2) = 93.56$, $p < .001$.

University rules manipulation check. In a multinomial logistic regression analogous to the one above, predicting responses to the question "did Anne break any rules of her university by taking a prescription stimulant", only the manipulation of university rules was a significant predictor, $\chi^2(2) = 77.39$, $p < .001$.

Summary

Overall, our manipulations showed very large effects on the manipulation checks that they were intended to affect, consistent with the simpler analyses reported in the main text. Effects on other manipulation checks and interactive effects were rare and generally showed much smaller effects, so we can be confident that the observed effects on normative judgments are primarily exerted through the intended psychological mechanisms.