

**Supplementary Online Materials
Experiment 1**

Design

Target Words in Experiment 1

	High action-frequency		Low action-frequency	
	Action words and # of trials	Inaction words and # of trials	Action words and # of trials	Inaction words and # of trials
High action - proportion	Block #1		Block #2	
	<i>youth</i> - 18 <i>drink</i> - 18 <i>lives</i> - 18	<i>fresh</i> - 18	<i>fresh</i> - 6 <i>drink</i> - 6 <i>lives</i> - 6	<i>youth</i> -54
Low action- proportion	Block #3		Block #4	
	<i>fresh</i> - 54	<i>youth</i> - 6 <i>drink</i> - 6 <i>lives</i> - 6	<i>youth</i> - 18	<i>fresh</i> - 18 <i>drink</i> - 18 <i>lives</i> - 18

(Note: The green-shaded block is Block 1; the yellow-shaded block is Block 2; the red-shaded block is Block 3; and the blue-shaded block is Block 4).

The four blocks were run within-subject, with counterbalanced order. Specifically, the order to run the four blocks Participants group 1: 1, 2, 3, 4; group 2: 2, 1, 3, 4; group 3: 3, 1, 2, 4; group 4: 4, 1, 2, 3.

Instructions

Instructions were presented to participants by both text and audio (mp3).

Screen 1.

Welcome to the Experiment!

If you have not done so already, please turn off your cell phone, pager, or any other electronic device.

Screen 2.

Before you begin, you **MUST** read and sign the INFORMED CONSENT form found at your work station. The purpose of this form is to inform you about this study and of your rights as a participant. When you have read and signed this form please raise your hand so the experimenter can collect it. Please **DO NOT PROCEED** until the experimenter has collected your signed form. Thank you.

Screen 3.

This study is controlled by the computer. You will be asked to complete a series of short tasks. In each case, the computer will provide you with specific instructions. Please be sure to read the instructions carefully before starting each task.

Screen 4.

As a major part of this study, we wish to measure your visual-motor skills. You will complete a discrimination task that involves making quick behavioral responses to certain stimuli.

Screen 5.

In this study, you are to discriminate among the words YOUTH, DRINK, LIVES and FRESH. These words will be automatically presented every 1 second.

Your job is to press the spacebar as quickly as possible when some of the words are presented, and do not press any key when the other words are presented. You should press the spacebar with your index finger of your dominant hand. You should be ready to respond to the word immediately and correctly! We will give you the specific instructions at the beginning of the testing block.

Screen 6.

In the specific instructions given before each session, you will be informed of whether or not to respond to a given word, and with which key to respond. Please read the instructions carefully.

Screen 7.

If you have any questions at this point, please raise your hand. Otherwise, you may begin.

Screen 8:

Now, let's move to the visual-motor skill test task.

First, we'd give you 20 practice trials in which you will be presented with two words: EARTH and NATURE. For the first 10 trials, when you see the word EARTH, please press the spacebar as quickly as possible; when you see the word NATURE, please do not press the spacebar. You should press the spacebar with your index finger on your dominant hand. And you must be fully attentive and press the spacebar quickly BEFORE the responding word (that is, EARTH) disappears on the screen.

Please press the space bar when you are ready to begin. Good luck!

Now, let's move to the visual-motor skill test task.

First, we'd give you 20 practice trials in which you will be presented with two words: EARTH and NATURE.

For the first 10 trials, when you see the word EARTH, please press the spacebar as quickly as possible; when you see the word NATURE, please do not press the spacebar.

You should press the spacebar with your index finger on your dominant hand. And you must be fully attentive and press the spacebar quickly BEFORE the responding word (that is, EARTH) disappears on the screen.

Please press the space bar when you are ready to begin. Good luck!

Screen 9:

Now, for the following 10 trials, please press the spacebar when you see the word NATURE; and do not press the space bar when you see the word EARTH. You should press the spacebar with your index finger on your dominant hand. And you must be fully attentive and press the spacebar quickly BEFORE the responding word (that is NATURE) disappears on the screen. Please press the space bar when you are ready to begin. Good luck!

Now, for the following 10 trials, please press the spacebar when you see the word NATURE; and do not press the space bar when you see the word EARTH.

You should press the spacebar with your index finger on your dominant hand. And you must be fully attentive and press the spacebar quickly BEFORE the responding word (that is NATURE) disappears on the screen.

Please press the space bar when you are ready to begin. Good luck!

After finishing 10 practice trials,

Screen 10:

Congratulations, you have finished the 20 practice trials. If you have any questions at this point, please raise your hand and let the experimenter know. Otherwise, you may begin the visual-motor skill test task by pressing the space bar. In the following, we will have 12 sessions total for this test. You will be given specific instructions for each session of the experiment.

Congratulations! You have finished the 20 practice trials!

If you have any question at this point, please raise your hand and let the experimenter know. Otherwise, you may begin the visual-motor skill test task by press the spacebar.

In the following, we will have 1 section total for this test. You may be given specific instructions for each section of the experiment.

Screen 11 (for Block 1)

Now you will be presented with four words: FRESH, YOUTH, DRINK and LIVES.

Please do not press any key when FRESH is presented, and press the spacebar when any of the other three words (that is, YOUTH, DRINK or LIVES) is presented.

You should press the spacebar with your index finger on your dominant hand. You must be fully attentive and press the spacebar as quickly before the responding words disappear on the screen.

Please press the spacebar when you are ready to begin.

Screen 12 (for Block 2)

Now you will be presented with four words: FRESH, YOUTH, DRINK and LIVES.

Please do not press any key when YOUTH is presented, and press the spacebar when any of the other three words (that is, FRESH, DRINK or LIVES) is presented.

You should press the spacebar with your index finger on your dominant hand. You must be fully attentive and press the spacebar as quickly before the responding words disappear on the screen.

Please press the spacebar when you are ready to begin.

Screen 13 (for Block 3)

Now you will be presented with four words: **FRESH, YOUTH, DRINK and LIVES.**

Please press the spacebar when **FRESH** is presented, and do not press any key when any of the other three words (that is, **YOUTH, DRINK or LIVES**) is presented.

You should press the spacebar with your index finger on your dominant hand. You must be fully attentive and press the spacebar as quickly before the responding word disappears on the screen.

Please press the spacebar when you are ready to begin.

Screen 14 (for Block 4)

Now you will be presented with four words: **FRESH, YOUTH, DRINK and LIVES.**

Please press the spacebar when **YOUTH** is presented, and do not press any key when any of the other three words (that is, **FRESH, DRINK or LIVES**) is presented.

You should press the spacebar with your index finger on your dominant hand. You must be fully attentive and press the spacebar as quickly before the responding word disappears on the screen.

Please press the spacebar when you are ready to begin.

(Note: the order of Blocks 1, 2, 3, and 4 were randomized, so the presentations of Screens 11, 12, 13 and 14 were also accordingly randomized).

Screen 15:

Thank you very much for participating!

When you are leaving, you will receive a debriefing form from the experimenter, please feel free to take it, or you may return it to the experimenter.

EXPERIMENT 2

Instructions

Screen 1:

Welcome to the Experiment!

If you have not done so already, please turn off your cell phone, pager, or any other electronic device.

Screen 2:

Before you begin, you **MUST** read and sign the **INFORMED CONSENT** form found at your work station. The purpose of this form is to inform you about this study and of your rights as a participant. When you have read and signed this form please raise your hand so the experimenter can collect it. Please **DO NOT PROCEED** until the experimenter has collected your signed form.

Thank you.

Screen 3:

This study is controlled by the computer. You will be asked to complete a series of short tasks. In each case, the computer will provide you with specific instructions. Please be sure to read the instructions carefully before starting each task.

Screen 4:

As a major part of this study, we wish to measure your memory and visual-motor skills. You will complete a discrimination task that involves making quick behavioral responses to certain stimuli. The types of stimuli that we will use have been randomized, so that some conditions include words, others people, and others nonhuman objects.

Screen 5:

The task for today is about memory for faces. We will test your ability to memorize different responses to different people who are introduced by a photograph and an associated name. In this condition you will see four people: Michael, Ashley, Emily, and Joshua.

Your task is to wave to target person(s) (as you knew the person(s)). For example, in one of the blocks, you may be instructed to wave to Michael by pressing the space bar (the wave key) and do not wave to the other three by not pressing any keys.


You will be presented with these faces over a number of trials and asked to respond to each face in a correct fashion. You will wave by pressing the space bar and not wave by not pressing the space bar.

The four target people are presented in the next slide.

Please press the space bar to continue.

Screen 6:

Here are the four people you need to memorize. Now you have two minutes to memorize them, including their names and faces. In the following section, we will test your memory by asking you to recognize them as quickly as possible. Please memorize them now.



Michael Ashley Emily Joshua

If you are ready for the recognition test, please press the space bar to continue.

Screen 7:

In this following section, we will test your memory. Remember, you need to wave to the target person(s) by pressing the space bar and not to wave to the others by not pressing any keys. We will give you specific instructions for each block.

Screen 8:

Before moving to the face recognition test, let's have a practice section first. This section will practice your visual-motor skills for recognizing stimuli and responding to them. Please continue to move into the practice section.

Screen 9 (Practice 1):

Now, let's move to the visual-motor skill practice section.

In the practice section, you will be presented with two words: EARTH and NATURE.

For the first 10 trials, when you see EARTH, please wave to the word EARTH by pressing the space bar as quickly as possible; when you see the word NATURE, please do not wave to it by not pressing any keys.

You should press the space bar with your index finger on your dominant hand. And you must be fully attentive and press the spacebar quickly BEFORE the responding word (that is, EARTH) disappears on the screen.

Screen 10 (Practice 2):

Now, for the following 10 trials, please wave to the word NATURE by pressing the space bar when NATURE appears; and do not wave to the word EARTH by not pressing the space bar.

You should press the space bar with your index finger on your dominant hand. And you must be fully attentive and press the spacebar quickly BEFORE the responding word (that is, NATURE) disappears on the screen.

Please press the space bar when you are ready to begin. Good luck!

Screen 11 (Practice End):

Congratulations! You have finished the 20 visual-motor skill practice trials!

If you have any question at this point, please raise your hand and let the experimenter know. Otherwise, you may begin the face recognition test by pressing the spacebar.

There is only one section for this recognition test. Please be fully attentive. You may be given specific instructions for this section.

Screen 12 (condition/block1 - low action-proportion)

Now, please wave to Michael by pressing the space bar when his picture is presented; and do not wave to the other three by not pressing any key. Please press the space bar as quickly as possible. If you need, you can have a few minutes to memorize them. If you are ready for the recognition test, please press the space bar to continue.

Now, let's move to the face recognition test. Remember, you and Michael are good friends and you do not know the other three ones. Please wave to Michael by pressing the space bar when Michael's picture is presented; and do not wave to the other three by not pressing any key. Please press the space bar as quickly as possible.



Michael

Wave to him



Ashley

Don't wave to her



Emily

Don't wave to her



Joshua

Don't wave to him

You can have a few minutes to memorize them. If you are ready for the recognition test, please press the space bar to continue.

Screen 13 (condition/block2 - low action-proportion)

Now, please wave to Joshua by pressing the space bar when his picture is presented; and do not wave to the other three by not pressing any key. Please press the space bar as quickly as possible. If you need, you can have a few minutes to memorize them. If you are ready for the recognition test, please press the space bar to continue.

Screen 14 (condition/block3 - high action-proportion)

Now, please wave to Ashley, Emily and Joshua by pressing the space bar when their pictures are presented; and do not wave to Michael by not pressing any key. Please press the space bar as quickly as possible.

If you need, you can have a few minutes to memorize them. If you are ready for the recognition test, please press the space bar to continue.

Screen 15 (condition/block4 - high action-proportion)

Now, please wave to Ashley, Emily and Michael by pressing the space bar when their pictures are presented; and do not wave to Joshua by not pressing any key. Please press the space bar as quickly as possible.

If you need, you can have a few minutes to memorize them. If you are ready for the recognition test, please press the space bar to continue.

Screen 16 (End)

Thank you very much for participating!

When you are leaving, you will receive a debriefing form from the experimenter, please feel free to take it, or you may return it to the experimenter.

EXPERIMENT 3

Design

Same design/instructions as Experiment 1.

Target words: Three sets of words were used as targets.

Set A were “Health”, “Doctor”, “Energy” and “Green” four words.

Set B were “Youth”, “Drink”, “Lives” and “Fresh” four words.

Set C were “Health”, “Doctor”, “Energy” and “Green”, and “Youth”, “Drink”, “Lives” and “Fresh” eight words.

Each set included four blocks of mapping rules.

Four Blocks for Set A:

Set A Block 1:

Health — No Go — 12 trials
Doctor — No Go — 12 trials
Energy — No Go — 12 trials
Green — Go — 12 trials

Set A Block 2:

Health — Go — 24 trials
Doctor — No Go — 8 trials
Energy — No Go — 8 trials
Green — No Go — 8 trials

Set A Block 3:

Health — No Go — 12 trials
Doctor — Go — 12 trials
Energy — Go — 12 trials
Green — Go — 12 trials

Set A Block 4:

Health — Go — 8 trials
Doctor — Go — 8 trials
Energy — Go — 8 trials
Green — No Go — 24 trials

Four Blocks for Set B:

Set B Block 1:

Youth — No Go — 12 trials
Drink — No Go — 12 trials
Lives — No Go — 12 trials
Fresh — Go — 12 trials

Set B Block 2:

Youth — Go — 24 trials
Drink — No Go — 8 trials
Lives — No Go — 8 trials
Fresh — No Go — 8 trials

Set B Block 3:

Youth — No Go — 12 trials
Drink — Go — 12 trials
Lives — Go — 12 trials
Fresh — Go — 12 trials

Set B Block 4:

Youth — Go — 8 trials
Drink — Go — 8 trials
Lives — Go — 8 trials
Fresh — No Go — 24 trials

Four Blocks for Set C:

Set C Block 1:

Health — No Go — 12 trials
Doctor — No Go — 12 trials
Energy — No Go — 12 trials
Green — Go — 12 trials
Youth — No Go — 12 trials
Drink — No Go — 12 trials
Lives — No Go — 12 trials
Fresh — Go — 12 trials

Set C Block 2:

Health — Go — 24 trials
Doctor — No Go — 8 trials
Energy — No Go — 8 trials
Green — No Go — 8 trials
Youth — Go — 24 trials
Drink — No Go — 8 trials
Lives — No Go — 8 trials
Fresh — No Go — 8 trials

Set C Block 3:

Health — No Go — 12 trials
Doctor — Go — 12 trials
Energy — Go — 12 trials
Green — Go — 12 trials
Youth — No Go — 12 trials
Drink — Go — 12 trials
Lives — Go — 12 trials
Fresh — Go — 12 trials

Set C Block 4:

Health — Go — 8 trials
Doctor — Go — 8 trials
Energy — Go — 8 trials

Green — No Go — 24 trials
Youth — Go — 8 trials
Drink — Go — 8 trials
Lives — Go — 8 trials
Fresh — No Go — 24 trials

Instructions

Screen 1:

Welcome to the Experiment!

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Screen 2:

Before you begin, you **MUST** read and sign the **INFORMED CONSENT** form found at your work station. The purpose of this form is to inform you about this study and of your rights as a participant. When you have read and signed this form please raise your hand so the experimenter can collect it. Please **DO NOT PROCEED** until the experimenter has collected your signed form.

Thank you.

Screen 3:

This study is controlled by the computer. You will be asked to complete a series of short tasks. In each case, the computer will provide you with specific instructions. Please be sure to read the instructions carefully before starting each task.

Screen 4:

As a major part of this study, we wish to measure your visual-motor skills. You will complete a discrimination task that involves making quick behavioral responses to certain stimuli.

Screen 5:

In this study, you are to discriminate among the words **YOUTH**, **DRINK**, **LIVES** and **FRESH**. These words will be automatically presented every 1 second.

Your job is to press the spacebar as quickly as possible when some of the words are presented, and do not press any key when the other words are presented. You should press the spacebar with your index finger of your dominant hand. You should be ready to respond to the word immediately and correctly! We will give you the specific instructions at the beginning of the testing block.

Screen 6:

In the specific instructions given before each session, you will be informed of whether or not to respond to a given word, and with which key to respond. Please read the instructions carefully.

Screen 7:

If you have any questions at this point, please raise your hand. Otherwise, you may begin.

Screen 8:

Now, let's move to the visual-motor skill test task.

First, we'd give you 20 practice trials in which you will be presented with two words: EARTH and NATURE. For the first 10 trials, when you see the word EARTH, please press the spacebar as quickly as possible; when you see the word NATURE, please do not press the spacebar. You should press the spacebar with your index finger on your dominant hand. And you must be fully attentive and press the spacebar quickly BEFORE the responding word (that is, EARTH) disappears on the screen.

Please press the space bar when you are ready to begin. Good luck!

Now, let's move to the visual-motor skill test task.

First, we'd give you 20 practice trials in which you will be presented with two words: EARTH and NATURE.

For the first 10 trials, when you see the word EARTH, please press the spacebar as quickly as possible; when you see the word NATURE, please do not press the spacebar.

You should press the spacebar with your index finger on your dominant hand. And you must be fully attentive and press the spacebar quickly BEFORE the responding word (that is, EARTH) disappears on the screen.

Please press the space bar when you are ready to begin. Good luck!

Screen 9:

Now, for the following 10 trials, please press the spacebar when you see the word NATURE; and do not press the space bar when you see the word EARTH. You should press the spacebar with your index finger on your dominant hand. And you must be fully attentive and press the spacebar quickly BEFORE the responding word (that is NATURE) disappears on the screen.

Please press the space bar when you are ready to begin. Good luck!

Now, for the following 10 trials, please press the spacebar when you see the word NATURE; and do not press the space bar when you see the word EARTH.

You should press the spacebar with your index finger on your dominant hand. And you must be fully attentive and press the spacebar quickly BEFORE the responding word (that is NATURE) disappears on the screen.

Please press the space bar when you are ready to begin. Good luck!

After finishing 10 practice trials,

Screen 10:

Congratulations, you have finished the 20 practice trials. If you have any questions at this point, please raise your hand and let the experimenter know. Otherwise, you may begin the visual-motor skill test task by pressing the space bar. In the following, we will have 12 sessions total for this test. You will be given specific instructions for each session of the experiment.

Congratulations! You have finished the 20 practice trials!

If you have any question at this point, please raise your hand and let the experimenter know. Otherwise, you may begin the visual-motor skill test task by press the spacebar.

In the following, we will have 1 section total for this test. You may be given specific instructions for each section of the experiment.

Screen 11 (For Set A Block 1):

Now you will be presented with four words: HEALTH, DOCTOR, ENERGY, and GREEN. Please do press spacebar when GREEN is present, and do not present any key when any of the other three words (that is, HEALTH, DOCTOR, or ENERGY) is presented.

You should press the spacebar with your index finger on your dominant hand. You must be fully attentive and press the spacebar as quickly before the responding words disappear on the screen. When you are ready for the test, please press the space bar to begin.

Screen 12 (For Set A Block 2):

Now you will be presented with four words: HEALTH, DOCTOR, ENERGY, and GREEN.

Please do press spacebar when HEALTH is present, and do not present any key when any of the other three words (that is, GREEN, DOCTOR, or ENERGY) is presented.

You should press the spacebar with your index finger on your dominant hand. You must be fully attentive and press the spacebar as quickly before the responding words disappear on the screen. When you are ready for the test, please press the space bar to begin.

Screen 13 (For Set A Block 3):

Now you will be presented with four words: HEALTH, DOCTOR, ENERGY, and GREEN.

Please do not press any key when HEALTH is present, and press the spacebar when any of the other three words (that is, GREEN, DOCTOR, or ENERGY) is presented.

You should press the spacebar with your index finger on your dominant hand. You must be fully attentive and press the spacebar as quickly before the responding words disappear on the screen. When you are ready for the test, please press the space bar to begin.

Screen 14 (For Set A Block 4):

Now you will be presented with four words: HEALTH, DOCTOR, ENERGY, and GREEN.

Please do not press any key when GREEN is present, and press the spacebar when any of the other three words (that is, HEALTH, DOCTOR, or ENERGY) is presented.

You should press the spacebar with your index finger on your dominant hand. You must be fully attentive and press the spacebar as quickly before the responding words disappear on the screen. When you are ready for the test, please press the space bar to begin.

Screen 15 (For Set B Block 1):

Now you will be presented with four words: YOUTH, DRINK, LIVES, and FRESH.

Please do press spacebar when FRESH is present, and do not present any key when any of the other three words (that is, YOUTH, DRINK, or LIVES) is presented.

You should press the spacebar with your index finger on your dominant hand. You must be fully attentive and press the spacebar as quickly before the responding words disappear on the screen. When you are ready for the test, please press the space bar to begin.

Screen 16 (For Set B Block 2):

Now you will be presented with four words: YOUTH, DRINK, LIVES, and FRESH.

Please do press spacebar when YOUTH is present, and do not present any key when any of the other three words (that is, FRESH, DRINK, or LIVES) is presented.

You should press the spacebar with your index finger on your dominant hand. You must be fully attentive and press the spacebar as quickly before the responding words disappear on the screen. When you are ready for the test, please press the space bar to begin.

Screen 17 (For Set B Block 3):

Now you will be presented with four words: YOUTH, DRINK, LIVES, and FRESH.

Please do not press any key when YOUTH is present, and press the spacebar when any of the other three words (that is, FRESH, DRINK, or LIVES) is presented.

You should press the spacebar with your index finger on your dominant hand. You must be fully attentive and press the spacebar as quickly before the responding words disappear on the screen. When you are ready for the test, please press the space bar to begin.

Screen 18 (For Set B Block 4):

Now you will be presented with four words: YOUTH, DRINK, LIVES, and FRESH.

Please do not press any key when FRESH is present, and press the spacebar when any of the other three words (that is, YOUTH, DRINK, or LIVES) is presented.

You should press the spacebar with your index finger on your dominant hand. You must be fully attentive and press the spacebar as quickly before the responding words disappear on the screen. When you are ready for the test, please press the space bar to begin.

Screen 19 (For Set C Block 1):

Now you will be presented with eight words: HEALTH, DOCTOR, ENERGY, GREEN, YOUTH, DRINK, LIVES, and FRESH.

Please do not press spacebar when GREEN and FRESH are present, and do not present any key when any of the other three words (that is, HEALTH, DOCTOR, ENERGY, YOUTH, DRINK, or LIVES) is presented.

You should press the spacebar with your index finger on your dominant hand. You must be fully attentive and press the spacebar as quickly before the responding words disappear on the screen. When you are ready for the test, please press the space bar to begin.

Screen 20 (For Set C Block 2):

Now you will be presented with eight words: HEALTH, DOCTOR, ENERGY, GREEN, YOUTH, DRINK, LIVES, and FRESH.

Please do not press spacebar when HEALTH and YOUTH are present, and do not present any key when any of the other three words (that is, GREEN, DOCTOR, ENERGY, DRINK, LIVES, or FRESH) is presented.

You should press the spacebar with your index finger on your dominant hand. You must be fully attentive and press the spacebar as quickly before the responding words disappear on the screen. When you are ready for the test, please press the space bar to begin.

Screen 21 (For Set C Block 3):

Now you will be presented with eight words: HEALTH, DOCTOR, ENERGY, GREEN, YOUTH, DRINK, LIVES, and FRESH.

Please do not press any key when HEALTH and YOUTH are present, and press the spacebar when any of the other three words (that is, GREEN, DOCTOR, ENERGY, DRINK, LIVES, or FRESH) is presented.

You should press the spacebar with your index finger on your dominant hand. You must be fully attentive and press the spacebar as quickly before the responding words disappear on the screen. When you are ready for the test, please press the space bar to begin.

Screen 22 (For Set C Block 4):

Now you will be presented with eight words: HEALTH, DOCTOR, ENERGY, GREEN, YOUTH, DRINK, LIVES, and FRESH.

Please do not press any key when GREEN and FRESH are present, and press the spacebar when any of the other three words (that is, HEALTH, DOCTOR, ENERGY, YOUTH, DRINK, or LIVES) is presented.

You should press the spacebar with your index finger on your dominant hand. You must be fully attentive and press the spacebar as quickly before the responding words disappear on the screen. When you are ready for the test, please press the space bar to begin.

(Note. The 4 Blocks in each set were randomized; and the 3 sets were also randomized).

Screen 23 (End):

Thank you very much for participating!

When you are leaving, you will receive a debriefing form from the experimenter, please feel free to take it, or you may return it to the experimenter.

EXPERIMENT 4

Action & Inaction Focus Conditions

Instructions

Screen 1:

Welcome to the Experiment!

If you have not done so already, please turn off your cell phone, pager, or any other electronic device.

Screen 2:

Before you begin, you **MUST** read and sign the INFORMED CONSENT form found at your work station. The purpose of this form is to inform you about this study and of your rights as a participant. When you have read and signed this form please raise your hand so the experimenter can collect it. Please **DO NOT PROCEED** until the experimenter has collected your signed form. Thank you.

Screen 3:

This study is controlled by the computer. You will be asked to complete a series of short tasks. In each case, the computer will provide you with specific instructions. Please be sure to read the instructions carefully before starting each task.

Screen 4:

As a major part of this study, we wish to measure your visual-motor skills. You will complete a discrimination task that involves making quick behavioral responses to certain stimuli.

Screen 5:

In this study, you are to discriminate among the words **YOUTH, DRINK, LIVES** and **FRESH**. These words will be automatically presented every 1 second.

Your job is to press the spacebar as quickly as possible when some of the words are presented, and do not press any key when the other words are presented. You should press the spacebar with your index finger of your dominant hand. You should be ready to respond to the word immediately and correctly! We will give you the specific instructions at the beginning of the testing block.

Screen 6:

If you have any questions at this point, please raise your hand. Otherwise, you may begin.

(For Action-focus condition practice) Screen 7:

Before the testing block, we'd give a 20-trial practicing block. In this block, you will be presented with two words: **EARTH** and **NATURE**.

Please press the spacebar as quickly as possible when you see the word **EARTH, and do not press any key when the other word is presented.**

Please press the space bar when you are ready to begin. Good luck!

(For Action-focus condition practice) Screen 8:

Congratulations, you have finished the 20 practicing trials. If you have any questions at this point, please raise your hand and let the experimenter know. Otherwise, you may begin the visual-motor skill test task by pressing the space bar. The testing block will contain 72 trials.

Remember, your job is to press the space for some of the words are presented. The specific instructions will be given at the beginning of the test block.

(For Inaction-focus condition practice) Screen 7:

Before the testing block, we'd give a 20-trial practicing block. In this block, you will be presented with two words: EARTH and NATURE.

Please not press any key when you see the word NATURE; and press the spacebar when the other word is presented.

Please press the space bar when you are ready to begin. Good luck!

(For Inaction-focus condition practice) Screen 8:

Congratulations, you have finished the 20 practicing trials. If you have any questions at this point, please raise your hand and let the experimenter know. Otherwise, you may begin the visual-motor skill test task by pressing the space bar. The testing block will contain 72 trials.

Remember, you must not press any keys when some of the words are presented. The specific instructions will be given at the beginning of the test block.

(For condition 1: high action-proportion & action-focus) Screen 9:

Now, please press the spacebar when YOUTH, DRINK, and LIVES are presented.

You must be fully attentive in the test.

You may take a little bit time for the preparation.

When you are ready for the test, please press the space bar to begin.

(For condition 2: high action-proportion & inaction-focus) Screen 9:

Now, please do not press any when YOUTH is presented.

You must be fully attentive in the test.

You may take a little bit time for the preparation.

When you are ready for the test, please press the space bar to begin.

(For condition 3: low action-proportion & action-focus) Screen 9:

Now, please press the spacebar when FRESH is presented.

You must be fully attentive in the test.

You may take a little bit time for the preparation.

When you are ready for the test, please press the space bar to begin.

(For condition 4: low action-proportion & inaction-focus) Screen 9:

Now, please do not press any when DRINK, LIVES, and FRESH are presented.

You must be fully attentive in the test.

You may take a little bit time for the preparation.

When you are ready for the test, please press the space bar to begin.

Screen 10 (End):

Thank you very much for participating!

When you are leaving, you will receive a debriefing form from the experimenter, please feel free to take it, or you may return it to the experimenter.

**Control (No focus) Conditions
(with Action and Inaction Instructions Stated in Counterbalanced Order)**

Instructions

Screen 1:

Welcome to the Experiment!

If you have not done so already, please turn off your cell phone, pager, or any other electronic device.

Screen 2:

Before you begin, you **MUST** read and sign the INFORMED CONSENT form found at your work station. The purpose of this form is to inform you about this study and of your rights as a participant. When you have read and signed this form please raise your hand so the experimenter can collect it. Please **DO NOT PROCEED** until the experimenter has collected your signed form. Thank you.

Screen 3:

This study is controlled by the computer. You will be asked to complete a series of short tasks. In each case, the computer will provide you with specific instructions. Please be sure to read the instructions carefully before starting each task.

Screen 4:

As a major part of this study, we wish to measure your visual-motor skills. You will complete a discrimination task that involves making quick behavioral responses to certain stimuli.

Screen 5:

In this study, you are to discriminate among the words **YOUTH, DRINK, LIVES** and **FRESH**. These words will be automatically presented every 1 second.

Your job is to press the spacebar as quickly as possible when some of the words are presented, and do not press any key when the other words are presented. You should press the spacebar with your index finger of your dominant hand. You should be ready to respond to the word immediately and correctly! We will give you the specific instructions at the beginning of the testing block.

Screen 6:

If you have any questions at this point, please raise your hand. Otherwise, you may begin.

(For practice in control condition in which action instruction precedes inaction instruction)

Screen 7:

Before the testing block, we'd give a 20-trial practicing block. In this block, you will be presented with two words: EARTH and NATURE.

Please press the spacebar as quickly as possible when you see the word EARTH, and do not press any key when the other word is presented.

Please press the space bar when you are ready to begin. Good luck!

(For practice in control condition in which action instruction precedes inaction instruction)

Screen 8:

Congratulations, you have finished the 20 practicing trials. If you have any questions at this point, please raise your hand and let the experimenter know. Otherwise, you may begin the visual-motor skill test task by pressing the space bar. The testing block will contain 72 trials.

Remember, your job is to press the space for some of the words are presented. The specific instructions will be given at the beginning of the test block.

(For practice in control condition in which inaction instruction precedes action instruction)

Screen 7;

Before the testing block, we'd give a 20-trial practicing block. In this block, you will be presented with two words: EARTH and NATURE.

Please not press any key when you see the word NATURE; and press the spacebar when the other word is presented.

Please press the space bar when you are ready to begin. Good luck!

(For practice in control condition in which inaction instruction precedes action instruction)

Screen 8;

Congratulations, you have finished the 20 practicing trials. If you have any questions at this point, please raise your hand and let the experimenter know. Otherwise, you may begin the visual-motor skill test task by pressing the space bar. The testing block will contain 72 trials.

Remember, you must not press any keys when some of the words are presented. The specific instructions will be given at the beginning of the test block.

(For Condition 1: high action proportion & control condition in which action instruction precedes inaction instruction) Screen 9:

Now, please press the spacebar when YOUTH, DRINK, and LIVES are presented, and do not press any key when FRESH is presented.

You must be fully attentive in the test.

You may take a little bit of time for the preparation.

When you are ready for the test, please press the spacebar to begin.

(For Condition 2: high action proportion & control condition in which inaction instruction precedes action instruction) Screen 9:

Now, please do not press any key when YOUTH is presented, and press the spacebar when DRINK, LIVES, and FRESH are presented.

You must be fully attentive in the test.
You may take a little bit of time for the preparation.
When you are ready for the test, please press the spacebar to begin.

(For Condition 3: low action proportion & control condition in which action instruction precedes inaction instruction) Screen 9:

Now, please press the spacebar when FRESH is presented, and do not press any key when YOUTH, DRINK, and LIVES are presented.
You must be fully attentive in the test.
You may take a little bit of time for the preparation.
When you are ready for the test, please press the spacebar to begin.

(For Condition 4: low action proportion & control condition in which inaction instruction precedes action instruction) Screen 9.

Now, please do not press any key when DRINK, LIVES, and FRESH are presented, and press the spacebar when YOUTH is presented.
You must be fully attentive in the test.
You may take a little bit of time for the preparation.
When you are ready for the test, please press the spacebar to begin.

Screen 11:

Great! You have done the test. Let's move to another experiment in the following 20 minutes.

(For Condition 2: high action proportion & control condition in which inaction instruction precedes action instruction) Screen 9:

Now, please do not press any key when YOUTH is presented, and press the spacebar when DRINK, LIVES, and FRESH are presented.
You must be fully attentive in the test.
You may take a little bit of time for the preparation.
When you are ready for the test, please press the spacebar to begin.

(For Condition 2: high action proportion & inaction focus) Screen 10:

Please remember that you should not press any key when YOUTH is presented.

(For Condition 3: low action proportion & control condition in which action instruction precedes inaction instruction) Screen 9:

Now, please press the spacebar when FRESH is presented, and do not press any key when YOUTH, DRINK, and LIVES are presented.
You must be fully attentive in the test.
You may take a little bit of time for the preparation.
When you are ready for the test, please press the spacebar to begin.

(For Condition 3: low action proportion & action-focus) Screen 10:

Please remember that you have to press the spacebar when FRESH is presented.

(For Condition 4: low action proportion & control condition in which inaction instruction precedes action instruction) Screen 9.

Now, please do not press any key when DRINK, LIVES, and FRESH are presented, and press the spacebar when YOUTH is presented.

You must be fully attentive in the test.

You may take a little bit of time for the preparation.

When you are ready for the test, please press the spacebar to begin.

(For Condition 4: low action proportion & inaction-focus) Screen 10:

Please remember that you should not press any key when DRINK, LIVES, and FRESH are presented.

Screen 11:

Great! You have done the test. Let's move to another experiment in the following 20 minutes.