MULTIPLE ANCHORS MANUFACTURED HEURISTICS – FINAL SURVEY

April 2017

**Dear Participant,**

**Please complete this survey on a relevant public policy issue. The survey is anonymous, and no one will know what answers you give. This brief survey should take no more than 20 minutes to complete. Thank you for your time and help with this effort. If you have any questions, please do not hesitate to send us an email at:** **survey.iub@gmail.com****.**

**Sincerely,**

**Dr. Shahzeen Attari and Dr. David Landy**

Note: Page breaks, survey notes, and logic branches are indicated in orange font. [Progress Bar Shown at the Bottom of Every Page] [PAGE BREAK]

Experimental arms - participants are shown only one of four arms (indicated as V1-V4) at random followed by the rest of the survey

**Appliance Wattage Estimations**

**[V1 Single Anchor]**

**A 100-watt incandescent light bulb uses 100 units of energy in one hour.**

**When you are asked to estimate units of energy, please compare each appliance to the appliance listed above. Think about whether each appliance below uses less energy or more energy than the appliance listed above. Please use this number to help you make your estimates.**

**How many units of energy do you think each of the following devices typically uses in one hour?**

**Your best estimates are fine. Please enter whole numbers with no other text (not decimals, ranges, or percentages).** [open ended; text box; numeric validation]

|  |  |
| --- | --- |
| **Appliance** | **Estimate of energy use** |
| Compact Fluorescent Light (CFL) bulb | 23 |
| Desktop computer | 138 |
| Laptop computer | 32 |
| Stereo | 33 |
| Window air conditioner | 1157 |
| Central air conditioner | 3797 |
| Clothes dryer | 3938 |
| Dishwasher | 1201 |
| Charging a Tesla Model-S electric car | 11520 |
| Dehumidifier | 734 |
| Humidifier | 185 |
| Vacuum | 809 |
| Incandescent light bulb | 100 |
| Slow cooker (crockpot) | 318 |
| Electric oven | 3050 |
| Portable heater | 1290 |
| Charging a smartphone | 3.42 |
| 40” flat screen television | 68 |
| Ceiling fan  | 68 |
| Water heater | 4284 |
| Modem | 12.1 |
| Television Cable box | 33 |
| Alarm clock | 2.8 |
| Iron | 1198 |
| Projector | 197 |
| Fridge | 364 |
| Storage freezer | 384 |
| Washing machine  | 478 |
| Video game console | 110 |
| Electric blanket | 197 |
| DVD player | 9.13 |
| Microwave | 1101 |
| Toaster | 1213 |
| LED light bulb | 15 |
| Electric kettle | 1390 |
| Coffee maker | 1134 |

**[V2 Multiple Anchors]**

**A 5-watt phone charger uses 5 units of energy to charge a smartphone in one hour. Similarly, a 100-watt incandescent light bulb uses 100 units of energy in one hour, and a typical clothes dryer uses about 4,000 units of energy in one hour.**

**When you are asked to estimate units of energy, please compare each appliance to the appliances listed above. Think about whether each appliance below uses less energy or more energy than the appliances listed above. Please use these numbers to help you make your estimates.**

**How many units of energy do you think each of the following devices typically uses in one hour?**

**Your best estimates are fine. Please enter whole numbers with no other text (not decimals, ranges, or percentages).** [open ended; text box; numeric validation]

|  |  |
| --- | --- |
| **Appliance** | **Estimate of energy use** |
| Compact Fluorescent Light (CFL) bulb | 23 |
| Desktop computer | 138 |
| Laptop computer | 32 |
| Stereo | 33 |
| Window air conditioner | 1157 |
| Central air conditioner | 3797 |
| Clothes dryer | 3938 |
| Dishwasher | 1201 |
| Charging a Tesla Model-S electric car | 11520 |
| Dehumidifier | 734 |
| Humidifier | 185 |
| Vacuum | 809 |
| Incandescent light bulb | 100 |
| Slow cooker (crockpot) | 318 |
| Electric oven | 3050 |
| Portable heater | 1290 |
| Charging a smartphone | 3.42 |
| 40” flat screen television | 68 |
| Ceiling fan  | 68 |
| Water heater | 4284 |
| Modem | 12.1 |
| Television Cable box | 33 |
| Alarm clock | 2.8 |
| Iron | 1198 |
| Projector | 197 |
| Fridge | 364 |
| Storage freezer | 384 |
| Washing machine  | 478 |
| Video game console | 110 |
| Electric blanket | 197 |
| DVD player | 9.13 |
| Microwave | 1101 |
| Toaster | 1213 |
| LED light bulb | 15 |
| Electric kettle | 1390 |
| Coffee maker | 1134 |

**[V3 Single Anchor and Manufactured Heuristic]**

**A 100-watt incandescent light bulb uses 100 units of energy in one hour.**

**When you are asked to estimate units of energy, please compare each appliance to the appliance listed above. Think about whether each appliance below uses less energy or more energy than the appliance listed above. Please use this number to help you make your estimates.**

**How many units of energy do you think each of the following devices typically uses in one hour?**

**Your best estimates are fine. Please enter whole numbers with no other text (not decimals, ranges, or percentages).** [open ended; text box; numeric validation]

**Note that LARGE appliances that primarily HEAT or COOL things use a lot more energy than people think.**

|  |  |
| --- | --- |
| **Appliance** | **Estimate of energy use** |
| Compact Fluorescent Light (CFL) bulb | 23 |
| Desktop computer | 138 |
| Laptop computer | 32 |
| Stereo | 33 |
| Window air conditioner | 1157 |
| Central air conditioner | 3797 |
| Clothes dryer | 3938 |
| Dishwasher | 1201 |
| Charging a Tesla Model-S electric car | 11520 |
| Dehumidifier | 734 |
| Humidifier | 185 |
| Vacuum | 809 |
| Incandescent light bulb | 100 |
| Slow cooker (crockpot) | 318 |
| Electric oven | 3050 |
| Portable heater | 1290 |
| Charging a smartphone | 3.42 |
| 40” flat screen television | 68 |
| Ceiling fan  | 68 |
| Water heater | 4284 |
| Modem | 12.1 |
| Television Cable box | 33 |
| Alarm clock | 2.8 |
| Iron | 1198 |
| Projector | 197 |
| Fridge | 364 |
| Storage freezer | 384 |
| Washing machine  | 478 |
| Video game console | 110 |
| Electric blanket | 197 |
| DVD player | 9.13 |
| Microwave | 1101 |
| Toaster | 1213 |
| LED light bulb | 15 |
| Electric kettle | 1390 |
| Coffee maker | 1134 |

**[V4 Multiple Anchors and Manufactured Heuristic]**

**A 5-watt phone charger uses 5 units of energy to charge a smartphone in one hour. Similarly, a 100-watt incandescent light bulb uses 100 units of energy in one hour, and a typical clothes dryer uses about 4,000 units of energy in one hour.**

**When you are asked to estimate units of energy, please compare each appliance to the appliances listed above. Think about whether each appliance below uses less energy or more energy than the appliances listed above. Please use these numbers to help you make your estimates.**

**How many units of energy do you think each of the following devices typically uses in one hour?**

**Your best estimates are fine. Please enter whole numbers with no other text (not decimals, ranges, or percentages).** [open ended; text box; numeric validation]

**Note that LARGE appliances that primarily HEAT or COOL things use a lot more energy than people think.**

|  |  |
| --- | --- |
| **Appliance** | **Estimate of energy use** |
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| Window air conditioner | 1157 |
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| DVD player | 9.13 |
| Microwave | 1101 |
| Toaster | 1213 |
| LED light bulb | 15 |
| Electric kettle | 1390 |
| Coffee maker | 1134 |

[PAGE BREAK] **[Everyone sees the rest of the survey]**

**How confident are you about your overall estimates?**

\_\_\_Not at all confident \_\_\_Somewhat confident \_\_\_Confident \_\_\_Extremely confident

**Walk us through how you estimated the amount of energy used for the washing machine:** **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Walk us through how you estimated the amount of energy used for the projector:**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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**Behavioral Choice Tasks**

[Display question logic: if V1 wattage estimate isn’t blank, display question: “A 100-watt incandescent light bulb uses 100 units of energy in one hour.”]

[Display question logic: if V2 wattage estimate isn’t blank, display question: “A 5-watt phone charger uses 5 units of energy to charge a smartphone in one hour. Similarly, a 100-watt incandescent light bulb uses 100 units of energy in one hour, and a typical clothes dryer uses about 4,000 units of energy in one hour.”]

[Display question logic: if V3 wattage estimate isn’t blank, display question: “A 100-watt incandescent light bulb uses 100 units of energy in one hour.

Note that LARGE appliances that primarily HEAT or COOL things use a lot more energy than people think.”]

[Display question logic: if V4 wattage estimate isn’t blank, display question: “A 5-watt phone charger uses 5 units of energy to charge a smartphone in one hour. Similarly, a 100-watt incandescent light bulb uses 100 units of energy in one hour, and a typical clothes dryer uses about 4,000 units of energy in one hour.

Note that LARGE appliances that primarily HEAT or COOL things use a lot more energy than people think.”]

**For the following pairs, please choose the task or appliance that you think uses the least amount of electricity.**

**Assume they are used for the same amount of time, unless otherwise stated.**

(a) *watching a movie on a laptop* (b) watching a movie on a projector

Laptop: *32 Wh* Projector: *197 Wh* Multiplier: *~6*

(a) *warming yourself with an electric blanket* (b) warming yourself with a portable space heater

Electric blanket: *197 Wh* Portable heater: *1290 Wh* Multiplier: *~6.5*

(a) a desktop computer’s tower (b) *a desktop computer’s monitor*

Tower: *92 Wh* Monitor: *34 Wh* Multiplier: *~2.7*

(a) cooking with an electric oven (b) *cooking with a crockpot*

Electric oven: *3050 Wh* Crockpot: *318 Wh* Multiplier: *~9.6*

(a) ironing your clothes (b) *vacuuming your carpets*

Iron: *1198 Wh* Vacuum: *809 Wh* Multiplier: *~1.5*

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Note that LARGE appliances that primarily HEAT or COOL things use a lot more energy than people think.”]

**For the following pairs, please choose the task or appliance that you think uses the least amount of electricity.**

**Assume they are used for the same amount of time, unless otherwise stated.**

(a) cooling yourself with a window air conditioner *(b) cooling yourself with a ceiling fan*

Window AC: *1157 Wh* Fan: *68 Wh* Multiplier: *~16.9*

*(a) watching a movie on a 40” flat screen television* (b) watching a movie on a projector

TV: *68 Wh* Projector: *197 Wh* Multiplier: *~2.88*

(a) watching your favorite shows on a 40” flat screen television *(b) watching your favorite shows on your laptop computer*

TV: *68 Wh* Laptop: *32 Wh* Multiplier: *~2.13*

(a) playing video games on your console (only consider the console) *(b) watching cable television (only consider the cable box)*

Console: *111 Wh* Cable Box: *32.88 Wh* Multiplier: *~3.4*

(a) charging a Tesla Model S electric vehicle for one hour *(b) cooking a casserole in an electric oven for one hour*

Tesla: *11520 Wh* Electric oven: *3050 Wh* Multiplier: *~3.8*

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Note that LARGE appliances that primarily HEAT or COOL things use a lot more energy than people think.”]

**For the following pairs, please choose the task or appliance that you think uses the least amount of electricity.**

**Assume they are used for the same amount of time, unless otherwise stated.**

(a) a water heater running at full capacity for one hour *(b) vacuuming your carpets for one hour*

Water Heater: *4284 Wh* Vacuum: *809 Wh* Multiplier: *~5.3*

(a) a central air conditioning unit running at full capacity for 8 hours throughout one day *(b) 25 Compact Fluorescent Light (CFL) bulbs left on for 8 hours in one day*

Central Air: *30372 Wh* Lights: *4600 Wh* Multiplier: *~6.6*

(a) warming a room with a portable space heater *(b) washing clothes in a washing machine*

Portable heater: *1290 Wh* Clothes Washer: *478 Wh* Multiplier: *~2.7*

(a) vacuuming carpets *(b) a refrigerator*

Refrigerator: *363.6 Wh* Vacuum: *809 Wh* Multiplier: *~2.23*

*(a) drying a load of laundry in a clothes dryer once a week* (b) 20 Light Emitting Diode (LED) bulbs left on for 60 hours each week

Clothes dryer: *3938 Wh* Lights: *18000 Wh* Multiplier: *~4.6*

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Note that LARGE appliances that primarily HEAT or COOL things use a lot more energy than people think.”]

**For the next set of questions, please consider which action would allow you to save the most electricity.**

**Read each option carefully and be sure to consider varying time components within the questions.**

*(a) Purchasing a space heater that is 20% more efficient* (b) purchasing a television that is 20% more efficient

Portable heater: *1290 Wh* Television: *68 Wh* Multiplier: *~19*

*(a) replacing 20 of your Compact Fluorescent Light (CFL) bulbs for LED bulbs, left on for 8 hours each day for one week* (b) hand washing your dishes with cold water rather than using the dishwasher

Lights: *8960 Wh* Hand washing: *2402 Wh* Multiplier: *~3.73*

*(a) line drying your clothes rather than using an electric clothes dryer (once a week)* (b) reading a book rather than watching television (20 hours a week)

Line dry: *3938 Wh* Read book: *1365 Wh* Multiplier: *~2.9*

*(a) turning off your cable box when not in use* (b) turning off an idle laptop when not in use

Idle Cable box: *17.83 Wh* Idle Laptop: *8.9 Wh*  Multiplier: *~2*

*(a) replacing your morning coffee (coffee maker runs at full capacity for 10 minutes) with a glass of water* (b) unwinding with a book at the end of the day rather than watching television for one hour

Morning Coffee: *189 Wh* Book: *68 Wh* Multiplier: *~2.8*

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**Energy and Electricity**

**Describe the difference between total energy use and electricity use in the home?**

 See Below.

**What are some appliances in an average home that might not primarily use electricity?**

*Water heater, gas oven/stove, central heating*

**What percent of total energy used in an average home in the United States is electricity? \_\_\_***43%\_\_\_* **\_\_** [open ended; text box; numeric validation]

*Link:* [*http://blog.ngnpalliance.org/energy-vs-electricity-and-why-we-care/*](http://blog.ngnpalliance.org/energy-vs-electricity-and-why-we-care/)

*Also see “Energy and Electricity Definitions” in the Actual Energy Data folder on Dropbox.*

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**Electricity and Energy: What is the difference?**

There are many ways to produce electricity whether it be through the utilization of resources such as fossil fuels like coal and natural gas or renewables like wind and solar. Once converted to electricity, that electricity can then be transported all the way from the power plant to an outlet in your wall. We use electricity to power all of our electronic devices such as televisions, lights, computers, etc. as well as for the generation of hot or cool air.

However, electricity is only one way we use energy. In our homes, we often utilize energy resources more directly such as burning natural gas to heat air in a furnace to produce heat in the winter or lighting a flame on your stovetop or in your oven with natural gas to cook food. These processes don’t require electricity but they still use energy. So, when thinking about electricity use in our homes, we only consider the electricity we use to power our devices. When thinking about total energy use in our homes, we consider both electricity use and other more direct forms of energy use, such as a gas powered furnace. So, electricity use is simply one component of total energy use.

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**National Energy Statistics Questions**

**For the Following questions, please think about total energy use, not just electricity.**

**What percent of total household energy consumption is heating, ventilation, and air-conditioning (HVAC) across the United States? \_\_\_*54%*\_** [open ended; text box; numeric validation]

Calculated by adding the energy use values for space heating and cooling from the chart titled “Energy Use in the home” in the “Actual Energy Folder” on Dropbox.

Link: <http://buildingsdatabook.eren.doe.gov/ChapterIntro2.aspx>

**What percent of residential space heating is directly fueled by natural gas in the United States? \_\_70%\_\_** [open ended; text box; numeric validation]

*See ce4.1 excel document in Dropbox folder “Actual Energy Data”*

**What percent of residential space heating is directly powered by electricity in the United States? \_\_9.7%\_\_** [open ended; text box; numeric validation]

*See ce4.1 excel document in Dropbox folder “Actual Energy Data”*

**What percent of the total energy consumption of the United States is represented by residential housing? \_\_*21%*\_\_** [open ended; text box; numeric validation] <https://www.eia.gov/consumption/>

**What percent of the total energy production in the United States is represented by renewable energy? \_\_11%\_\_** [open ended; text box; numeric validation]

<http://www.eia.gov/energyexplained/?page=us_energy_home>

**What percent of the total energy production in the United States is represented by natural gas? \_\_32%\_\_** [open ended; text box; numeric validation]

<http://www.eia.gov/energyexplained/?page=us_energy_home>

**What percent of the total energy production in the United States is represented by coal? \_\_21%\_\_** [open ended; text box; numeric validation]

<http://www.eia.gov/energyexplained/?page=us_energy_home>

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**Policy Preference Questions**

**Please indicate which of the following policies you would support or oppose*.***

**Fund more research into renewable energy sources, such as solar and wind power**

\_\_\_**4**\_\_Strongly Oppose *\_****11****\_\_\_*Oppose *\_\_****44****\_\_*Support *\_****41****\_\_\_*Strongly Support

**Regulate carbon dioxide (the primary greenhouse gas) as a pollutant**

\_\_\_**15**\_Strongly Oppose *\_\_****14****\_\_*Oppose *\_\_****47****\_\_*Support *\_\_****24****\_\_*Strongly Support

**Require electric utilities to produce at least 20% of their electricity from wind, solar, or other renewable energy sources, even if it costs the average household an extra $100 a year**

\_\_\_**21**\_Strongly Oppose *\_\_****21****\_\_*Oppose *\_\_****40****\_\_*Support *\_\_****18****\_\_*Strongly Support

*For the above policy preference questions, see “Yale Climate Energy Public Policy Support 2010” pdf in the “Climate Policy Public Opinion” folder in the literature folder on Dropbox.*

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**Climate Change Attitude Questions**

**Recently, you may have noticed that climate change has been getting some attention in the news. Climate change refers to the idea that the world’s average temperature has been increasing over the past 150 years, may be increasing more in the future, and that the world’s climate may change as a result. What do you think? Do you think that climate change is happening?**

☐ Yes -- Definitely

☐ Yes -- Probably

☐ No -- Probably

☐ No -- Definitely

**Assuming climate change is happening, do you think it is:**

☐ Caused mostly by human activities

☐ Caused mostly by natural changes in the environment

☐ Caused by both human activities and natural changes

☐ None of the above because climate change isn’t happening

☐ Don’t know

☐ Other (please specify): \_\_\_\_\_\_\_\_\_

**Which comes closer to your own view?**

☐ Most scientists think climate change is happening

☐ Most scientists think climate change is not happening

☐ There is a lot of disagreement among scientists about whether or not climate change is happening

☐ I don’t know enough to say

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**How important is the issue of climate change to you personally?**

☐ Very important

☐ Somewhat important

☐ Not too important

☐ Not at all important

**How sure are you that climate change is happening?**

☐ Extremely sure

☐ Very sure

☐ Somewhat sure

☐ Not at all sure

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[Pro-environmental Attitude Scale: NEP]

**For each statement below, please indicate how strongly you agree or disagree with the statement:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| We are approaching the limit of the number of people the earth can support |[ ] [ ] [ ] [ ] [ ]
| Humans have the right to modify the natural environment to suit their needs |[ ] [ ] [ ] [ ] [ ]
| When humans interfere with nature, it often produces disastrous consequences |[ ] [ ] [ ] [ ] [ ]
| Human ingenuity will ensure that we do NOT make the earth unlivable |[ ] [ ] [ ] [ ] [ ]
| Humans are severely abusing the environment |[ ] [ ] [ ] [ ] [ ]
| The earth has plenty of natural resources if we just learn how to develop them |[ ] [ ] [ ] [ ] [ ]
| Plants and animals have as much right as humans to exist |[ ] [ ] [ ] [ ] [ ]
| The balance of nature is strong enough to cope with the impacts of modern industrial nations |[ ] [ ] [ ] [ ] [ ]

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**For each statement below, please indicate how strongly you agree or disagree with the statement:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| Despite our special abilities, humans are still subject to the laws of nature |[ ] [ ] [ ] [ ] [ ]
| Human destruction of the natural environment has been greatly exaggerated |[ ] [ ] [ ] [ ] [ ]
| The earth has only limited room and resources |[ ] [ ] [ ] [ ] [ ]
| Humans were meant to rule over the rest of nature |[ ] [ ] [ ] [ ] [ ]
| The balance of nature is very delicate and easily upset |[ ] [ ] [ ] [ ] [ ]
| Humans will eventually learn enough about how nature works to be able to control it |[ ] [ ] [ ] [ ] [ ]
| If things continue on their present course, we will soon experience a major ecological disaster |[ ] [ ] [ ] [ ] [ ]

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**Numeracy Questions (Swartz)**

**To answer the following questions, please enter whole numbers or decimals with no other text (not ranges or percent signs).**

**Imagine that we flip a fair coin 1,000 times. What is your best guess about how many times the coin would come up heads in 1,000 flips?** [open ended; text box; numeric validation] **500**

**In the Big Bucks Lottery, the chance of winning a $10 prize is 1%. What is your best guess about how many people would win a $10 prize if 1000 people each buy a single ticket from Big Bucks?**[open ended; text box; numeric validation] **10**

**In an Acme Publishing Sweepstakes, the chance of winning a car is 1 in 1,000. What percent of tickets to Acme Publishing Sweepstakes win a car?** [open ended; text box; numeric validation] **0.1%**

[PAGE BREAK] **(Berlin Numeracy Task)**

**Out of 1,000 people in a small town 500 are members of a choir. Out of these 500 members in the choir 100 are men. Out of the 500 inhabitants that are not in the choir 300 are men. What is the probability that a randomly drawn man is a member of the choir? Please indicate the probability in percent. \_\_\_25%\_\_\_** [open ended; text box; numeric validation]

**Imagine we are throwing a five-sided die 50 times. On average, out of these 50 throws how many times would this five-sided die show an odd number (1, 3 or 5)? \_\_\_30\_ out of 50 throws.** [open ended; text box; numeric validation]

**Imagine we are throwing a loaded die (6 sides). The probability that the die shows a 6 is twice as high as the probability of each of the other numbers. On average, out of these 70 throws how many times would the die show the number 6? \_\_20\_\_\_\_out of 70 throws.** [open ended; text box; numeric validation]

**In a forest 20% of mushrooms are red, 50% brown and 30% white. A red mushroom is poisonous with a probability of 20%. A mushroom that is not red is poisonous with a probability of 5%. What is the probability that a poisonous mushroom in the forest is red? 50%**

[open ended; text box; numeric validation]

[PAGE BREAK]

**Behavioral Questions (high impact)**

**What percentage of light bulbs in your home are energy-efficient bulbs (such as CFLs or LEDs)? \_\_\_\_**[open ended; text box; numeric validation 0-100%]

**Do you have an Energy Star refridgerator?**

☐ Yes

☐ No

☐ I don't know

**How many times a week do you shower with hot water?** \_\_\_ [open ended; text box; numeric validation]

**How long are your showers in minutes? \_\_\_** [open ended; text box; numeric validation]

**Imagine the temperature outside was 40 degrees Fahrenheit, at what temperature would you set the thermostat? Answer in degrees Fahrenheit.** [open ended; text box; numeric validation]

**Imagine the temperature outside was 85 degrees Fahrenheit, at what temperature would you set the thermostat? Answer in degrees Fahrenheit**. [open ended; text box; numeric validation]

[PAGE BREAK]

**Demographics**

**How would you describe your political beliefs?**

☐ Very Liberal

☐ Liberal

☐ Slightly Liberal

☐ Moderate

☐ Slightly Conservative

☐ Conservative

☐ Very Conservative

**What is your gender?**

 ☐ Male

 ☐ Female

 ☐ Other

**What is your age? \_\_\_\_\_** [numeric validation]

[PAGE BREAK]

**Have you received any training as an electrician?**

☐ Yes

☐ No

**Do you have any degrees in the physics, math, or engineering?**

☐ Yes

☐ No

**What is the highest level of education you have attained?**

☐ Some schooling, but no diploma or degree

☐ High school diploma or GED

☐ Some college

☐ College degree

☐ Some graduate school

 ☐ Graduate degree

**During 2016, what was your yearly household income before taxes? Your best estimate is fine.**

☐ None

☐ < $20,000

☐ $20,000 - $40,000

☐ $40,001 - $80,000

☐ $80,001 - $120,000

 ☐ $120,001 - $200,000

 ☐ > $200,000

**What is your ZIP code?**

\_\_\_\_\_\_ [Zip code validation]

[PAGE BREAK]

**Do you have any additional thoughts or comments about the survey that you would like to share with us?**

[open ended; not required]

[END OF SURVEY]