

Appendix 1: Vignettes (Study 1, Study 3)

| Number | Vignette Text |
|--------|--|
| 1 | Miriam works in a veterinary clinic in a rural area as a veterinarian. Miriam was walking to the computer to enter notes after a surgery on an animal. One of the veterinarian assistants spilled a sample from an animal on the floor, which Miriam slipped in. Miriam fell onto the floor, landing on her wrist, resulting in a sprained wrist. |
| 2 | Tina is an operator of a cutting machine in a large printing plant. One day, as Tina was carrying materials to her machine, Tina caught the sleeve of her shirt on a shelving unit in the plant, causing her arm to bump against the shelving unit, hard. Tina's arm has bruising and a cut where it hit the shelving unit. |
| 3 | William is a janitor for Modern Family Realtors, a local business with a large office building. He was doing maintenance on the 3 rd floor. While on a ladder changing a lightbulb, William fell to the ground. William hit his head on the ground and suffered a concussion. |
| 4 | Marcella is a graphic design artist for a large printing company in a metropolitan area. The printing company sent Marcella out in a company car to meet with potential clients. While stopped at an intersection, another vehicle hit the company car. Marcella's neck was injured when she suffered whiplash during the impact of the accident. |
| 5 | Edwin is a residential interior/exterior painter for a family business, Johnson & Sons Painters. Due to the repetitive nature and strain of holding a paint brush and painting, his wrist starts to hurt. Edwin visits the doctor and he is diagnosed with tendonitis. |
| 6 | Jackie is a cashier at a local organic garden, who helps water and sell seasonal plants and vegetables. While watering the plants, Jackie slips and runs into a wheelbarrow used to transport plants. Due to running into the wheelbarrow, Jackie suffers bruising to her stomach. |
| 7 | Jeff is a lawyer for an innovative software corporation. He was assisting the company's intellectual property lawyer to prepare and file software patents. A storm caused the power in the building to surge, which led to his work computer electrocuting him. |
| 8 | Randall is a chemist-toxicologist specialist at an independent testing laboratory. A co-worker next to Randall accidentally mixed together chemicals that led to a chemical explosion, which included a fire. Due to the explosion and fire, Randall ended up receiving burns on his hands as well as inhaling smoke. |
| 9 | Regina is a security officer at a private security agency, who helps guard a local building overnight. While on the job she witnessed a co-worker getting into a physical altercation with someone trying to break into the building. This led to her co-worker losing their life. After witnessing the event, Regina was diagnosed by a mental health professional with post-traumatic stress disorder. |
| 10 | Harry is a statistician who works with a group of other statisticians in a federal agency. While taking the stairs to his office, Harry tripped and fell down a few stairs, landing on his backside. As a result of the fall, Harry's tailbone was bruised, which caused him difficulties sitting. |

| Number | Vignette Text |
|--------|--|
| 11 | Stephanie is Executive Director of a city Police Athletic League. Stephanie is responsible for coordinating a variety of youth development programs. While helping demonstrate some soccer moves for a youth soccer league, Stephanie fell into a hole in the ground in the soccer field. Stephanie ended up with a sprained left ankle due to twisting her ankle in the hole. |
| 12 | Arnold is a carpenter for a custom cabinetry company. While working on building a cabinet, Arnold is struck by a hammer that was dropped by a co-worker. The hammer hit Arnold on his face, causing his lower jaw to become fractured. |
| 13 | Nicholas performs general maintenance and repairs for a school. While repairing the school's boiler system, Nicholas's pant leg becomes caught on a bolt that is sticking out of the boiler door. As Nicholas tried to remove his pants from the bolt, his leg brushed against the boiler causing a second degree burn on his thigh. |
| 14 | Helen is a therapist who was helping local schools prepare and implement Individualized Education Program (IEP) plans for children in need of speech therapy. While lifting a child into a seat for testing, Helen strained her back. When Helen went to the doctor, she was told that she tore ligaments in her lower back, which was causing the pain in her lower back. |
| 15 | Philip is a trained nurse working in a rural hospital. While helping to sedate a patient who was injured, the patient became agitated and struck Philip in the face. The patient's hand and fingernail ended up catching Philip in the eye, causing a scratch to his cornea. |
| 16 | Therese is a senior architect at the local city's building and zoning agency. Therese needed to deliver paperwork to another city government building. As she was walking across the street to the building, she was struck by a car. As a result of being struck by the car, Therese cracked several of her ribs and suffered lacerations and bruising to her torso. |
| 17 | Marvin works full time collecting water samples and measuring air quality for his state environmental agency. While collecting air samples, Marvin ended up inhaling toxic fumes. Afterwards, Marvin developed lung cancer, which doctors attributed directly to his inhaling toxic substances at work. |
| 18 | Lawrence is an automotive technician who maintains or repairs the vehicles (police, fire, ambulance, etc.) owned by his town in an automotive repair shop. While getting ready to repair a car, the auto lift failed and pinned Lawrence to the ground. As a result of being struck by the auto lift, Lawrence suffered a fractured pelvis. |
| 19 | Fred is an attorney specializing in taxation and investment. He works for a law firm, with multiple other attorneys. While retrieving office supplies from the supply closet, a loose shelf struck Fred in the nose, causing a nose bleed. |
| 20 | Harriet drives semi-trucks for a shipping company. She drives a company-owned semi-truck when she is working. Helen was in an accident with another vehicle. The airbag deployment and impact of the accident caused Helen to sprain her right wrist. |

Appendix 2: Study 1 protocol

Screener Question: Have you ever had a workplace injury or illness? [if necessary: Last week, did you do any work for pay?]

Screener Instructions: Please state out-loud how you meet the requirements by providing a brief description of the workplace injury or illness. [if necessary: ...by providing a brief description of your job title.]

General Statement Information: Part of the mission of the Bureau of Labor Statistics is to collect information on work-related injuries and illnesses. This study is part of our research to improve a survey on workplace injuries and illnesses. Please read the following silently to yourself:

The Bureau of Labor Statistics is conducting this voluntary study under OMB No. 1220-0141, which expires on March 31, 2021. Without this currently approved number, we could not conduct this survey. Your participation is voluntary, and you have the right to stop at any time. This study will take no more than 30 minutes to complete. This study is being administered by TryMyUI.com and SurveyMonkey and resides on a server outside of the BLS Domain. BLS cannot guarantee the protection of responses and advises against the inclusion of sensitive personal information in any response. By proceeding with this study, you give your consent to participate in this study.

Scenario Text: You will be asked to read brief scenarios of workplace injuries and illnesses of people we've made up and given first names to. After reading about each scenario, please answer a few questions about the injury or illness. We want to learn how people like you might answer questions like these on a real survey and so your own personal answer is the one we want, just based on what each scenario tells you. There are no "right" or "wrong" answers to any of the questions. The purpose of this research is to get feedback to improve question wording by making the questions as clear and easy to understand as possible, so please give us your honest feedback as you work through the tasks. Please think aloud as you answer each question. Please proceed to the following link (*insert Survey Monkey link*).

Remember, please think aloud as you answer each question. Please tell us if you have any difficulty answering a question, and explain why.

<Page break>

First, please think about your own workplace injury or illness.

<Page break>

Q1. What event led to the injury or illness?

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Q2. What object or substance directly harmed the employee?

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Q3. What would the medical diagnosis if the employee went to see a doctor, or in other words, what is the nature of the injury or illness?

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Q4. Were multiple parts of the body injured?

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[If Yes to Q4]

Q5a. If yes, which parts of the body were injured?

Q5b. If you had to choose just one part of the body to say was injured, which part would you choose and why? Please describe how you came to that answer.

Q5c. Was one part of the body was more severely injured than others?

[If No to Q4]

Q6. Which part of the body was injured?

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Now, please read the read the following scenario silently. In your own words, can you summarize this scenario?

<Each vignette will remain on display as the following questions are asked for each vignette. We will randomize 10 vignettes per respondent>

<Repeat questions 1-6 as above for each vignette>

Post-Test Survey:

Q1: Were there any unfamiliar terms used in the questions we asked or in the scenarios? If so, what were those terms?

Q2: Thinking about your own workplace injury or illness, would you be able to answer these questions about your own workplace injury or illness? Why or why not?

Q3: How long ago did your injury/illness occur?

Q4: Any suggestion for changes to the questions we asked?

Appendix 3: Study 2 protocol

Welcome

This study is part of our research to improve a survey on workplace injuries and illnesses.

In this task you will be asked to sort workplaces injuries or illnesses into categories. If you believe none of the existing categories are appropriate, you can create and name new categories.

The study should take about 15 minutes. Please only start the study when you will be able to complete the whole study without interruption.

The Bureau of Labor Statistics is conducting this voluntary study under OMB No. 1220-0141, which expires on March 31, 2021. Without this currently-approved number, we could not conduct this survey. Your participation is voluntary, and you have the right to stop at any time. We estimate that it will take on average 15 minutes to complete this survey. This survey is being administered by Optimal Workshop and resides on a server outside of the BLS Domain. The BLS cannot guarantee the protection of survey responses and advises against the inclusion of sensitive personal information in any response. By proceeding with this study, you give your consent to participate in this study.

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Instructions

Take a look at the list on the left.

We'd like you to sort the items on the left into the groups on the right.

There is no right or wrong answer. Just do what comes naturally.

Click **“Finished”** at the top right corner of the screen when you're done.

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Card sorting task – Each participant will be asked to complete two of the below card sorting tasks. The Groups are based on the higher-level OIICS category groupings (Appendix 4). The Items are examples of concepts from the most detailed level of OIICS categories, with variations to labels to reduce as much as possible any superficial similarity between items. The order of the items will be randomized when displayed to participants.

| Task | Groups | Items |
|--------|---|---|
| Nature | <ul style="list-style-type: none">• Physical injury• Infectious or parasitic disease• Tumor or cancer• Other disease or disorder of the body• Mental health disorder• Other or unknown | <ul style="list-style-type: none">• Brain injury• Injury to an internal organ• Hernia• Damage to a prosthetic or medical device• Effect of exposure to poison, toxin or allergen• Bacterial disease• Fungal infection• Cancer or tumor• Disease or disorder affecting brain or spinal cord• Cataract (causes blindness)• Heart disease• Asthma• Lung cancer |

| | | |
|--------|---|--|
| | | <ul style="list-style-type: none"> • Stomach ulcer • Blood clots • Contact dermatitis • Carpal tunnel syndrome • Multiple symptoms but no diagnosis • Abnormal results but no diagnosis • Did not receive any test results or diagnosis |
| Source | <ul style="list-style-type: none"> • Vehicle • Ground, walkway, or stairs • Body of water • Person, plants, or animal • Object, including machine, equipment, or materials • Structure or part of a structure • Hazardous or infectious materials, including fumes • Other or unknown | <ul style="list-style-type: none"> • Aircraft • Industrial vehicles • Unattached vehicle parts • Byproduct of plant or animal • Container, including tank, barrel, and box • Furniture and fixtures • Portable ladders and stairs • Recreation and athletic equipment • Audio/Visual equipment • Medical and surgical instruments and equipment • Measurement and scientific devices • Office equipment • Adhesives, sealants, and paints • Door, window or other structural part of the building • Confined space, including elevators • Building system, including electrical or security • House, office, or retail building • Confined space, including tunnels and mines • Explosives • Gases • Flammable and combustible liquids and solids • Drugs • General consumer chemical products |
| Event | <ul style="list-style-type: none"> • Transportation • Explosion or fire • Violence or harm by a person • Slip, trip or fall • Exposure • Impact or contact • Overexertion including fainting • Other or unknown | <ul style="list-style-type: none"> • Incident involving a water vehicle • Incident involving a non-motorized vehicle • Intentional injury by self • Witnessing a violent act • Slip, trip or stumble without a fall • Exposure to radiation and noise • Exposure to temperature extremes • Exposure to air or water pressure change • Exposure to harmful substances • Exposure to low oxygen levels without harmful substances • Exposure to a stressful or traumatic event • Trapped in a collapsed space • Struck by a moving object • Contact with an object, including machines or doors • Contact with a person by accident • Extended vibration, friction, pressure, or jarring • Moving an object, including lifting, pushing and steering • Position of the body, including sitting and standing • Repeated motion • Illness or other condition of the body |
| Part | <ul style="list-style-type: none"> • Head • Neck or throat | <ul style="list-style-type: none"> • Brain • Skull or scalp |

| | | |
|--|---|---|
| | <ul style="list-style-type: none"> • Torso (mid-section) • Shoulders, arms or hands • Hips, legs or feet • Prosthetic or other medical device • Other or unknown | <ul style="list-style-type: none"> • Face, including eyes, nose, mouth • Ears • Throat or other part of the inside of the neck • Outside of the neck • Chest, including ribs, internal organs • Back, including spine, spinal cord • Abdomen • Pelvic region • Shoulders or collarbone • Arms • Wrists • Hands • Hips • Legs • Ankles • Feet • Functioning of the entire body, such as cardiovascular system |
|--|---|---|

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Feedback

Were any of the terms used in the task unfamiliar or confusing to you? If so, please tell us which ones.
[open text entry]

Did you have any difficulty completing the task? If so, please describe why it was difficult.
[open text entry]

What is your mTurk Worker ID number?
[open text entry]

Thank you! Please copy the code **5681354** and paste it into the mTurk HIT window to validate that you have completed this study.

Appendix 5: Study 3 protocol

Welcome

This study is part of our research to improve a survey on workplace injuries and illnesses. You'll be helping us to develop a classification system.

You will be asked to read brief descriptions of workplace injuries and illnesses – for example, what happened to the worker or what caused the injury – and then select categories from a list to describe what happened.

The study should take about 15 minutes. Please only start the study when you will be able to complete the whole study without interruption.

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[Optimal Workshop Protocol]

Instructions

Here's how it works:

- Read the information presented to you about a workplace injury or illness, like “slipped and fell on the floor” or “heavy box”.
- Click through the lists to find the category that fits best. Keep drilling down through the lists selecting the best option until the message “I'd find it here!” appears and then click on it.
- If you go down the wrong path, you can go back by clicking one of the preceding links.

[SurveyMonkey Protocol]

Instructions

Here's how it works:

- Read the information presented to you about a workplace injury or illness, like “slipped and fell on the floor” or “heavy box”.
- Click through the lists to find the category that fits best. Keep drilling down through the lists selecting the best option.
- If you go down the wrong path, you can go back by clicking the “Go Back” button.

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[Tree testing task – a selection of up to 16 of the below items will be displayed to a given participant. The number of items displayed per participant will be reduced if concurrent probes are added or the task takes longer than the anticipated 15 minutes.]

| | |
|------|----------------|
| Tree | See Appendix 4 |
|------|----------------|

| Task Set | Item |
|----------|---|
| Nature | <ul style="list-style-type: none"> • Broken arm • Fainting • Paralysis, or loss of ability to move one side of the body • Whiplash, or sudden neck strain • Mosquito bite • Stroke • Burns and smoke inhalation • Choked on food • Carpal tunnel syndrome • Low back pain • Nose bleed • Anxiety |
| Source | <ul style="list-style-type: none"> • Crate • Wall • Wheelbarrow • Light bulb • Self, falling • Other, falling • Loading dock • Hole in ground • Knife • Car, as a pedestrian • Driveable airport stairs |
| Event | <ul style="list-style-type: none"> • Hit by a nail from a nail gun • Carrying heavy boxes • Stress from witnessing a fight • Jump from a moving truck • Slipped on ice but didn't fall • Fall from a chair • Fall out of a stationary truck trailer • Toe run over by a powered wheelchair • Dust flying in the air • Clothing caught in machine • Transferring a patient to a bed |
| Part | <ul style="list-style-type: none"> • Eyes • Lower back • Brainstem • Jaw • Stomach (from a digestion disorder) • Tailbone • Stomach (from a punch in the stomach) • Groin |

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If necessary, add probes at the start and end of an OIICS element navigation task (e.g., before beginning to navigate through the Nature categories, after selecting the final category for Nature) to understand possible causes for misclassification:

Before navigating through the tree categories:

What information from the vignette will you try to classify for this question?

[open text entry]

After selecting a final category:

Did you find the category that you were looking for?

Yes

No

[if no] Please briefly describe how you made your final category selection.

[open text entry]

<page break>

Feedback

Would you have liked to see examples of what kinds of injuries or illnesses are included in or excluded from a category?

Yes

No

No opinion

Were any of the terms used in the task unfamiliar or confusing to you? If so, please tell us which ones.

[open text entry]

Did you have any difficulty completing the task? If so, please describe why it was difficult.

[open text entry]

What is your mTurk Worker ID number?

[open text entry]

Thank you! Please copy the code **4545528** and paste it into the mTurk HIT window to validate that you have completed this study.

Appendix 6: Screener survey for mTurk

This screener survey will be used to determine eligibility for Studies 2 and 3. The open-ended items will be used to identify fraudulent responses (i.e., participants giving nonsense answers indicating poor data quality) and those participants will be excluded from the main survey.

Welcome! Thanks for your interest in this survey.

This is a short screener survey to identify individuals who are eligible for our main survey. The main survey will:

- Launch on mTurk next week
- Take about 15 minutes
- Pay \$2.00
- Be available only to those workers who qualify through this screener survey

This survey should take about 2 minutes.

Please do not use your browser's back button.

The Bureau of Labor Statistics is conducting this voluntary study under OMB No. 1220-0141, which expires on March 31, 2021. Without this currently-approved number, we could not conduct this survey. Your participation is voluntary, and you have the right to stop at any time. We estimate that it will take on average 2 minutes to complete this survey. This survey is being administered by SurveyMonkey and resides on a server outside of the BLS Domain. The BLS cannot guarantee the protection of survey responses and advises against the inclusion of sensitive personal information in any response. By proceeding with this study, you give your consent to participate in this study.

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Please do your best to answer the questions accurately. We are looking for a range of participants. Answering “no” to any of the below questions will not necessarily mean you are ineligible for the main survey.

1. What is your mTurk Worker ID?
[Open text entry]
2. What is your age?
[Open text entry]
3. What is your sex?
Male
Female
4. Are you Hispanic, Latino or Spanish?
Yes
No
5. What is your race? Please select all that apply.
White
Black or African American

American Indian or Alaska native
Asian
Native Hawaiian or Pacific Islander

6. Last week, did you do any work for pay?
Yes
No

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If Q6 = Yes then

7. Thinking of your main job, what kind of work do you do, that is, what is your occupation?
Do not include any names or personal information.
[Open text entry]
8. What was the most *burdensome* single HIT you have ever completed? Please briefly describe the task.
Do not include any names or personal information.
[Open text entry]

Thank you for participating! Here is your completion code. Please paste this code into the HIT window to verify your participation.

[random numeric code]