**SUBJECT INSTRUCTION**

Thank you for signing up for the experiment.

By agreeing to participate, you have already earned a show-up fee of $5.

At the end of the experiment, you will receive $30 for the completion of the experiment and an additional payment (minimum of $5) based on your performance in the task.

NOTE: It is VERY important that you understand the instructions since the additional payment will depend on your performance in the task.

The schedule of the experiment is as follows (lasting for about 120 min in total).

Outside the scanner

* Instruction (~10min)

Inside the scanner (~8 min)

- Anatomical scan + practice (~5 min)

Inside the scanner (~14 min each)

* Session 1
* Session 2 4 minutes break between sessions
* Session 3
* Session 4

Outside the scanner

* Questionnaire (~10min)
* Reward payment

**Task**

A trial in the task is from one of two conditions, which we call Change detection condition and Oddball detection condition. **Change detection condition starts with the presentation of the white cross** and **Oddball detection condition starts with the presentation of the green cross.**

**Change detection condition**

There are two sushi chefs; one is diligent and productive while the other is lazy and unproductive. On average, the diligent chef produces a greater number of sushi pieces than the lazy one although the exact amount produced by each chef fluctuates from time to time. You are at a restaurant where the two chefs are working. What you will see in each trial is a sequence of sushi pieces produced. A brief presentation of a sushi piece at the center of the screen represents one piece of sushi produced. There are two chefs in the kitchen but only one of the two chefs is in production at a particular time. The chef who is making sushi might or might not change from one to the other during the production**. The number of changes between the two chefs varies from trial to trial.** **Your task is to detect the change(s) of the chef making sushi by observing the production process**. **Press the button on the keypad using your right index finger when you detect any changes.**



Figure 1.

An example trial is described in Figure 1-1. **Each trial starts after the disappearance of the white cross** at the center of the screen. The picture of a sushi piece is presented at irregular timings. A sushi piece is always centered and **only the timings of a piece of sushi produced matter in this task**. One trial lasts for 30 seconds.

For instance in Figure 1-2, two chefs David and James are in the kitchen. First, David who is less productive is making sushi. After a while, you see an increase in the number of sushi pieces produced. You might reason that this increase is caused by the change of chef to James who is more productive, in which case you press the button to report it. However, you might reason that David is still producing (no change) and the large number of sushi pieces made by David is merely by chance, in which case you do not press the button.

**OTHER IMPORTANT POINTS ABOUT THIS TASK**

* The productivity of each of the two chefs in the kitchen varies from trial to trial.
* The number of change(s) between the two chefs varies from trial to trial. **There can be trials that do not contain a change or that contain multiple changes.**
* The time between the disappearance of the white cross (start of a trial) and the first appearance of a sushi piece is a part of the production process.
* You do not get any feedback about your performance.

**Oddball detection condition**

Some of the trials start with **the green cross** as shown in Figure 2. As with the trials that start with the white cross, a sequence of sushi pieces produced is presented. But sometimes, the chef puts a strip of fish that is not fresh by mistake. **Your task is NOT to detect changes between the two chefs but to press the button on the keypad using your right index finger as soon as (within 1 second) you see a piece of sushi with a strip of fish that is not fresh** to report the problem to the chef. Each trial lasts for 30 seconds and **there can be trials that do not contain a strip of fish that is not fresh or that contain multiple ones**. A piece of sushi with a strip of fish that is not fresh looks faded and darker than the other ones as shown in Figure 2 (**The one in the figure is easier to detect than the actual ones you will experience for display purpose!**) and you will experience them in the practice trials before the actual experiment starts. The image of a piece of sushi that is not fresh is the same throughout the sessions.



Figure 2.

**Reward Payment**

At the end of the experiment, the computer will select 25% of the trials randomly from each of the 4 sessionsand you will earn a reward based on the performance in the selected trials. You gain or lose in each of the selected trials based on the method described below. Since you do not know which trial will be selected, you should treat every trial as if it were the selected one.

If the trial chosen is of Change detection condition:

For each **correct button press** (A change occurred and a button press was made within5 seconds after the change; A in Figure 3.), you gain $2. For each **incorrect button press** (There are two cases. 1. There was a button press but no change occurred within 5 seconds before the button press; B in Figure 3. 2. There was a change within 5 seconds before the button press but, after the change and before the button press, there was another button press; C in Figure 3.), you lose $2.

If the trial chosen is of Oddball detection condition:

For each **correct button press** (There was a sushi piece with a strip of fish that was not fresh and a button press was made within1 second after its presentation.), you gain $2. For each **incorrect button press** (There are two cases. 1. There was a button press but there was no sushi piece with a strip of fish that was not fresh within 1 second before the button press. 2. There was a sushi piece with a strip of fish that was not fresh within 1 seconds before the button press but, after its presentation and before the button press, there was another button press.), you lose $2.

Your final reward will be the cumulative amount (minimum will be $5).

**The amount you won will not be shown at the end of each trial nor each session but only at the end of the experiment.**

**Remember you gain $2 for accurately detecting a change and lose $2 for inaccurately detecting a change.**



Figure 3.