

# Measurement Instrument Screenshots

Susan Vanderplas, Tyler Wiederich

## 2D Bar Charts

The screenshot displays a web-based experiment interface titled "Perceptual Judgements Experiment". It features three tabs: "Perceptual Judgements Experiment", "Experiment" (which is active), and "Exit Screen". The main content area is divided into two parts. On the left, there is a control panel with the question "Which bar is smaller?" followed by a dropdown menu. Below this is another question: "Approximately what size is the smaller bar in comparison to the larger bar?", accompanied by a horizontal slider. The slider has a blue track and a grey knob, with "Smaller" and "Larger" labels at its ends. A "Next" button is located at the bottom of this panel. On the right, there are two bar charts, labeled A and B. Chart A has five bars of varying heights, with a small black circle marking the second bar from the left and a small black triangle marking the third bar. Chart B also has five bars of varying heights, with no specific markers.

Figure 1: Two-dimensional bar charts. Bars are marked with a circle and a triangle; participants must indicate which bar is smaller, and then estimate the ratio of the smaller bar to the larger bar using the slider.

## 3D Projections

## 3D Printed Charts

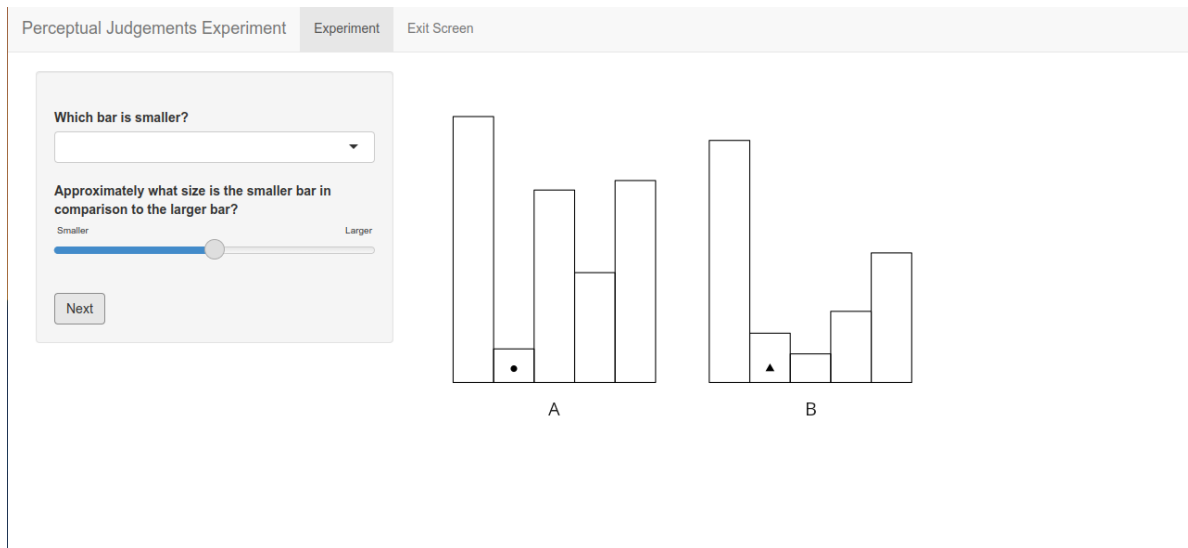


Figure 2: Another two-dimensional bar chart. Bars are marked with a circle and a triangle; participants must indicate which bar is smaller, and then estimate the ratio of the smaller bar to the larger bar using the slider.



Figure 3: A screenshot of the measurement applet displaying a 3D bar chart in as an interactive projection.

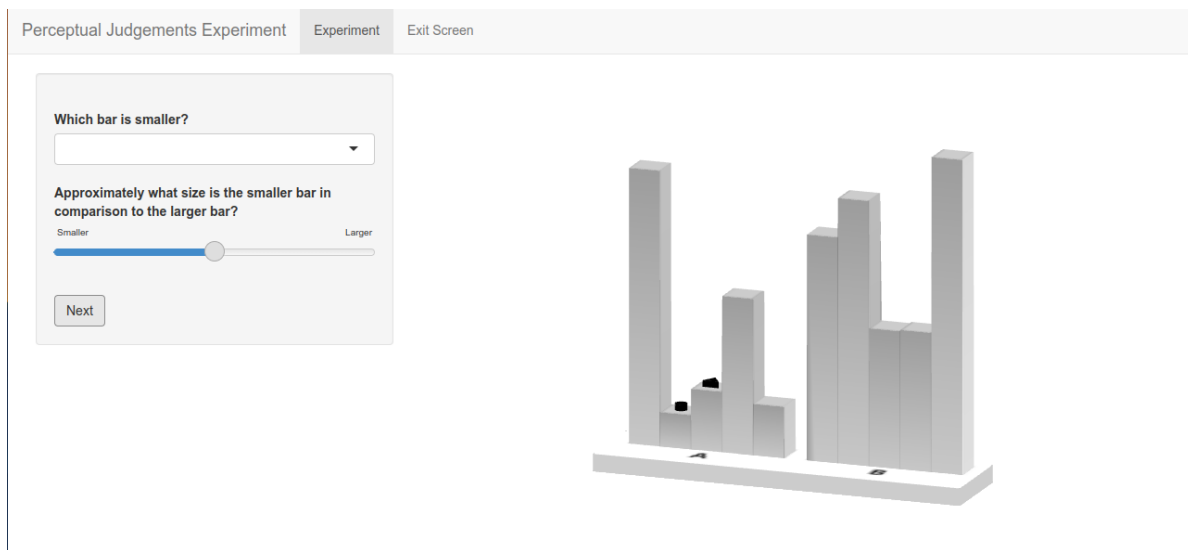


Figure 4: Another screenshot of the measurement applet showing a different chart at a different angle. The user can rotate the chart to get a different perspective on the question before answering.

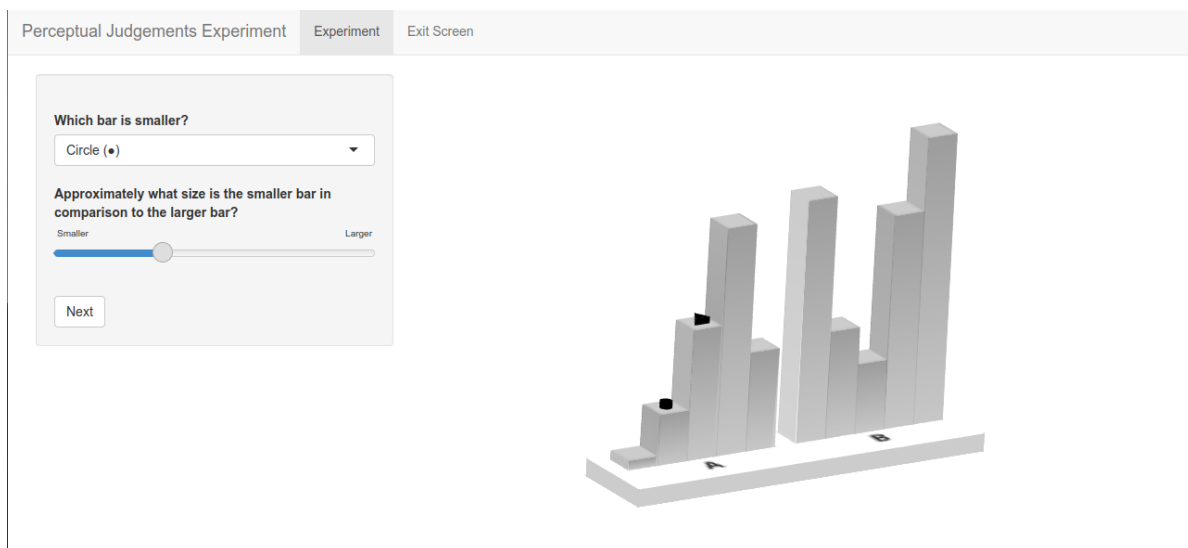


Figure 5: Another screenshot of the measurement applet showing a different chart at a different angle. The user will drag the circle to represent the size of one bar relative to the other.



Figure 6: One set of 3D printed charts used in this experiment. Each ratio of bars is printed in a different color, and the chart ID is engraved on the bottom of the chart during the 3D printing process.

Perceptual Judgements Experiment

Experiment

Exit Screen

What is the identifier on the bottom of the graph?

data/pilot/Set85/id-02/Type3-Rep01

If the identifier on the bottom of the plot does not match any of the available options, please enter the identifier here:

Which bar is smaller?

Triangle (▲)

Approximately what size is the smaller bar in comparison to the larger bar?

Smaller

Larger

Next

Please randomly select a chart from your kit

Figure 7: The applet will direct the user to select a 3D printed chart when appropriate during the course of the experiment. A kit consists of 5 3D printed charts.