# Study 1 Spec Sheet

## Sequence of a session (trials):

1. **App Start**

Experimenter is presented with a start screen to collect info and make adjustments before the experiment begins. Experiment begins with “begin experiment” button.

Subject is placed in the virtual environment and shown a message to “please wait”.

1. **Approach the Agent**

Data collection begins.

Subject is presented a message to walk towards the agent. When they get near (normal conversation distance), they are shown a message to wait and watch the agent.

1. **Agent Walks**

The agent walks along the path towards an ending position. When they reach this position, they turn around and look towards the subject.

1. **Subject Walks**

The subject is shown a message to walk towards the agent across the narrow ledge area. At places along the path, the subject’s position triggers small rock falls.

The experimenter uses UI controls to trigger agent animations – either supportive (waiving and encouraging) or not (looking away, looking board).

1. **Subject Reaches Finish Point**

The subject reaches the end of the narrow area and triggers a message to stop and return to the start position.

The experimenter uses the UI to trigger either a rewarding cheer or no support.

1. **Subject Return**

The subject returns to the start location, triggering a message that the experiment is over, and they can remove the VR headset.

Data collection stops when the subject reaches this trigger location.

1. **Experiment End**

The Experimenter uses an “End Experiment” button, which writes data to the output file, and then closes the program.

## Environment Features

The VR environment consists of a natural location with a large stable starting area, a large stable ending area, and a narrow ledge or walkway connecting them. The walkway is about 10 ft long and very narrow and scary to walk over.

There is a transparent virtual screen that appears to provide text message instructions to the subject. This UI appears generally in the middle of the user’s field of view.

## Experimenter Start UI:

### Subject Info Collection:

* **Subject Name** (string) – name of the study subject, first and last
* **Subject ID** (string) – used to identify the subject
* **Session Number** (int, default 1) – allow numbering of multiple sessions with this subject.
* **Experimenter Name** (string) – name of person running the app, first and last.
* **Save File Location** (file path) – location of CSV save file.
  + Provide a file browser window.
* **Append Data** (bool, default true) – add new data to the end of the CSV file.
* **Male/Female Model** (enum, default female) – select from pictures
* **Skintone** (enum, default 1) – select from tones
* **Session Type** (enum) – choose supportive or unsupportive.

### UI Checks / Utilities on Start Screen

* Check that all boxes are filled in.
* Check that file location will not overwrite – show warning popup.

### Start UI Controls

* Reset or adjust user’s VR position.
* Begin Experiment Button – start the experiment.

### Experimenter Session UI:

The experimenter has a camera view of the scene where they can see the overall environment. An FPS Camera button allows the user to move the camera’s position for a better view.

The following elements are shown overlayed over the environment view:

* **Current Trial Number** – the current trial
* **Data collection readouts** – the current values of the data collection stats.
* **(optional) small subject POV**

The experimenter is provided the following buttons:

* **FPS Camera** – turn on the WASD controls to move the camera. Display a message to hit ESC to turn off camera controls.
* **Interaction Animation Buttons** – several, trigger agent animations.
* **End Experiment** – triggers the end of the session, no matter what is going on. Writes data to the output file and exits the program. Provide popup warning message.

## Session Data Collection:

**Proximity** (float, virtual meters) – the virtual distance in meters between the subject (measured at the VR headset location) and agent (measured at the center of their head).

**Gaze** (float, 0.0-1.0) – a normalized measure of how directly the subject is looking at the agent. Angle between subject’s forward vector and the vector connecting the subject to the agent. 1.0 means parallel vectors, 0.0 means angle is greater than headset field of view.

## Output CSV files:

**Raw.csv** – all collected data points for each frame rendered.

* **ppid** - <subject ID>\_<subject name>
* **time** – time since the start of the session, in seconds.
* **system time** – system time when sample was taken.
* **distance** – distance between the subject headset and the agent’s head, measured in virtual meters.
* **gaze** – gaze score in the range of [0,1] where 0 is looking away, and 1 is looking directly at the agent.

**Average.csv** – running averages every 60 seconds of the Raw above.

**Results.csv** – general results file

* **Subject Name** – as entered on the start screen.
* **Subject ID** – as entered on the start screen.
* **Session** – session number as entered on the start screen.
* **ppid** - <subject ID>\_<subject name>
* **Experimenter Name** – as entered in the start screen.
* **File Path** – path to this data folder. Will be the same for each row.
* **Trial number** – the number of the current step of the tiral.
* **start\_time** – time this trial started, measured in seconds since the start of the session.
* **end\_time** – time this trial ended, measured in seconds since the start of the session.
* **Model** – the model selected for the agent. The female model is 0, the male model is 1.
* **Skintone** – the skintone selected for the model. Default is 1.
* **Session Type** – supportive or unsupportive.
* **trial average distance** – average of distance samples for just this trial.
* **trial median distance** – median of distance samples for just this trial.
* **trial standard deviation distance** – standard deviation of samples for just this trial.
* **trial average gaze** – average of gaze samples for just this trial.
* **trial median gaze** – median of gaze samples for just this trial.
* **trial standard gaze distance** – gaze deviation of samples for just this trial.
* **global average distance** – average of distance samples over the whole session.
* **global median distance** – median of distance samples over the whole session.
* **global standard deviation distance** – standard deviation of samples over the whole session.
* **global average gaze** – average of gaze samples over the whole session.
* **global median gaze** – median of gaze samples over the whole session.
* **global standard deviation gaze** – gaze deviation over the whole session.