

SuperLab 4

Basic Procedures for OSU Students and Faculty

Featuring Two Sociolinguistic Experiments
and a Short Overview

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This procedures guide is intended to *supplement* the SuperLab 4 user's manual and to provide information of specific use to OSU English Dept. students and faculty. Prior familiarity with the manual will help you understand this document, but it is not required.

1. Experiment #1: Rhoticity and hearer expectations.

The following is a step-by-step example of a sociolinguistics experiment that happens to demonstrate some of the most common operations in SuperLab 4. The example presents only the most basic steps for setting the experiment, giving you a good feel for how the process works in the hope that you could modify it for your own purposes later.

1.1. Background.

Say that you want to test hearer expectations of certain sociolinguistic factors relating to a speaker when the hearer is presented only with auditory stimuli, as in the case of talking to a stranger on the telephone. More specifically, you want to know if, when a person simply hears non-rhotic (*r*-less, e.g., in certain British dialects) versus rhotic (with *r*, e.g., in certain American dialects) speech, they automatically conjure a mental image of the speaker with a specific age, ethnicity, social status, physical attractiveness level, or emotional state despite the fact that they have no visual reinforcement for such an assumption.

1.2. Experimental design.

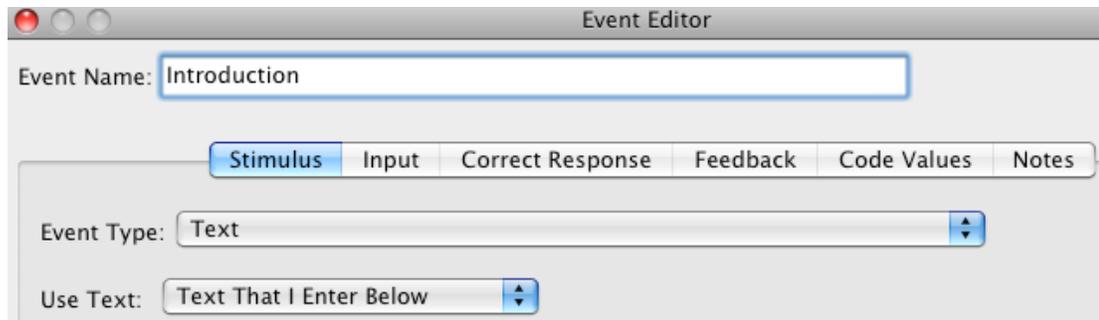
This experiment will require the participant to be first presented with auditory stimuli, of either non-rhotic or rhotic speech, followed then by a choice of two photographs. The participant will then have to choose which of the people in the two photographs is more

likely to have recorded the speech sample. Because you want to test how strong the expectations are, you will want to measure the participant's response times; assume that the stronger the expectation is, the faster the reaction times are. Note: There are already audio samples and photographs for use in this experiment, but they are less than ideal.

1.3. Setting up the experiment.

Follow the steps below to create this experiment:

1. Either open SuperLab 4 anew or click **File > New** in the SuperLab menu to start a new experiment.
2. Click in the white area under **Blocks** to select this unit. In the toolbar above, click on the green plus sign to create a new block (think of a block as a generic container for certain experimental structures). Type **Introduction** in the **Block Name:** field. Hit the **OK** button. Click on the green floppy disk icon in the toolbar to save your experiment. You will be prompted to name your experiment. Call it **RhoticExpectations**.
3. Do the same thing again but in the **Trials** area instead. It, too, should be named **Introduction**. Note that unique names are required in each area, but items from different areas can have the same name. Save the experiment.
4. Repeat again for the **Events** area. Here, though, click on the **Stimulus** tab if it is not already selected. Use the pull-down menu for **Event Type** to specify a **Text** event. In the **Use Text** menu, select **Text That I Enter Below**.



In the large text box under the **Use Text** menu, enter the following text to be used as a visual stimulus:

In the following experiment, you will first hear an audio sample of some recorded speech. You will then see photographs of two people. It will then be your job to determine which of the two people is more likely to have recorded the speech sample.

Press the lowercase g if you think the person on the left is more likely to have recorded the sample. Press the lowercase h if you think the person on the right is more likely to have recorded the sample. Press the space bar if you can't decide or if you feel both people are equally likely to have recorded the sample.

Press any key to continue.

Click on **Settings...** to the right of the text. Under the **Presentation Options** tab, make sure the **Erase Screen** option is checked in the **At Event End:** menu. Click **OK**. Back at the **Event Editor**, go to the **Input** tab. Look under the **End This Event and Move to the Next One** options. Make sure the **After any response from the participant** option is the only one checked. At the bottom of the screen, make sure that neither the **Record and save response** option nor the **Reset RT timer** option is checked. Click **OK**. Save the experiment.

5. Set up an input device by going to the **Experiment > Participant Input...** menu. Click on the **Keyboard-Single Keys** option. Click **Done**. Save the experiment.
6. Go to the **Experiment > Participant Input...** menu. Click **New....** Name this keyboard response **Left option (g)**. In the field for **The following key:**, type **g**. Click **OK**. Click **New....** Name this keyboard response **Right option (h)**. In the field for **The following key:**, type **h**. Click **OK**. Click **New....** Name this keyboard response **Either option (space)**. In the field for **The following key:**, just hit the space bar once. Click **OK**. Click **Done** in the **Participant Input** editor. Save the experiment.
7. If there is grey highlighting on any item name, clear it by clicking in the white “field” of the area that the item is in. When all grey highlighting is gone, click on the **Introduction trial**. Associate the **Introduction** event to the **Introduction** trial by clicking in the blue box next to the event name. A small check mark will appear when successful. Save the experiment.
8. Associate the **Introduction** trial to the **Introduction** block following the same procedure. Save the experiment.
9. Although the experiment doesn’t do much this point, you can now run it. Click the green arrow icon in the toolbar above the **Events** area. Deselect both the **Save collected data** and the **Run selected blocks only** options. Since you’re not saving data, you don’t need to enter a participant name. Just click **Run**. You’ll notice that the experiment doesn’t do much, yet, but that it does run as expected.
10. Create a new block named **Block1**. Save the experiment.

11. Create two new trials, one named **MaleStimuli** and one named **FemaleStimuli**. Save the experiment.

12. Create a new event named **MaleAudio**. Set it up as an audio file. For the **Use** field, select the **A File Chosen From the List:** option and click **Create List....** Title the list **MaleList** and click **Add Files....** Navigate to **Applications > SuperLab > Basic Procedures Experimental Files** and select first **nonrhoticmale.wav** and then **rhoticmale.wav**.^{*} Click **OK**. While still in the **Stimulus** tab, deselect the **Wait for audio to finish playing** option if it is already selected. Then, under the **How to end audio:** menu, select **Allow audio to continue playing until it ends on its own**. **Wait for audio to end before ending**. Once it is selected, select the **Wait for audio to finish playing** option. Under the **Input** tab, select the **Immediately after the event is presented** option. Also, deselect the **Record and save response** and **Reset RT timer** options. Hit **OK**. Save the experiment.

**Note that the audio files used in this example are actually computer-generated, and are not at all ideal in such an experiment. Still, once you understand how to set up the experiment, you can easily go back and replace the audio and even the visual cues to whatever is most appropriate for the experiment you would like to design.*

13. Use a slightly different method to create a parallel stimulus list for the female audio files. Go to **Experiment > Stimulus Lists...** and click the green plus sign to create a new list. Call it **FemaleList** and add the files **nonrhoticfemale.wav** and then **rhoticfemale.wav**. Click **OK**. Click **Done** on the Stimulus Lists editor. Save the experiment.

14. Create an event named **FemaleAudio** with all the properties of **MaleAudio** but using audio files from the list **FemaleList**. Save the experiment.

15. Use the **Stimulus Lists** editor to create a new list called [MalePhotoLeft](#). Add the following picture files from the **Basic Procedures Experimental Files** folder *in this order*:

morwah.jpeg (stands for Male Older euRopean Wealthy Atractive Happy; a similar format is used for all files used in this document; this file will be used to test age expectations)

morwnu.jpeg (will be used to test ethnicity expectations)

morpnu.jpeg (will be used to test social class expectations)

morwnh.jpeg (will be used to test physical attractiveness expectations)

morwnu.jpeg (will be used to test emotional state expectations)

When adding the last file, SuperLab will warn you that you are using a file that already exists on the list. Click **Yes** on the warning screen.

Create a new list called [MalePhotoRight](#). Add the following picture files:

myrwah.jpeg (will be used to test age expectations)

moswnu.jpeg (will be used to test ethnicity expectations)

morwnu.jpeg (will be used to test social class expectations)

morwah.jpeg (will be used to test physical attractiveness expectations)

morwnh.jpeg (will be used to test emotional state expectations)

Click **Done** on the **Stimulus Lists** editor. Save the experiment.

16. Using the same technique, create a new list called [FemalePhotoLeft](#). Add the following picture files:

forwah.jpeg (will be used to test age expectations)

fyrwau.jpeg (will be used to test ethnicity expectations)

forpnu.jpeg (will be used to test social class expectations)

forwah.jpeg (will be used to test physical attractiveness expectations)

fyrwau.jpeg (will be used to test emotional state expectations)

Create a new list called **FemalePhotoRight** with the following picture files:

fyrwah.jpeg (will be used to test age expectations)

fyswau.jpeg (will be used to test ethnicity expectations)

forwnu.jpeg (will be used to test social class expectations)

forwnh.jpeg (will be used to test physical attractiveness expectations)

fyrwah.jpeg (will be used to test emotional state expectations)

Save the experiment.

17. Create a new photo event called **MaleLeft**. Have SuperLab choose picture files from the stimulus list **MalePhotoLeft**. Click on **Settings...** to the right of the large blue panel. Under the **Position** tab, change the **Horizontally (X)** value to **-288** pixels (this is supposed to be a negative number, so be sure to include the negative sign). Under the **Size** tab, select **I want to specify a frame size**. Then, set the **Width (X)** value to **108** and the **Height (Y)** value to **144**. Under the **Presentation Options** tab, select both the **Erase screen before presenting stimulus** and **Keep stimulus invisible** options. Make sure the **Do Nothing** option is checked in the **At Event End:** menu. Click **OK** on the **Picture Settings** editor. In the Event Editor, move to the **Input** tab. Click **OK**. Select the **Immediately after the event is presented** and the **Reset RT Timer** options. Click **OK**. Use the up and down arrows on the toolbar to move the event just below the **MaleAudio** event. Save the experiment.

18. Create a new photo event called **MaleRight** that chooses picture files from the stimulus list **MalePhotoRight**. In the **Picture Settings** editor, change the horizontal position value to **288** pixels and the frame size **108** width and **144** height. Under the **Presentation Options** tab, select ONLY the **Erase Screen** option (under **At Event**

End:) is selected. Click **OK**. Back at the Event Editor, go to the **Input** tab. Select **After a correct response from the participant** and **Record and save responses**. Click on the **Correct Response** tab. Select all the picture files using the shift button while clicking. Under **...the correct response is:**, select **One or more of the following:**. Check each of the three responses. Click **OK**. Move the event just below **MaleLeft**. Save the experiment.

19. Associate the **MaleAudio**, **MaleLeft**, and **MaleRight** events with the **MaleStimuli** trial. Then associate the **MaleStimuli** trial to **Block1**. Save the experiment.
20. Create an event called **FemaleLeft** identical in every way to **MaleLeft** with the exception that it should choose images from the **FemalePhotoLeft** list. Arrange it under **FemaleAudio**. Save the experiment.
21. Create an event called **FemaleRight** identical in every way to **MaleRight** with the exception that it should choose images from the **FemalePhotoRight** list. Arrange it under **FemaleLeft**. Save the experiment.
22. Associate the **FemaleAudio**, **FemaleLeft**, and **FemaleRight** events with the **FemaleStimuli** trial. Then associate the **FemaleStimuli** trial to **Block1**. Save the experiment.
23. Run the experiment to see if it works to your satisfaction. This time, though, give the participant a name and make sure that the **Save collected data** option is checked. When you click **Run**, you will be prompted to specify a filename and location for the data file. After running it, locate your data and view it to get a feel for how SuperLab records data.

1.4. Extending the experiment.

In its present state, the experiment does the bare minimum of what it is intended to do. But will the experiment generate reliable data from beginning to end? Probably not. Right now, the participants have no chance to *learn* the basic mechanics of how to perform their role in the trial except by participating in the trial. This means that they are likely to show slower reaction times for items appearing at the beginning of the trial, when the whole process is new, than they show for items appearing at the end of the trial, when they are more familiar with what to look and listen for and where to place their hands to maximize their speed. It would, therefore, be beneficial not only for participants' confidence but to the overall integrity of the data to provide a mechanism by which they can practice running the trial before data is collected.

One way to do this is to incorporate a brief practice block called, say, **Practice**, making use of “dummy” cues and collecting no data. **Practice** will be run between **Introduction** and **Block1**. It should have the exact same format as **Block1**, with the exception that it will have only one trial called, say, **Practice**. **Practice** will be exactly the same as either **MaleStimuli** or **FemaleStimuli**, except that it can use any two photos and any audio cue of your choice for an event since no data will be collected. A series of perhaps three or four such matching exercises will then be followed with a simple text event prompting the participant to hit any key to continue. In essence, this block is will give participants a moment or two to practice the procedures before data will be collected—and this is always a good idea. Be sure when using such a practice block to revise the text of the **Introduction** event to explain the practice procedure.

At this point in your experience with SuperLab, you should be able to generate this **Practice** block and all its necessary components. Try and see what you can do following the procedures and purposes described above.

2. Experiment #2: *Pin/pen* merger.

The following is a step-by-step example of a sociolinguistics experiment of special interest to researchers of Oklahoma dialects. The experiment builds on some of the techniques demonstrated in Experiment #1; if you have not already covered that one, please do so before moving on to this one.

2.1. Background.

Say that you want to test the salience of the contrast between [ɪ] and [ɛ] before nasals for a given set of participants. If a participant has the contrast, then she will presumably produce and detect a difference in pronunciation between English *pin* [p^hɪn] and *pen* [p^hɛn]. On the other hand, if [ɪ] and [ɛ] have merged before nasals, a participant may produce both words as [p^hɪn]. Such a merger is generally believed to be common in Oklahoma, particularly among older and more rural English speakers. However, recent dialectological work in the state suggests that younger, more urban speakers may have acquired the contrast. If so, then these speakers may have come to associate the merger with older individuals or more rural individuals. Additionally, young speakers may expect a greater degree of contrast among female speakers versus male speakers.

Note that a similar merger and contrast pattern exists in Oklahoma between [ɑ] and [ɔ] as in *cot* and *caught*, respectively. One would, therefore, assume that an experiment designed to test the expected merger or contrast of [ɪ] and [ɛ] may be used to detect merger or contrast of [ɑ] and [ɔ] with relatively minor modifications.

2.2. Experimental design.

For this experiment, the participant will be exposed to several stimuli all at once. On the left edge of the screen there will be a text cue, such as the word 'PIN,' and on the right, 'PEN.' In the center of the screen, there will be a photograph of an individual—male or female, old or young, rural or urban. The participant will then hear an audio recording of, say, 'pin.' The participant, drawing on cues from the photograph, will probably assume that the voice on the recording belongs to the person in the photograph. Acting on this

information, the participant must decide which of the two words matches the recording. The idea is that younger participants, for example, may assume that [p^hɪn] represents *pin* when it accompanies a younger, more urban, or female face, but may have a harder time (and exhibit longer response times) when [p^hɪn] accompanies an older, more rural, or male face. Note: There are already audio samples and photographs for use in this experiment, but they are less than ideal; feel free to use your own or modify the existing ones.

2.3. Setting up the experiment.

Follow the steps below to create this experiment:

1. Create a new experiment.
2. Create a new block, a new trial, and a new event all called **Introduction**. Click on the green floppy disk icon in the toolbar to save your experiment. You will be prompted to name your experiment. Call it **PinPenPhoto**.
3. In the SuperLab menu, go to **Experiment > Participant Input....** Select **Keyboard-Single Keys**. Click **New...** and make response called **Left word correct (1)**. Set the field value of **The following key:** to **1**. Click **OK**. Make a new list called **Right word correct (3)** and set the value to **3**. Make a third list called **Continue (space)** and hit the space bar in the field for **The following key:**. Back in the main Participant Input editor window, go to the **Options** tab. Under the **Look for Single Key Responses From Participants:** menu, select **Only if an event designates a single key response as correct**. Click **Done**. Save the experiment.
4. For the **Introduction** event, specify it as a text event, and provide the following text for it:

In the following experiment, you will see a picture and hear an audio sample of recorded speech. You will also see two printed words. Your job is to pick

which of the two printed words best matches the
the word in the recording.

Press the number 1 on the 10-key number pad if you
think the word on the left is the best match. Press
the number 3 on the 10-key number pad if you think
the word on the right is the best match.

Press the space bar to continue.

Click **Settings...** to the right of the text panel. Under the **Presentation Options** tab of the **Text Settings** editor, select only **Erase screen before presenting stimulus** and, in the **At Event End:** menu, **Erase Screen**. Click **OK**. Under the **Input** tab of the **Event Editor**, select **After a correct response from the participant** and deselect both **Record and save response** and **Reset RT timer**. Under the **Correct Response** tab, set the **...the correct response is:** menu to **One or more of the following:** and choose **Continue (space)**. Click **OK**. Save the experiment.

5. Associate the event **Introduction** to the trial **Introduction** and the trial to the block **Introduction**. Save the experiment.
6. Create a new block called **Block1** and a new trial called **Stimuli**. Save the experiment.
7. Create new text events called **LeftWords** and **RightWords**. Save the experiment.
8. For **LeftWords**, under the **Stimulus** tab, choose **Use Text: Text Chosen from the List:** and create a new list called **LeftWordList**. Add the words in the following list below, one word per line (do not include commas):
DIM, SET, PEN, FIN, CHEM, FIT, SITE, DIN, HEM, BED, GEM, BIN, PIN, PEN, JIM, GEM, HIM,
HID, DEM, KIN, BEN, TIN, BIN, TEN, DIM, BIG, PIG, CHEM, FIT, HIM, BEN, DRIP, BED, HEM,
SIT, KEN, KIM, BIT, KEN, JIM, DEM, TIN, KIM, PIN, TEN, BEG, BID, and SIGHED.

Note that about one third of these words are filler words designed NOT to test the *pin/pen* merger. Click on **Settings....** Under the **Position** tab, set the **Horizontally (X)** value to **-360**. Under the **Presentation Options** tab, select only **Keep stimulus invisible** and, under the **At Event End:** menu, **Do Nothing**. Click **OK**. Go to the **Input** tab. Select **Immediately after the event is presented** and deselect **Record and save response** and **Reset RT timer**. Click **OK**. Save the experiment.

9. Go to **Experiment > Stimulus Lists...** and create a new stimulus list of **List Type: Text** called **RightWordList**. Add the words in the following list, one word per line (do not include commas):

DEM, SIT, PIN, THIN, KIM, HIT, SIGHED, DEN, HIM, BET, JIM, BEN, PEN, PIN, GEM, JIM,
HEM, HIT, DIM, KEN, BIN, TEN, BEN, TIN, DEM, BEG, PEG, KIM, FIN, HEM, BIN, GRIP, BID,
HIM, FIT, KIN, CHEM, BIG, KIN, GEM, DIM, TEN, CHEM, PEN, TIN, PEG, BED, and SIGN.

Click **Done**. Save the experiment.

10. For **RightWords**, under the **Stimulus** tab, choose **Use Text: Text Chosen from the List:** and select **RightWordList**. Click on **Settings....** Under the **Position** tab, set the **Horizontally (X)** value to **360**. Under the **Presentation Options** tab, select only **Keep Invisible** and also **Do Nothing** the **At Event End:** menu. Click **OK**. Under the **Input** tab, Select only **Immediately after the event is presented**. Click **OK**. Save the experiment.

11. Go to **Experiment > Stimulus Lists...** and create a new stimulus list of **List Type: Text** called **ComboList**. Copy the following text and past it into the field (be aware of the highlighted entries—this will be important in the next step):

MYU:DIM~DEM=DIM

FOU:SET~SIT=SET

FOR:PEN~PIN=PIN

FYU:FIN~THIN=FIN

MOR:CHEM~KIM=KIM

FYR:FIT~HIT=FIT

MYU:SITE~SIGHED=SIGHED

FOR:DIN~DEN=DIN

MYU:HEM~HIM=HEM

MOU:BED~BET=BET

FOU:GEM~JIM=GEM

MOR:BIN~BEN=BIN

MYU:PIN~PEN=PEN

FOU:PEN~PIN=PEN

MOU:JIM~GEM=GEM

FYU:GEM~JIM=JIM

FYU:HIM~HEM=HEM

MYU:HID~HIT=HIT

FYR:DEM~DIM=DEM

FYR:KIN~KEN=KEN

FOR:BEN~BIN=BEN

FOU:TIN~TEN=TIN

MOR:BIN~BEN=BEN

MOR:TEN~TIN=TEN

MYR:DIM~DEM=DEM

MYR:BIG~BEG=BIG

FOU:PIG~PEG=PEG

MYR:CHEM~KIM=CHEM

FOR:FIT~FIN=FIN

FYR:HIM~HEM=HIM

FYR:BEN~BIN=BIN

MOR:DRIP~GRIP=DRIP

FYU:BED~BID=BID

MYU:HEM~HIM=HIM

MOU:SIT~FIT=SIT

MOU:KEN~KIN=KEN

FYU:KIM~CHEM=KIM

MYR:BIT~BIG=BIT

MOU:KEN~KIN=KIN

MYR:JIM~GEM=JIM

FOU:DEM~DIM=DIM

FOR:TIN~TEN=TEN

FYU:KIM~CHEM=CHEM

MYR:PIN~PEN=PIN

MOU:TEN~TIN=TIN

FOR:BEG~PEG=BEG

FYR:BED~BED=BED

MOR:SIGHED~SIGN=SIGHED

Click **Done**. Save the experiment.

12. Create a new text event called [ComboStimuli](#). Set the program so that it chooses from the list **ComboList**. Click on **Settings....** Under the **Text Color** tab, set the **Select color:** value to [White](#). Under the **Position** tab, set the **Vertically (Y)** value to **-360**. Under the **Presentation Options** tab, select only the **Erase Screen**. Click **OK**. Under the **Input** tab, select **After any response from the participant, Record and save response**, and **Reset RT timer**. Go to the **Correct Response** tab. Select all the words from the **ComboList** list above that were highlighted; be careful as you have to be exact. In the **...the correct response is:** field, choose **One or more of the following:** and select **Right word correct (3)**. Now select the words from the list that were NOT highlighted above. Set their correct response to **Left word correct (1)**. Click **OK**. Save the experiment.
13. Create a new audio event called [AudioFiles](#) that chooses files from a list you create. Use **Add Files....** to build up the new list called [AudioList](#) containing the following

files from **Applications > SuperLab > Basic Procedures Experimental Files** (in this order—be careful, while there are no repeated files, there are still numerous opportunities for error):

myu1.wav, fou1.wav, for1.wav, fyu1.wav, mor1.wav, fyr1.wav, myu2.wav, for2.wav, myu3.wav, mou1.wav, fou2.wav, mor2.wav, myu4.wav, fou3.wav, mou2.wav, fyu2.wav, fyu3.wav, myu5.wav, fyr2.wav, fyr3.wav, for3.wav, fou4.wav, mor3.wav, mor4.wav, myr1.wav, myr2.wav, fou5.wav, myr3.wav, for4.wav, fyr4.wav, fyr5.wav, mor5.wav, fyu4.wav, myu6.wav, mou3.wav, mou4.wav, fyu5.wav, myr4.wav, mou5.wav, myr5.wav, fou6.wav, for5.wav, fyu6.wav, myr6.wav, mou6.wav, for6.wav, fyr6.wav, and mor6.wav.

In the **Sound Option:** menu, select only **Allow audio to continue playing until it ends on its own**. Under the **Input** tab, select only **Immediately after the event is presented**. Click **OK**. Associate the event with the **Stimuli** trial. Reorder the event so that it appears before **LeftWords**. Save the experiment.

14. Create a new picture event called **PhotoFiles** that chooses files from a list that you create. Use **Add Files....** to build up the new list called **PhotoList** containing the following files from **Applications > SuperLab > Basic Procedures Experimental Files** (in this order—be careful, there are numerous repeated files):

myu.jpeg, fou.jpeg, for.jpeg, fyu.jpeg, mor.jpeg, fyr.jpeg, myu.jpeg, for.jpeg, myu.jpeg, mou.jpeg, fou.jpeg, mor.jpeg, myu.jpeg, fou.jpeg, mou.jpeg, fyu.jpeg, fyu.jpeg, myu.jpeg, fyr.jpeg, fyr.jpeg, for.jpeg, fou.jpeg, mor.jpeg, mor.jpeg, myr.jpeg, myr.jpeg, fou.jpeg, myr.jpeg, for.jpeg, fyr.jpeg, fyr.jpeg, mor.jpeg, fyu.jpeg, myu.jpeg, mou.jpeg, mou.jpeg, fyu.jpeg, myr.jpeg, mou.jpeg, myr.jpeg, fou.jpeg, for.jpeg, fyu.jpeg, myr.jpeg, mou.jpeg, for.jpeg, fyr.jpeg, and mor.jpeg.

Click **Settings....** Under the **Size** tab, specify a frame size of **108** width and **144** height. Under **Presentation Options** tab, select the **Erase screen before presenting stimulus** and the **Keep stimulus invisible**. Under the **At Event End:** menu, select **Do Nothing**. Click **OK**. Under the **Input** tab, select only **Immediately after the event is presented**. Click **OK**. Associate the event with the **Stimuli** trial.

Reorder the event so that it appears before **LeftWords** and after **AudioFiles**. Save the experiment.

15. Run the experiment to see if it works to your satisfaction. Give the participant a name and make sure that the **Save collected data** option is checked. When you click **Run**, you will be prompted to specify a filename and location for the data file. After running it, locate your data and view it.

16. One thing that's still needed is a mechanism for collecting background data on the participants. To do so, create a new block and a new trial, both of which are to be called **Demographics**. For this experiment, you're interested in determining the following background information: Sex, age, education, provenance, urbanity of upbringing, and nativity of English speech. Each page requesting one of these pieces of information will need to be an event. Create the following text events: **Dem_Sex**, **Dem_Age**, **Dem_Educ**, **Dem_Prov**, **Dem_Urbn**, and **Dem_Sprk**. Associate the events with the **Demographics** trial and the trial with the **Demographics** block. Save the experiment.

17. Use the **Experiment > Participant Input...** menu to create a new keyboard-string input called **Background responses**. This will trigger a warning, but click **OK**. Under the **Response Completion** tab, make sure maximum number of characters is set to **7**. For the **SuperLab Assumes That the Participant is Done:** menu, select **After clicking on a button labeled Next >**. Under the **Options** tab, in the **Show String Input's Edit Field:** menu, select **Only if an event designates a string response as correct**. Click **Done**. Save the experiment.

18. Go to **Dem_Sex**. Have the program use the following text:
Before the experiment can begin, you must first provide some background information about yourself.

What is your sex?
(press m for male, f for female)

Under the **Input** tab, make sure that both **After any response from the participant** and **Record and save response** options are selected. Under the **Correct Response** tab, set the correct response to **One or more of the following: Demographic responses**. Click **OK**. Save the experiment.

19. Configure **Dem_Age** exactly as **Dem_Sex**, but with the following text:

What is your age?

(enter how old you are in years)

Save the experiment.

20. Configure **Dem_Educ** exactly as **Dem_Sex**, but with the following text:

What is your highest level of education completed?

(press a for high school, b for college or technical/
professional school, c for grad school, d for other)

Save the experiment.

21. Configure **Dem_Prov** exactly as **Dem_Sex**, but with the following text:

Where would you say you're from?

(enter the five-digit ZIP code for the location that
best describes where you're from)

Save the experiment.

22. Configure **Dem_Urbn** exactly as **Dem_Sex**, but with the following text:

Would you say you're basically from the city (press a)
the country (press b), or both (press c)?

Save the experiment.

23. Configure **Dem_Spkr** exactly as **Dem_Sex**, but with the following text:

Is English your first language?

(press y for yes, n for no)

Save the experiment.

24. Reorder the **Demographics** block, the trial associated with it, and the events associated with the trial to appear first in their respective lists. Save the experiment.
25. At this point, the experiment is ready to run. However, currently, the experiment always serves up content in the same order. You can randomize the **Block1** block so that participants get randomized content every time the experiment runs. Click on **Block1**. Under the **Randomize** tab, select **Randomize the trials in this block** and **Once per participant**. Click **OK**. Save the experiment.
26. Run the experiment to make sure it does what you want it to do.

2.4. Extending the experiment.

Again, it is a good idea to go back and create a **Practice** block to give participants the opportunity to work out the mechanics of the experiment before data is to be collected. At this point, such a task should not be difficult for you. Simply follow the steps outlined above while keeping in mind the purposes the block will serve. You'll need to locate audio and visual cues to use in the three-to-five event repetitions. Also, don't forget to change your introductory text accordingly. See §1.4 for more details.

3. Overview of SuperLab 4.

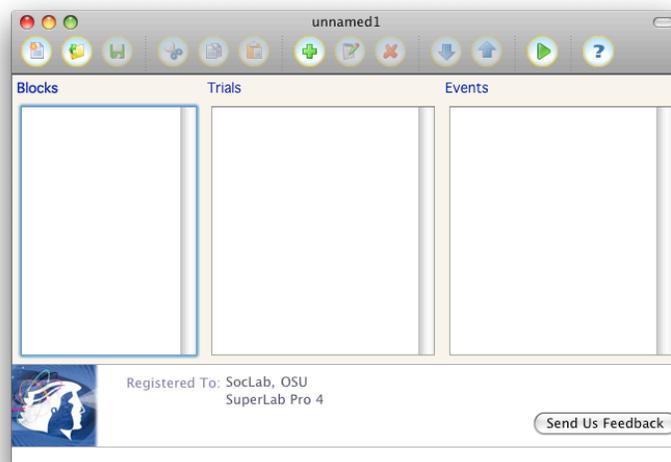
SuperLab 4 is a software tool for designing and organizing experiments and collecting experimental data from participants. Using the program, therefore, typically involves creating or modifying and eventually running an experiment.

3.1. Creating a new experiment.

Opening SuperLab 4 usually sets up a new experiment template. If it does not, click on New Experiment under the File tab. You are now free to modify the blank template to create whatever experiment you have in mind.

3.1. Organizational scheme.

One of the most important things to know about SuperLab 4 is that it organizes the components of an experiment according to a visual ascendancy hierarchy in the horizontal plane. Items on the left hand side of the screen are conceptually “larger” than items on the right hand side. Thus, **blocks** can be supersets of **trials**, which in turn can be supersets of **events**. The reverse is not true. Additionally, within each of these three areas, items exhibit a secondary vertical hierarchy of ordering. So, events closer to the top of the page occur by default before those closer to the bottom.

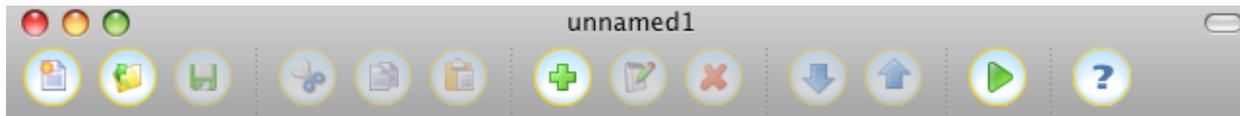


Larger  Smaller

Sooner

Later

3.2. Toolbar.



Most of the operations you will need to get started on a new experiment show up as icons on the toolbar. The toolbar commands from left to right are as follows: New Experiment (shiny document), Open Experiment (folder), Save Experiment (disk), Cut (scissors), Copy (pair of documents), Paste (clipboard and document), New Item (+), Edit Item (writing on document), Delete Item (X), Move Down (↓), Move Up (↑), Run (▶), and Help (?).

3.3. Components of an experiment.

The basic units for working with experiments in SuperLab 4 are as follows:

- Block** This can be thought of as a generic container capable of holding one or more trials. SuperLab 4 runs experiments at the block level, not at the trial or event level. So, when running an experiment, you are free to choose which blocks of an experiment to run. However, you can only run trials or events somehow associated with blocks (see below). Blocks are required components of any experiment.
- Trial** The term ‘trial’ is something of a misnomer. While it can be and indeed is the unit into which experimental trials fit, it is also just the level hierarchically lower than the block. For example, a block organizing only the display of instructions will have a trial component, although it won’t actually *try* anything. Like blocks, trials also are generic containers. But, unlike blocks, which hold trials, trials hold events. Each experiment must have at least one trial.
- Event** The event is the level at which most experimental actions take place. Events can be almost anything, instances of text, audio-visual material, prompts for data collection, and so on. Whereas blocks and trials are more structurally oriented and behind-the-scenes, your experimental participants will have direct involvement with your events. An experiment must have at least one associated event to run.

There are also other necessary components to experiments, such as Participant Inputs and Stimulus Lists, and optional ones, too, like Codes and Macros.

3.4. New experiment design.

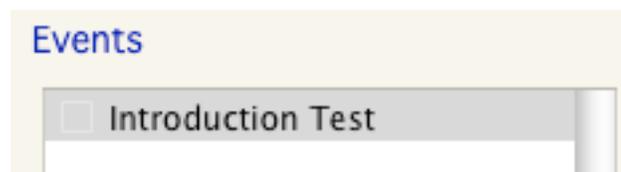
Designing an experiment that will run in SuperLab 4 involves three major steps—**creating** the various items, **associating** them with one another, and **specifying** their properties.

Let's look at each in turn.

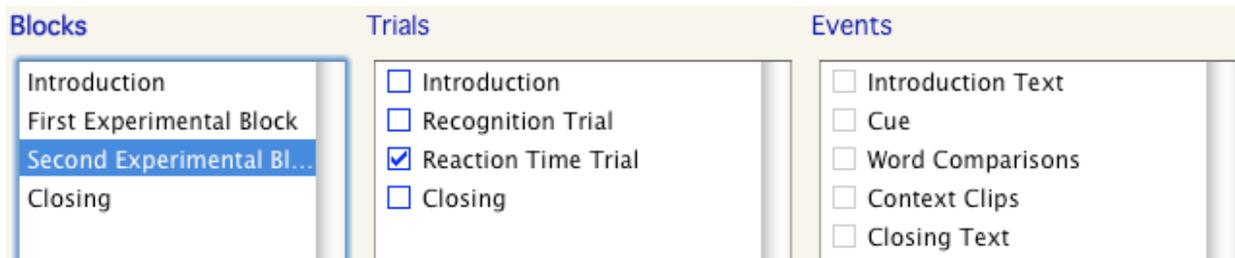
3.4.1. Creation of new items. **Creating** a new item involves merely selecting its unit area (Blocks, Trials, or Events), and clicking on the New Item icon in the toolbar. SuperLab 4 then prompts you to name the item and gives you the opportunity to specify its properties. You can always return to the item to specify its properties later, so this step can be delayed as long as needed. However, you must give new items names before leaving the prompt. Be sure to give them useful, descriptive names that help you remember what function they serve in the overall structure of the experiment. Note that item names must be unique only within a unit area. That is to say, for example, no two *blocks* can be called "Matched Guise," but you can have a block and a trial both with the name "Matched Guise."

3.4.2. Association of items. SuperLab 4 combines items by way of **association**. You can associate any item to any other item one unit higher. That is to say, you can associate a trial with a block or an event with a trial. But you cannot associate an event directly with a block without first associating it with a trial and then associating that trial with the block.

3.4.2.1. Making associations. When you create new trials or events, they appear in their respective areas with a small box to the left of their names. To associate a trial with a block, you must first make sure that there is no grey highlighting around any item, such as the following:



To get rid of the highlighting, simply click in the white “field” of the unit’s area. In the case of the example above, you could click just below the words “Introduction Test” in the event area. When all grey highlighting is gone, click on the *block* you wish to associate the trial with. This will create blue highlighting on the block name and turn the squares next to trials blue. To associate trials with this block, simply click in the blue square next to a *trial’s* name. Check marks will then appear in the squares to show that the trial has been successfully associated with that block, as in the following:



Here, the trial “Reaction Time Trial” has been associated with the block “Second Experimental Block.” Associations between events and trials follow the exact same process. Note that a single item can be associated with more than one larger item. For example, the item “Cue” above can be associated with both “Recognition Trial” and “Reaction Time Trial.” In turn, a block or trial can have numerous items associated with it.

3.4.2.2. Reviewing associations. After associating items, you can always review which items are associated with which others by simply clicking on the item name of the higher unit. That is to say, clicking on a block will reveal all of its associated trials, and clicking on a trial will reveal all of its associated events.

3.4.3. Specifying properties of new items.

Most of the design work in SuperLab 4 involves **specifying** properties for items. You can do so either when you create them or at any point after that. To specify the properties of an item that already exists, just double click on it to bring up that item’s Editor window. The window provides most (but not all) of the fundamental properties you will need to specify in order to achieve your desired results plus many others you may never need to deal with. Fortunately, the process of specifying properties is all done graphically, and does not involve any special programming knowledge. However, it does involve a very clear

understanding of the things you want to accomplish. Nowhere is this truer than with events, which are not only the units that experimental participants actually work with but are also the units that control how data is obtained from them. As a consequence, there are more properties to specify for events than there are for blocks or trials.

3.4.3.1. Specifying properties of events. The properties of events appear in the Event Editor just below the name where they are organized into tabs representing the order of presentation to the user (experimental stimuli come before the participant's response input, which comes before evaluation of that response, which comes before feedback, etc.). The most crucial of these is probably Stimulus, which is where you specify what kind of event it is, when and how it is selected, etc. Chances are that you'll be working mostly with Audio Files (don't use Sound File types—they are only there to make the program reverse-compatible with older experiments), Movies, Picture Files, and Texts. There is a great deal to learn about specifying event properties to make the experiment function the way you want it to function. Please see the SuperLab 4 manual for information on how to maximize experimental functionality.

3.5. Running an experiment.

Running an experiment for the first time involves some planning of how and where you want the data saved. Planning the experimental group, therefore, must occur before you run the experiment with participants.

3.5.1. Participant groups.

The first step in the process is deciding whether or not you want to group the participants in any particular way. For instance, if you are running the experiment on one of the laptops both in the field and in the lab, you might want to have field participants in one group and lab participants in another. That way you can later make a case for control of location if, say, laboratory trials ran faster on average than field trials. Or, you may not need to group participants in any particular way. At any rate, you can create groups in two ways. The best way is found under the Experiment > Participant Groups... menu. Here, you can add or delete groups and modify their properties, which includes which blocks will be run for

which groups and narrative descriptions of the groups themselves. The other way to group participants is at the time of running the experiment. However, if you've managed to come that far with your experiment and have still yet to think about groups, there may be other, more serious problems with your experiment!

3.5.2. *Individual participants.*

When actually running the experiment to collect data, you'll probably want to save the unique results of the experiment for each participant. As such, SuperLab 4 prompts you to provide a name for the participant when you click the Run icon. Remember, though, that the name you choose for the individual is the only piece of information you have linking an individual to their personal responses within the data. Accordingly, coding participant names is the best means you have of protecting your participants' anonymity. Consistency is the key to this; if you plan on collecting experimental data from less than 100 participants, you may code names as Subject_01, Subject_17, Subject_82, etc. If you use a table of random numbers to draw their number, regardless of their order of participation, you provide an additional layer of anonymity. Such a table is provided in Section 3.7

Note also that SuperLab 4 saves data obtained from participants in a folder of your choice. If you are not careful about where you save things, you may overwrite or lose valuable data, especially if you're running two separate experiments at the same time. Or the same experiment on two computers.

3.6. Viewing and using data.

SuperLab 4 saves data obtained from each participant in a separate tab-delineated text file in a folder of your choice. Columns in the file represent the *types* of data SuperLab 4 saves, such as participant response, correct response, reaction time, etc. Meanwhile, rows represent the actual values for those types, such as "Space (continue)," "Left word (1)," and "1497" (times are in milliseconds), respectively. Because the individual values may be of varying sizes, the columns rarely line up when viewing the file in its native format. This makes it very difficult to read, and suggests that there are better ways to view the text than as a .txt file. There are several ways to view and organize data, including the Cedrus Data

Viewer and MS Excel. Many students and faculty are very proficient with Excel, but most have neither heard of nor worked with Data Viewer.

3.6.1. Cedrus Data Viewer.

The program Data Viewer allows you to view the results of your experiments quickly and easily. In fact, you can open numerous .txt files at the same time, merge them into a single file, sort by type or value, hide unnecessary rows or columns, convert row data to columnar data, copy and manually export selected data to MS Excel, etc. Furthermore, it's a free download that doesn't require SuperLab 4 to use. This means that you can run your experiment on a computer in the Sociolinguistics Lab and do your analysis at home. Download Data Viewer for free at <http://www.superlab.com/dataviewer/>.

3.7. Random number table.

Below is a small random number table for use in assigning codes to participants. The table lists the numbers from 0-99 uniquely. To use the table, select a method for navigating it consistently, such as left-to-right starting top-to-bottom (18, 50, 53, ... 25), top-to-bottom starting right-to-left (91, 71, 32, ... 21), etc.

18	50	53	68	38	49	31	09	70	91
81	59	47	08	48	67	33	40	12	71
52	44	34	42	07	56	23	45	97	32
27	54	55	24	74	92	75	36	10	69
06	93	77	58	41	30	19	03	15	80
98	20	86	72	87	16	99	66	01	35
89	62	28	13	29	65	78	11	37	39
14	85	02	60	76	90	00	95	26	94
79	88	82	64	04	51	17	84	61	63
21	83	43	22	73	96	46	57	05	25