

Generic Psychology Laboratory

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Introduction

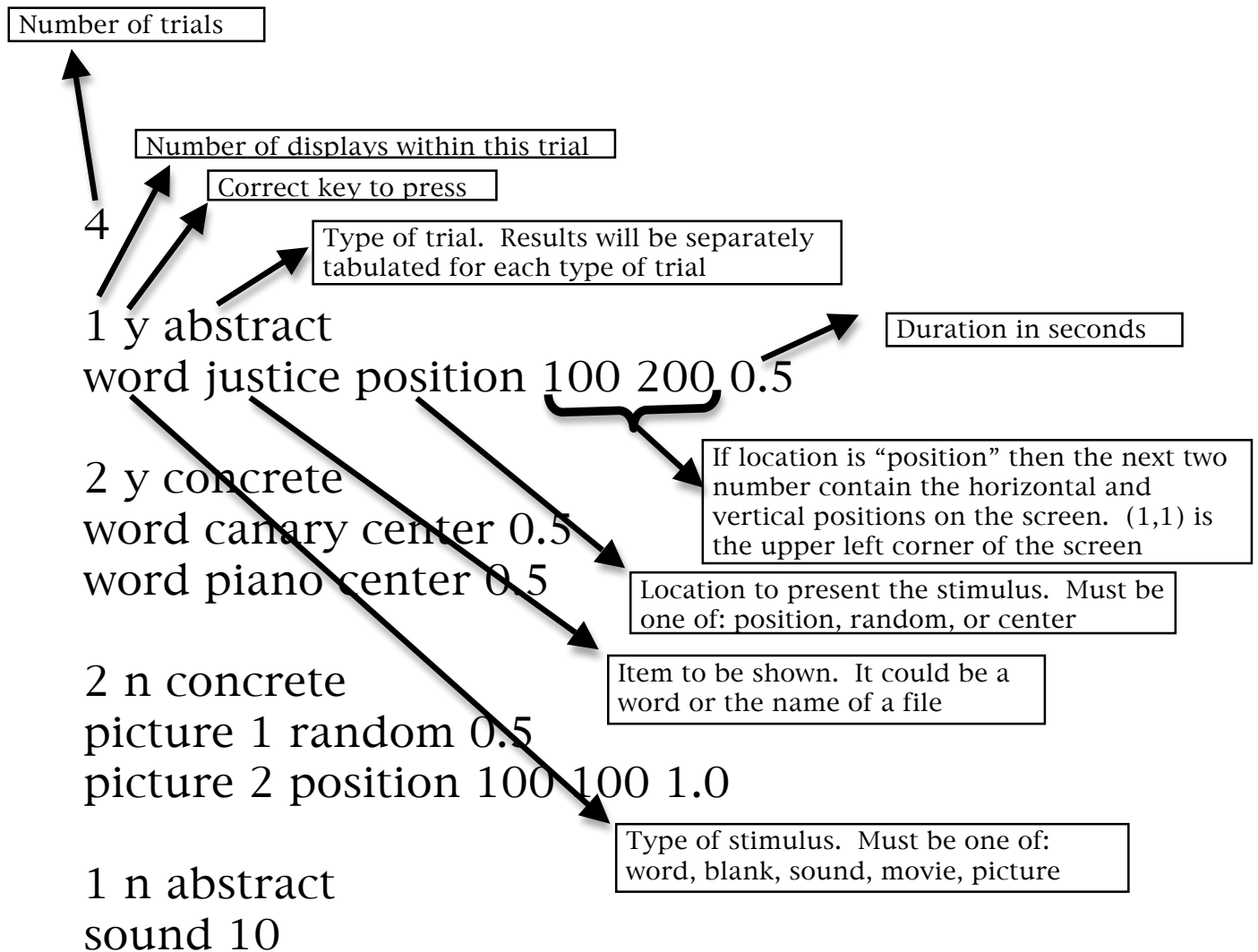
This laboratory is designed to run many different kinds of experiments involving words, pictures, movies, and sounds. The pictures, movies and sounds that you want to use in an experiment are stored in separate files. Another text file that you write, called the “script,” has a list of all of the trials that you want to expose to a subject. Each trial is made up of one or more displays, and each display describes what will appear, where it will appear, how long it will appear, what the correct response is to it.

Creating Picture, Movie and Sound Files

Generic Lab can read a variety of file formats. For pictures, it can read in .pict, .gif, or .jpg files. Movies can be in .avi formats. Sounds can be in .wav or .aiff formats.

Creating Files of Trials

The bulk of the work in creating an experiment is deciding what will happen on each trial. A simple text script file is written by the experimenter and read by the laboratory software. This file contains a description of each trial. It has a very specific format, as shown here:



A number of notes of explanation should be given;

1. The first line of the data file contains a single number that is the number of trials contained in the file. Up to 200 trials may be described.
2. Each trial may contain up to 10 displays. Before the displays are described, three pieces of information must be given about the entire trial: the number of displays in it, the key to press on the keyboard that is the correct response, and type of trial. The computer will only accept keys that are listed in one of the trials. When the experimental results are being displayed, the computer will tabulate results separately for each of the different trial types that have been specified in the file. In the example above, the computer would show separate results from "abstract" and "concrete" trials. The labels given to trial

types should have no spaces in them. If you have a design with both abstract and concrete words crossed with frequent and rare words, your category types might be "abstractfrequent," "absractrare," "concretefrequent," and "concreterare." If your experiment does not have a correct response, you can put "*" for the key to accept any letter input or "#" to accept any digit.

3. The first word of each display describes what kind of material is presented, and must be one of the following: "word," "movie," "picture," "sound," or "blank." "Blank" simply shows a blank screen for a specified duration.
4. If a word is displayed, the next entry shows this word. An entire phrase can also be presented (but should not include any of the words "center," "position," or "random"). Each display line may only contain 255 characters. If a sound or picture is presented, the next entry gives the resource number in the resedit file for the item.
5. The next piece of information tells the computer where to present the item. This entry is left off for "blank" or "sound" trials. If "position" is specified, then it must be followed by a horizontal (first) and vertical (second) location. Your screen dimensions may be 1024 X 768, so do not specify values beyond the screen. These numbers should be integers.
6. The final entry for a display is its duration, which is specified in seconds. If "0" is specified, then the image will stay on the screen until a key is pressed. A duration is not specified for sounds because the sound continues until it is finished.
7. The empty lines between trials are not required, but a blank line at the end of the file is required.
8. It is important not to have extra spaces (more than one) between entries or at the end of each line.

Here is a small file that you should now be able to understand. It runs an experiment testing whether people can judge whether or not something is a word better if it is preceded by a related word.

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2 y related

word nurse center 0.5

word doctor center 0

2 y unrelated

word wombat center 0.5

word doctor center 0

2 n nonword

word nurse center 0.5

word tordoc center 0

2 n nonword

word wombat center 0.5

word tordoc center 0

More formally, the syntax for the file of trials looks is expressed below. In the following notion, **bold words** must appear exactly as shown, and options are placed between parentheses with each option surrounded by "<" and ">," and separated by commas such as (<left>, <right>, <up>, <down>):

(**instructions** file-name)

number of trials

number-of-displays-in-Trial-1, correct-response-key, one-word-category

(<**word** word-or-phrase (<**center**>, <**random**>, <**position** x-coordinate y-coordinate)> duration> ,

<**picture** file-name (<**center**>, <**random**>, <**position** x-coordinate y-coordinate)> duration> ,

<**movie** file-name (<**center**>, <**random**>, <**position** x-coordinate y-coordinate)> duration> ,

<**sound** file-name > ,

<**blank** duration>)

....for each display within Trial 1

number-of-displays-in-Trial-2, correct-response-key, one-word-category

....for each trial.

Setting Up the Experiment

When you select the "Set up Experiment" menu item, you will see a window that looks like):

Script filename: '0/Generic Lab/word superiority demo

Repetitions of each trial:

Trial order: Use order in file Use random order

Order of displays within trial: Use order in file: Use random order

Font and size of word stimuli:

Leave old display on when drawing new? No Yes

Ranges for random display position: Horizontal (1 - 390): Vertical (1 - 250):

Present prompt string after displays? No Yes:

Give feedback after response? No Yes

Delay between trials (ms):

By changing the options in this window, you can customize various aspects of the experiment.

Script file name: This contains the script with the trial descriptions that you want to run. You can “browse” for it on your computer. It should be a text file, and not, for example, a Microsoft Word file. You can, however, use Microsoft Word to create the file. Just be sure to use the "Save As" command when saving your file, and specify under the "save" options that the file should be a "text only" file.

Repetitions of each trial: You can present each trial more than one time. This is often done to get more reliable results from an experiment with few trials.

Trial order. Trials can be presented in the same order that they appear in the file, or can be presented randomly. If you have chosen to display each trial more than one time, then all of the repetitions of all of the trials will be randomized, meaning that you could get two repetitions of the same trial in a row.

Order of displays within trial. Similarly, if a trial has more than one display, you can either present the displays in the same order that they appear in the file, or you can randomly present the displays.

Font and size of word stimuli. For words, you can specify the font that is used to render the word, as well as its size.

Leave old display on when drawing new? If a trial has more than one display in it, you can choose to not erase the screen after the first display has been presented. If so, then both displays will appear together.

Ranges for random display positions. If the "random" option is specified in a file for the location of an item, then it will appear somewhere within a box around the center of the screen. The horizontal and vertical numbers specify the dimensions of this box. For example, if a horizontal value of 50 is selected, then the item will appear somewhere between the location 25 pixels left of center and 25 pixels right of center.

Present prompt after displays. After all of the displays within a trial have been presented, you can choose to present a prompt string to subjects. If you choose to display a prompt, you would type it into the long box. The prompt would typically describe to subjects what their possible response choices are.

Give Feedback? If you give feedback, then after a subject has made a response, the computer will compare their response to the correct key press stipulated in the file. If the subject gave the correct response, a check appears; otherwise, an "X" appears.

Delay between trials. With this option, you can specify in milliseconds (1/1000ths of a second) how much of a pause to give subjects between trials.

Running the Experiment

To run the experiment, first give your subject the instructions for the experiment, or remind yourself what your task and possible key responses are. Then, simply select the "run experiment" menu option. You will be shown all of trials in the specified file of trials, with the number of repetitions specified in the "trial details" window. The repetitions will be completely randomized, such that it is possible to get the same trial twice in a row.

The computer will not allow any key presses that are not the correct key press for at least one of the trials. If you need to abort the experiment before it is finished, press the Abort button at the bottom of the screen. During the experiment, the computer will keep track of your responses, measuring response times to the millisecond, although their accuracy may depend upon the computer you are using to run the experiment.

The maximum number of trials described in your file of trials is 200, the maximum number of displays per trial is 10, and the maximum number of categories is 26.

After you are finished running the experiment, you can see your results by selecting the “Results” menu option. Your results window will look something like:

Results for all Category abstract items:

Responded with a on 2 trials with an average response time of 1.491 seconds.

Responded with c on 0 trials.

Number of correct responses = 2, with an average response time of 1.491 seconds.

Number of incorrect responses = 0.

Results for all Category concrete items:

Responded with a on 1 trials with an average response time of 0.359 seconds.

Responded with c on 1 trials with an average response time of 0.52 seconds.

Number of correct responses = 1, with an average response time of 0.52 seconds.

Number of incorrect responses = 1, with an average response time of 0.359 seconds.

These results break down your results according to the categories specified in the file of trials. For each category of trials, the computer will tell you how often each different key response was made, with the average response time given for the response. The computer will also break down the results more generally into the number of, and response time for, correct and incorrect responses. In addition to showing your results on a window, your results can be saved by pressing the “save data in file” button and specifying a file name. You can also save your raw data to a specified file. If you do this, then each row of the raw data file will represent a single trial presented to the subject, and will contain information describing which trial (in the script file) was presented, what trial number it was (the first, second, third, etc. trial shown to the subject), and what key the subject pressed.