Task Setup

To get to the appropriate directory

>>cd stopsig_behav (or whatever name given to the directory where all the stop signal files are)

To test the volume of the sound

>>test_sound

(If it's too loud or soft, you can change the volume on the computer and replay the program until the sound is OK. Do this while the subject is wearing his or her headphones.)

Task Instructions

You will see an arrow in the middle of a circle pointing either left or right. As soon as you see the arrow, respond ***as quickly and as accurately as possible***, by pressing "<" if it's pointing left and ">" if it's pointing right. Use the index and middle fingers of your right hand. When you hear a beep, that signals to you stop your response immediately and not to respond to that particular arrow. Still respond to the others after it, unless there is another tone. ***Both going and stopping are equally important.***

This task is designed to be difficult and for subjects to make mistakes, because we are interested in looking at those mistakes. So don't get frustrated if it's difficult. ***Just make sure not to slow down your responses to wait for the beep so that you are no longer going when you are supposed to, because then you are no longer doing the task.***

You won't always be able to stop when you hear a beep, so just try your best. As long as you go quickly all of the time without pushing the wrong button for arrow direction, and can stop some of the time you're doing the task correctly.

It's also important to concentrate and not to talk while you're doing the task.

Do you have any questions?

If not, let's begin the demo program.

Run Demo

To start the demo

>> stopbehavOSX_2stairs_demo

(*make sure subject is using correct keys and fingers!!*)

Do you understand the task? If so, let's get started.

Run Task

Actual Task-run 1

>> stopbehavOSX_2stairs_counterbalance

Enter subject number: <must be a number, no letters>
Enter run number (max is 4): 1
Which order do you want to use, 1 - 4? <so can counterbalance across subjects>
Ladder1 start val (e.g. 250): 250

Ladder2 start val (e.g. 350): 350

You can press any key to begin the task.

****Watch the subject during the first half of the task (at least, longer if they have a bad strategy during the first half) to make sure they're pushing the right buttons for arrow direction and to look at their strategy; notice if they start slowing down (to wait for the beep), or go too fast and never stop, etc.**
**Note that halfway through the subject's RT will pop up. Give the subject quick feedback when you see the reaction time and error screen pop up. A good RT is between 400 and 500 usually (*but don't tell subjects that, this is for your own information!!!!*), and fewer than 4 errors is good. Also make sure to watch the subject so you can give them feedback based on how they respond (i.e., if they go very fast and never stop when they hear a beep, have them slow down a little; if they keep slowing down as if they're waiting for the beep, emphasize that going and stopping are equally important and not to slow down on the go task to wait for the beep).

If the subject falls within that range, say: "You're doing a great job; keep your speed constant and keep up the good work."
If they're a little slower, say: "Remember that going and stopping are equally important and don't slow down on the go task to wait for the beeps or you aren't doing the go portion of the task, which is just as important as the stopping portion. You won't be able to stop every time you hear a beep, we design the task that way, so just try your best and keep your speed constant."
If they have too many arrow direction errors or never stop when there's a beep, say: "Remember that going and stopping are both important, so maybe you should slow down a bit on the go task so you push the correct buttons for the arrows and can stop some of the time, but remember not to continue slowing down so you're waiting for the beep."

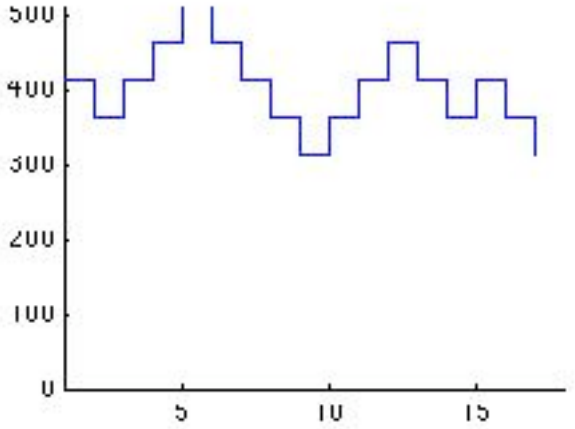
If the feedback pops up and RT is N/A and/or there are a ton of errors but the subject seemed to be doing the task correctly, it could be because they were using the wrong keys.

Between runs, you should look at the graph of stop-signal delays to make sure the subject is using the appropriate strategy.

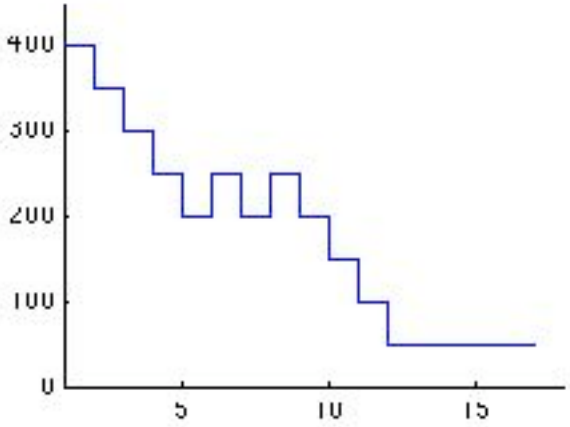
<u>Analyze Run</u>
Analyze Program to check on subject's strategy
>>ls (this is to see a list of all files in the directory)
>> analyse_ 2stairs_quantile
Enter behavioral filename: <copy and paste appropriate .mat file, should be names like: #stop_behav**1**_orderX_date_time.mat – date will be from day 1>
How many steps of the ladder do you want included in the SSRT estimation? 8 is half the run, 16 is entire run: <16>
Is this to put the data in the behavioral spreadsheet? 1 if yes, 0 if no: <0>

A graph will pop up. This plots the staircase values, give appropriate feedback strategy based on the graph.

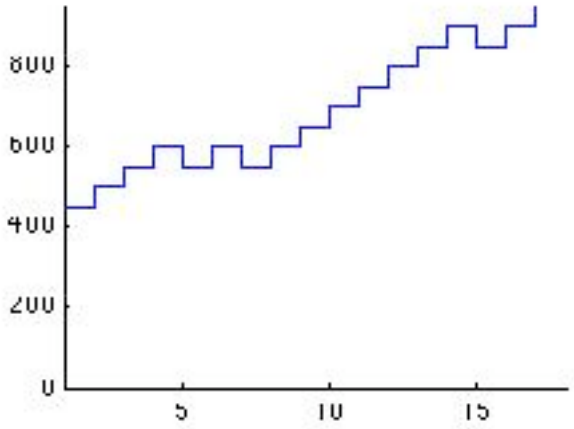
Example graphs:



This is a good example of a converged staircase, meaning the subject has a good strategy. Tell the subject they found a good balance between responding quickly on the go task and stopping the best they can on the stop task.



This is an example of a participant who never stops. Suggest that they try going slightly slower on the go task and not to forget to try to inhibit as best they can on the stop task.



This is an example of a participant who is paying too much attention to trying to stop and not maintaining their speed while going. They are likely slowing down their responses so much in order to stop more that they are no longer doing the go task quickly. Tell them to try to keep their speed up and not slow down, and that it's OK not to inhibit on every single stop trial. Remind them that both going and stopping are equally important, and by slowing down on the go task they are no longer doing the go portion of the task.

Actual Task-run 2
>>ls (this is to see a list of all files in the directory)
>> stopbehavOSX_2stairs_counterbalance
Enter subject number: < same as used for run 1>
Enter run number (max is 4): 2
Enter name of prior behavioral file to open: <copy and paste the .mat file from the previous run; will look something like: #stop_behav**1**_orderX_date_time.mat>

Analyze Program to check on subject's strategy
>>ls (this is to see a list of all files in the directory)
>> analyse_ 2stairs_quantile
Enter behavioral filename: <copy and paste appropriate .mat file, should be names like: #stop_behav**2**_orderX_date_time.mat – date will be from day 1>
How many steps of the ladder do you want included in the SSRT estimation? 8 is half the run, 16 is entire run: <16>
Is this to put the data in the behavioral spreadsheet? 1 if yes, 0 if no: <0>

Actual Task-run 3
>>ls (this is to see a list of all files in the directory)
>> stopbehavOSX_2stairs_counterbalance
Enter subject number: < same as used for run 1>
Enter run number (max is 4): 3
Enter name of prior behavioral file to open: <copy and paste the .mat file from the previous run; will look something like: #stop_behav**2**_orderX_date_time.mat>

You can run the task up to 4 times