Task Info:

Staircase Procedure:

* Adjust SNR of stimulus (do so by changing the intensity of the stimulus, NOT the noise) such that for each condition (A, AV, Environ), we know the SNR at which the subject will get 70% and 95% correct. If possible, structure this such that the 70% and 95% thresholds can be determined in one continuous task.
* Counterbalance which conditions/thresholds are computed first

Main Task Structure:

* 3 conditions – auditory, audiovisual, environmental sounds (aud only)
* 200 trials per condition (100 Hard, 100 Easy)
* Stimuli will be blocked by condition, with block order randomized
  + Each block will have 20 trials (10 hard, 10 easy, randomly mixed within the block)
  + Blocks will be separated by a title screen with plain text indicating what the next block of stimuli will be (1 sec duration) – i.e. “Auditory” “Visual” “Sounds”
* REST – there will be 2 rest blocks (2 min duration). One rest after the first 200 trials (10 blocks), one rest after the 400th trial (20 blocks).
* Instruction pages (one page per bullet):
  + “In this task, you will be asked to listen to sounds and watch videos and tell us what you perceived. Some of these clips will be English words and some will be everyday sounds. These clips will be played in different levels of noise, and some will be harder to understand than others. Do your best, listen to the whole clip, and choose the answer choice that most closely matches what you perceived. Press space bar to continue.”
  + “At the beginning of each section there will be instructions telling you what you will see and hear in that section. For just English words (sound only), it will say “Auditory.” For videos of a person saying English words (video and sound), it will say “Visual.” For everyday environmental sounds, it will say “Sounds.” You will complete 10 sections and take a break. Press space bar to continue.”
  + “The clips will be played in different levels of noise. Some will be harder to understand than others. At the beginning of each trial, you will see an “H” or and “E”. These letters tell you whether the trial will be harder (H) or easier (E) to understand. Press space bar to continue”
  + “After you listen to or see the clips, you will be given 4 possible answer choices. Choose the answer that best matches what you perceived. Use the up/down/left/right arrows to choose the answers in the corresponding positions on the screen (i.e. left arrow for answer choice on the left side). Do you understand the task? If no, ask the experiment now. If yes, press space bar to begin the task”
* Trial Structure:
  + Each trial is 5 sec long, with an inter-trial interval of 1 sec (so, 6 sec total)
  + Inter-trial interval (not pictured, occurs before/after each trial):
    - 1 sec duration, no sound, gray fixation cross.
  + Prestimulus period
    - 1 sec duration
    - Noise always present (should sound identical in all trial types)
    - Visual input is either “H” or “E” centered on screen in black text indicating Hard or Easy trial
  + Stimulus Presentation Window
    - 2 sec duration
    - Noise is constant – should be no interruption, should sound continuous from prestimulus period
    - Stimulus onset occurs at a variable point within 2 sec window such that stimulus concludes within window
      * Need to output stimulus onset and offset times for each trial, such that we know which stimulus occurred at which time point
    - Visual Input: differs depending on condition
      * Auditory and Environ – scrambled image that matches low level vis properties of faces. (perhaps we should load a video but not show it to keep delay time constant?)
      * AV – visual input is video of me speaking. Video appears at start of presentation window (2sec mark), but doesn't play. Video plays at randomized onset time within window.
    - Poststimulus Waiting Period
      * 1 sec duration
      * No sound, red fixation cross
    - Answer choice:
      * Ends when response is made, times out after 3 sec.
      * No sound
      * Visual input: 4 answer choices, correct answer location varies, key presses to choose: arrange choices in plus sign pattern (not as pictured), use arrow keys as response keys

