
PyHab Documentation

Release v0.5

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This is documentation for the code of PyHab. Eventually this will contain all of the documentation for PyHab, but that work is in progress.

CHAPTER 1

Installation

Prerequisites: Install the most recent version of PsychoPy (<https://github.com/psychopy/psychopy/releases/>).

Download the .dmg installer for mac or the .exe installer for Windows.

You will also need VLC media player in order to play media. It is free. (<https://www.videolan.org/vlc/index.html>)

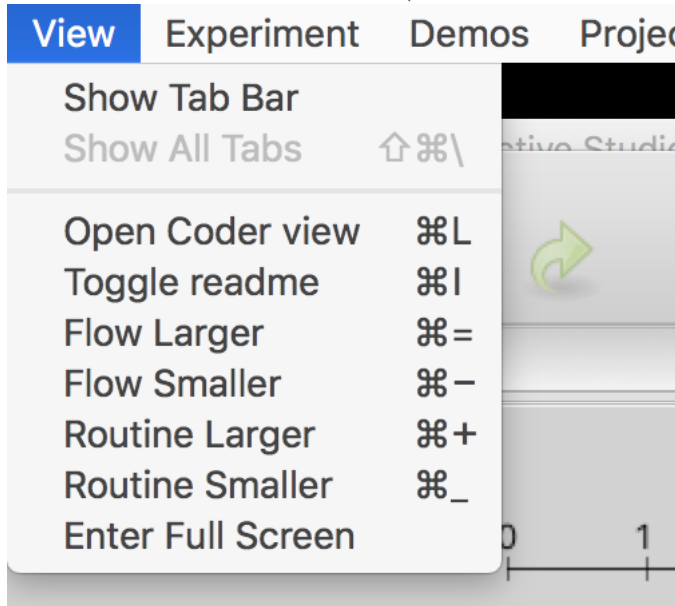
On Windows, you may need to install some movie codecs into PsychoPy directly. See [WindowsTroubleshooting](#)

Download the latest release of PyHab as a .zip file (<https://github.com/jfkominsky/PyHab/releases>).

Unzip the folder anywhere you would like. Then, see *Quickstart guide*

2.1 Creating a new PyHab project from scratch

1. Open PsychoPy
2. Go to “View” and select “Coder View”. (You can also hit cmd-L on Mac or ctrl-L on Windows.)



3. Go to File > Open and find the PyHab folder. Select “NewPyHabProject.py”

```

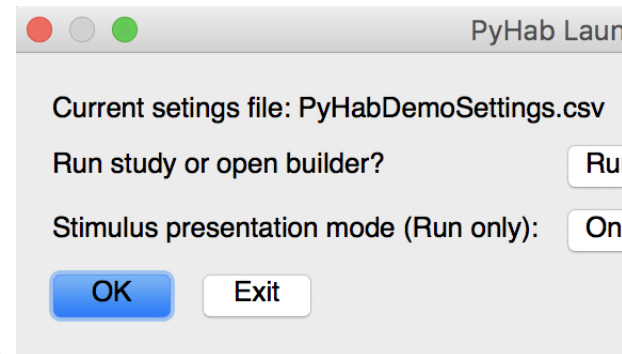
1 #For making PyHab studies from a blank slate.
2 #Simply hit the green running-silhouette button to begin!
3 #(You can also press CTRL-R or Command-R)
4 import PyHabBuilder as PB
5
6 builder = PB.pyHabBuilder()
7
8

```

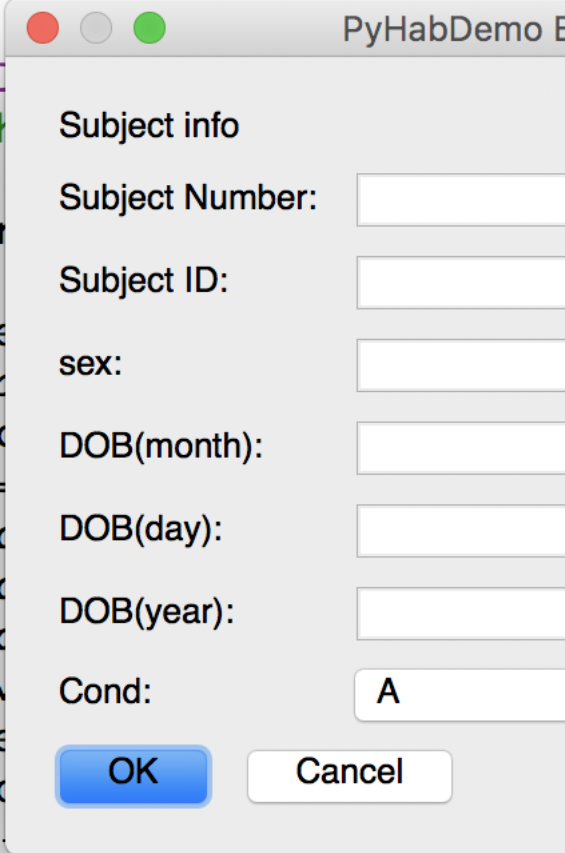
4. This should open a short text script in the coder window. Hit the big green “Run” button.
5. Construct your study and save it.
6. In the PsychoPy coder, choose “Open”, then find the experiment folder you saved. Open the file “[project-name]Launcher.py”
7. Hit the big green run button to open the builder.
8. Read the manual (<https://github.com/jfkominsky/PyHab/raw/master/PyHab%20User%20Manual.pdf>) for more information on how to build an experiment.

2.2 Running the demo or a pre-made PyHab experiment

1. In coder view, open the experiment’s launcher script. For the demo experiment, in the PyHab folder open “PyHabDemoLauncher.py” in the “PyHabDemo” folder.



2. **Hit the green “Run” button, and you should see a window like this.**
3. If you want to modify anything about the experiment, click the first drop-down menu and select “Builder”, and then click OK. If you want to run the experiment, select whether or not you want it to present stimuli with the second drop-down list, and then hit OK.



Subject info

Subject Number:

Subject ID:

sex:

DOB(month):

DOB(day):

DOB(year):

Cond:

OK Cancel

4. **The next window that appears will be the subject information window.**

4a. The first two lines are the subject number and identifier. These are arbitrary, but you need to put something in at least one of them.

4b. The subject sex is entirely optional and can be left blank.

4c. The next three lines are the subject date of birth. These **MUST** be filled out. Each field takes **ONLY** two digits. So, for a date of birth of November 12, 2018, you would put 11 in the first box, 12 in the second, and 18 in the third.

4d. The final line is a condition drop-down menu with a list of conditions. If the experiment you are running does not have conditions configured, this will be an arbitrary text box. Otherwise, select the appropriate condition.

5. **Hit OK, and the experiment will launch. You will be presented with the experimenter window. Press “A” to start the first**

5a. For preferential looking studies, hold “B” when they are looking left and “M” when they are looking right.

6. The experiment will notify you when it is saving data and then prompt you to press “return” to close the stimuli and experimenter windows and return to the launcher menu.

The builder code uses PsychoPy's visual library to create a rudimentary GUI for creating PyHab studies. The GUI itself mostly consists of clickable shapes that open dialog boxes. The only notable exception is the system for creating conditions, which creates an entire new UI in the window.

When the builder's save functions are called, they create a complete, self-contained folder which includes the experiment settings file (a csv), a launcher script, the PyHab module folder with PyHabClass, PyHabClassPL, and PyHabBuilder, and copies of all of the stimuli and attention-getters to a stimuli folder.

class PyHab.PyHabBuilder.**PyHabBuilder** (*loadedSaved=False, settingsDict={}*)

Changelist from 0.4:

MaxOff and minOn are now trial-type-specific

Now supports dynamic peak habituation criterion and moving vs. fixed-window habituation evaluation.

Now supports different types of stimuli - Movies, images, audio, and images with audio.

Changed how stimuli are added to experiment - you now create a "stim library" and separately associate items in it with different trial types.

TODO: Option for habituation over whole meta-trials not just the "hab" portion

addHabBlock (*makeNew=True*)

Creates a hab trial type, which consists of a hab trial plus, now, some other number of trials. It essentially needs to create a sub-flow.

0 = Maximum duration

1 = Maximum continuous off-time

2 = Minimum on-time

[If stimulus files associated with type, these occupy 3-N]

3/-5 = Auto-advance into trial

4/-4 = Select attention-getter

5/-3 = Inter-stimulus interval (ISI)

6/-2 = Use sub-block structure?

7/-1 = Number of trial types in sub-block, including hab

TODO: Compute hab over whole thing versus just 'hab' trial.

Returns

Return type

addStimToLibraryDlg ()

A series of dialog boxes which allows you to build a "library" of stimulus files for your experiment, which you can then assign to trial types in a separate dialog.

Works a bit like the attention-getter construction dialogs, but different in that it allows audio or images alone. The image/audio pairs are complicated, but not worth splitting into their own function at this time.

Returns

Return type

addStimToTypesDlg ()

A series dialog boxes, the first selecting a trial type and the number of stimuli to add to it, a second allowing you to add stimuli from the stimulus library that is stimList in the settings. Also used for adding beginning and end of experiment images (?)

Returns

Return type

attnGetterAudioDlg ()

A modular dialog for setting the options for an audio-based attention-getter

Returns A dictionary containing all the info required for an audio attention-getter

Return type dict

attnGetterDlg ()

The dialog window for customizing the attention-getters available to use for different trials. Two-stage: Modify existing attngetter or make new, then what do you do with either of those. Allows audio with PsychoPy-produced looming shape or just a video file.

Returns

Return type

attnGetterVideoDlg ()

A modular dialog for setting the options for a video-based attention-getter

Returns A dictionary containing all the info required for a video attention-getter

Return type dict

condMaker (rep=False, currPage=1)

A whole separate interface for managing condition creation.

Outputs settings condList (labels of each condition), condFile (save conditions to this file) and makes new structure condDict (mapping of each label to actual condition it applies to)

Parameters **rep** (*bool*) – Basically whether we are recursing while editing conditions

Returns

Return type

condRandomizer ()

This is based on other scripts I've made. Basically, say you have four conditions, and you want four participants to be assigned to each one, but you want to be totally blind to which condition a given participant is in. Here, once you have made your four conditions, you can tell it to create a condition list that it never shows you that has each condition X times, and that becomes the new condition file/list/etc.

Returns**Return type****condSetter (cond='NEW', ex=False)**

One dialog per trial type. Each dialog has a list of all the movies in that type This is not intuitive under the hood. The output of this is a dict with a list of movies, in order, for each trial type. This makes it slightly more human-intelligible than the previous system, which had a list of indexes.

Parameters

- **cond** (*str*) – Condition name
- **ex** (*bool*) – Whether the condition already exists

Returns**Return type****condSettingsDlg ()**

The dialog window for “condition settings”, not to be confused with the condition interface created by self.condMaker(). This determines whether condition randomization is used at all, a separate interface is used to define the conditions themselves.

Returns**Return type****dataSettingsDlg ()**

Which columns of data are recorded. Resets if the experiment type is switched to or from preferential looking.

Returns**Return type****delCond ()**

Present list of existing conditions. Choose one to remove.

delTrialTypeDlg ()

Dialog for deleting a trial type, and all instances of that trial type in the study flow

Returns**Return type****habSettingsDlg (lastSet=[], redo=False)**

Dialog for settings relating to habituation criteria:

0 = maxHabTrials (maximum possible hab trials if criterion not met)

1 = setCritWindow (# trials summed over when creating criterion)

2 = setCritDivisor (**denominator of criterion calculation . e.g., sum of first 3 trials** divided by 2 would have 3 for setCritWindow and 2 for this.)

3 = setCritType (peak window, max trials, first N, or first N above threshold)

4 = habThresh (threshold for N above threshold)

5 = metCritWindow (# trials summed over when evaluating whether criterion has been met)

6 = metCritDivisor (denominator of sum calculated when determining if criterion has been met)

7 = metCritStatic (static or moving window?)

Parameters

- **lastSet** (*list*) – If information entered is invalid and the dialog needs to be shown again, this allows it to remember what was previously entered.
- **redo** (*boolean*) – Checking if redoing last setting

Returns

Return type

loadFlow ()

This creates the array of objects in the study flow display

Returns

Return type

loadTypes ()

This function creates the trial types palette

Returns

Return type

mainLoop ()

Main loop of the whole program.

Returns

Return type

moveTrialInFlow (*flowIndex*)

A function for when a trial is clicked in the study flow, allowing you to either swap it or remove it.

Parameters **flowIndex** (*int*) – The index in the flowArray of the trial being modified

Returns

Return type

quitFunc ()

Simple function for quitting, checks if you want to save first (if there's anything to save).

Returns

Return type

removeStimFromLibrary ()

Presents a dialog listing every item of stimuli in the study library. Allows you to remove any number at once, removes from all trial types at same time. Deletes from stimuli folder on save if extant.

Returns

Return type

run ()

Exists exclusively to be called to start the main loop.

Returns

Return type

saveDlg ()

Opens a save dialog allowing you to choose where to save your project. Essentially sets self.folderPath

Returns**Return type****saveEverything ()**

Saves a PyHab project to a set of folders dictated by self.folderPath

Returns**Return type****setHabSubTrials (numHab)**

Groups trial types into hab blocks. Hab blocks can have multiple trial types, but one must always be Hab. This function doesn't care if you've made a hab block before, it just overwrites whatever exists. This is under the assumption that hab blocks will have few trials.

Parameters **numHab** (*int*) – Number of trials in a hab block

Returns**Return type****showMainUI ()**

Main draw loop of the primary builder interface

Returns**Return type****stimSettingsDlg (lastSet=[], redo=False)**

Settings relating to stimulus presentation. Indexes from the dialog

0 = screenWidth: Width of stim window

1 = screenHeight: Height of stim window

2 = Background color of stim window

3 = movieWidth: Width of movieStim3 object inside stim window. Future: Allows for movie default resolution?

4 = movieHeight: Height of movieStim3 object inside stim window

5 = screenIndex: Which screen to display the stim window on.

6 = freezeFrame: If the attention-getter is used (for this trial type), this is the minimum time the first frame of the movie will be displayed after the attention-getter finishes.

Parameters

- **lastSet** (*list*) – Optional. Last entered settings, in case dialog needs to be presented again to fix bad entries.
- **redo** (*boolean*) – Are we doing this again to fix bad entries?

Returns**Return type****trialTypeDlg (trialType='TrialTypeNew', makeNew=True, prevInfo=[])**

Dialog for creating OR modifying a trial type. Allows you to set the maximum duration of that trial type as well as remove movies from it, and also set whether the trial type is gaze contingent. Now also sets whether the study should auto-advance into this trial and whether the built-in attention-getter should be used.

The dialog by default outputs a list with 8 items in it. 0 = trial type name

1 = Maximum duration of trials of this type

[if movies assigned to trial type already, they occupy 2 - N]

2/-7 = Gaze-contingent trial type?

3/-6 = Maximum continuous looking-away to end trial of type

4/-5 = Minimum on-time to enable off-time criterion (not continuous)

5/-4 = Auto-advance into trial?

6/-3 = Attention-getter selection

7/-2 = End trial on movie end or mid-movie

8/-1 = inter-stimulus interveral (ISI) for this trial type

Parameters

- **trialType** (*str*) – Name of the trial type
- **makeNew** (*bool*) – Making a new trial type or modifying an existing one?
- **prevInfo** (*list*) – If user attempts to create an invalid trial type, the dialog is re-opened with the previously entered information stored and restored

Returns

Return type

univSettingsDlg ()

Settings that apply to every PyHab study regardless of anything else.

0 = prefix: The prefix of the launcher and all data files.

1 = blindPres: Level of experimenter blinding, 0 (none), 1 (no trial type info), or 2 (only info is whether a trial is currently active.

2 = prefLook: Whether the study is preferential-looking or single-target.

3 = nextFlash: Whether to have the coder window flash to alert the experimenter they need to manually trigger the next trial

Returns

Return type

PyHab Class (base)

This is the base class that is used to actually run PyHab studies. There is an extension of this base class for preferential looking paradigms, see *Preferential Looking*

class PyHab.PyHabClass.**PyHab** (*settingsDict*)
 PyHab looking time coding + stimulus control system

Jonathan Kominsky, 2016-2018

Keyboard coding: A = ready, B = coder 1 on, L = coder 2 on, R = abort trial, Y = end experiment (for fussouts)

Between-trials: R = redo previous trial, J = jump to test trial, I = insert additional habituation trial (hab only)

Throughout this script, win2 is the coder display, win is the stimulus presentation window. dataMatrix is the primary data storage for the summary data file. It is a list of dicts, each dict corresponds to a trial.

Anything called “verbose” is part of the verbose data file. There are up to four such structures: On (for gaze-on events) Off (for gaze-off events) On2 and Off2 (for the optional secondary coder) Each coder’s on and off are recorded in a separate dict with trial, gaze on/off, start, end, and duration.

TODO: Habituation calculated over whole meta-trial rather than just “Hab”

SetupWindow ()

Sets up the stimulus presentation and coder windows, loads all the stimuli, then starts the experiment with doExperiment()

Returns

Return type

abortTrial (*onArray, offArray, trial, ttype, onArray2, offArray2, stimName=*)

Only happens when the ‘abort’ button is pressed during a trial. Creates a “bad trial” entry out of any data recorded for the trial so far, to be saved later.

Parameters

- **onArray** (*list of dicts {trial, trialType, startTime, endTime, duration}*) – Gaze-on events for coder 1

- **offArray** (*list of dicts {trial, trialType, startTime, endTime, duration}*) – Gaze-off events for coder 1
- **trial** (*int*) – trial number
- **ttype** (*string*) – trial type
- **onArray2** (*list of dicts*) – Gaze-on events for (optional) coder 2
- **offArray2** (*list of dicts*) – Gaze-off events for (optional) coder 2
- **stimName** (*string*) – If presenting stimuli, name of the stim file

Returns**Return type****attnGetter** (*trialType*)

Plays either a default attention-getter animation or a user-defined one. Separate settings for audio w/shape and video file attention-getters.

Returns**Return type****avgObsAgree** (*timewarp, timewarp2*)

Computes average observer agreement as agreement in each trial, divided by number of trials.

Parameters

- **timewarp** (*list*) – List of every individual frame’s gaze-on/gaze-off code for coder A
- **timewarp2** (*list*) – As above for coder B

Returns average observer agreement or N/A if no valid data

Return type float

checkStop ()

After a hab trial, checks the habituation criteria and returns ‘true’ if any of them are met. Also responsible for setting the habituation criteria according to settings. Prior to any criteria being set, self.HabCrit is 0. We can use this as a check whether it has been set.

TODO: Hab over sub-trials versus just the ‘Hab’ trial type. This requires some kind of tagging for hab sub-trials.

Returns True if hab criteria have been met, False otherwise

Return type**cohensKappa** (*timewarp, timewarp2*)

Computes Cohen’s Kappa

Parameters

- **timewarp** (*list*) – List of every individual frame’s gaze-on/gaze-off code for coder A
- **timewarp2** (*list*) – As above for coder B

Returns Kappa

Return type float

dataRec (*onArray, offArray, trial, type, onArray2, offArray2, stimName=""*)

Records the data for a trial that ended normally.

Parameters

- **onArray** (*list of dicts {trial, trialType, startTime, endTime, duration}*) – Gaze-on events for coder 1
- **offArray** (*list of dicts {trial, trialType, startTime, endTime, duration}*) – Gaze-off events for coder 1
- **trial** (*int*) – trial number
- **type** (*string*) – trial type
- **onArray2** (*list*) – Gaze-on events for (optional) coder 2
- **offArray2** (*list*) – Gaze-off events for (optional) coder 2
- **stimName** (*string*) – If presenting stimuli, name of the stim file

Returns**Return type****dispAudioStim** (*trialType, dispAudio*)

For playing audio stimuli. A little more complicated than most because it needs to track whether the audio is playing or not. Audio plays separately from main thread.

Parameters **dispAudio** (*sound.Sound object*) – the stimuli as a sound.Sound object

Returns an int specifying whether the audio is in progress (0), we are in an ISI (1), or the audio is looping (2)

Return type int

dispCoderWindow (*trialType=-1*)

Draws the coder window, according to trial type and blinding settings.

Parameters **trialType** (*int or string*) – -1 = black (between trials). 0 = ready state. Otherwise irrelevant.

Returns**Return type****dispImageStim** (*dispImage*)

Very simple. Draws still-image stimuli and flips window

Parameters **dispImage** (*visual.ImageStim object*) – the visual.ImageStim object

Returns constant, 1

Return type int

dispMovieStim (*trialType, dispMovie*)

Draws movie stimuli to the stimulus display, including movie-based attention-getters.

Parameters

- **trialType** (*int or str*) – 0 for paused, otherwise a string
- **dispMovie** (*moviestim3 object*) – The moviestim3 object for the stimuli

Returns an int specifying whether the movie is in progress (0), paused on its last frame (1), or ending and looping (2)

Return type int

dispTrial (*trialType, dispMovie=False*)

Draws each frame of the trial. For stimPres, returns a movie-status value for determining when the movie has ended

Parameters

- **trialType** (*string*) – Current trial type
- **dispMovie** (*bool or dict*) – A dictionary containing both the stimulus type and the object with the stimulus file(s) (if applicable)

Returns 1 or 0. 1 = end of movie for trials that end on that.

Return type int

doExperiment ()

The primary control function and main trial loop.

Returns

Return type

doTrial (*number, type, disMovie*)

Control function for individual trials, to be called by doExperiment Returns a status value (int) that tells doExperiment what to do next

Parameters

- **number** (*int*) – Trial number
- **type** (*string*) – Trial type
- **disMovie** (*dictionary*) – A dictionary as follows { ‘stim’:[psychopy object for stimulus presentation], ‘stimType’:[movie,image,audio, pair]}

Returns int, 0 = proceed to next trial, 1 = hab crit met, 2 = end experiment, 3 = trial aborted

Return type

endExperiment ()

End experiment, save all data, calculate reliability if needed, close up shop. Displays “saving data” and end-of-experiment screen.

Returns

Return type

flashCoderWindow (*rep=False*)

Flash the background of the coder window to alert the experimenter they need to initiate the next trial. .2 seconds of white and black, flashed twice. Can lengthen gap between trial but listens for ‘A’ on every flip.

Returns

Return type

insertHab (*tn*)

Literally insert a new hab trial or meta-trial into actualTrialOrder, get the right movie, etc.

Parameters **tn** (*int*) – trialNum

Returns [disMovie, trialType], the former being the movie file to play if relevant, and the latter being the new trial type

Return type list

isInt ()

silly little function for validating a very narrow usage of “cond” field

Returns Bool: if arbitrary argument t is an int, true.

Return type

jumpToTest (*tn*)

Jumps out of a hab block into whatever the first trial is that is not a hab trial or in a hab meta-trial-type
 :param tn: trial number :type tn: int :return: [disMovie, trialType] as insertHab, the former being the movie file to play if relevant, and the latter being the new trial type :rtype: list

lookKeysPressed ()

A simple boolean function to allow for more modularity with preferential looking Basically, allows you to set an arbitrary set of keys to start a trial once the attngetter has played. In this case, only B (coder A on) is sufficient.

Returns True if the B key is pressed, False otherwise.

Return type

pearsonR (*verboseMatrix, verboseMatrix2*)

Computes Pearson's R

Parameters

- **verboseMatrix** (*dict*) – Verbose data, coder A
- **verboseMatrix2** (*dict*) – Verboase data, coder B

Returns Pearson's R

Return type float

redoSetup (*tn, autoAdv*)

Lays the groundwork for redoTrial, including correcting the trial order, selecting the right stim, etc.

Parameters

- **tn** (*int*) – Trial number (trialNum)
- **autoAdv** (*list*) – The current auto-advance trial type list (different on first trial for Reasons)

Returns list, [disMovie, trialNum], the former being the movie file to play if relevant, and the latter being the new trial number

Return type

redoTrial (*trialNum*)

Allows you to redo a trial after it has ended. Similar to abort trial, but under the assumption that the data has already been recorded and needs to be replaced. Decrementing of trial numbers is handled in doExperiment when the relevant key is pressed.

Parameters **trialNum** (*int*) – Trial number to redo

Returns

Return type

reliability (*verboseMatrix, verboseMatrix2*)

Calculates reliability statistics. Constructed originally by Florin Gheorgiu for PyHab, modified by Jonathan Kominsky.

Parameters

- **verboseMatrix** (*list*) – A 2-dimensional list with the content of the verbose data file for coder 1
- **verboseMatrix2** (*list*) – A 2-dimensional list with the content of the verbose data file for coder 2

Returns A dict of four stats in float form (weighted % agreement, average observer agreement, Cohen's Kappa, and Pearson's R)

Return type dict

run (*testMode=[]*)

Startup function. Presents subject information dialog to researcher, reads and follows settings and condition files. Now with a testing mode to allow us to skip the dialog and ensure the actualTrialOrder structure is being put together properly in unit testing.

Parameters **testMode** (*list*) – Optional and primarily only used for unit testing. Will not launch the window and start the experiment. Contains all the info that would appear in the subject info dialog.

Returns

Return type

wPA (*timewarp, timewarp2*)

Calculates weighted percentage agreement, computed as number of agreement frames over total frames.

Parameters

- **timewarp** (*list*) – List of every individual frame's gaze-on/gaze-off code for coder A
- **timewarp2** (*list*) – As above for coder B

Returns Weighted Percentage Agreement

Return type float

Preferential Looking

This class is an extension of the *PyHab Class (base)* base class.

class `PyHab.PyHabClassPL.PyHabPL` (*settingsDict*)

A new preferential-looking version of PyHab that extends the base class rather than being a wholly separate class. There's still a lot of redundant code here, which will require significant restructuring of the base class to fix.

abortTrial (*onArray, offArray, trial, ttype, onArray2, stimName=""*)

Aborts a trial in progress, saves any data recorded thus far to the bad-data structures

Parameters

- **onArray** (*list of dicts {trial, trialType, startTime, endTime, duration}*) – Gaze-on Left events
- **offArray** (*list of dicts {trial, trialType, startTime, endTime, duration}*) – Gaze-off events
- **trial** (*int*) – Trial number
- **ttype** (*string*) – Trial type
- **onArray2** (*list of dicts {trial, trialType, startTime, endTime, duration}*) – Gaze-on Right events
- **stimName** (*string*) – If presenting stimuli, name of the stim file

Returns

Return type

checkStop ()

After a hab trial, checks the habituation criteria and returns 'true' if any of them are met. Needs its own version because it has to get both timeOnL and timeOnR

Parameters **trial** (*int*) – Trial number

Returns True if hab criteria have been met, False otherwise

Return type

dataRec (*onArray, offArray, trial, type, onArray2, stimName=""*)

Records the data for a trial that ended normally.

Parameters

- **onArray** (*list of dicts {trial, trialType, startTime, endTime, duration}*) – Gaze-on Left events
- **offArray** (*list of dicts {trial, trialType, startTime, endTime, duration}*) – Gaze-off events
- **trial** (*int*) – Trial number
- **ttype** (*string*) – Trial type
- **onArray2** (*list of dicts {trial, trialType, startTime, endTime, duration}*) – Gaze-on Right events
- **stimName** (*string*) – If presenting stimuli, name of the stim file

Returns

Return type

doTrial (*number, type, disMovie*)

Control function for individual trials, to be called by doExperiment Returns a status value (int) that tells doExperiment what to do next

Parameters

- **number** (*int*) – Trial number
- **type** (*string*) – Trial type
- **disMovie** (*movieStim3 object*) – Movie object for stimulus presentation

Returns int, 0 = proceed to next trial, 1 = hab crit met, 2 = end experiment, 3 = trial aborted

Return type

endExperiment ()

End experiment, save all data, calculate reliability if needed, close up shop :return: :rtype:

lookKeysPressed ()

A simple boolean function to allow for more modularity with preferential looking Basically, allows you to set an arbitrary set of keys to start a trial once the attngetter has played. In this case, only B or M are sufficient.

Returns True if the B or M key is pressed, False otherwise.

Return type

Standalone Reliability

class StandaloneReliability

This script is simply the reliability function from *PyHab Class (base)* but run over two arbitrary verbose data files.

`PyHab.avgObsAgree` (*timewarp*, *timewarp2*)

Computes average observer agreement as agreement in each trial, divided by number of trials.

Parameters

- **timewarp** (*list*) – List of every individual frame’s gaze-on/gaze-off code for coder A
- **timewarp2** (*list*) – As above for coder B

Returns average observer agreement or N/A if no valid data

Return type float

`PyHab.cohensKappa` (*timewarp*, *timewarp2*)

Computes Cohen’s Kappa

Parameters

- **timewarp** (*list*) – List of every individual frame’s gaze-on/gaze-off code for coder A
- **timewarp2** (*list*) – As above for coder B

Returns Kappa

Return type float

`PyHab.pearsonR` (*verboseMatrix*, *verboseMatrix2*)

Computes Pearson’s R

Parameters

- **verboseMatrix** (*dict*) – Verbose data, coder A
- **verboseMatrix2** (*dict*) – Verboase data, coder B

Returns Pearson’s R

Return type float

PyHab.**wPA** (*timewarp*, *timewarp2*)

Calculates weighted percentage agreement, computed as number of agreement frames over total frames.

Parameters

- **timewarp** (*list*) – List of every individual frame’s gaze-on/gaze-off code for coder A
- **timewarp2** (*list*) – As above for coder B

Returns Weighted Percentage Agreement

Return type float

CHAPTER 7

Indices and tables

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