PsychoPy3

Now running studies online

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RELEVANCE TO EYE-TRACKING

- Builder experiment can use real-time gaze or pupil data from experiment participants interfacing with an eye tracker, e.g. Tobii

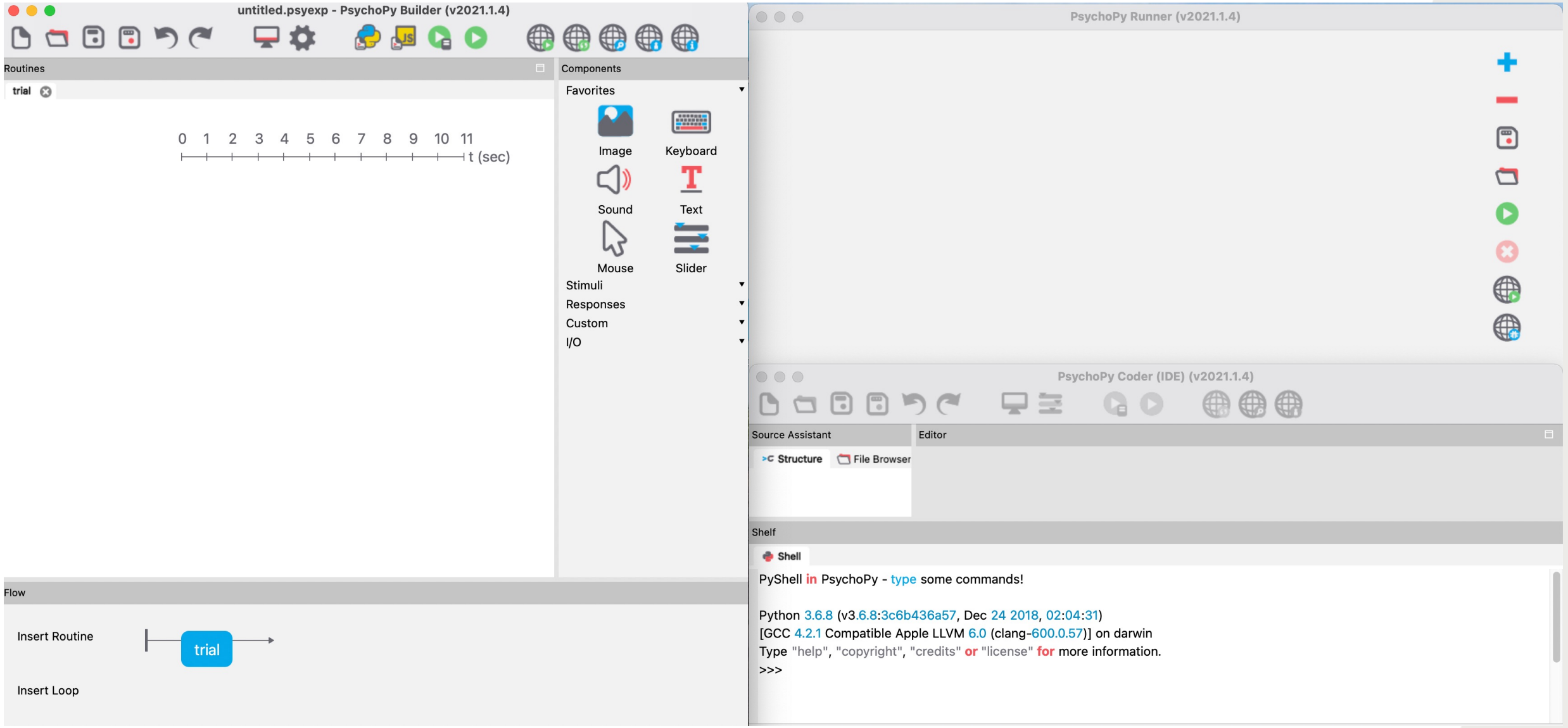
OUTLINE

- What's PsychoPy
- Create an experiment
- Example experiment 1
- Example data
- Practice experiment

WHY PSYCHOPY?

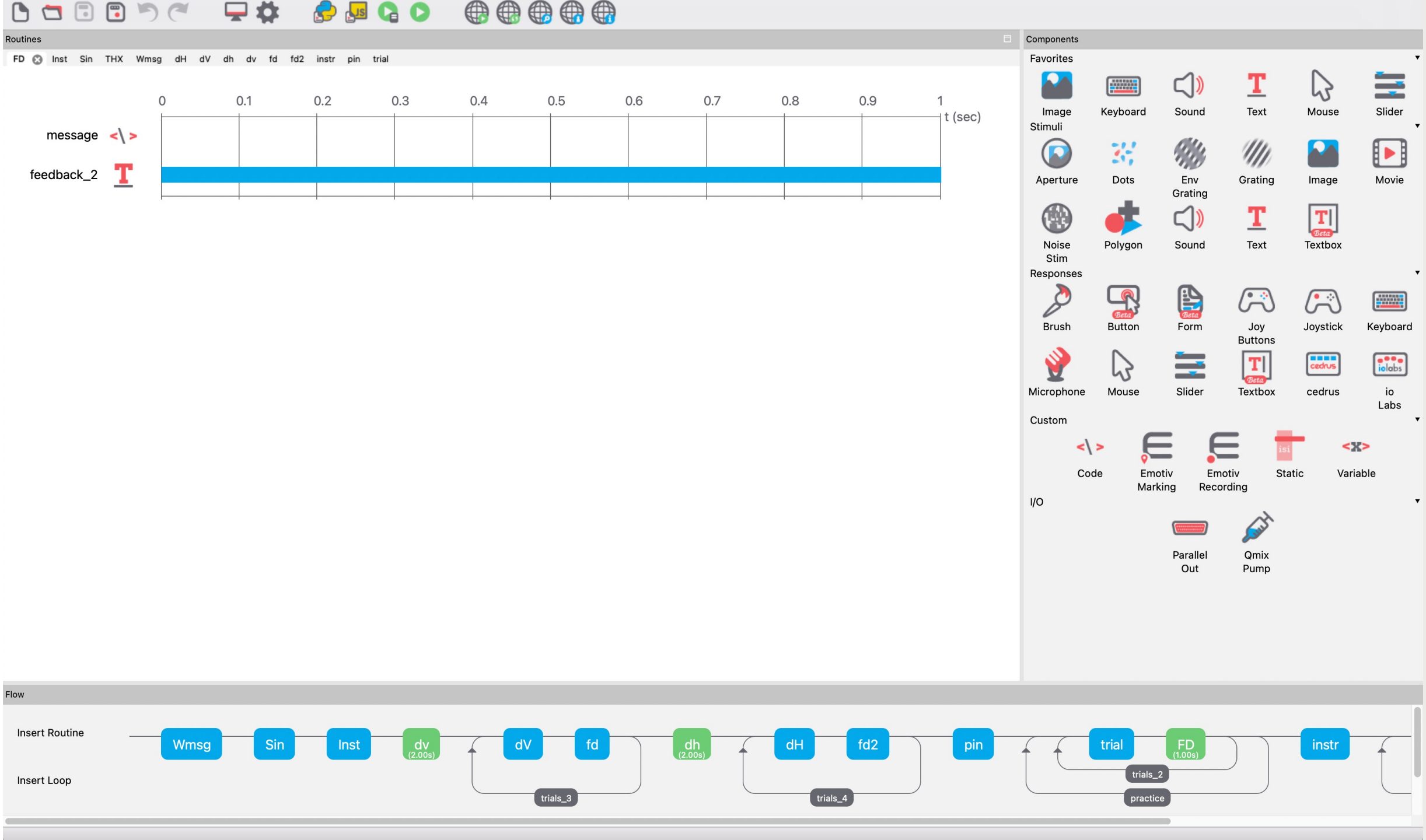
	PSYCHOPY	*PSYCHTOOLBOX*	*E-PRIME*
FREE	YES	YES, but needs MATLAB	NO
FULL-SOURCE CODE	YES	Partially NONE for MATLAB	NO
PLATFORM INDEPENDENT	YES	YES	YES

PSYCHOPY • Builder; Coder; Runner

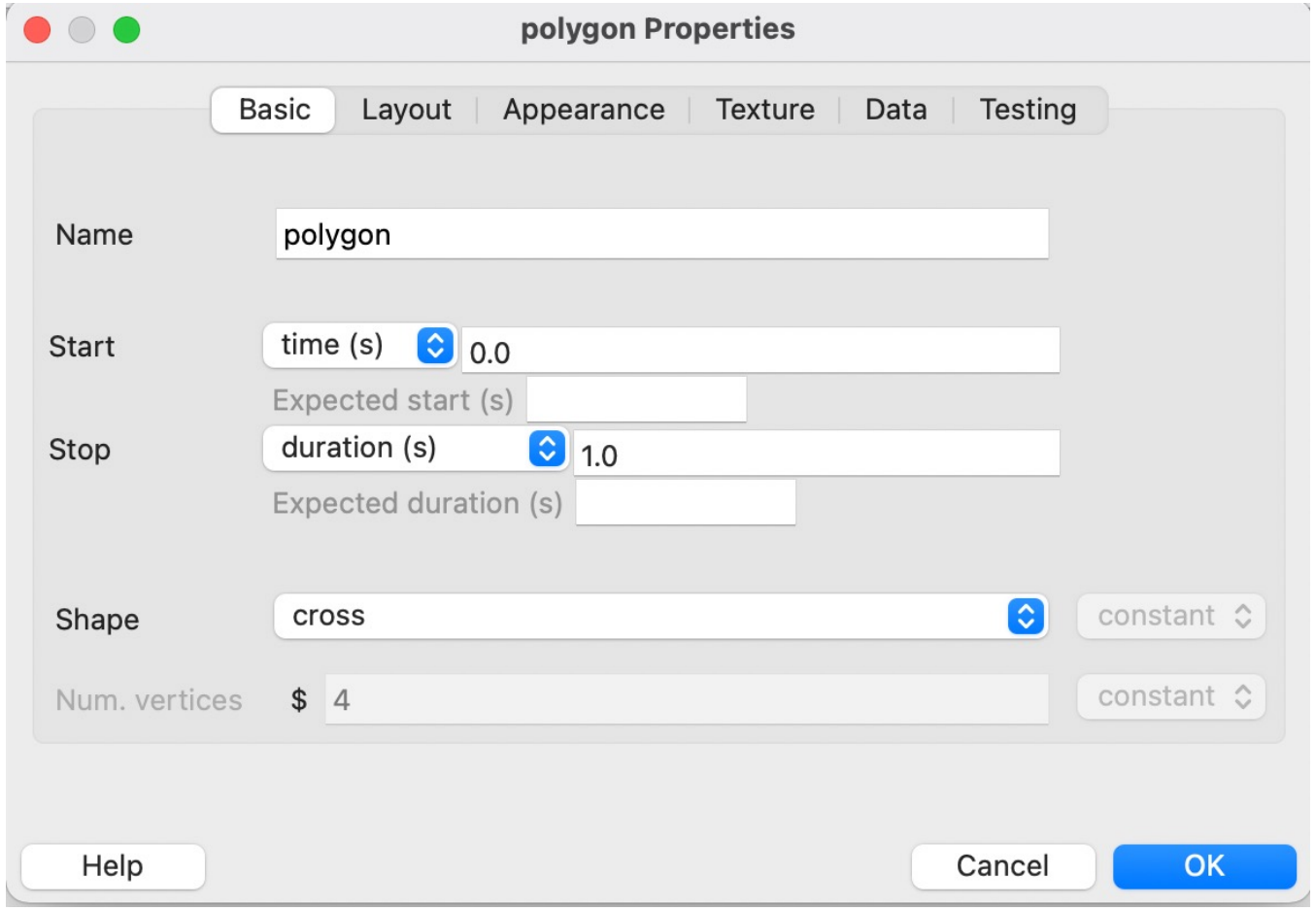


TWO WAYS TO CREATE EXPERIMENTS

- write scripts in the *Coder* view that control the presentation of your stimuli
- create an experiment visually in *Builder* view and use that either to run the experiment or to generate a script that you can then modify in *Coder*


Routines
FD
Inst
Sin
THX
Wmsg
dH
dV
dh
dv
fd
fd2
instr
pin
trial
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
t (sec)
message
feedback_2
Components
Favorites
Image
Keyboard
Sound
Text
Mouse
Slider
Stimuli
Aperture
Dots
Env Grating
Grating
Image
Movie
Noise Stim
Polygon
Sound
Text
Textbox
Responses
Brush
Button
Form
Joy Buttons
Joystick
Keyboard
Microphone
Mouse
Slider
Textbox
cedrus
io Labs
Custom
Code
Emotiv Marking
Emotiv Recording
Static
Variable
I/O
Parallel Out
Qmix Pump
Flow
Insert Routine
Insert Loop
Wmsg
Sin
Inst
dv
(2.00s)
dV
fd
trials_3
dh
(2.00s)
dH
fd2
trials_4
pin
trial
FD
(1.00s)
trials_2
practice
instr

PATCH COMPONENT



KEYBOARD

key_resp Properties

Basic | Data | Testing

Name: key_resp

Start: time (s) 0.0

Expected start (s)

Stop: duration (s)

Expected duration (s)

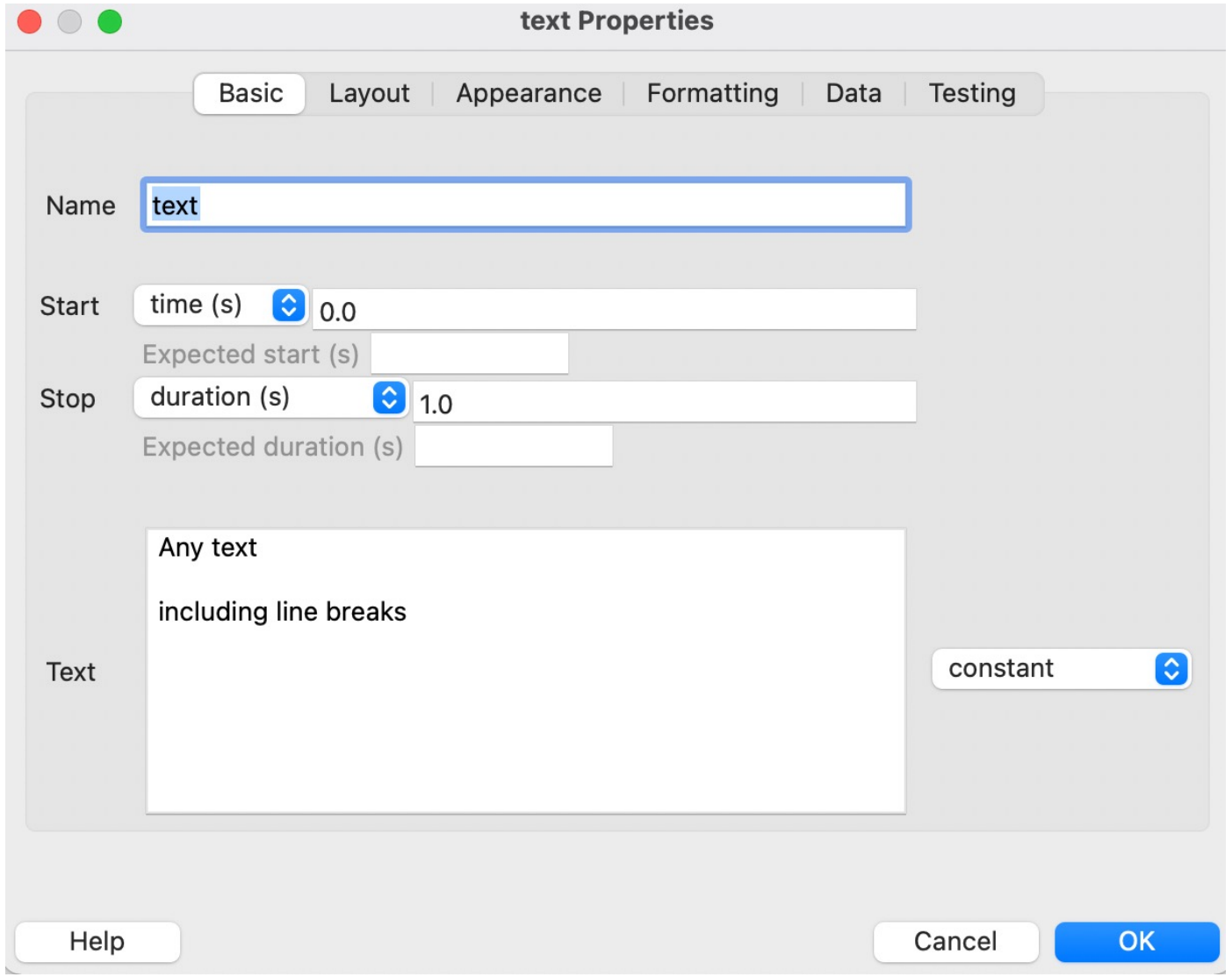
Force end of Routine

Allowed keys: $ 'y','n','left','right','space' constant

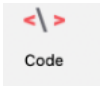
Help | Cancel | OK

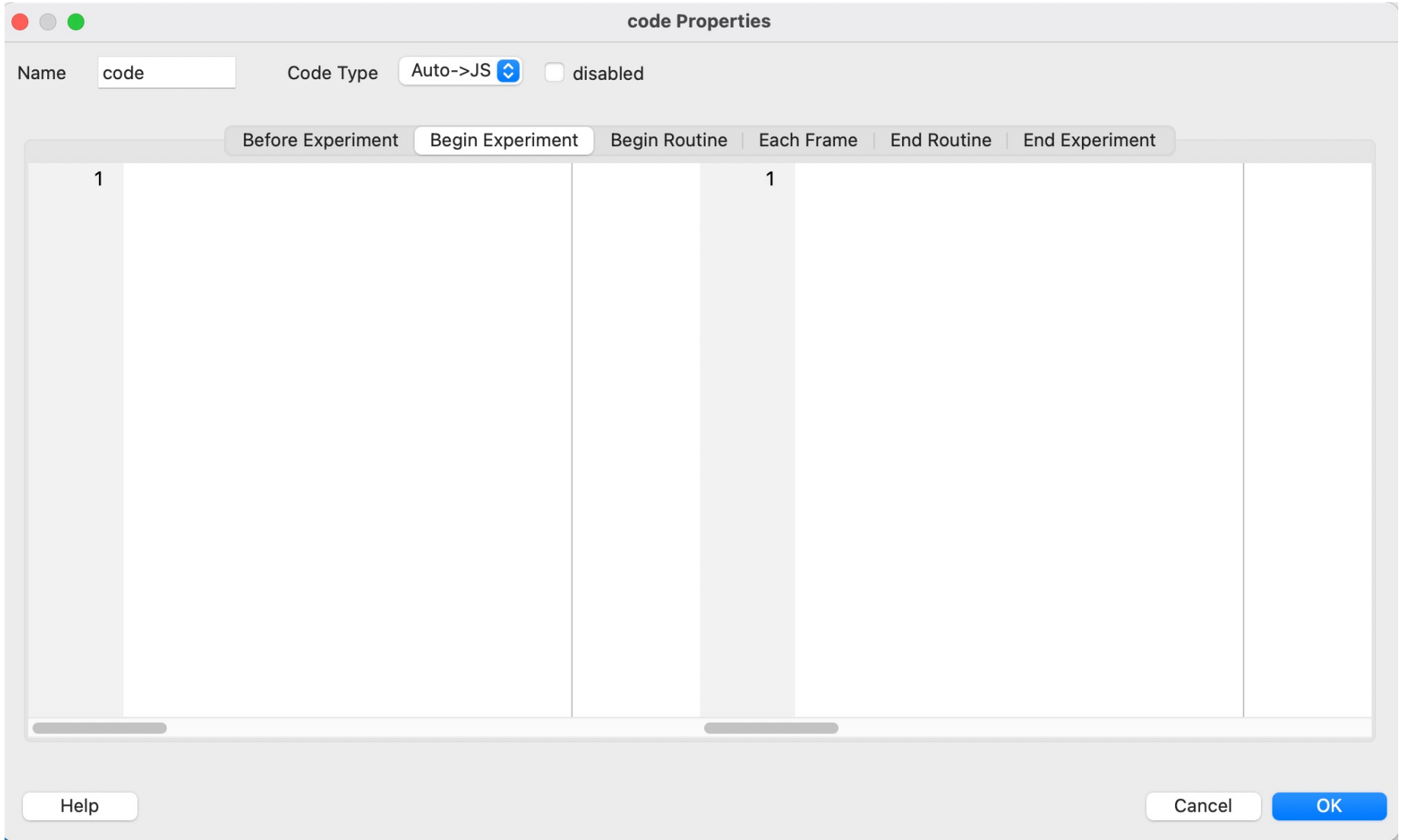
TEXT


Text


text Properties
Basic
Layout
Appearance
Formatting
Data
Testing
Name
text
Start
time (s)
0.0
Expected start (s)
Stop
duration (s)
1.0
Expected duration (s)
Text
Any text
including line breaks
constant
Help
Cancel
OK

CODE


Code


code Properties
Name
code
Code Type
Auto->JS
disabled
Before Experiment
Begin Experiment
Begin Routine
Each Frame
End Routine
End Experiment
1
1
Help
Cancel
OK

RULE* COMPONENT NAMES

- In PsychoPy almost everything you create needs to be given a name
- The name must;

  be unique

  not contain spaces, punctuation (except underscore _) or mathematical symbols
- e.g. if you have a Routine called ‘feedback’ you can’t have a Text Component called ‘feedback’

RULE★FLOW

You can combine Routines in the Flow panel

To add one of your Routines to the Flow (you must create it first) click on “Insert Routine” in the Flow panel and select where you want it to go

If you want something to repeat (e.g. to run multiple trials) then you can “Insert Loop” and select the points where you want to start/finish

- loops can span across multiple Routines
- loops can nest (you can have loops around loops)

Loops and Routines can also be edited or removed form the Flow by clicking or right-clicking

CREATE AN EXPERIMENT-OBJECTIVE

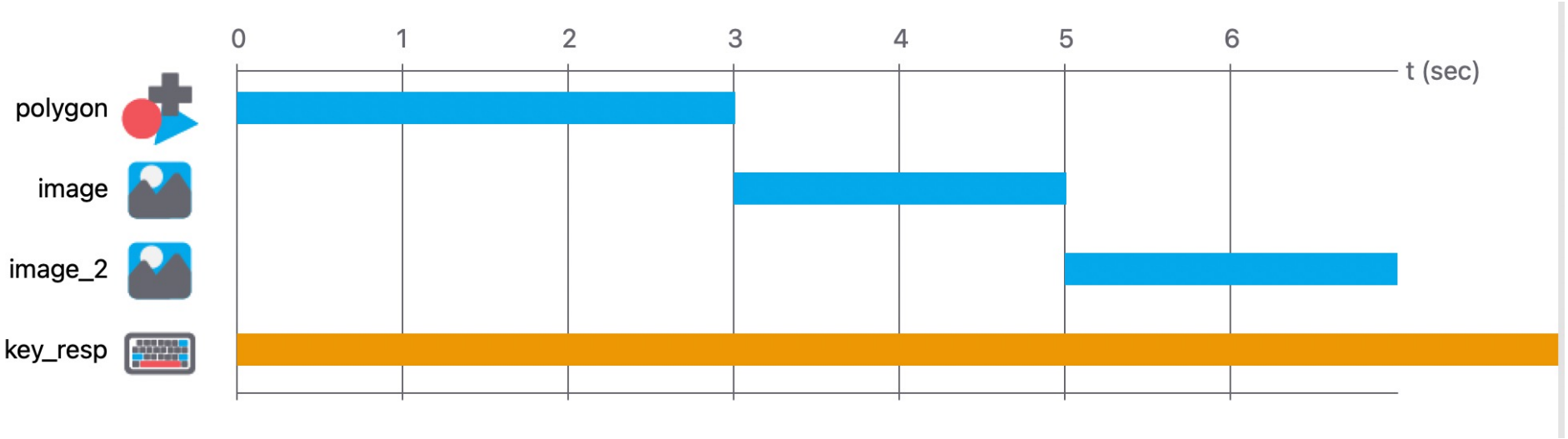
- Task: There will be two images popping up in each trial, please respond to the FIRST image ONLY. press ‘w’ for ‘white’ image ; ‘y’ for yellow image

Items to present:

- Fixation cross
- White/pink image
- White/pink image
- Keyboard response

CREATE AN EXPERIMENT

- Create stimuli
- Record response



CONDITION FILES

- Can be .csv/.xlsx

	A	B	C
1	cue_file	distraction	answer
2	/Users/serenagu/Desktop/Example/White	/Users/serenagu/Desktop/Example/Pink	w
3	/Users/serenagu/Desktop/Example/Pink	/Users/serenagu/Desktop/Example/White	p
4	/Users/serenagu/Desktop/Example/White	/Users/serenagu/Desktop/Example/White	w
5	/Users/serenagu/Desktop/Example/Pink	/Users/serenagu/Desktop/Example/Pink	p
6			

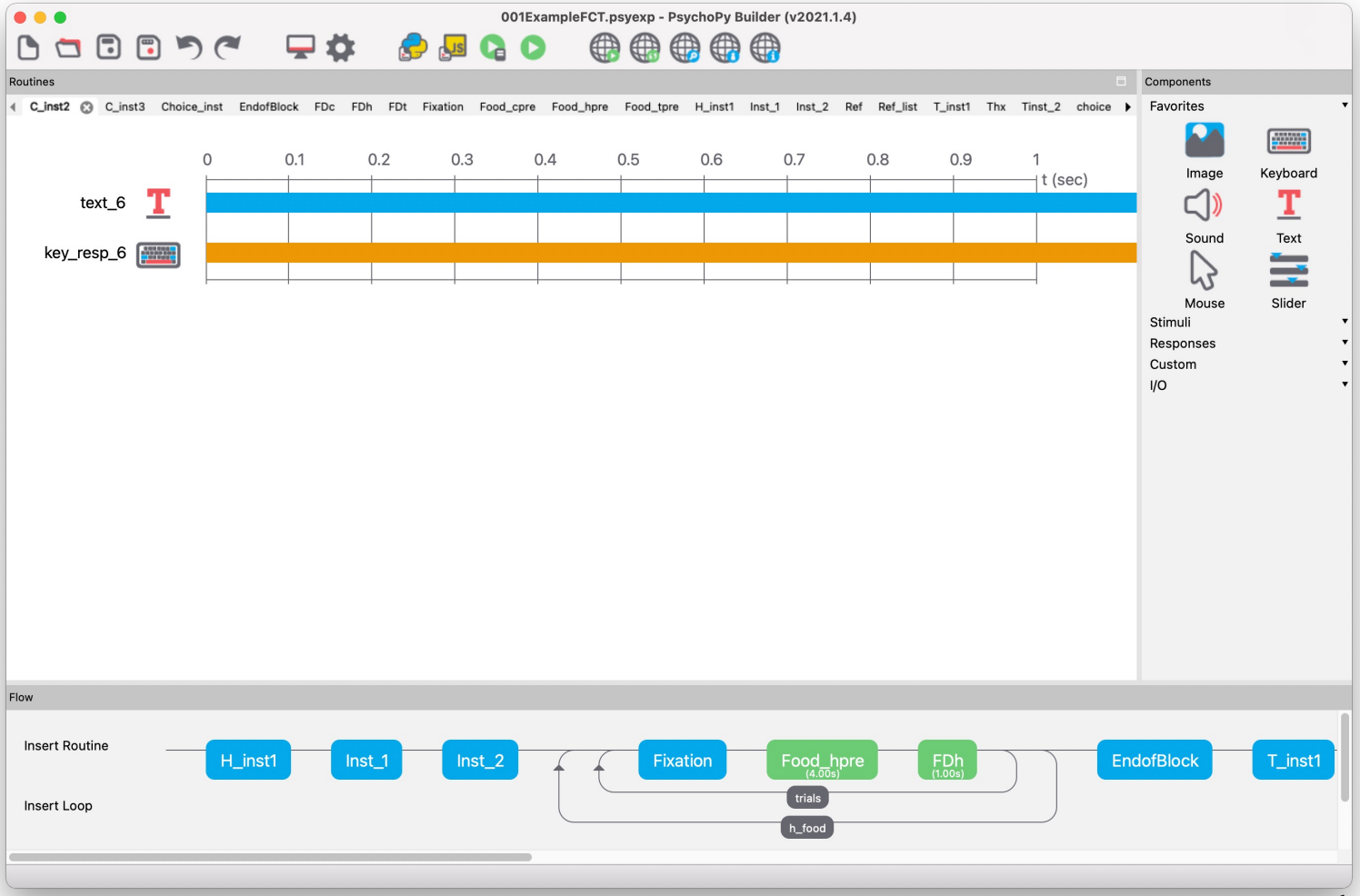
LET'S SEE ANOTHER EXAMPLE EXPERIMENT IN PSYCHOPY

EXAMPLE EXPERIMENT – FOOD CHOICE TASK

IV: Healthiness, Tastiness
DV: Food Choice

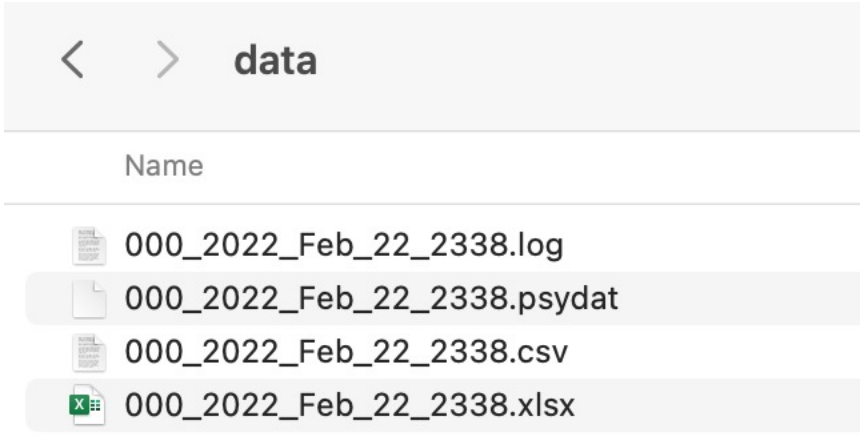
Columbia Center for Eating Disorder
Foerde et al. (2021)
10.1186/s40337-021-00402-y

FOOD CHOICE TASK



Columbia Center for Eating Disorder
Foerde et al. (2021)

DATA SAMPLE


data
Name
000_2022_Feb_22_2338.log
000_2022_Feb_22_2338.psydat
000_2022_Feb_22_2338.csv
000_2022_Feb_22_2338.xlsx

FIRST FEW COLUMNS

food	h_food.thisRepN	h_food.thisTrialN	h_food.thisN	h_food.thisIndex	trials.thisRepN	trials.thisTrialN	trials.thisN	trials.thisIndex	t_food.thisRepN
/Users/serenagu/Desktop/Columbia Center for Eating Disorder/FCT_PsychoPy/stimuli/hotdog w must.jpg	0	0	0	4	0	0	0	0	
/Users/serenagu/Desktop/Columbia Center for Eating Disorder/FCT_PsychoPy/stimuli/hotdog w must.jpg	0	0	0	4					
/Users/serenagu/Desktop/Columbia Center for Eating Disorder/FCT_PsychoPy/stimuli/yogurt pretzels.jpg	0	1	1	0	0	0	0	0	
/Users/serenagu/Desktop/Columbia Center for Eating Disorder/FCT_PsychoPy/stimuli/yogurt pretzels.jpg	0	1	1	0					
/Users/serenagu/Desktop/Columbia Center for Eating Disorder/FCT_PsychoPy/stimuli/bagel plain.jpg	0	2	2	3	0	0	0	0	
/Users/serenagu/Desktop/Columbia Center for Eating Disorder/FCT_PsychoPy/stimuli/bagel plain.jpg	0	2	2	3					
/Users/serenagu/Desktop/Columbia Center for Eating Disorder/FCT_PsychoPy/stimuli/reeses.jpg	0	3	3	2	0	0	0	0	
/Users/serenagu/Desktop/Columbia Center for Eating Disorder/FCT_PsychoPy/stimuli/reeses.jpg	0	3	3	2					
/Users/serenagu/Desktop/Columbia Center for Eating Disorder/FCT_PsychoPy/stimuli/bagel and cc.jpg	0	4	4	1	0	0	0	0	
/Users/serenagu/Desktop/Columbia Center for Eating Disorder/FCT_PsychoPy/stimuli/bagel and cc.jpg	0	4	4	1					
/Users/serenagu/Desktop/Columbia Center for Eating Disorder/FCT_PsychoPy/stimuli/yogurt pretzels.jpg									0
/Users/serenagu/Desktop/Columbia Center for Eating Disorder/FCT_PsychoPy/stimuli/yogurt pretzels.jpg									0
/Users/serenagu/Desktop/Columbia Center for Eating Disorder/FCT_PsychoPy/stimuli/hotdog w must.jpg									0
/Users/serenagu/Desktop/Columbia Center for Eating Disorder/FCT_PsychoPy/stimuli/hotdog w must.jpg									0
/Users/serenagu/Desktop/Columbia Center for Eating Disorder/FCT_PsychoPy/stimuli/reeses.jpg									0

	hratings.stopped	h_rating.keys	h_rating.rt	h_rating.star
00	None	4	1.4520832389999900	20.21607157
00	None	2	1.2685932749999400	24.21922326
00	None	3	3.551722320999940	27.24509012
00	None	4	2.09050050999997	32.51412651
00	None	2	2.27684622400011	36.93124910

WHAT WE ARE COLLETING -RESPONSE & RT

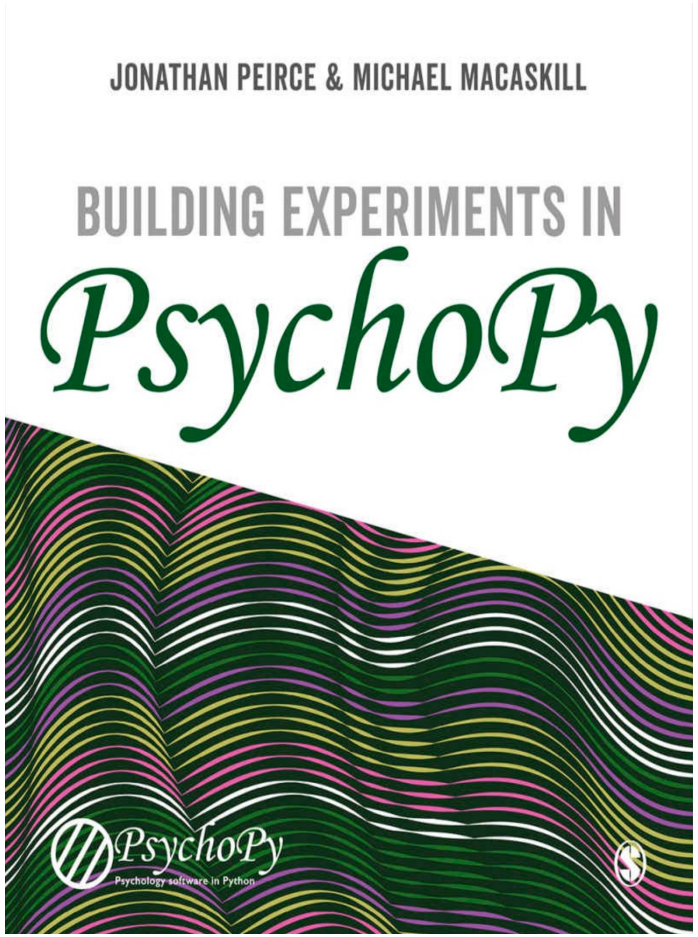
PRACTICE EXPERIMENT

Try design a Stroop task!

You could also try design an oddball task!

If you want more challenges, you could also find a task of your interest and create it yourself.

RESOURCES



https://www.psychopy.org/resources/resources.html

https://megcore.nih.gov/images/9/91/PsychoPyManual.pdf

POTask:
https://docs.google.com/document/d/1Q4R0FkEnJc0A5eT_xDohrB7cDCGz7zLgMG8uNH7e0HI/edit

LET'S SEE AN EXPERIMENT IN PSYCHOPY
PERCEPTUAL ORGANIZATION TASK

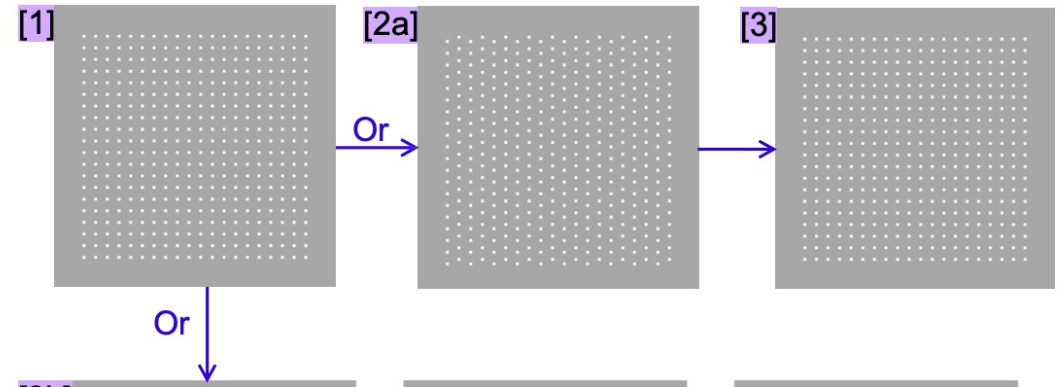
Motion Stimuli: Participants will see 200ms animations displayed over **three frames**, where:

1 The 1st frame is at baseline;

2 The 2nd frame is where pairs of dots appear to *move* closer to one another, either:

[2a] **Vertically** or [2b] **Horizontally**; and the organization levels will vary from 100% - 70%.

[3] The 3rd frame is where the dots return to their original position.



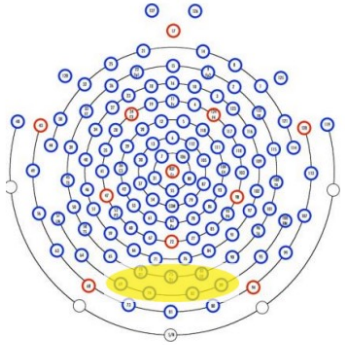


Fig. 2: Layout of sensor net's electrodes.