Slides - Sternberg

April 7, 2020

1 High-Speed Scanning in Human Memory (Sternberg, 1966)

```python
[2]: import glob
     import seaborn as sns
     import pandas as pd
     import matplotlib.pyplot as plt
     #%matplotlib inline
     import numpy as np

     path = '/Users/ethan/Documents/GitHub/Learn-PsychoPy/Labs/Sternberg/data/'
     all_files = glob.glob(path + "/*.csv")

     # assemble data from all participants into one dataframe

     temp = [] # make a list to hold all the individual dataframes

     for filename in all_files:
         df = pd.read_csv(filename, index_col=None, header=0) # read in each
      ↪dataframe
         df = df[df['resp.rt'].notna()] # remove trials with no participant response
         temp.append(df) # add each dataframe to the list of dataframes

     # concatenate all dataframes in to one dataframe
     # axis = 0: concatenate by adding rows, rather than columns
     # ignore_index = False: maintain the original trial numbers for each participant
     df = pd.concat(temp, axis=0, ignore_index=False)
```

```python
[3]: df # inspect the concatenated dataframe
```

```
[3]:      setSize posInSet present    numberSet  target corrAns  \
     1        5.0        4       y    1 7 9 8 5     8.0   right
     2        2.0       --       n          2 1     5.0    left
     3        2.0        1       y          4 8     4.0   right
     4        5.0       --       n    9 6 7 4 5     3.0    left
     5        4.0       --       n        3 1 9 4   6.0    left
     ..       …         …       …          …        …      …
     135      6.0        2       y  7 1 8 5 6 2     1.0   right
```

1

```
136      6.0        --      n  6 2 9 3 8 4     1.0     left
137      3.0         1      y          9 8 4   9.0     right
138      6.0         2      y  6 9 7 4 5 1     9.0     right
139      5.0        --      n     8 6 3 4 7    1.0     left
```

	pracTrials.thisRepN	pracTrials.thisTrialN	pracTrials.thisN \
1	0.0	0.0	0.0
2	0.0	1.0	1.0
3	0.0	2.0	2.0
4	0.0	3.0	3.0
5	0.0	4.0	4.0
..	…	…	…
135	NaN	NaN	NaN
136	NaN	NaN	NaN
137	NaN	NaN	NaN
138	NaN	NaN	NaN
139	NaN	NaN	NaN

	pracTrials.thisIndex	…	OK2.rt	OK2.started	OK2.stopped	participant \
1	8.0	…	NaN	NaN	NaN	1
2	3.0	…	NaN	NaN	NaN	1
3	2.0	…	NaN	NaN	NaN	1
4	9.0	…	NaN	NaN	NaN	1
5	7.0	…	NaN	NaN	NaN	1
..	…	…	…	…	…	…
135	NaN	…	NaN	NaN	NaN	1
136	NaN	…	NaN	NaN	NaN	1
137	NaN	…	NaN	NaN	NaN	1
138	NaN	…	NaN	NaN	NaN	1
139	NaN	…	NaN	NaN	NaN	1

	session	date	expName	psychopyVersion	frameRate \
1	2	2020_Apr_07_0856	sternberg	2020.1.2	60.273797
2	2	2020_Apr_07_0856	sternberg	2020.1.2	60.273797
3	2	2020_Apr_07_0856	sternberg	2020.1.2	60.273797
4	2	2020_Apr_07_0856	sternberg	2020.1.2	60.273797
5	2	2020_Apr_07_0856	sternberg	2020.1.2	60.273797
..	…	…	…	…	…
135	2	2020_Apr_07_0856	sternberg	2020.1.2	60.273797
136	2	2020_Apr_07_0856	sternberg	2020.1.2	60.273797
137	2	2020_Apr_07_0856	sternberg	2020.1.2	60.273797
138	2	2020_Apr_07_0856	sternberg	2020.1.2	60.273797
139	2	2020_Apr_07_0856	sternberg	2020.1.2	60.273797

	Unnamed: 45
1	NaN
2	NaN

```
3           NaN
4           NaN
5           NaN
..          ...
135         NaN
136         NaN
137         NaN
138         NaN
139         NaN

[138 rows x 46 columns]
```
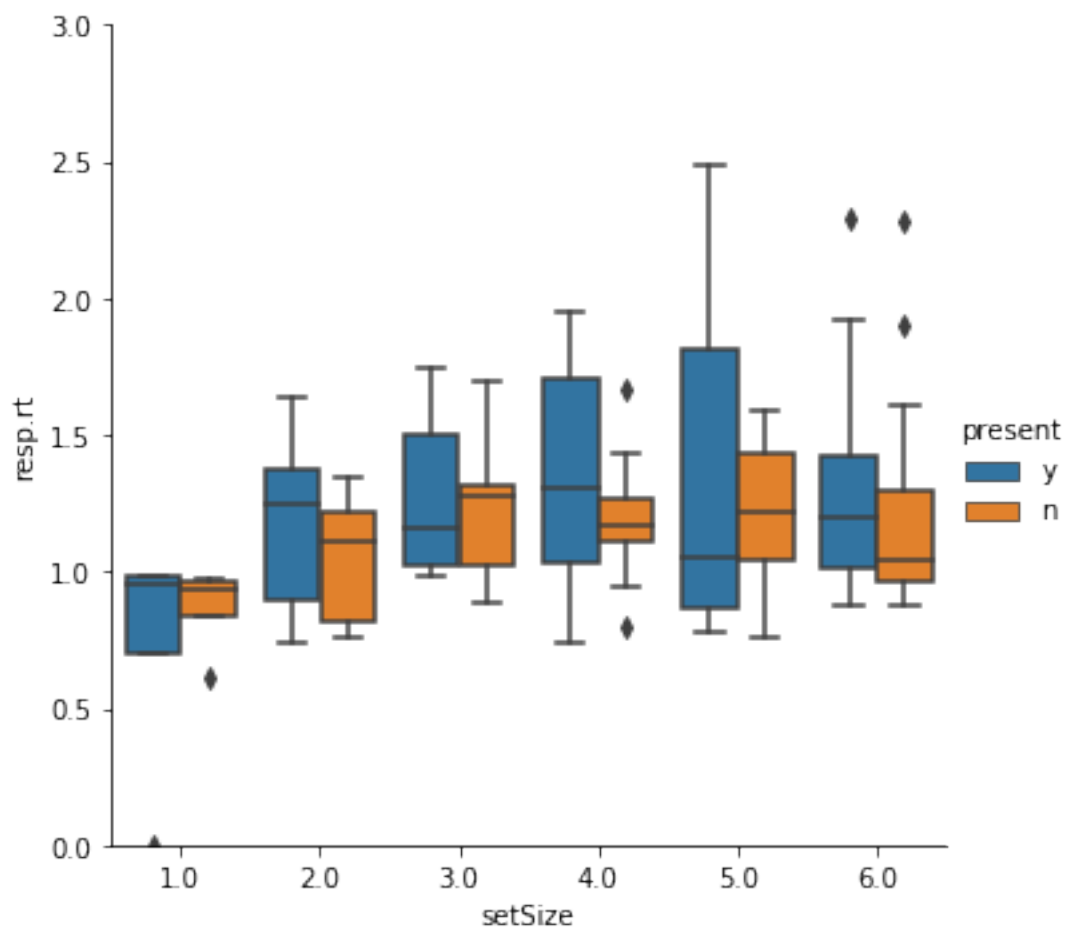
[4]:
```python
ax = sns.catplot(x = "setSize", y = "resp.rt", kind = "box", hue = "present",
 ↪data = df);
ax.set(ylim=(0, 3))
```
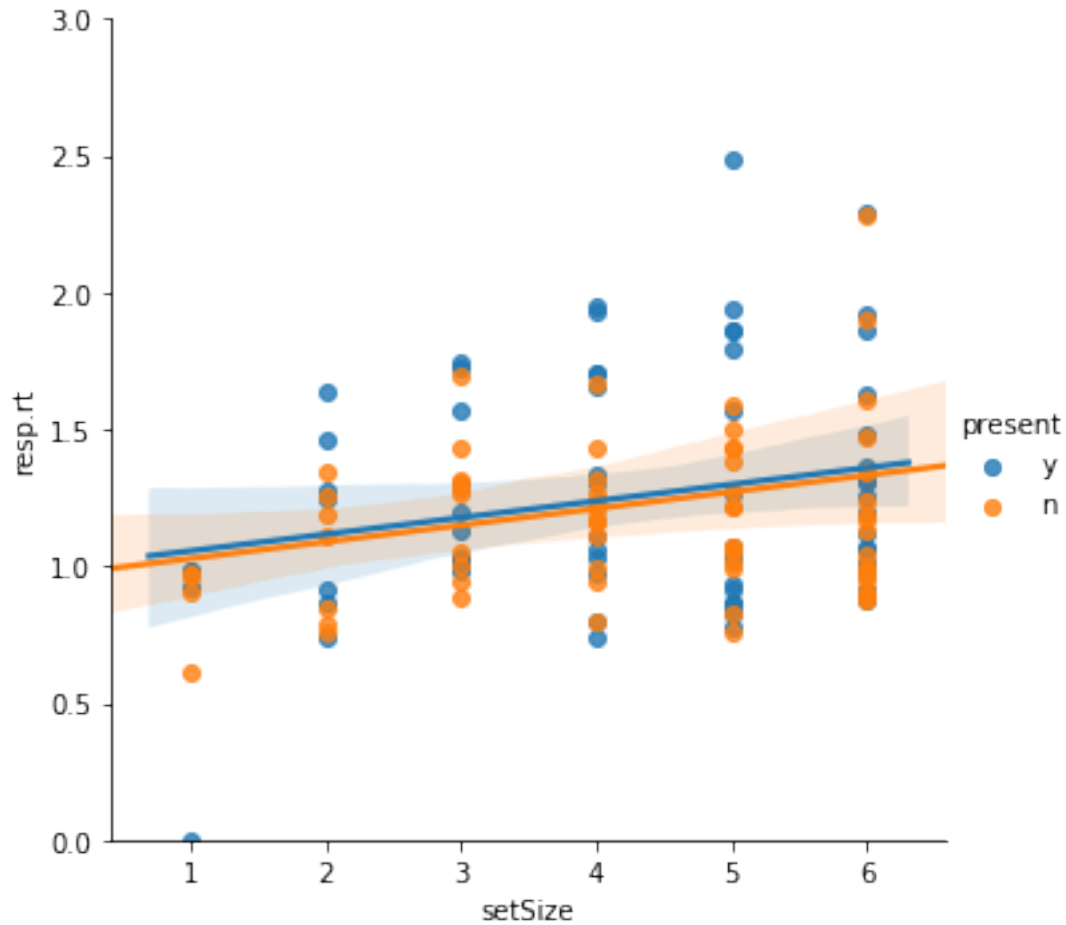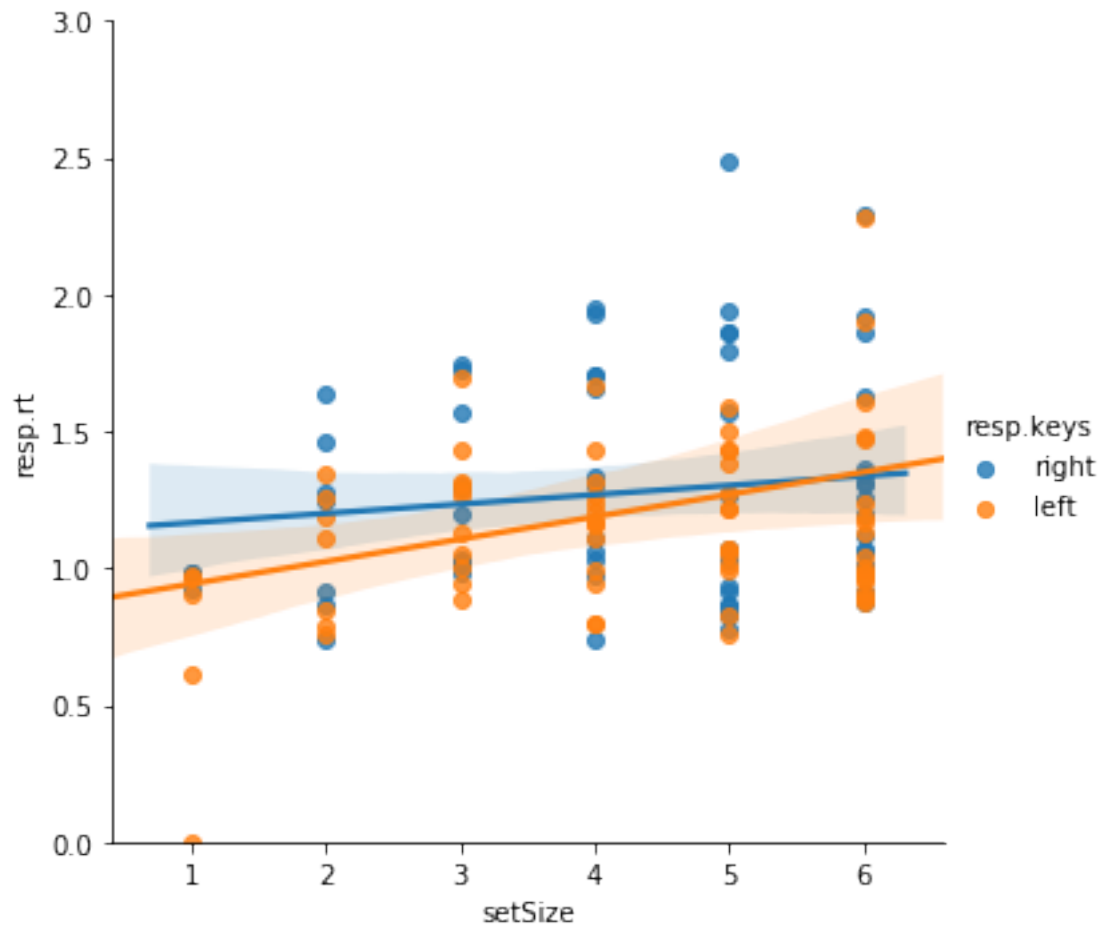
[4]: `<seaborn.axisgrid.FacetGrid at 0x108d92208>`

```
[5]: ax = sns.lmplot(x = "setSize", y = "resp.rt", hue = "present", data = df);
     ax.set(ylim=(0, 3))
```

[5]: <seaborn.axisgrid.FacetGrid at 0x1a1ce54c18>


```
[6]: ax = sns.lmplot(x = "setSize", y = "resp.rt", hue = "resp.keys", data = df);
     ax.set(ylim=(0, 3))
```
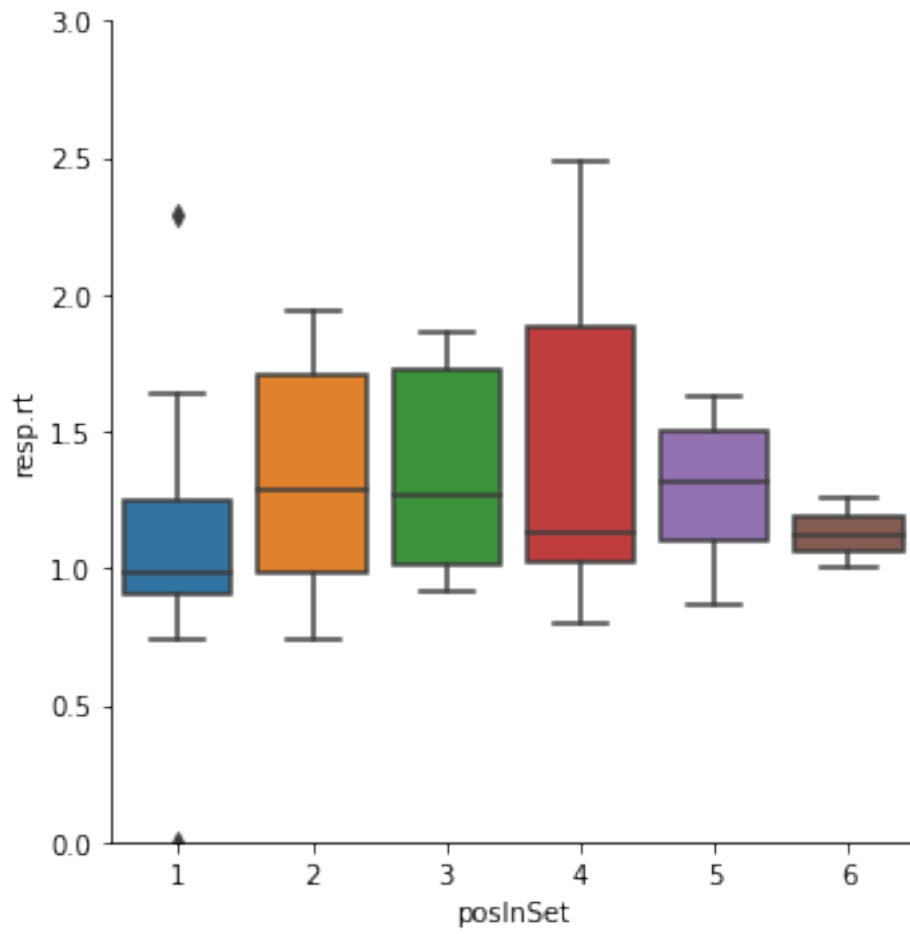
[6]: <seaborn.axisgrid.FacetGrid at 0x1a1c59ce48>

```
[7]: is_present =  df['present'] == "y"
     df_is_present = df[is_present]

     ax = sns.catplot(x = "posInSet", y = "resp.rt", kind = "box", data =␣
      ↪df_is_present);
     ax.set(ylim=(0, 3))
```

[7]: <seaborn.axisgrid.FacetGrid at 0x1a1d073d68>

[ ]: