STUDY design and plotting overview

STEP 1
Build a STUDY

STEP 2
Build design(s)

STEP 3
Precompute the data

STEP 4
Plot the data

Exercise...
Memory options should change when using STUDY vs single dataset.
Build a STUDY

EEGLAB v6.0b

File  Edit  Tools  Plot  Study  Datasets  Help

Import data
Import epoch info
Import event info
Export

Load existing dataset
Save current dataset(s)
Save current dataset as
Clear dataset(s)

Create study
Using all loaded datasets
Browse for datasets

Load existing study
Save current study
Save current study as
Clear study

Memory and other options
Save history
Quit
Build a STUDY, cont'd
Edit dataset info

Create a new STUDY set -- pop_study()

Edit STUDY set information - remember to save changes

| STUDY set name: | Stemberg |
| STUDY set task name: | Stemberg |
| STUDY set notes: |

<table>
<thead>
<tr>
<th>dataset filename</th>
<th>browse</th>
<th>subject</th>
<th>session</th>
<th>condition</th>
<th>group</th>
<th>Select by r.v.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nvolumes/donnees/data/STUD</td>
<td>...</td>
<td>S01</td>
<td></td>
<td>memorize</td>
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<td>Nvolumes/donnees/data/STUD</td>
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<td>All comp.</td>
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</tbody>
</table>

Important note: Removed datasets will not be saved before being deleted from EEGLAB memory

Dataset info (condition, group, ...) differs from study info. [set] = Overwrite dataset info.

Delete cluster information (to allow loading new datasets, set new components for clustering, etc.)

Help  Cancel  Ok
Experimental design

1x2 unpaired
- Patients
  - Group A
  - Group B
- Controls

1x2 paired
- Stim A
- Stim B

2x2 unpaired
- Patients
  - Old
    - Group A
    - Group B
  - Young
    - Group C
    - Group D
- Controls

2x2 paired
- Stim A
- Stim B

2x2 paired & unpaired
- Patients
  - Drug A
  - Drug B
- Controls
  - Drug A
  - Drug B
Create design

1x3 design

Figure 3: Channel ERP
Build a STUDY, alternative method

<table>
<thead>
<tr>
<th>dataset filename</th>
<th>browse</th>
<th>subject</th>
<th>session</th>
<th>condition</th>
<th>group</th>
</tr>
</thead>
<tbody>
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</table>

**Important note:** Removed datasets will not be saved before being deleted from EEGLAB memory.

- Update dataset info - datasets stored on disk will be overwritten (unset = Keep study info separate).
- Delete dataset information (to allow loading new datasets, set new components for clustering, etc.)
Edit dataset info

Create a new STUDY set -- pop_study()

Edit STUDY set information - remember to save changes

STUDY set name: Sternberg
STUDY set task name: Sternberg
STUDY set notes:

<table>
<thead>
<tr>
<th>dataset filename</th>
<th>browse</th>
<th>subject</th>
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<th>group</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Volumes/donnee/data/STUI</td>
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<td>S01</td>
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<tr>
<td>Volumes/donnee/data/STUI</td>
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</tbody>
</table>

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- Update dataset info - datasets stored on disk will be overwritten (unset = Keep study info separate).
- Delete cluster information (to allow loading new datasets, set new components for clustering, etc.)
Create design

1x3 design

Select STUDY design
- Ignore vs. Memorize vs. Probe

Subjects
- S01, S02, S03, S04, S05, S06, S07, S08, S09, S10, S11, S12, S13

Independent variable 1
- stimtype
- stimulus
- time
- type
- uncertainty1
- uncertainty2

Ind. var. 1 values
- Ignore
- Memorize
- Probe

Independent variable 2
- None
- duration
- init_index
- init_time
- inset
- load...

Ind. var. 2 values

Combine selected values

Use only specific datasets/trials

Delete all data files associated with this STUDY design

Save the STUDY

Cancel  Ok
Select STUDY design

Audio versus light all subjects
   All stimulus type - non dual subjects only
   Blank versus other stimulus type - non dual subjects only
   Audio preceeded by different stimulus types
   Audio versus ligh across sessions - non dual subjects only
   Audio versus light across presentation - non dual subjects only

Subjects
- c1
- c2
- c3
- c4
- c5
- c6
- c7
- c8
- nd1
- nd2
- nd3
- nd4
- nd5
- nd6
- nd7
- nd8

Independent variable 1
- None
- group
- stimulusType
- presentation
- session
- preevent

Ind. var. 1 values
- audio
- blank
- both
- light
- audio - light

Independent variable 2
- None
- group
- stimulusType
- presentation
- session
- preevent

Ind. var. 2 values
- control
- nondual

Use only specific datasets/trials

Delete all datafiles associated with this STUDY design

Save the STUDY
Select STUDY design
Audio versus light all subjects
All stimulus type - non dual subjects only
Blank versus other stimulus type - non dual subjects only
Audio preceeded by different stimulus types
Audio versus light across sessions - non dual subjects only
Audio versus light across presentation - non dual subjects only

Subjects
- c1, c2, c3, c4, c5, c6, c7, c8
- nd1, nd2, nd3, nd4, nd5, nd6, nd7, nd8

Independent variable 1
- None
- group
- stimulusType
- presentation
- session
- preevent

Ind. var. 1 values
- audio
- blank
- both
- light
- audio - light

Independent variable 2
- None
- group
- stimulusType
- presentation
- session
- preevent

Ind. var. 2 values

Combine selected values
Unpaired statistics

Use only specific datasets/trials
Delete all datafiles associated with this STUDY design

Save the STUDY

Cancel Ok
Select STUDY design

Audio versus light all subjects
All stimulus type - non dual subjects only
Blank versus other stimulus type - non dual subjects only
**Audio preceded by different stimulus types**
Audio versus light across sessions - non dual subjects only
Audio versus light across presentation - non dual subjects only

Subjects

c1
c2
c3
c4
c5
c6
c7
c8
nd1
nd2
nd3
nd4
nd5
nd6
nd7
nd8

Independent variable 1

None
group
stimulusType
presentation
session
preevent

Ind. var. 1 values

audio
blank
both
light

Combined selected values

Unpaired statistics

Use only specific datasets/trials

Delete all datafiles associated with this STUDY design

Save the STUDY
STUDY design and plotting overview

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Plot the data

Exercise...
Create simple ERP STUDY

This interface creates a simple STUDY and computes its condition grand average ERPs. For each subject, trials for each condition must first be stored in a separate dataset. Create other STUDY using the standard editor.

Number of conditions: 3
Number of subjects: 15
Create simple ERP STUDY

<table>
<thead>
<tr>
<th>Condition 1 name</th>
<th>Condition 2 name</th>
<th>Condition 3 name</th>
</tr>
</thead>
<tbody>
<tr>
<td>probe-cond</td>
<td>memory-cond</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Condition 1 datasets</th>
<th>Condition 2 datasets</th>
<th>Condition 3 datasets</th>
</tr>
</thead>
<tbody>
<tr>
<td>/Users/amo/eeglab-testcase</td>
<td>/Users/amo/eeglab-testcase</td>
<td></td>
</tr>
</tbody>
</table>

When using more than 1 condition, datasets on each line must correspond to the same subject.
Create simple ERP STUDY