

# An introduction to experiment building with OpenSesame

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# Today

- A short introduction (20 min)
- Create a simple experiment (50 min)
- Coffee break
- Design your own experiment (50 min)

## About OpenSesame

# About OpenSesame

- A graphical experiment builder
  - Drag-and-drop, point-and-click
  - Complement with Python scripting
- Open source
  - Free of charge
  - Source code available
- Cross platform
  - All major platforms
  - Runtime support for Android

# About OpenSesame

- A broad focus
  - Fits many types of research
- Psychophysics
  - Reaction time tasks, complex stimuli, etc.
- Neuroimaging
  - Parallel-port triggers, etc.
- Social psychology
  - Questionnaires, etc.
- Clinical applications
  - Test batteries, etc.

# Support

- Documentation
  - <http://osdoc.cogsci.nl>
- Community
  - <http://forum.cogsci.nl>
  - ~500 members, daily activity, very responsive
- Outlook
  - Will OpenSesame still be there in [X] years?
  - Active development team
  - Large user base

# Developers

Laboratoire de  
Psychologie  
Cognitive

- A core team

Daniel Schreij  
VU University Amsterdam



Lotje van der Linden  
Aix-Marseille Université



Edwin Dalmaijer  
Utrecht University



- Occasional contributors

# Teaching



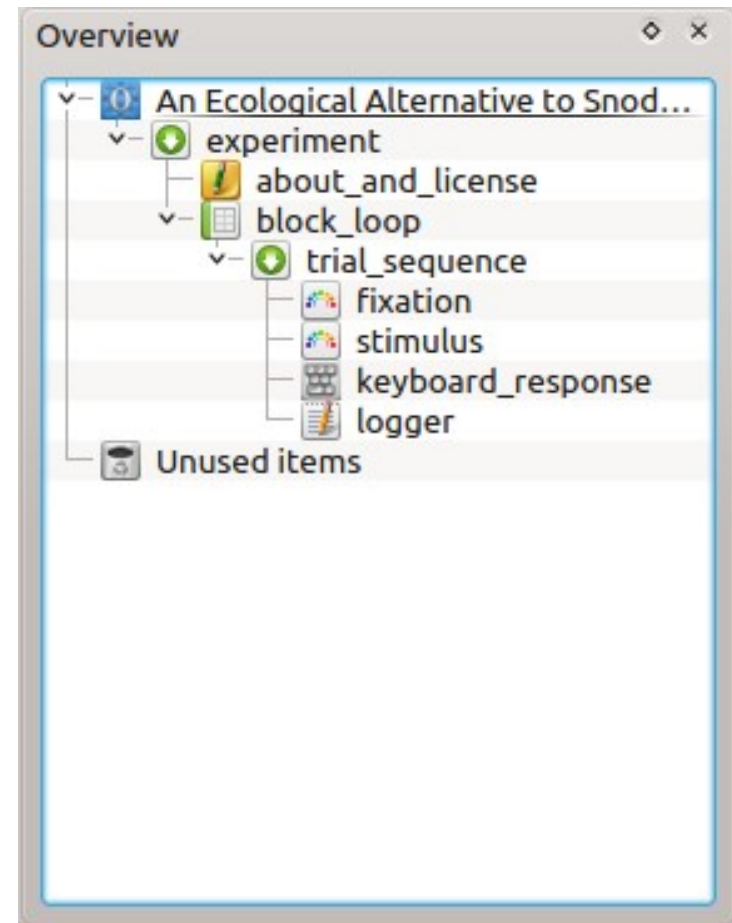
# Teaching

- No licensing issues
- No steep learning curve
- Used for teaching at universities across the world

# Using OpenSesame

# Items

- **Items** are building blocks
- **Ten core items** offer common functionality



# Plug-ins

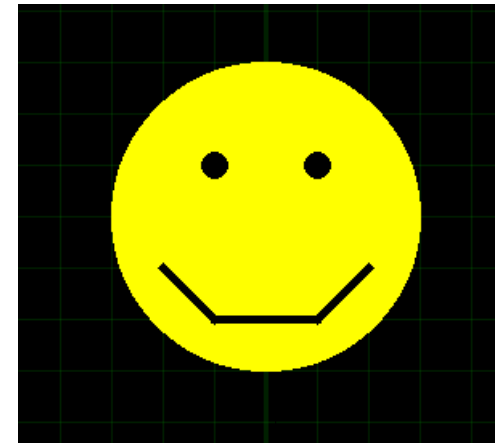


- **Plug-ins** are additional items
  - Eye trackers
  - Video playback
  - Forms
  - Etc.
- Plug-ins also provide graphical controls
- New plug-ins can be written easily

## User interface vs script

# Combining GUI and script

- The GUI generates a script
  - Custom language
  - Not Python!
- You can edit this script directly
- Afterwards you can continue using the GUI



1 set duration "keypress"  
2 set start\_response\_interval "no"  
3 set description "Displays stimuli"  
4 draw ellipse -96.0 -288.0 192.0 1  
5 draw fixdot -32.0 -224.0 color=bl  
6 draw fixdot 32.0 -224.0 color=bla  
7 draw line -64.0 -160.0 -32.0 -128  
8 draw line -32.0 -128.0 32.0 -128.  
9 draw line 32.0 -128.0 64.0 -160.0

# Combining GUI and script

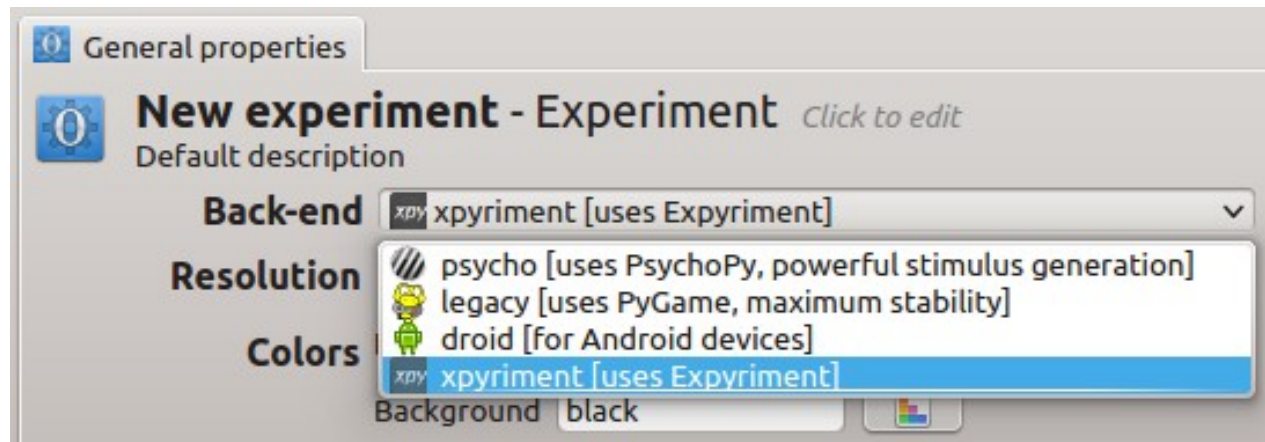
- You can create a prototype display using the GUI, and add variables using scripting
- Prototype script:
  - draw image 0.0 0.0 "gaze\_**left**.png" scale=1.0  
center=1 show\_if="always"
- Variable script:
  - draw image 0.0 0.0 "gaze\_**[gaze\_cue]**.png"  
scale=1.0 center=1 show\_if="always"

# Back-ends



# Back-ends

- There are many ways to control the display, input, etc.
- OpenSesame is not tied to one method
- **Back-ends** can be flexibly added, like plug-ins



# Back-ends

- Each back-end has its own benefits
  - Temporal precision
  - Stability
  - Extra functionality
  - Cross-platform support
- **Expyriment** → Simple with good temporal precision
- **Legacy** → Fallback, modest temporal precision
- **Psycho** → PsychoPy based, good temporal precision
- **Droid** → For Android devices

And now for the tutorial!