

WEXTOR tutorial: Re-creating the cup experiment

<http://wextor.org:8080/frog/cupmethneu/index.html?qu=cu12>

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The screenshot shows a web browser window with the title "Welcome to WEXTOR". The address bar contains "http://wextor.eu" and the search bar has "Have fun!". The browser tabs include "WEXTOR", "web e...", "WEB EX...", "Scientif...", "VAS Ge...", "Free C...", "Virtual ...", "Stroop ...", "Tools f...", "web ex...", and "Frageb...".

The website header features the WEXTOR logo with the tagline "Ten steps to your experimental design" and navigation links for "Home | Contact | Help | Login".

The main content area is titled "WEXTOR 2.5" and describes the tool's capabilities: "Develop, manage, and visualize experimental designs and procedures". It states that WEXTOR is a Web-based tool for designing and visualizing laboratory experiments and Web experiments in a guided step-by-step process. It dynamically creates customized Web pages and delivers a print-ready display of experimental designs. For more information, it links to "WEXTOR at a glance" and "Standards for Internet-based experimenting [pdf, 124kb]".

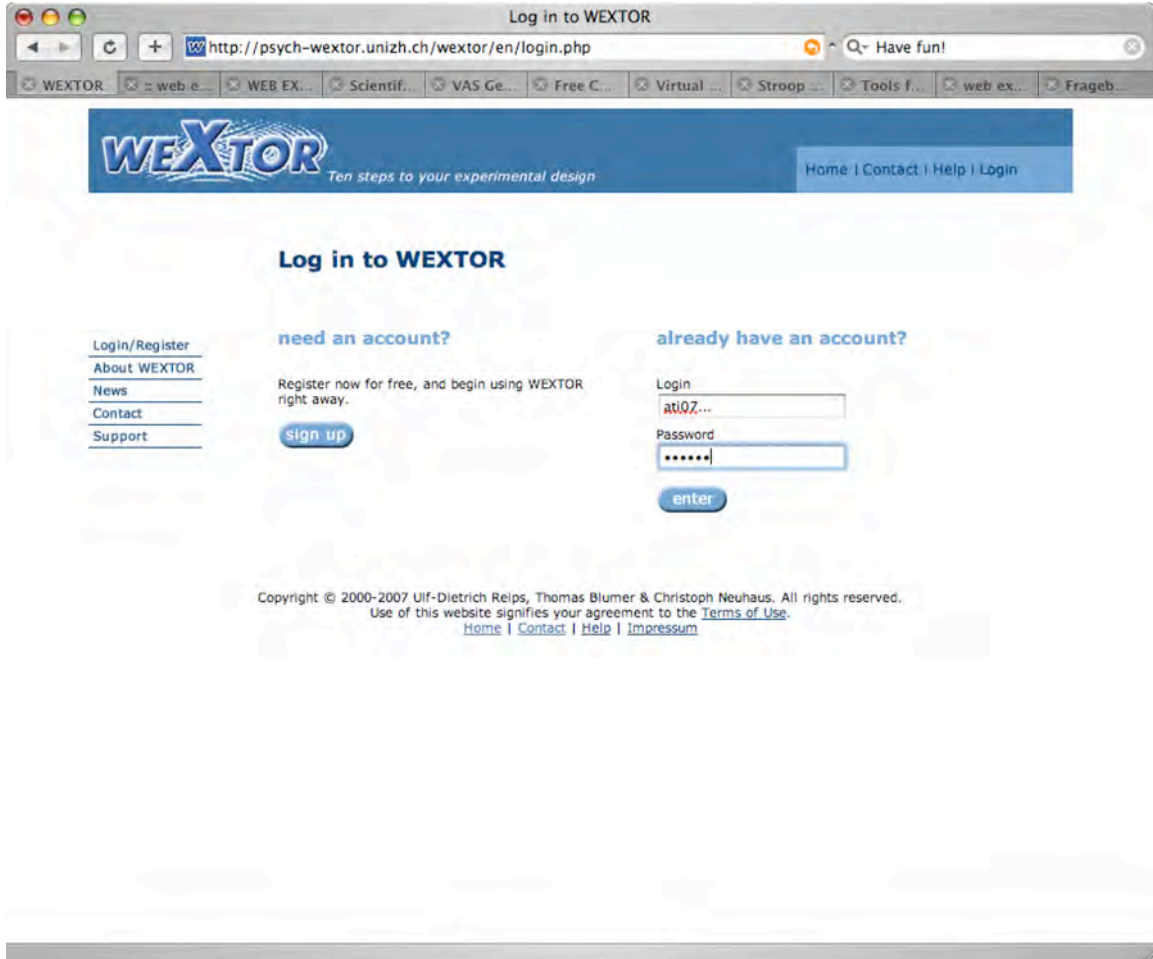
A sidebar on the left contains links for "Login/Register", "About WEXTOR", "News", "Contact", and "Support".

Below the main text, there is a "Free WEXTOR trial account" section. It asks if the user is "Ready to join the 1497 people already using WEXTOR?" and provides a "sign up" button. For existing members, it asks "Already a member?" and provides a "login" button.

The footer contains copyright information: "Copyright © 2000-2007 Ulf-Dietrich Reips, Thomas Blumer & Christoph Neuhaus. All rights reserved. Use of this website signifies your agreement to the [Terms of Use](#)." It also includes navigation links for "Home | Contact | Help | Impressum".

If you do not have a WEXTOR account yet: click „sign up“ and fill in the short form. You will receive an e-mail with an activation code. You will need to enter that code only during your very first login, afterwards your login and password will suffice.

Log in:



We will now create a simple one factorial experiment with two levels on that factor. We will later expand the experiment to a 2x2 factorial experiment. (Note that WEXTOR can also be used to create surveys by simply ignoring the factorial variations.)

On the first screen after login click on “Create/Modify an experimental design”:

Welcome to WEXTOR

http://psych-wextor.unizh.ch/wextor/en/start.php?user_id=APA&session=4f6e

WEXTOR
Ten steps to your experimental design

Home | Contact | Help | Logout

Welcome to WEXTOR!

My home
Logout
About WEXTOR
News
Contact
Support


WEXTOR is a Web-based tool that lets you quickly design and visualize laboratory and Web experiments in a guided step-by-step process. It dynamically creates the customized Web pages needed for the experimental procedure anytime, anywhere, on any device. It delivers a print-ready display of your experimental design. For more about WEXTOR, read [WEXTOR at a Glance](#).

Please subscribe to our [WEXTOR e-group](#) to receive information about new releases. The WEXTOR e-group also is an excellent source for tips and tricks as well as a forum for discussion and help.

From here you can:

- [Create/modify an experimental design](#)
- [Upload an experiment, download data](#)
- [Administer your account](#)

Creating experiments on this website is currently provided absolutely for free. If you feel like supporting us by paying us a cup of coffee or a beer or two, by all means do so by using the PayPal donate button.



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[Home](#) | [Contact](#) | [Help](#) | [Impressum](#)

Welcome to WEXTOR

http://psych-wextor.unizh.ch/wextor/en/exp.php?user_id=APA&session=4ft

WEXTOR
Ten steps to your experimental design

Home | Contact | Help | Logout

Get your experimental design now!

My home
Logout
About WEXTOR
News
Contact
Support

Create an experimental design

Name your experimental design: [create](#)

Modify an experimental design

cup
cup_better

[modify](#) [view](#) [download](#) [duplicate](#) [rename](#) [delete](#) [upload](#)
[modify](#) [view](#) [download](#) [duplicate](#) [rename](#) [delete](#) [upload](#)

Type in a name for your experiment and click “create”, then click on “modify” in the newly appearing line. Then, on the following screen, define your factors. We will need one between-subjects factor.

WEXTOR - defining factors

http://psych-wextor.unizh.ch/wextor/en/factor_a.php?user_id=APA&sessi... Have fun!

WEXTOR Ten steps to your experimental design Home | Contact | Help | Logout

Jump to step: [1] [2] [3] [4] [5] [6] [7] [8] [9a] [9b] [9c] [10a] [10b]

Step 1 Defining factors

You may choose to manipulate several independent variables. There are three basic ways to assign participants to the levels of your independent variable. You can expose each participant to only one level of the independent variable (or variables). This method is called between-subjects design. Or you can expose each participant to all levels of the independent variable (or variables). This method is called within-subjects design. Or you can expose each participant to only one level of the independent variable depending on participants' answer to a question (e.g. sex).

At this stage, please think of your experimental design as a complete design. Don't worry for now, if the experimental design you have in mind is incomplete. You will be able to erase the superfluous experimental conditions in Step 6. Additional procedures for quasi-experimental (natural) factors may be defined in Step 8.

NOTE: For display reasons, an experimental design created by WEXTOR may consist of 1 to 5 between-subjects factors and 1 to 5 within-subjects factors. For experimental designs with a maximum of six levels of one within-subjects factor, WEXTOR lets you choose which sequences should be displayed. For each participant, one of these will be randomly chosen. For seven or more levels of one within-subjects factor, you can still choose to display the pages in random order. If your design consists of more than one within-subjects factor, pages will always be displayed in the order given by the order of levels and pages within levels. An experimental design created by WEXTOR seemingly includes only one quasi-experimental (natural) factor at most. However, you may include more than one quasi-experimental factor through direct naming of level combinations (e.g., "female & age 20-40").

Between-subjects factors

How many between-subjects factors does your experimental design consist of?

1

Within-subjects factors

How many within-subjects factors does your experimental design consist of?

NOTE: Currently, it is best to define only one within factor. If you have multiple within factors in your design, then please redefine their combinations of levels as levels of one within factor, e.g. color (red, blue) and font size (10, 12) of Web pages as appearance (red-10, red-12, blue-10, blue-12).

0

Quasi-experimental factors

Does your experiment include at least one quasi-experimental (natural) factor?

no

On the following screens, just read what it says and copy what you see here.

WEXTOR – defining levels

http://psych-wextor.unizh.ch/wextor/en/factor_b.php?user_id=APA&sessic... Have fun!

WEXTOR Ten steps to your experimental design Home | Contact | Help | Logout

Jump to step: [1] [2] [3] [4] [5] [6] [7] [8] [9a] [9b] [9c] [10a] [10b]

Step 2 Defining factors

Your experiment consists of 1 factors. Please name all factors and indicate the number of levels for each factor.

Between-subjects factors

Please name your between-subjects factors and indicate the number of levels for each factor.

Name: Number of levels:

⏪ ⏩ ⏴ ⏵

WEXTOR – defining levels

http://psych-wextor.unizh.ch/wextor/en/level.php?user_id=APA&session=4... Have fun!

WEXTOR Ten steps to your experimental design Home | Contact | Help | Logout

Jump to step: [1] [2] [3] [4] [5] [6] [7] [8] [9a] [9b] [9c] [10a] [10b]

Step 3 Defining levels

Please name the levels of the factors, you defined in Step 2.

Between-subjects factors

Please name the levels of your between-subjects factors!

Factor 'reference point'

Name:

Name:

⏪ ⏩ ⏴ ⏵

WEXTOR - defining experimental conditions

http://psych-wextor.unizh.ch/wextor/en/condition.php?user_id=APA&sessi... Have fun!

WEXTOR... = web e... WEB EX... Scientifi... VAS Ge... Free CA... Virtual... Stroop I... Tools f... web ex...

WEXTOR
Ten steps to your experimental design

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Jump to step: [1] [2] [3] [4] [5] [6] [7] [8] [9a] [9b] [9c] [10a] [10b]

Step 4

Defining experimental conditions

Please name your experimental conditions. We already made a naming proposal, which consists of the abbreviated form for the experimental condition and four random characters. Please note that it is wise to NOT use names that reveal information about the underlying structure of your Web experiment.

If your experimental design is incomplete, you may now erase the superfluous experimental conditions. Simply uncheck all experimental conditions you don't need.

Experimental condition 1: 15948

Experimental condition 2: 28c01

⏪ ⏩ ⏴ ⏵

WEXTOR - defining Web pages

http://psych-wextor.unizh.ch/wextor/en/page_a.php?user_id=APA&session= Have fun!

WEXTOR Ten steps to your experimental design Home | Contact | Help | Logout

Jump to step: [1] [2] [3] [4] [5] [6] [7] [8] [9a] [9b] [9c] [10a] [10b]

Step 5 Defining Web pages

How many pages does one experimental condition consist of? If you are intending to conduct this experiment on the World Wide Web, consider using the [warm-up technique](#) for [drop-out](#) control. Please note that the number of Web pages has to be the same in every experimental condition - otherwise we would introduce a confounding variable.

WEXTOR automatically generates five Web pages:

- index page: this is the homepage of your experiment.
- start page: we need to test whether a participant's Web browser is JavaScript compatible. If the test result is positive then the user will be redirected to the start page automatically. This page should contain general information about your Web experiment. If your instruction requires a participant consent form, then this page would be the place for it.
- source page: If the user doesn't have a JavaScript capable Web browser, he will be sent to the source page. This page should display the information that the user won't be able to participate in this experiment because the Web browser isn't JavaScript capable. Further you can tell the user where to get a qualifying Web browser or how to enable JavaScript in the browser preferences.
- demos page: this is the place to ask the user for demographical information.
- thank page: this is the place to thank participants for their participation.

NOTE: Do not include the 5 default pages with the number of pages you fill in.

Number of Web pages:

Navigation icons: back, forward, search

WEXTOR - defining Web pages

http://psych-wextor.unizh.ch/wextor/en/page_b.php?user_id=APA&session=... Have fun!

WEXTOR Ten steps to your experimental design Home | Contact | Help | Logout

Jump to step: [1] [2] [3] [4] [5] [6] [7] [8] [9a] [9b] [9c] [10a] [10b]

Step 6 Defining Web pages

Please name your Web pages now (e.g., intro.html).

Name of index page:

Name of start page:

Name of source page:

Name of demos page:

Name of thank page:

Name of Web page 1:

Time-out in seconds. (0: the page will not time-out)

Choosing obvious file names is a frequent error when creating and designing Web experiments. For this reason WEXTOR offers to add some random characters at the end of your file names. Simply click on the button 'add'. You will see the changes immediately in your file names.

Navigation: Home, Back, Forward

WEXTOR - defining the sequence of within-subjects factor levels

http://psych-wextor.unizh.ch/wextor/en/sequence.php?user_id=APA&se... Have fun!

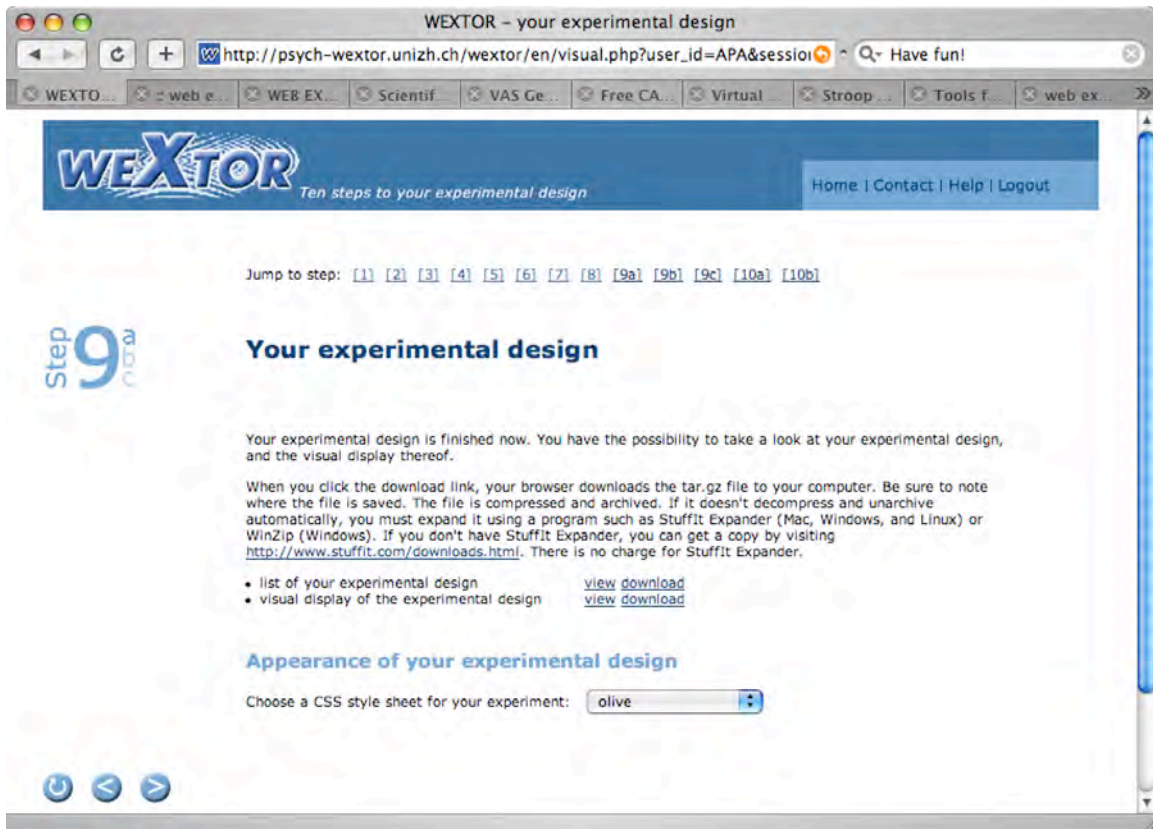
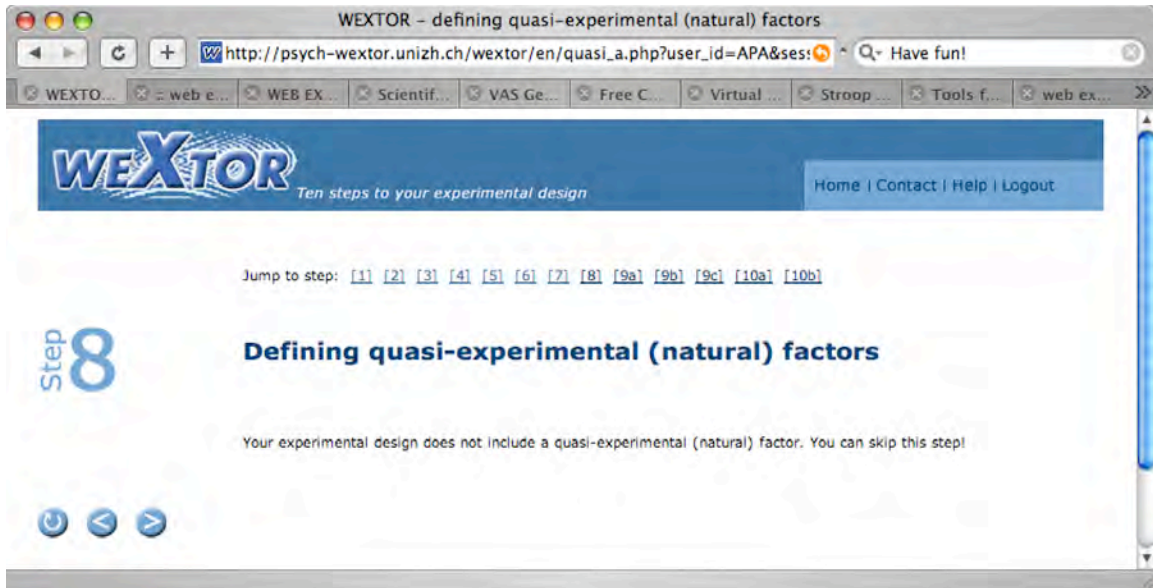
WEXTOR Ten steps to your experimental design Home | Contact | Help | Logout

Jump to step: [1] [2] [3] [4] [5] [6] [7] [8] [9a] [9b] [9c] [10a] [10b]

Step 7 Defining the sequence of within-subjects factor levels

Your experimental design does not include a within-subjects factor. You can skip this step!

Navigation: Home, Back, Forward



Step 9a offers options to visualize your design and procedure and to choose a so-called CSS skin to change the appearance of your pages (you will be able to preview your choice in Step 9b). You can download the list view and display to later view them when you are not connected to the Internet.

Click on “view” for the option “list of your experimental design”. You will see the following structured view of your factors with levels, the resulting experimental

conditions, and your code plan (now it is still empty, but will show details after you add measures in Step 9b – see next screen).

The screenshot shows a web browser window with the title "WEXTOR - list of your experimental design". The address bar shows the URL "http://psych-wextor.unizh.ch/wextor/en/visual_a.php?user_id=APA...". The browser tabs include "WEXTOR...", "web e...", "WEB EXP...", "Scientifi...", "VAS Gen...", "Free CA...", "Virtual...", "Stroop I...", and "Tools fo...".

The WEXTOR logo is displayed at the top left, with the tagline "Ten steps to your experimental design". Navigation links for "Home | Contact | Help | Logout" are on the top right.

Your experimental design

Your experiment consists of 1 factors:

Between-subjects factors

Factor 'reference point'

- 4-->2
- 0-->2

Experimental conditions

Experimental condition 1: 15948

- factor reference point, level 4-->2

Experimental condition 2: 28c01

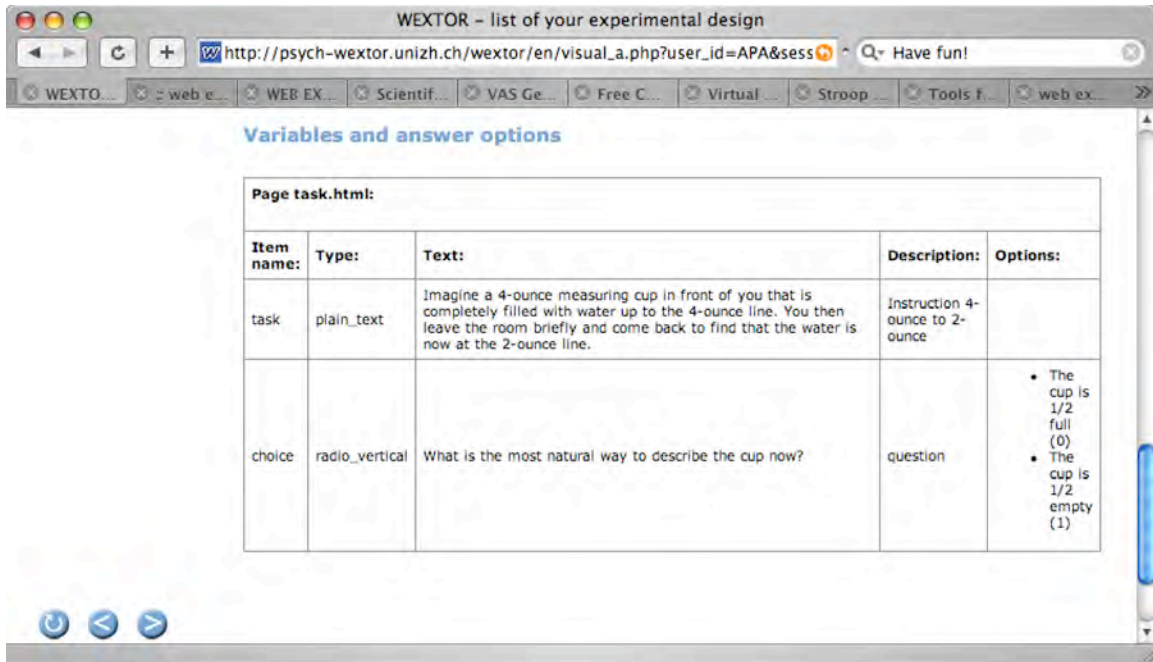
- factor reference point, level 0-->2

Code plan for cup

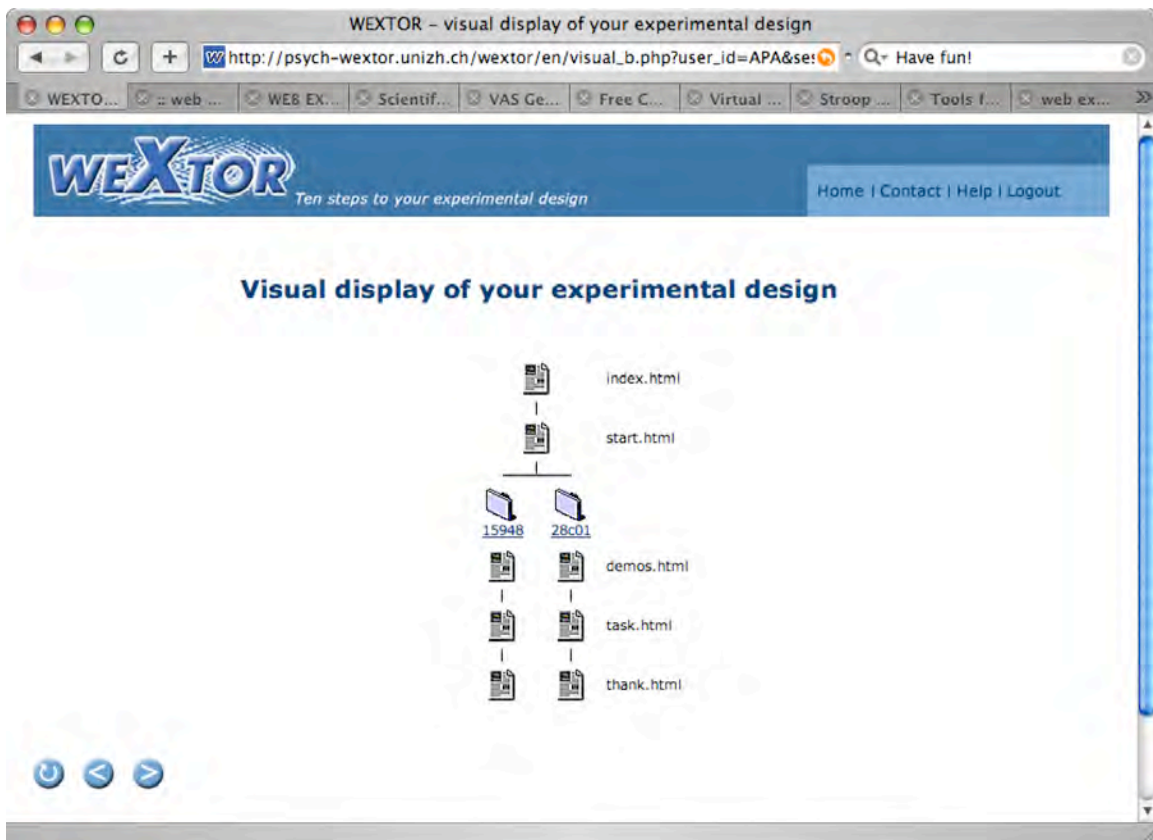
General information

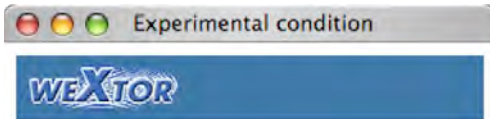
Number of within factors:	0
Number of between factors:	1
Number of quasi experimental factors:	0
Number of pages (not predefined):	1
Name of the index page:	index.html
Name of the source page:	source.html
Name of the start page:	start.html
Name of the demos page:	demos.html
Name of the thank you page:	thank.html
Delay until start.html is shown:	0 seconds
Delay until demos.html is shown:	0 seconds
Delay until the first page after demos.html is shown:	0 seconds

Variables and answer options



Clicking on “Visual display of your experimental design in Step 9a” will provide you with the following display that shows a flow chart or procedure for your experiment. A participant will move from top to bottom through the Web pages that are shown.





Experimental condition 1 is the abbreviated form for the following setting:

- factor reference point, level 4-->2



On to Step 9b:

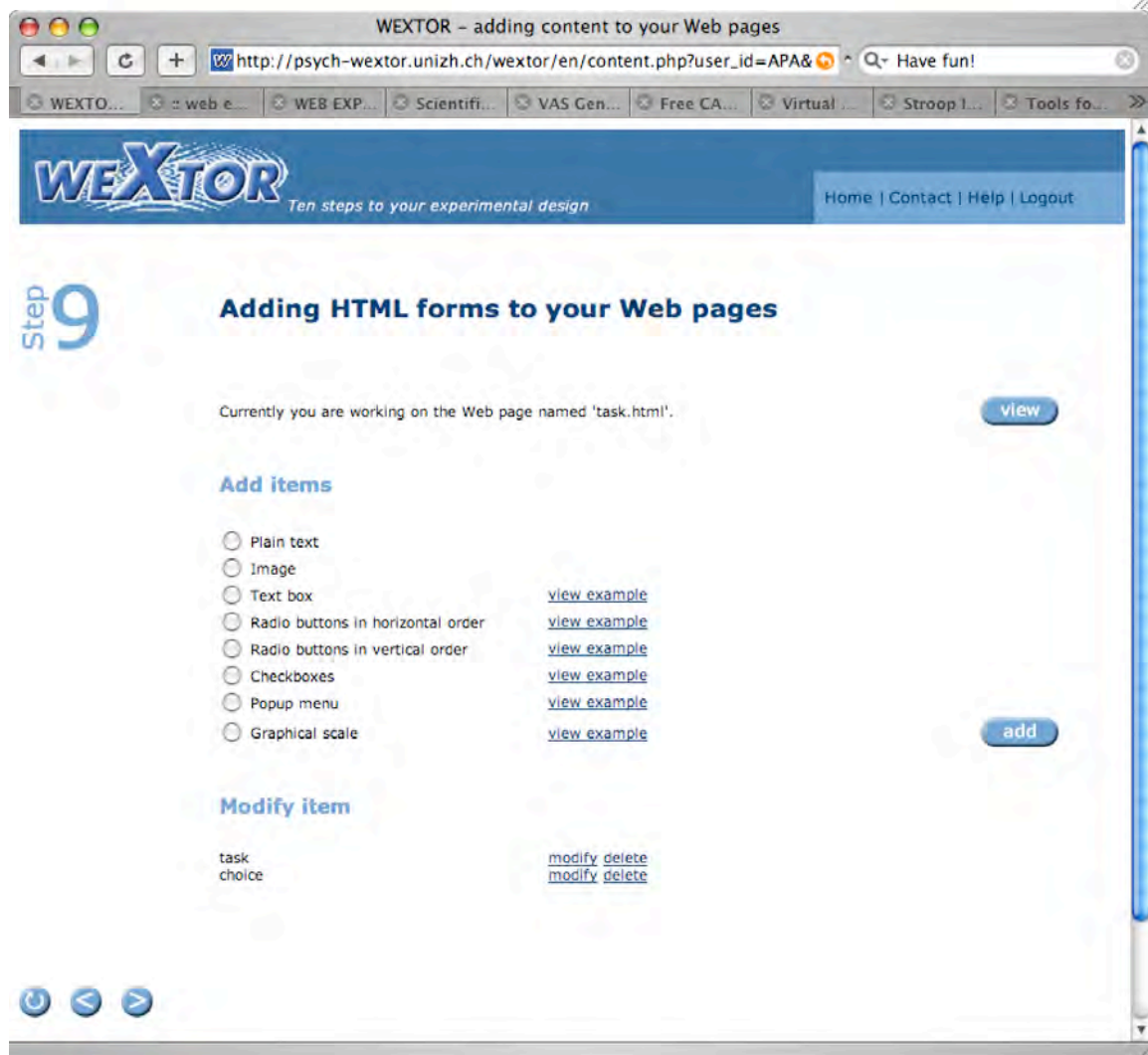
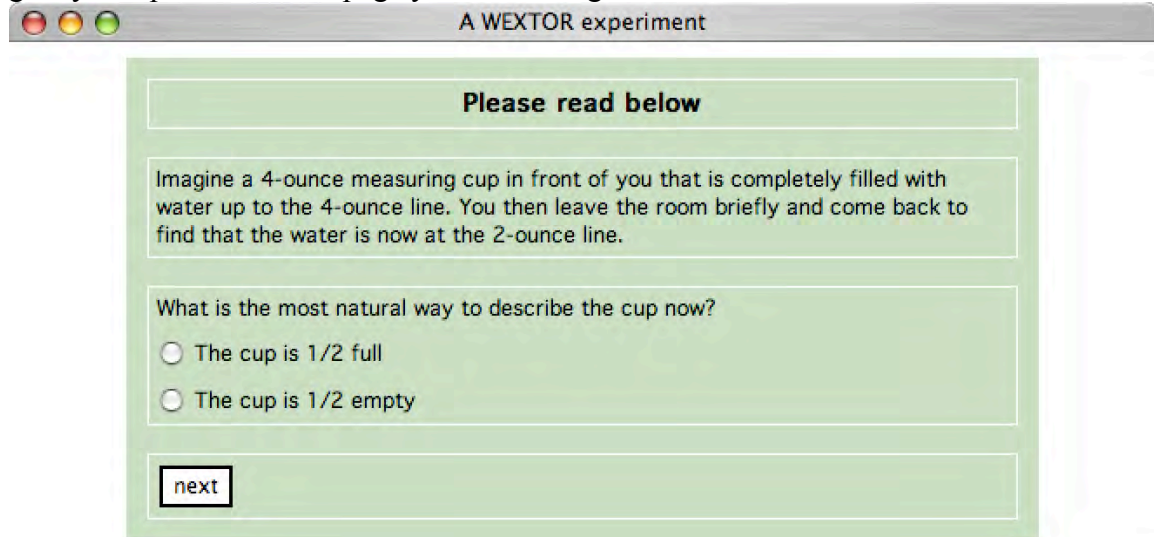
Jump to step: **Step 9b**

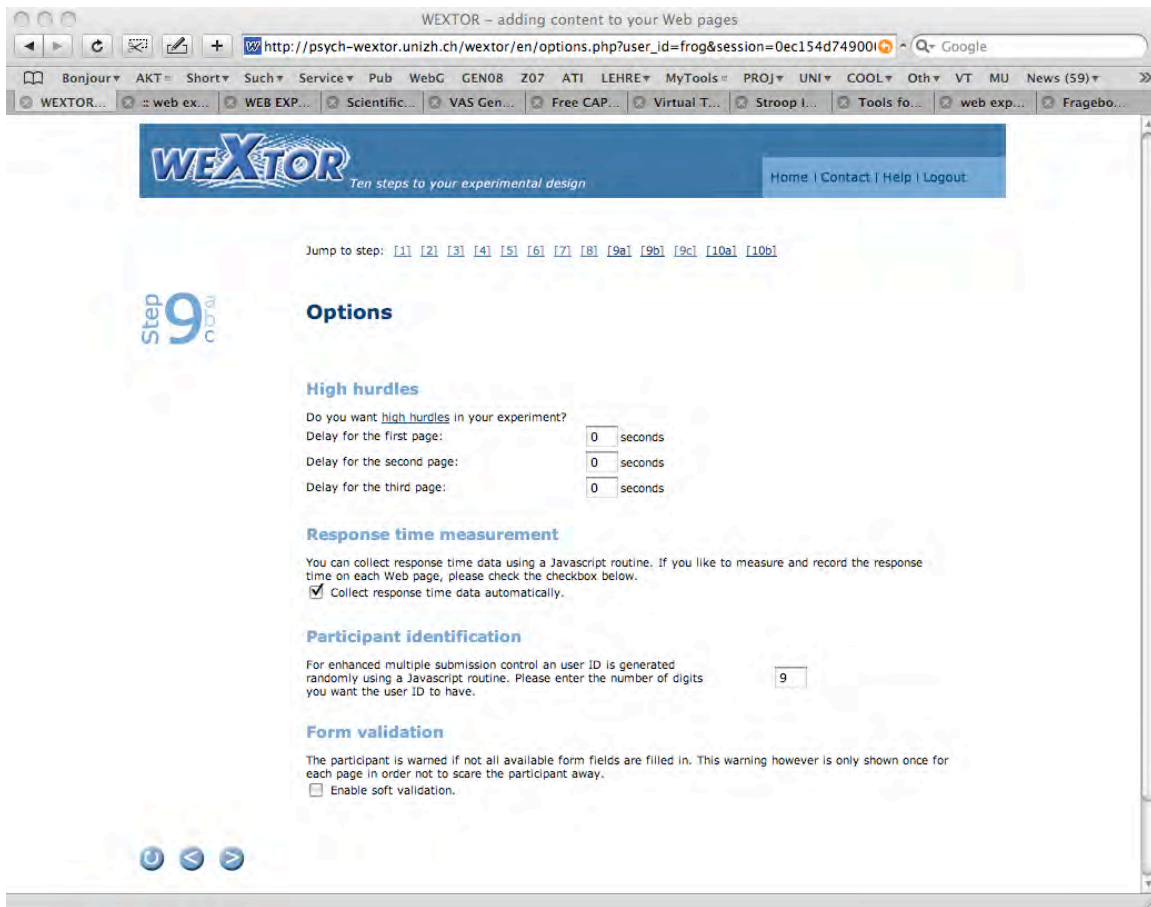
Adding HTML forms to your Web pages

Simply click on the names of your Web pages to add HTML forms. Editing of the standard Web pages (start.html, demos.html etc.) will be implemented in WEXTOR's next version. For now, you may use an HTML editor (e.g. Adobe Gollive or Macromedia Dreamweaver) to edit these Web pages after download.

```
graph TD; index.html --> start.html; start.html --> 15948; start.html --> 28c01; 15948 --> demos.html; 28c01 --> task.html_view[task.html (view)]; demos.html --> thank.html; task.html_view --> thank.html;
```

You can now edit pages by clicking on their name or picture, clicking on “view” will give you a preview of the page you are editing:





In Step 9c you can add or modify some options for your experiment, for example collection of response times.

Don't forget to go back to go back to Step 9a to look at your code plan. Check whether everything is as you want it to be. You will need the code plan to identify the meaning of entries during analysis.

You can now download your experimental materials in Step 10a:

WEXTOR - downloading your experimental material

http://psych-wextor.unizh.ch/wextor/en/download_a.php?user_

WEXTOR Ten steps to your experimental design

Home | Contact | Help | Logout

Jump to step: [1] [2] [3] [4] [5] [6] [7] [8] [9a] [9b] [9c] [10a] [10b]

Step 10 Downloading your experimental materials

Your experimental design was just turned into a set of experimental materials. You can [download your experimental materials](#) as a .zip-compressed file.

NOTE: Make sure to read the instructions on the next page (10b), so you will be able to use the materials.

Download as .zip file

When you click the download link, your browser downloads the your_experiment_name.zip file to your computer (in some cases the file is named download_a.php). Be sure to note where the file is saved. The file is compressed and archived. If it doesn't decompress and unarchive automatically, you must expand it using a program such as [7-Zip](#) (Windows) or [Untar](#) (Mac).

NOTE: If you use WinZip to handle the downloaded file, you should decompress the contents of the file to a temporary folder (this is the default setting of WinZip). You will then see the contents of the .zip file. When extracting them from the archive, make sure that the option 'Use folder names' is turned on.

Creating experiments on this website is currently provided absolutely free. If you feel like supporting us by paying us a cup of coffee or a beer or two, by all means do so by using the PayPal donate button.

[PayPal Donate](#)

Step 10b provides you with information about some of the variable names that may be important to know later during analysis of results:

WEXTOR - downloading your experimental material

http://psych-wextor.unizh.ch/wextor/en/download_b.php?user_id=A

WEXTOR Ten steps to your experimental design

Home | Contact | Help | Logout

Jump to step: [1] [2] [3] [4] [5] [6] [7] [8] [9a] [9b] [9c] [10a] [10b]

Step 10^a Downloading your experimental materials

After you have decompressed your files, you may open them with a HTML editor, such as Macromedia Dreamweaver or Adobe Golive. You can now edit the appearance of your Web pages to suit your taste. Do NOT delete / change the javascript code in the <head> section, the properties of the form, and the button on each Web page.

WEXTOR automatically generates some predefined variables:

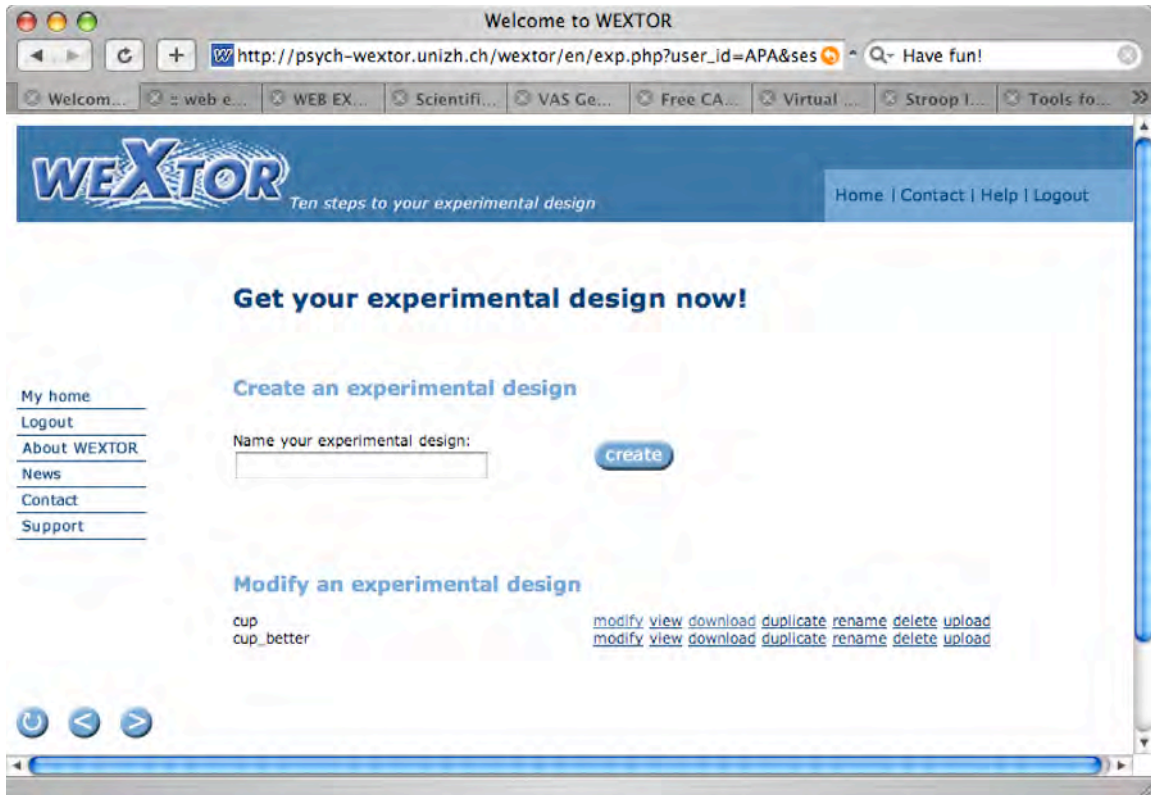
- **id** is the user ID for enhanced multiple submission control
- **vl_x** simplifies your dropout analysis. When a participant visits a Web page, the value 1 is assigned to the variable (e.g. vl_1 indicates, if a participant visited the Web page 'demos.html')
- **rt_x** measures and records the response time on each Web page (e.g. rt_1 records the response time on your Web page 'demos.html')
- **i** is a simple control variable needed for the experimental procedure and is of no importance for your data analysis

Each HTML document requires a document type declaration. The "DOCTYPE" begins the HTML document and tells a validator which version of HTML to use in checking the document's syntax. By default your documents are declared to be HTML 4.01 Transitional. If you like too check your document's syntax using a validator, change the DOCTYPE if necessary (e.g. for documents that use frames). If you need further information, please click [here](#).

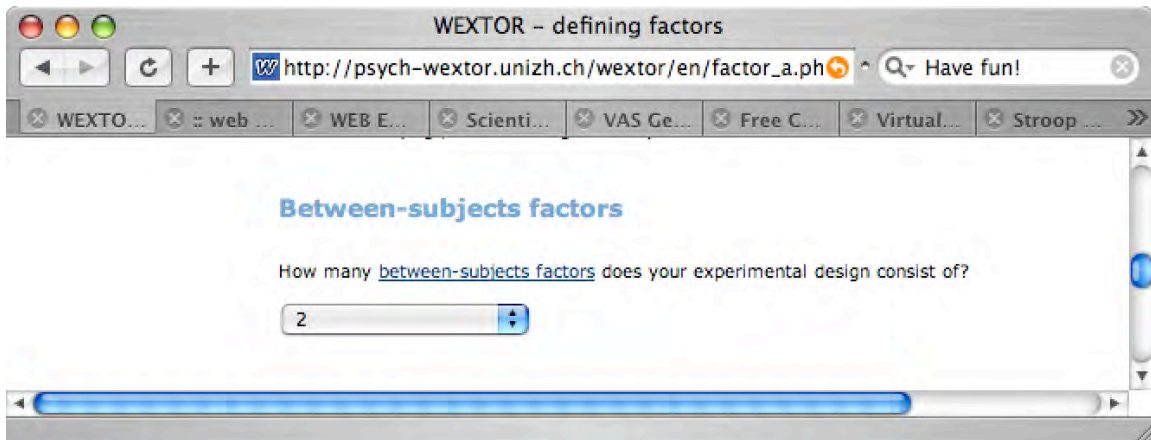
If you need further information on issues to consider when creating a Web experiment, take a look at "Standards of Internet-based experimenting" [[pdf, 124kb](#)].

Following repeated requests we have now implemented hosting of Web experiments. It is available separately in paid account mode. Please contact wextor@genpsy.unizh.ch for details.

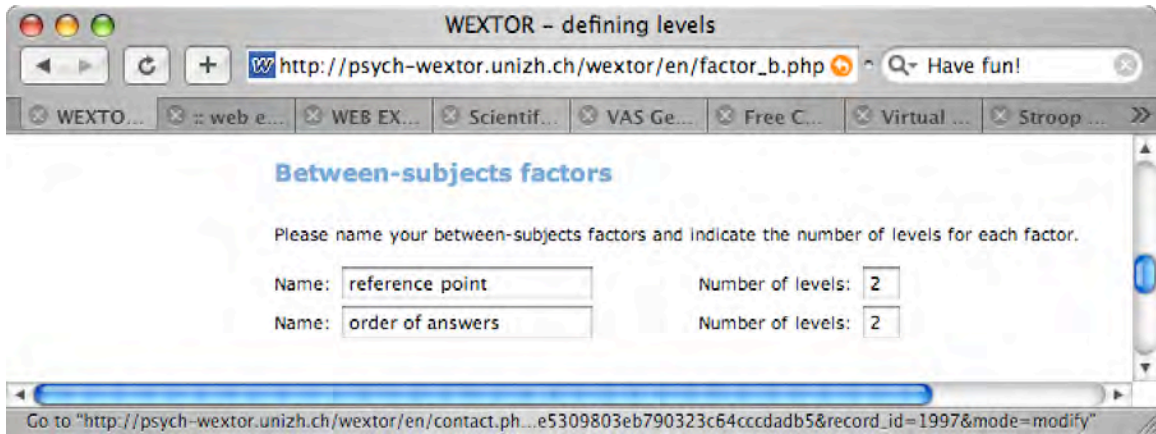
Before we now continue editing the downloaded materials, we will apply a change, so you see how easily WEXTOR handles modifications of designs. We decide to vary the order of our two answer options. It is best to implement this variation by adding another factor. So we go back to Step 1:



We change the number of between factors to two:



A new row with fields appears in Step 2. We add a name and define the number of levels for the new factor:



We then name the levels for the new factor in Step 3:

WEXTOR - defining levels

http://psych-wextor.unizh.ch/wext

WEXTO... :: web e... WEB EX... Scientif... VAS Ge... Free C...

Step 3

Defining levels

Please name the levels of the factors, you defined in Step 2.

Between-subjects factors

Please name the levels of your between-subjects factors!

Factor 'reference point'

Name:

Name:

Factor 'order of answers'

Name:

Name:

Navigation icons: Home, Previous, Next

WEXTOR - defining experimental conditions

http://psych-wextor.unizh.ch/wextor Have fun!

WEXTO... :: web e... WEB EX... Scientif... VAS Ge... Free CA...

Step 4

Defining experimental conditions

Please name your experimental conditions. We already made a name abbreviated form for the experimental condition and four random characters. Use names that reveal information about the underlying structure of the design.

If your experimental design is incomplete, you may now erase the selected conditions by unchecking all experimental conditions you don't need.

<input checked="" type="checkbox"/>	Experimental condition <u>1</u> - <u>1</u> :	11cff0
<input checked="" type="checkbox"/>	Experimental condition <u>1</u> - <u>2</u> :	120454
<input checked="" type="checkbox"/>	Experimental condition <u>2</u> - <u>1</u> :	21d357
<input checked="" type="checkbox"/>	Experimental condition <u>2</u> - <u>2</u> :	22adfb

Your experimental design

Your experiment consists of 2 factors:

Between-subjects factors

Factor 'reference point'

- 4-->2
- 0-->2

Factor 'order of answers'

- full first
- empty first

Experimental conditions

Experimental condition 1-1: 11cff0

- factor reference point, level 4-->2
- factor order of answers, level full first

Experimental condition 1-2: 120454

- factor reference point, level 4-->2
- factor order of answers, level empty first

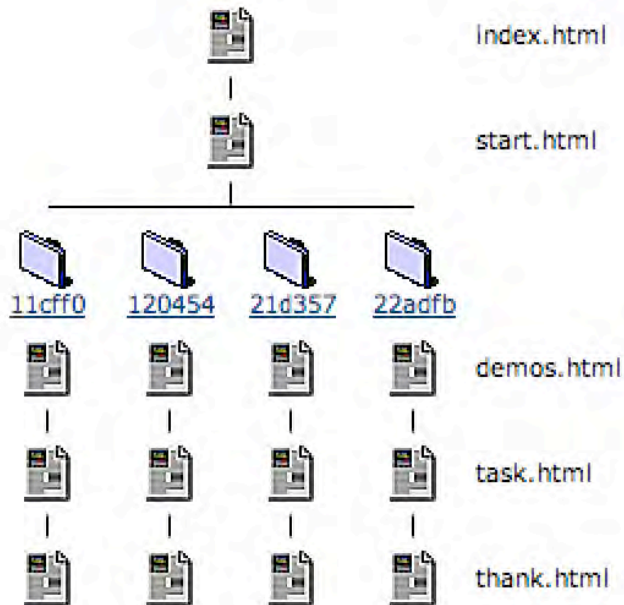
Experimental condition 2-1: 21d357

- factor reference point, level 0-->2
- factor order of answers, level full first

Experimental condition 2-2: 22adfb

- factor reference point, level 0-->2
- factor order of answers, level empty first

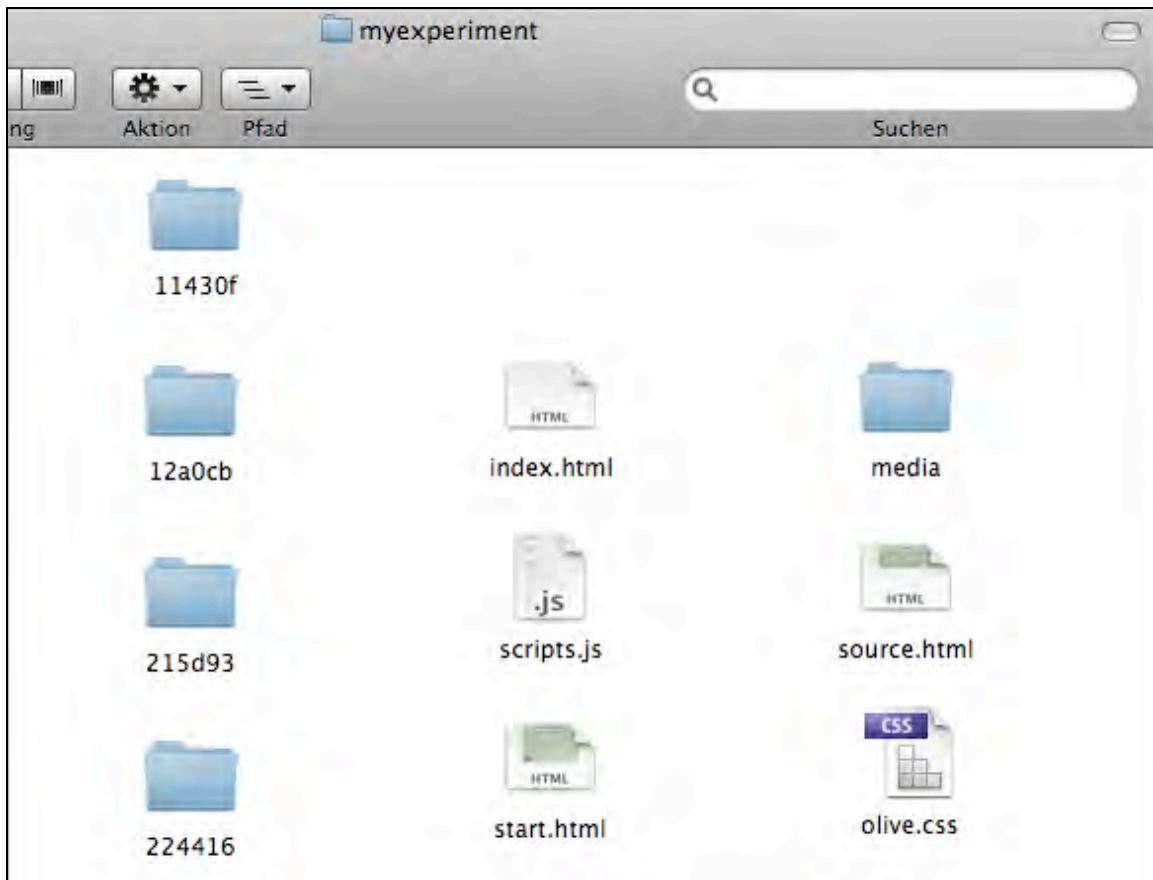
Visual display of your experimental design



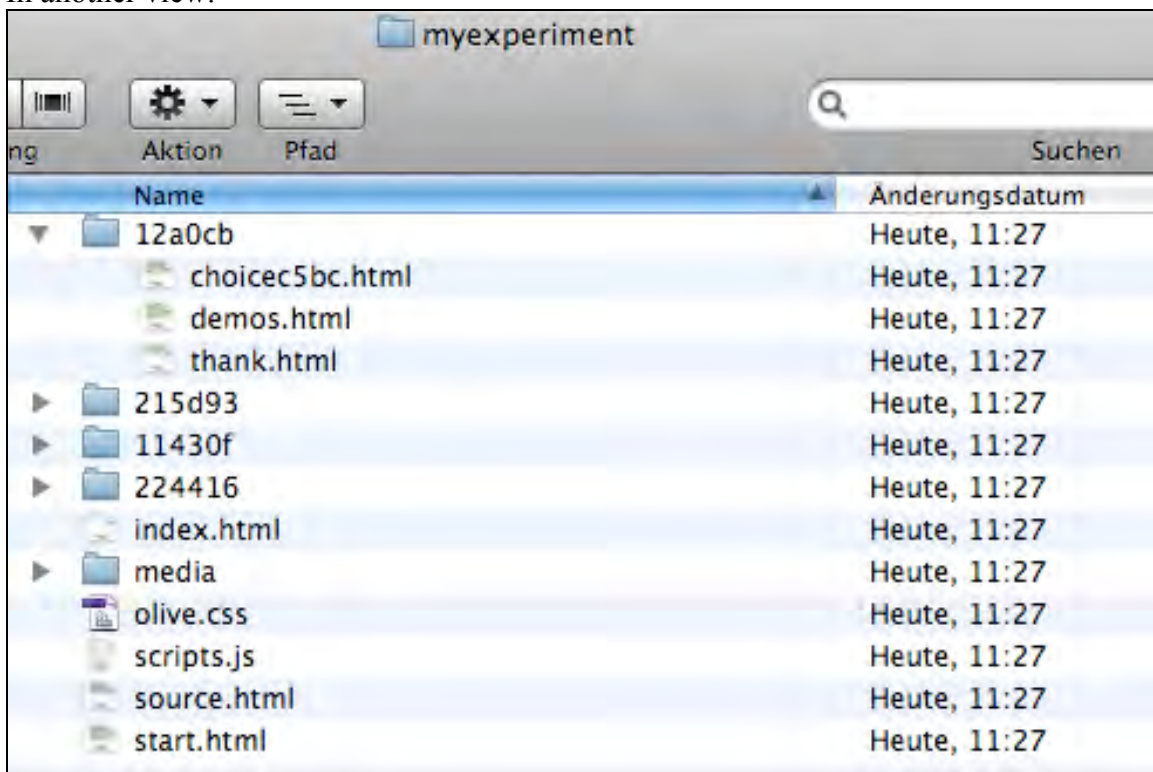
In the visual display of the procedure in Step 9a the horizontal line shows when participants are randomly distributed to one of the experimental conditions.

Downloading the new experiment in Step 10a. Once you decompress the zip file on your desktop you will get a folder that is named like your experiment. Within this folder you will find a subfolder for each condition, a folder for media files (images, flash files etc.) and some additional files. **Make sure not to rename any of these files and folders!**

Double click on “index.html”. You will preview your experiment. This is possible even when you are not connected to the Internet, because the experiment folder is self-contained: everything that is needed in your experiment is right there on your desktop.



In another view:



One by one, load „choicec5bc.html“ (or however you named that page in WEXTOR) from conditions 12, 21, and 22 into an HTML editor (Dreamweaver, Adobe Golive, UltraEdit, BBEdit... – you may also use a text editor, but **do not use MS Word!**) and change according to „Experimental conditions“ above. The screenshots below (in standard blue CSS design) also show you how the text needs to be changed depending on the condition.

11:

The cup

Imagine a 4-ounce measuring cup in front of you that is completely filled with water up to the 4-ounce line. You then leave the room briefly and come back to find that the water is now at the 2-ounce line.

What is the most natural way to describe the cup now?

The cup is 1/2 full

The cup is 1/2 empty

next

12:

The cup

Imagine a 4-ounce measuring cup in front of you that is completely filled with water up to the 4-ounce line. You then leave the room briefly and come back to find that the water is now at the 2-ounce line.

What is the most natural way to describe the cup now?

The cup is 1/2 empty

The cup is 1/2 full

next

21:

The cup

Imagine a 4-ounce measuring cup in front of you that is completely empty down to the 0-ounce line. You then leave the room briefly and come back to find that there is now water up to the 2-ounce line.

What is the most natural way to describe the cup now?

The cup is 1/2 full

The cup is 1/2 empty

next

22:

The cup

Imagine a 4-ounce measuring cup in front of you that is completely empty down to the 0-ounce line. You then leave the room briefly and come back to find that the water is now at the 2-ounce line.

What is the most natural way to describe the cup now?

The cup is 1/2 empty

The cup is 1/2 full

next

Make sure that the value assigned to each radio button option stays the same for its meaning, i.e. a 1 should always mean “The cup is 1/2 full” was selected and a 0 should always mean “The cup is 1/2 empty” was selected.

Zip compress your entire experiment folder. (Make sure you do not compress anything else with it – a typical error would be to also compress the folder that contains your experiment folder). You should then have a file on your desktop that is named like your experiment folder and ends in “.zip”.

Log back into WEXTOR. On the first screen appearing click on “Upload an experiment, download data”. On the new screen (like the one shown below) follow the instructions to upload your experiment.

You are ready to go! Click on the link that appears to pretest your experiment.

WEXTOR Ten steps to your experimental design Home | Contact | Help | Logout

WEXTOR hosting

'cupmethneu.zip' uploaded; extraction successful

Upload an experiment (96 uploads left)

To let us host your experiment on the WEXTOR web server, you first have to **compress the entire folder** that contains your experiment. This compressed file with a .zip or .tar.gz extension may then be uploaded.

Your experiment will be accessible as "http://psych-wextor.unizh.ch:8080/yourname/yourexperiment/", where 'yourname' corresponds to the login name you use to access WEXTOR and 'yourexperiment' is the same as the folder name the uploaded file contains (not the filename!)

Select file for upload (".zip" or ".tar.gz"), **max. filesize: 5MB**:

Keine Datei ausgewählt

88497 (http://psych-wextor.unizh.ch:8080/frog/88497/)	get data get log delete
cup-2 (http://psych-wextor.unizh.ch:8080/frog/cup-2/)	get data get log delete
cupmeth_2 (http://psych-wextor.unizh.ch:8080/frog/cupmeth_2/)	get data get log delete
cupmethneu (http://psych-wextor.unizh.ch:8080/frog/cupmethneu/)	get data get log delete

Happy Web experimenting!

Your WEXTOR team