PercyConfigurator – Perception Experiments as a Service

Christoph Draxler

Institute of Phonetics and Speech Processing, Ludwig Maximilian University Munich, Germany

draxler@phonetik.uni-muenchen.de

Abstract

PercyConfigurator is an experiment editor that eliminates the need for programming; the experiment definition and content are simply dropped onto the PercyConfigurator web page for interactive editing and testing. When the editing is done, the experiment definition and content are uploaded to the server. The server returns a link to the experiment which is then distributed to potential participants.

The Bavarian Archive for Speech Signals (BAS) hosts PercyConfigurator as a free service to the academic community.

Index Terms: perception experiments, Percy, web service, software as a service

1. Introduction

There are a number of academic and commercial online experiment systems available, e.g. SoSci Survey, Google Forms, PsyToolkit, etc. (sec. 5). Many of these systems are text-based only and hence not sufficient for online perception experiments which require media playback.

Percy is an online perception experiment framework based on HTML5 and JavaScript. It was first described in [1] and early experiences using the system were reported in [2]. In Percy, the experiment content is stored in a database on the server, the experiment pages and the exact layout and behavior of the interactive input elements are specified using HTML and JavaScript. Thus, the definition of an experiment requires programming.

The different online experiment systems take different approaches to defining online experiments. For example, Google Forms uses a graphical editor to define one item after the other, whereas PsyToolkit uses a simple script language with embedded HTML to define the layout and mechanics of an experiment. Other providers allow the experimenter to select from a library of predefined experiment layouts.

These approaches have disadvantages: a graphical editor is cumbersome for experiments with a large number of repeated items, defining an experiment by programming requires learning the system-specific language, and selecting from a set of predefined experiment layouts may be confusing.

This paper presents PercyConfigurator, a web service for defining basic online perception experiments in an intuitive and efficient way, allowing the experiment designer to use the editors he or she is familiar with, without any programming. This makes it ideal for student experiments.

2. PercyConfigurator

PercyConfigurator is a single page web application. The experiment designer opens the web page and defines the experiment interactively in the browser window. The application logic runs on the client. During editing and testing no Internet connection is needed. The main task of PercyConfigurator is to map map the textual experiment definition to the media files used in the experiment, and to check its consistency and completeness.

When the experiment has been defined and tested, the experiment data is transferred to the server as a JSON object, together with the media files used in the experiment. The server returns a link via which the experiment can be accessed; this link is then distributed to potential experiment participants.
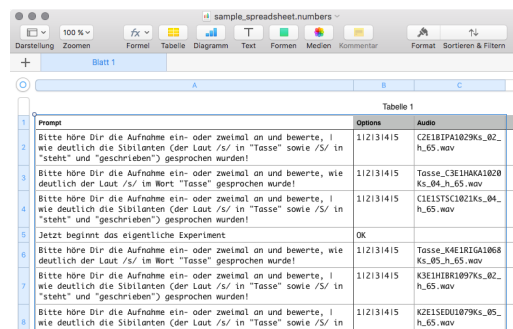
3. Defining an experiment in five steps

The following sections present the five steps necessary to define and set up an online perception experiment with PercyConfigurator.

3.1. Create experiment items

PercyConfigurator expects an experiment definition in a three column text. The first column contains the item text, the second the available input options, the third the base name of the media file associated with this item.

To create such a three column text, any text processor, spreadsheet application, or database system may be used. Thus, the experiment designer may use the editors he or she is familiar with. Spreadsheet applications are particularly useful because they organize data in columns already. They usually have commands for repeating rows and pasting data column-wise, which makes the definition of repeated items straightforward (fig. 1). PercyConfigurator supports four different graphical input ele-

Figure 1: *Experiment definition in spreadsheet application*

ments: button list, slider, text field and text area (fig. 2) The input options elements are defined in a simple markdown notation. The input button list in fig. 5 is created by the string `sehr undeutlich (1|2|3|4|5) sehr deutlich`.

The experiment definition is imported into PercyConfigurator via drag & drop or a file chooser dialog. In the PercyConfigurator window, the experiment is displayed as a table. Media files are also imported via drag & drop (fig. 3). Import is incremental, facilitating the selection of files from different directories. PercyConfigurator automatically associates the media files with experiment items via the base name of the file. A click on the media item file name starts playback of the file.
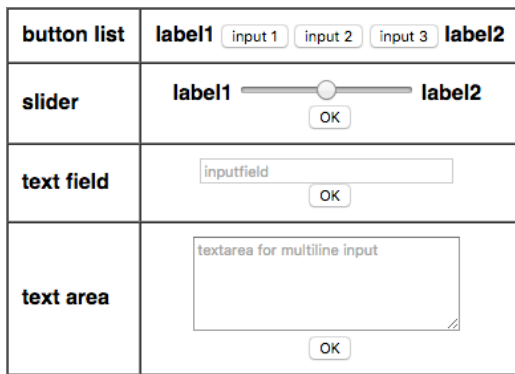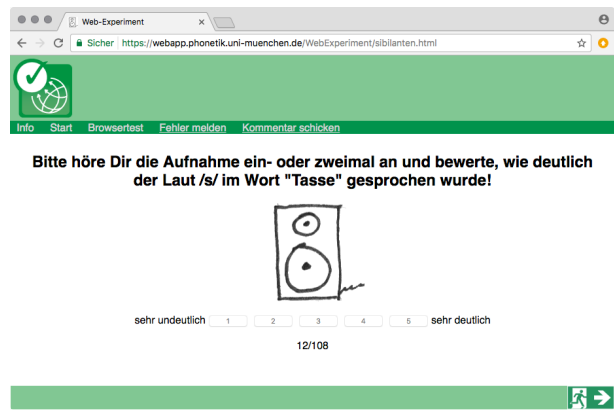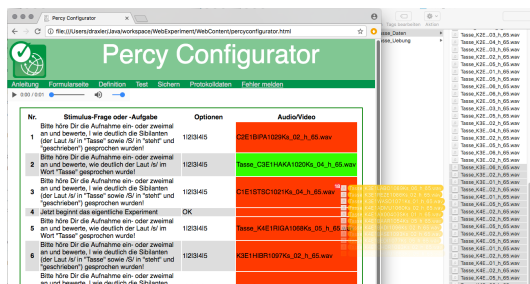
Figure 2: *Supported graphical input elements*

Figure 3: *Importing media files via drag & drop. Missing media files are highlighted with a red background. A green background indicates that this item has been mapped to a media file.*

3.2. Edit participant form

In general, participants must fill in a short form before entering the experiment. This form contains common items such as email, sex, age, mother tongue, etc. PercyConfigurator features a table of predefined form items; the experiment designer selects rows from this table by marking them as *visible* or *required*; items not needed are left unmarked (fig. 4). Default in-
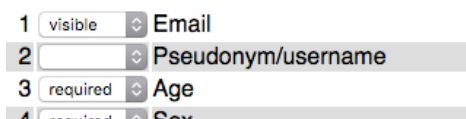

Figure 4: *Table with standard participant form items*

put elements are used for the form items, e.g. radio buttons for male/female, and a text field for the email address.

3.3. Test the experiment

In the test mode, the experiment is displayed just as it would be when run in a browser (fig. 5).

3.4. Upload the definition

Finally, the experiment definition and the media files are uploaded to the server. For this, a form asks for a short experiment name to appear in the banner area of the final experiment, the

Figure 5: *Test run of the experiment*

email address of the experiment designer, start date of the experiment, randomizsation of items, etc.

3.5. Distribute the link

When an experiment definition has been uploaded, it is checked by the Percy administrator. If it is found to be ok, then the experiment is deployed on the Percy experiment server, and a link to the experiment is sent to the address given in the experimenter form. The experimenter may then distribute this link to potential experiment participants.

Note that this validation step is necessary to prevent PercyConfigurator from being abused, e.g. for spam.

4. Conclusion and Outlook

PercyConfigurator offers a smooth and intuitive way of setting up simple perception experiments via the web. The experiment designer can use the tools he or she is familiar with for compiling the experiment contents and media data. After dragging & dropping the experiment contents and media data on the Percy Configurator window in a browser, the software checks the completeness and consistency of the definition and uploads the experiment data so that an online perception experiment may become available within minutes.

Currently, PercyConfigurator features only a single predefined experiment layout and no internal structuring of experiments. These restrictions are a result of keeping the interface simple and intuitive – future versions may provide more functionality.

5. Links

```
forms.google.com
www.psytoolkit.org
www.soscisurvey.de
webapp.phonetik.uni-muenchen.de/WebExperiment
```

6. References

[1] C. Draxler, "Percy – an HTML5 framework for media rich web experiments on mobile devices," in *Proc. Interspeech*, Florence, Italy, 2011, pp. 3339–3340.

[2] ——, "Online experiments with the Percy software framework – experiences and some early results," in *Proc. LREC*, Reykjavik, 2014, pp. 235–240.