

Produktdesign | Interaction Design
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Concept
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freies Projekt

soundbook

reading with sound

Idea

Reading today tends to be more and more aim-oriented, while reading just for the pleasure of it drifts to be more seldom than ever.
„Soundbook“ is a new media which allows the reader not only to read but at the same time to hear the story. This means that there are sounds linked to the specific content of a story. For example the footsteps of a person on the pavement, the sound of a crossing car or even the atmosphere of a trainstation. The visual imagination of the story should be made more experientiable and intensive by adding a fine composed soundsetting.

Set of problems

The difficulty of this concept ist to connect the sound to the individual reading speed of each reader. The reading speed does not only differentiate from reader to reader but also within a single readers flow.

Study

With the support of Technical University of Berlin I could accomplish a study in which I was permitted to use their eyetracking systems and rooms.
I had 25 subjects read a short story, which I wrote especially for this purpose, while being monitored by an eyetracking system. Based on the outcome of the study (eyemovement, reading speed, etc.) I taped and composed a soundsetting for the story. It was outstanding that the time of imagination and the real time in which a scene took place made a huge difference. This fact led to the necessity of shortening the sounds.

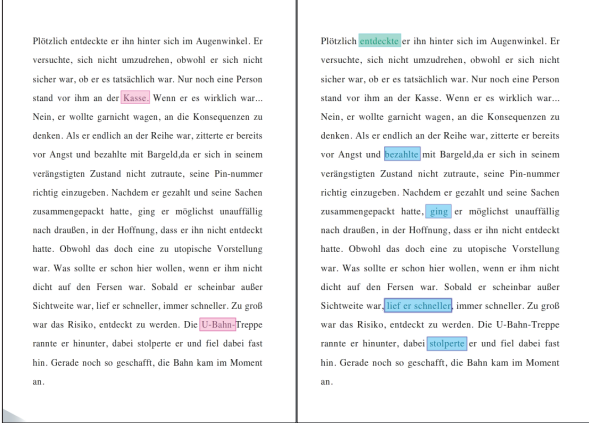
Soundtrigger

After several trials to clear the problem of connecting the sounds to the reading speed, I came up with the problem stuck out.
I created invisible buttons (each as big as the connected sound is long) which are triggered by the readers eyemovement. They make reading with sound possible, without the reader recognizing the activation of the sound.
As normal eyemovement is not accurately stuck to each line, it is necessary to arm the soundbuttons with adequate programming.
To avoid the early starting and stopping of sounds, each button is supplied with a countdown function, both for start and for stop. Only after the readers eye is over the button for a certain time, the connected sound will be faded in. This way each soundbutton adapts to the reading speed. Many of these buttons in a row add up to a seamless sound background. Each new sound fades in while the former sound is fading out.

Content analysis

Regarding content, I recognized that external sounds (sounds produced by the outside world or other people in the story) would work better than selfmade sounds (sounds produced by a protagonist in first-person). The most exciting possibility of using sound and text together is to add up both channels to make a whole. This means that the sound does not double the text information but instead the two channels (sound and text) complement one another.
For example sound can describe and therefore replace actions same as places in the text. So if there is a place described in the text, the sound can give the reader the information about what is happening. The other way around, if the text is describing an action, the sound can give information about the place where the action is happening.
Both possibilities can be applied within one text in any order.

However it might be easier for the reader to understand sounds of places than sounds of actions because these are often more definite (for example a trainstation). Of course the sound should not replace informations of mayor importance to the story, just in case someone does not understand it.



Eyetracking

The eyemovement is monitored with an eyetracker and live transformed by a special software into mousemovement. While mousemovement on the display is invisible for the reader, it activates the invisible buttons which are linked to the sounds. This technology makes it possible to have a seamless sound background.

As eyetracking is not yet affordable enough to put into regular readers, I designed a simulation of this method.

In the simulation, the mousemovement (for example caused by a finger on the display), „enlightens“ the text in a horizontal expanse, while other parts of it are not visible to the reader.

Originally I designed this version only to demonstrate the method of eyetracking. But as long as eyetracking is still too expensive to be put into mobile devices, it could be used as alternative method.



Flowing Text

In the second concept of reading with sound the text flows over a display from the bottom to the top. Same as the eyetracking concept, also in this version sound is linked to the text.
The difference is that the reader triggers the sounds manually, but indirectly. Depending on which part of the text is displayed, the linked sound plays. The speed of textflow can be adjusted instantly by the reader, so that he does not have to adjust his reading speed to the device, but the other way around.
To the top and bottom of the display, the contrast of the text is reduced, so that the reader uses mainly the middle of the display. To allow spontaneous re-reading of sentences, in pause-mode the contrast enlarges to the top of the display.

New possibilities of reading with sound

By using sound it is possible to define simple circumstances like the time of the day, for example by implementing a caw of a rooster. But also it is possible to define the movement of something in 3-dimensional space or the distance to a source of sound. By using halleffects, it is even possible to define the size of rooms in which a sound is produced.

In addition sound can also be used dramatically. For example one can describe something in a text and play a sound with the description - later in the text only by playing the same sound again but not mentioning the former described in the text, the imagination of it will appear again on the readers mind.
It is also possible to enhance the imagination of something that actually does not make any sound, by implementing sound to it. For example clouds crossing the sky very fast.

Vision

To provide the possibility of implementing these dramatic means, it would be sensible to have authors write their novels „multisensorial“ themselves. So the sound can be implemented into the act of writing directly.
Therefore the next step would be to create a software which allows authors to apply sounds to their texts instantly - a symbiosis of text- and soundediting program. So authors would have the possibility to write at least the essence and main structure of a „soundbook“ without the help of others.

