

# STEREO TYPE

AN INTERACTIVE SOUND PROJECT

va402 project proposal

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## Project Definition

An interactive sound installation criticizing the visual and vocal representations of letters.

## Goals and Objectives

- » Highlighting how disconnected visual (grapheme) and vocal (phoneme) representations of typographic characters are.
- » A critique on how accustomed and in full compliance we are to the predefined vocal representations of letter forms (phonology).
- » The inconvenience of different languages and nationalities having different vocal representations.

It may be a challenge to approach a concept as rooted as the communication. For many years beginning with its creation, the majority of the society (excluding the linguistic experts and professionals) hasn't questioned the linguistic systems, namely graphemes and phonemes. There's a written and vocal system people are born into and while some seek to understand the technicality of it all, I believe the majority are living without this inquisition.

While some letters like "O" and "A" are justified as a reflection of the shape the mouth takes during the act of pronunciation, most characters like "R" or "P" are embedded sounds that are far from any justification, parallel to their physical attributes. Linguistic system has given people the means to communicate effectively, although I believe it lacks to represent the connection between the visual letter forms and their sounds.

By analyzing each and every letter visual, I want to find the true sound of each letter. A true sound that is derived from the lines and curves and dots that provide identity to each unique letter. Doing so, will not only be an approach to globalize the alphabet so the pronunciation of letters would remain unaffected to the change of language, but also be an in-depth analysis on perception of sounds and shapes.

## Target Audience / User

Since its essentially about graphemes and phonemes (visual and vocal representations of units), the experts who work on linguistics will widely form the precise audience for this project, however, it applies to every single person, regardless of their nationality or linguistic preferences.

Among these people, the everyday person who may or may not have thought on this, will also be within the scope of the audiences of this project.

Another plausible audience might be the young generation that is constantly being born to this linguistic system and are rushed to "memorize" thus is in a very critical stage of questioning and skepticism.

One other audience this project will relate to will be sound and music enthusiasts and graphic designers specialized in typography.

## Background Information

This project is a sound installation that is a direct inquisition of the linguistic system we're born into. It will be consisted of a computer and an interface of a program that will let people type. Upon doing so, they will hear contemporary sounds that reflect the characteristics of each and every letter.



I stumbled upon this idea when I was doing my Erasmus Programme in the Academy of Fine Arts in Krakow, Poland. During my stay I was, in a way, forced to learn the pronunciation of Polish language because it had a significant difference to my own language and I couldn't even communicate on a basic, verbal level. While learning this language, I realized how some sounds are represented in different letters or letter combinations and it was so inconvenient to have it this way.

After doing more thinking and research over the matter, I have narrowed my frustration down to the failure of sound and text allocations. From there, arrived the concept of connecting the visual characteristics of letters to new vocal representations.

When people are taught a new language, regardless of their age, their first struggle comes from the pronunciation of certain letters. This is mostly because of their national language having different vocal representations for the same letters.

However, what I will be focusing on this project will not be a solution to this problem. My aim and concentration will remain as an effort to reflect the "look" and "feel" of the letter forms through polyphonic, sound compositions.

The focus of this project is the lack of feel in the vocal representations to their visual partners. Even the very act of reading this proposal, when we think about it, the letters are merely the tools which create the words that provide meaning and recognition. The letters themselves are, apart from forming these recognitions, lost their significance.

I would like to provide them this significance by giving them a musical identity which represents not only what they stand for, but also what they are.

Working on this project will trigger my perceptions on how sounds are visualised in human brain thus being an indirect study of the function of the brain as well as a macro approach on typography.



The musical and sound engineering aspect of this project is also why I chose this subject to work with. Since I remember myself I'm very much interested in composing music and combining sounds. I would like to see the results of my interest for music and my interest in typography combined.

There are some projects that I've found which are underlining visual and vocal aspects of typography and how they convey communication and interaction in our lives. However I failed to find any project that goes directly in the same angle as to question the phonemes that were assigned to the letter forms, nor a project that proposes an alternative to these phonemes in relation to the visual representations.

### » **Stereotyped**

Strangely, the title of my project wasn't an inspiration from this project but it was a funny coincidence. Stereotyped was a sound and typography exhibition that looked at how type and sound create the meaning in our everyday lives and changing the definition of the designer in the 21st century.

The project stresses on how the visual elements of typography are constantly added new approaches and different typefaces have different "voices" even when the written text might be the same thing.

Its also criticizing the evolution of digital technologies and how it resulted in a mass of designers who can simply create sound and typography, sitting at home.

Overall, its a very informative exhibition and provided me with great information about sound and typography, both in our past and present.

**<http://vimeo.com/28054284>**

## » Teaching Typography Through Sound

This is an idea that was voted to come alive on a panel website. Although I believe the voting period expired and it never did. Still, its a valid example to link here just because the idea was about the interaction between sound and typography.

This project is quite different than the one I'm aiming for, but still there are roads they intersect. This project was an alternative to increase typographic literacy in people. Its underlining the problem that graphic design, being a very visual discipline to learn, not always have the studens that are best at visual learning.

The project starts from this idea to create sonic landscapes of letterforms to create complex compositions and learning the foundational visual principles such as letter spacing, by hearing them.

**<http://panelpicker.sxsw.com/vote/21976>**

## » Phonemes Experiment

This project has no visual part to it as to critisize the typography and their sound representation, however its a direct elaboration of phonemes(the vocal representation of letters).

In this project, the author (Keith) recreated a paragraph using single audio files for each phoneme. Meaning the words were broken into their components, and each letter was recorded seperately, mashed later on to experiment if the sentences formed would still carry meaning.

As hard as it is, his voice can be understood and the result is a very robotic sound that's coveying the message in a semi-clear way. Still, a very interesting experimentation on phonemes.

**<https://vimeo.com/126470>**

» **Golan Levin makes art that looks back at you**

An excellent TEDTalks episode where Golan Levin is displaying his works about phonaesthesia, speech recognition, simultaneous subtitling and more.

The video section between 3:30-6:04 is about phonaesthesia, which relates to my project, being a counter study of the regular sounds we produce reflecting specific shapes.

<http://youtu.be/1G0MzlfMPuM>

» **Timothy Donaldson - Shape for Sounds**

Timothy Donaldson, a typographer, graphic designer and teacher, gives a 15 minute speech in Falmouth University about how alphabet was formed.

He presents the past to understand the future of textual communication. All the events that happened in the past that contributed to the evolution of alphabet is in the story.

The book, Shape for Sounds, is a deeper study of everything related to linguistic systems and how they came to life. The phoenetics, sociology, linguistics, psychology, design, typography...

Overall its a nice study on how these linguistic conventions are indoctrined from the past until now.

<http://youtu.be/pcLy6hzQeII>

## Detailed Project Description

In this project, I will be dealing with the miniscule letter forms, since majescale letters are mostly formed of straight lines and will be harder to characterize effectively.

After breaking the letter anatomy of each letter into its components (ascenders, descenders, stems, bars, etc...), I will compose polyphonic sounds for each component.

Now at this stage, the feel of every shape and curve will be taken into account and vocalisation of visuals will be formed. For similar components, depending on the length, width, thickness, angle, positioning and similar factors, the sounds will be altered (the sounds will not alter drastically, just small changes to best suit the differences - ie: the sound for a longer descender, will be the same sound but longer).

The music production software, Reason (by Propellerheads) will be used to generate the new phonemes for each letter. Reason is a great software that lets the user write, edit, manage and compose music and will play a very critical role in the completion of this project.

By managing and/or modifying the predefined sounds that are in the sound bank or through altering the real sound recordings from my own electric guitar through synthesizers and FX panels.

After this, will be the process of computizing the whole project to turn it into an interactive experiment for people to try.

For this part of the project, Processing will be used. There are already sound libraries in processing that are used as an output, such as Minim. All that will be needed to do is to create individual tunes for each letter and save them as an appropriate audio file format (mp3, wav, aac). Then through processing (and Minim library) I will be able to call each audio file on keystroke, so when A is pressed on the keyboard, the application will call for the audio file for that letter.

Also, through the flexibility of processing, I will be able to arrange the intervals in which the input will be taken and other customizable variables like simultaneous input and fade time.



Another approach could be the piano applications for keyboard, made in processing. These applications have MIDI sounds that correspond to each piano key, and are called through the letters on keyboard. What needs to be done is to implement the same concept on the sounds that I've created for each letter.

As for presentation, the people will be presented a very simple computer screen and a keyboard in which they could type as they see fit.

There won't be anything revealing the purpose of the project or providing any instruction on how to operate, only the extremely simple application interface that prompts people to type something.

I believe doing so will not only make the project more tempting to try for the audience but also be less distracting from the purpose.

## Scope of the Project

There will be only one set of letters that will be vocalised - the miniscule letter forms. The reason behind this is because miniscule forms are much more characteristic in a way that they are consisted of a mix between curves and lines which will sound more complex and entertaining.

Additionally the style of the font will not be taken into account. So, the serif / sans serif / slab serif will all be treated equally. For the purposes of convenience, I will be working with sans serif typefaces.

The sounds created will be made specifically for the designated letters. The audience will have no control on the sounds that were provided and will only be in interaction with the selection of letters.

## Required Know-How and Resources

For the project, Processing will be used to create the application.

There's an excellent audio library in Processing called Minim. It allows users to record, input, output audio files to work in Processing. The audio files recorded will be put in the audio library of Minim (or be directly recorded in Minim) and connected with the keys on keyboard.

Each key press will call an audio file that's created by me. The sounds that are going to be used are going to be recorded in Reason Essentials.

Each individual audio file will have a length of approximately 2 seconds.

## Phases of the Project

- » The examination of each letter form and breaking them into their components.
- » Using Reason Essentials to create sounds that compliment the visual forms of these components.
- » Combining the sound files of each component to create the sound of the letters.
- » Writing the code in Processing to playback the sounds on key press.
- » Create the installation area where the keyboard and computer will be present.

## Difficulties and Risks

Processing seems to be consuming a lot of memory and the prolonged use of the application might not be ideal.

To have a flawless playback and transition between notes, the sound files cant be in large sizes. Which means the sound that will be created in Reason must have a high compression. There must be a good balance between compromising the quality of the sound for the overall user experience quality.

## Criteria of Success

I will examine every letter to define their components. I will create sounds for each component. I will merge the sounds of components to create the sound of each letter. I will explore the Minim sound library and code the function to play the audio files on key press in Processing. I will create a place to install the computer, keyboard and the speakers where the audience will be presented the project where the main message will be to make them think that the vocal representations of letter forms can also represent their visual elements.