

# DASEIN

SONIC INTERACTION DESIGN  
HS2020

## DASEIN – Research Blog

[https://s3-us-west-2.amazonaws.com/secure.notion-static.com/501eb22a-f113-4256-902e-b9e09a242912/IMG\\_2995.mp4](https://s3-us-west-2.amazonaws.com/secure.notion-static.com/501eb22a-f113-4256-902e-b9e09a242912/IMG_2995.mp4)

Platzhalter

### Field of Research

At the beginning of our research, we asked ourselves how we could improve the current remote situation. Since we've experienced many remote presentations lately, we are stuck in that scenario.

Our research aim is to develop a better user experience for the presenting person. For that, we verbalized a hypothesis.

Ambient sound during a presentation on Zoom supports the attention of the listening people and the presenter. The listeners' current concentration state can be audio visualized for the presenter through a good sound hierarchy.

## **Concept of DASEIN**

DASEIN is a plugin for video call programs, which supports the presenting person by binaural ambient sound. The plugin makes it auditorily clear how the attention of the audience is. Distractions are detected via face-tracking of the listeners and are transmitted with a subtle sound effect at the presenting person and the inattentive person.

The DASEIN plugin tracks...

... the absence of a person (by tracking the presence of the head)

... the movement of the mouth (by talking)

... the movement of the head

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## **Content of Documentation**

■ Brainstorming & Defining Problems

■ Research

■ Testings

■ Video Behind The Scene

■ Further Development

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■ Notebook

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Research Participants: Alec Nikolov, Alessia Wiss, David Wollschlegel, Sonia Tao  
Lecturers: Matthias Kappeler and Marcial Koch

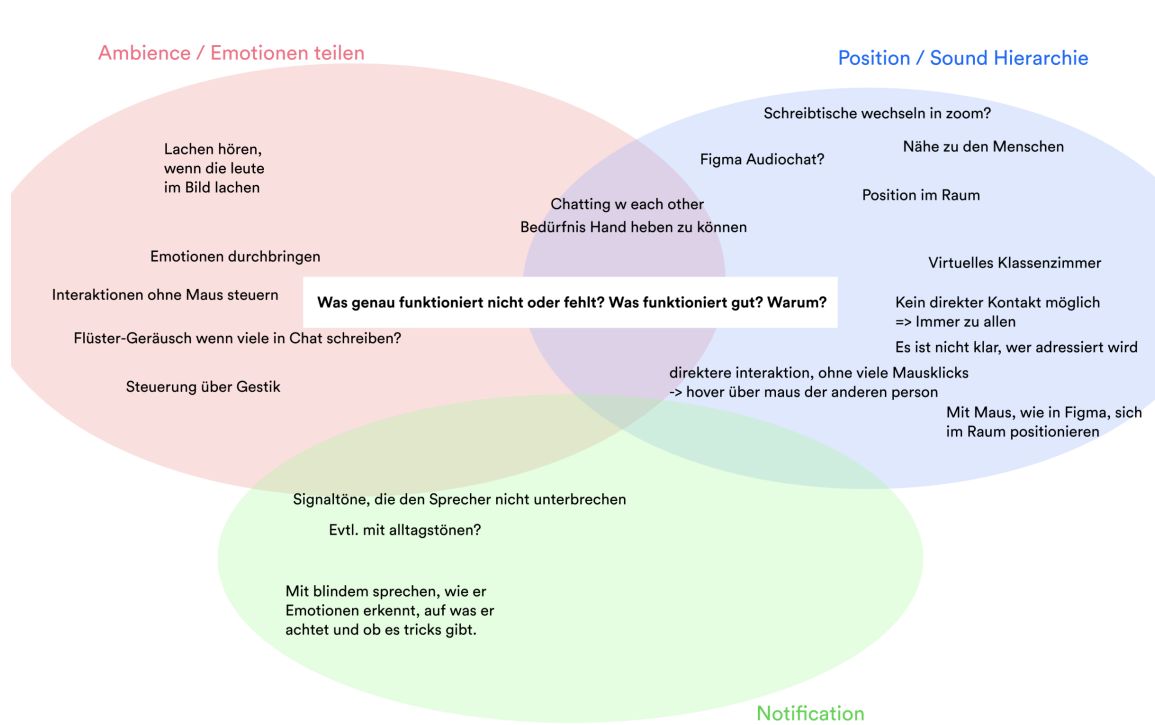
## Module Description

- To understand the influence of sound on the interaction with an object.
  - To understand the influence of sound on the perception of an object and its affordances.
  - To discuss and deepen the meaning of concrete design variants in this regard.
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# Brainstorming & Defining Problems

## Brainstorming



In the beginning of our finding phase we focused on the question **what doesn't work and is missing on Zoom**. We came to three main points and tried to specify each term a bit more:

1. Ambience & Sharing Emotions
2. Position & Sound Hierarchy
3. Aspect of Notification

**Notify**

**Emotions**



It lacks a subtle way of drawing the attention of other people/workers. There is no overview of the mood in the group.

## **Spontaneity**

So far, there is hardly any possibility to participate in discussions spontaneously or to start informal conversations.

Difficult to pick up on emotions / nonverbal cues as a presenter. Generally "feeling" the audience.

## **Hierarchy**

There is a lack of space at parties and other "gatherings". It isn't easy to spontaneously join a conversation and opt-out of it. It would be interesting to find out if spatial audio can solve this issue

After sorting the ideas we came across the aspect of problems and issues we experience during presentations on Zoom.

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## **Defining Problems**

### **Presentation on Zoom**

- No overview of attention
- No feedback
- No eye contact
- Focus on notes and presentation (by the person presenting)
- One does not see when the audience has questions
- One feels "lonely" while presenting

## **Defining Targets**

### **What are indicator for distraction**

- Being distracted by people surrounded by you in real life
- Eyes on the screen
- Looking away from the screen
- Presentation-Window open or not
- Private Messaging
- Position of the head (restless movements)
- Absence of the person (tracking of the head)
- Mouth movement (talking and not listening to the presentation)



# Research

## Field Research - Already Existing Tools

The first part of the field research is focused on spatial online services which already exist. These services mostly contribute with an interactive interface where the user can move in and talk/chat to other users.

### SpatialChat

SpatialChat is an online space for you to come together casually with friends, family and loved ones, or professionally with colleagues and peers for online conferencing and business interactions

**So far, SpatialChat has become popular for:**

- Networking events during online conferences
- Poster sessions
- Online classes in universities
- Virtual town hall meetings for remote teams
- Community meetups.

<https://www.youtube.com/watch?v=cRQAGfp6rXI&feature=youtu.be>

### Famera

More Playful Interface

You're having an abstract designed avatar with a video of your head as head itself while video chatting with your mates.

[https://www.youtube.com/watch?v=cRju9QqW5vM&feature=emb\\_title](https://www.youtube.com/watch?v=cRju9QqW5vM&feature=emb_title)

### Proximity Chat

Audio reacting to your virtual position with volume and location.

<https://youtu.be/CHMjBPUmGZk?t=26>

List of other Proximity Chats

<https://docs.google.com/spreadsheets/d/1FgynDnnrrlIZZUa42XcKSfD68G5VAMZsLkARXHtgHOM/edit#gid=0>

### Topia

Build your world with your own sketches/ideas and start conversations by getting closer to someone via audio and video.

**Similar examples**

<https://gather.town>

<https://rambly.app/#/create>

<https://www.youtube.com/watch?v=LuelmHLjpdA&feature=youtu.be>

## Habbo Hotel

Having an Avatar of yourself and walking through the space with it.

<https://www.youtube.com/watch?v=bosfP5sFz3s>

## Facebook Spaces

Virtual Reality Meetings

You are using VR glasses to meet your friends, having your avatar and your natural body movement mapping on it.

[https://www.youtube.com/watch?v=hAVojXJoMtU&feature=emb\\_title](https://www.youtube.com/watch?v=hAVojXJoMtU&feature=emb_title)

## Articles about Virtual Spaces

<https://www.lesswrong.com/posts/hsWzBzHSMGxz8rcXghttps://www.wired.com/story/zoom-not-cutting-it-best-virtual-worlds-for-hanging-out>

[virtual-world-online-town/](https://www.wired.com/story/zoom-not-cutting-it-virtual-world-online-town/)

## Visualising Sound

During the process, we also asked ourselves, how sound would look like if we visualize it? So we continued our research also in that field.

### Hej

"Hej" is a device that you put next to your desktop. With colors, it shows you if your co-workers are around, concentrated or what their state is. By toppling it backward, it activates your absence when you're not around.

[https://www.behance.net/gallery/86417927/Hej?tracking\\_source=search\\_projects\\_recommended%7Csonic%20interaction%20design%20remote](https://www.behance.net/gallery/86417927/Hej?tracking_source=search_projects_recommended%7Csonic%20interaction%20design%20remote)

### Dropin

Dropin is a vibration speaker and controller. The speaker is designed to feel the vibration deeply, and the controller enables you to easily control the music.

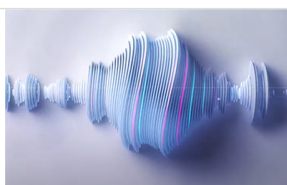
<https://vimeo.com/273175972>

## Inspirational visuals and videos

Milkininside (re-sound)

Graphic Design, Sound Design, Computer Animation, Steinberg Cubase

<https://www.behance.net/gallery/101922165/Milkininside-%28re-sound%29?>



<https://player.vimeo.com/video/487284208>

## Binaural Beats and Ambient sounds

The thesis of the criteria for the background music/noise:

- No "everyday noises" → Dishes jingling and co.
- Lower tones?
- no monotonous and long-drawn tones

### General ambient sounds

<https://www.youtube.com/watch?v=xNN7iTA57jM>

<https://www.youtube.com/watch?v=e-oh0TeAmrs>

<https://www.youtube.com/watch?v=o75uPQl83fg>

### Binaural Beats

<https://www.youtube.com/watch?v=HA6nSQawROM>

<https://www.youtube.com/watch?v=Q8JI0106JIM>

[https://www.youtube.com/watch?v=xBy-zkYkqk8&feature=emb\\_title](https://www.youtube.com/watch?v=xBy-zkYkqk8&feature=emb_title)

## What are Binaural Beats?


Binaural beats are like optical illusions for sounds. When your left ear hears a slightly different tone from your right ear, you perceive a beat not present in the music you listen to. These binaural beats (from Latin "with both ears") have been peddled as "digital drugs", producing all sorts of effects from improving sleep to enhancing your memory.

→ For example, recently the pharmaceutical company Bayer, manufacturer of Aspirin, put seven files of binaural beats on its Austrian website. The idea: by making you relax, the beats may put you in a relaxed state, which could alleviate headaches. But it is far from certain whether this idea – and many others about binaural beats – hold true.

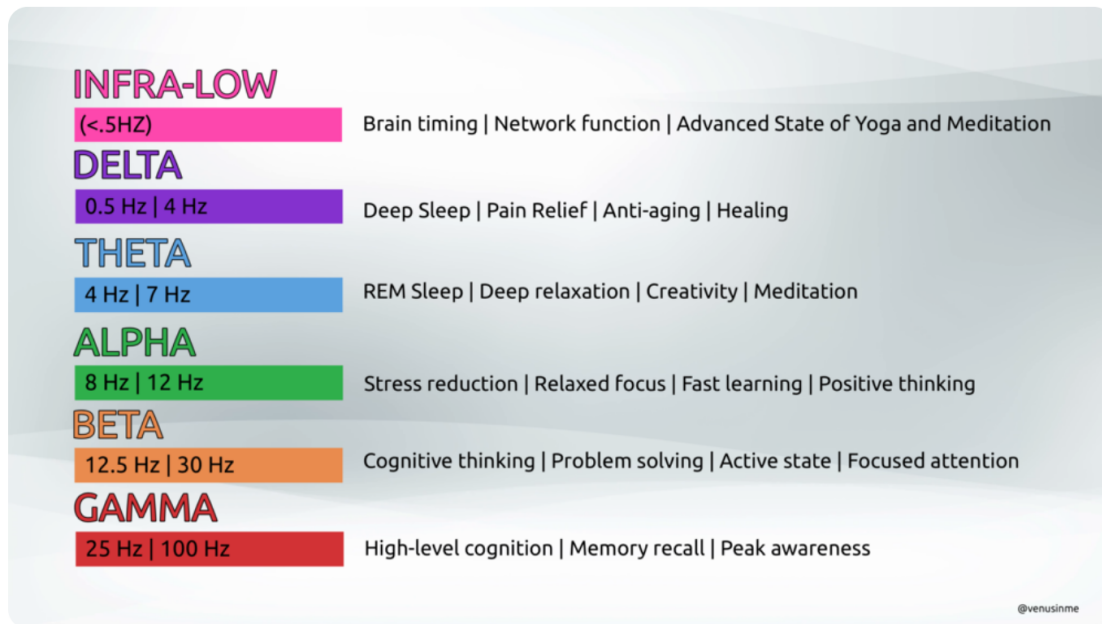
<https://knowingneurons.com/2017/12/21/binaural-beats/>

### Sounds That Modify Our State Of Consciousness

"The Mozart Effect" & Auditory beat stimulation No one can deny that sounds can generate a determined state of mind and that listening to certain types of music

 <https://coil.com/p/ProfitPepper/Sounds-That-Modify-Our-State-Of-Consciousness/MzkzauRxs>



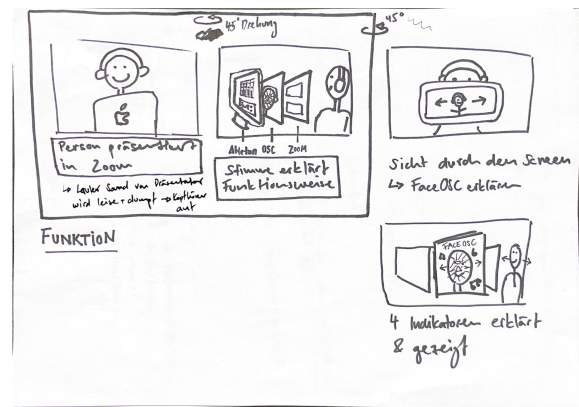
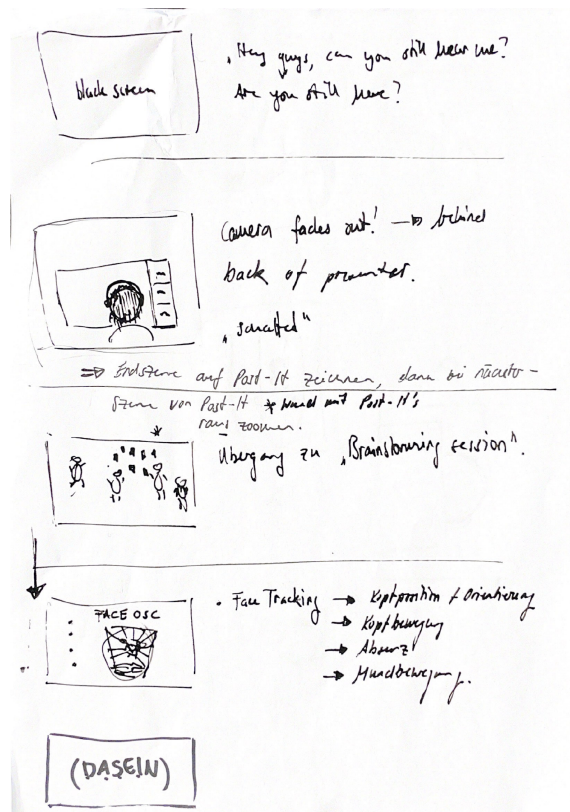


We grab our headphones, put a binaural beat and press play. The sound we will listen is split into two distinct sine waves, one that plays in the left ear at 510 Hz, and the other that plays at 500 Hz in the right ear, our brainwave patterns will then passively mimic the difference in frequency between the two original waves – in this case, 10 Hz.

There are few studies in the field that demonstrate the influence of binaural beats on our wellbeing, the autonomic nervous system, or which brain networks are affected by them. Hopefully, there will be more in the near future. Neuroscience is a promising field and is making significant progress in understanding brain structure and function.

<https://www.aspirin.at/good-vibes/wie-funktionieren-binaurale-beats/>

# Video Behind The Scene



As preparation for shooting our concept video, we created a storyboard. We had different ideas in mind about how to build up the story. We aimed to develop an explanatory video that shows the defined problem, our thoughts, and a possible solution.

To get a feeling of our production, we did a short prototype video.



## Prototype Video

[https://s3-us-west-2.amazonaws.com/secure.notion-static.com/834cdf1e-0e71-4ef4-bb84-4b3f3a8c3fbc/IMG\\_2995.mp4](https://s3-us-west-2.amazonaws.com/secure.notion-static.com/834cdf1e-0e71-4ef4-bb84-4b3f3a8c3fbc/IMG_2995.mp4)



<https://s3-us-west-2.amazonaws.com/secure.notion-static.com/bedb6b7d-dbad-461d-924a-ad11f55f430e/Behindthescene.mov>

<https://s3-us-west-2.amazonaws.com/secure.notion-static.com/802bb15b-a14c-4d6a-a3bd-660a856255e3/TestingExample.mov>

Each part of the Video is recorded separately to provide the best possible quality of sound.



# Further Development

- make it less forcing
- improve sounds
- test binaural sounds
- testing it via [shifter.io](https://shifter.io) with multiple users