RE4Design:
RHYTHMIC ENTRAINMENT FOR DESIGN FRAMEWORK

HOW TO USE

This framework is built to inform designers about Rhythmic Entrainment.
It contains a quick overview of the information that is provided in the accompanying thesis report. The color of each bubble corresponds to the chapter of the thesis where information of that bubble came from. The findings are divided into 7 insights, as seen on the right.
Please inform yourself from left to right.

Experiencing RE | **Opportunities** | **Knowledge gathering** | **Time as a design aspect** | **Interaction** | **Particular sensitivity** | **Keep it simple!**

"Rhythmic Entrainment for design"
Frederike Stortelers

HOW MUCH TIME DO YOU HAVE?

INTRO VIDEO

MUSIC ANNOTATIONS

Spotify playlist:

3 MINUTES

CASES

FROM RESEARCH

Social music
Music performance and listening strengthens social aspects between groups
(Fink et al., 2022.; J.W. Krueger, 2011)

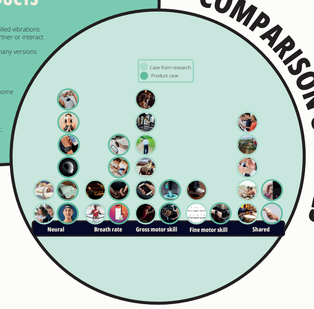
Running on beat
The time before a runner is exhausted was longer when a rhythm played in the same tempo as their cadence (Bood et al., 2013)

FROM PRODUCTS

Lovense
A sex toy that uses app-controlled vibrations that can be controlled by a partner or interact with the sextoy of the partner. The field of teledildonics has many versions of this product.

Soundbrenner
A wearable metronome that uses tactile vibrations to help musicians keep a consistent tempo while playing music.

COMPARISON OF CASES



30 MINUTES

TERMINOLOGY

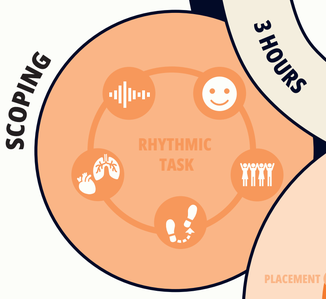
RHYTHMIC ENTRAINMENT (RE)
The process of (at least) 2 weakly coupled autonomous rhythmic agents, adjusting their rhythms toward a common phase or periodicity.

RHYTHM
A pattern of repeating elements/pulses with a constant ratio between the duration of the pulse and the "silence".

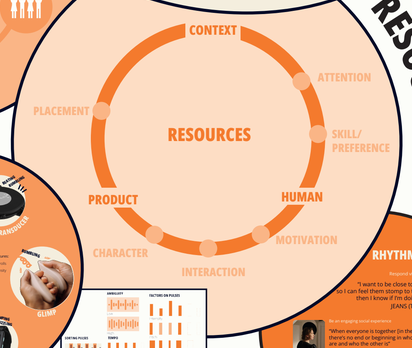
AFFORDANCE
The relationships an animal has with certain (sensitive/attuned to) contextual information (resources), these relationships create features that animals have the ability to interact with.

3 HOURS

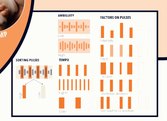
SCOPING



RESOURCES



BENCHMARK



INTERVIEWS

RESPONSIVE RHYTHMS

RESPONSIVE:
A product that is able to adjust the output rhythm by analyzing user input with sensors and data.

WHY IS THIS VALUABLE?
Responsive contexts were considered valuable in the interviews and research has shown it can generate strong positive effects. Most products on the market are not responsive.

LEVELS OF RESPONSIVENESS
A few levels were distinguished, which differ in their input speed, output speed and origin of data. More responsiveness is assumed to be beneficial

3 DAYS

CASE PROBLEM

How to make Glimp responsive to the breath of the user?

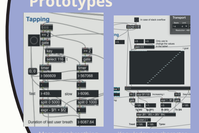
3 WEEKS

RTD CASE

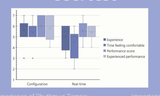
What is desirable, feasible & viable?

Does an increased level of responsiveness ("real time" vs. "configuration") increase user comfort?

Prototypes



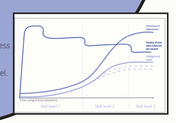
Usertest



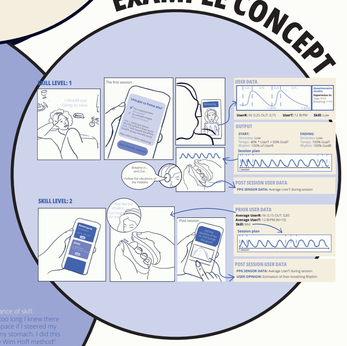
Impossibility of rhythm as rhythm:
"I really wanted to be in rhythm with the sound but when my lungs are full, they're full, I can't add more air if there's no space in my lungs left"

Acceptance of skill:
"If inhaling took too long I knew there was still some space if I steered my breath towards my stomach. I did this before with the Wim Hoff method"

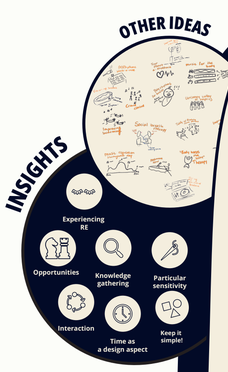
Conclusion:
The concept adopts a "configuration" level of responsiveness to the breathing rhythm of the user, in combination with a variety of data measurements of the user and a soundscape that adjusts to their skill level.



EXAMPLE CONCEPT



INSIGHTS



OTHER IDEAS

Full (zoomable) version of RE4Design Framework:

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