



UNIVERSITY  
OF OSLO

RITMO Centre for Interdisciplinary Studies in Rhythm, Time and Motion



20 years of concert research at the University of Oslo







Tellef Kvifte

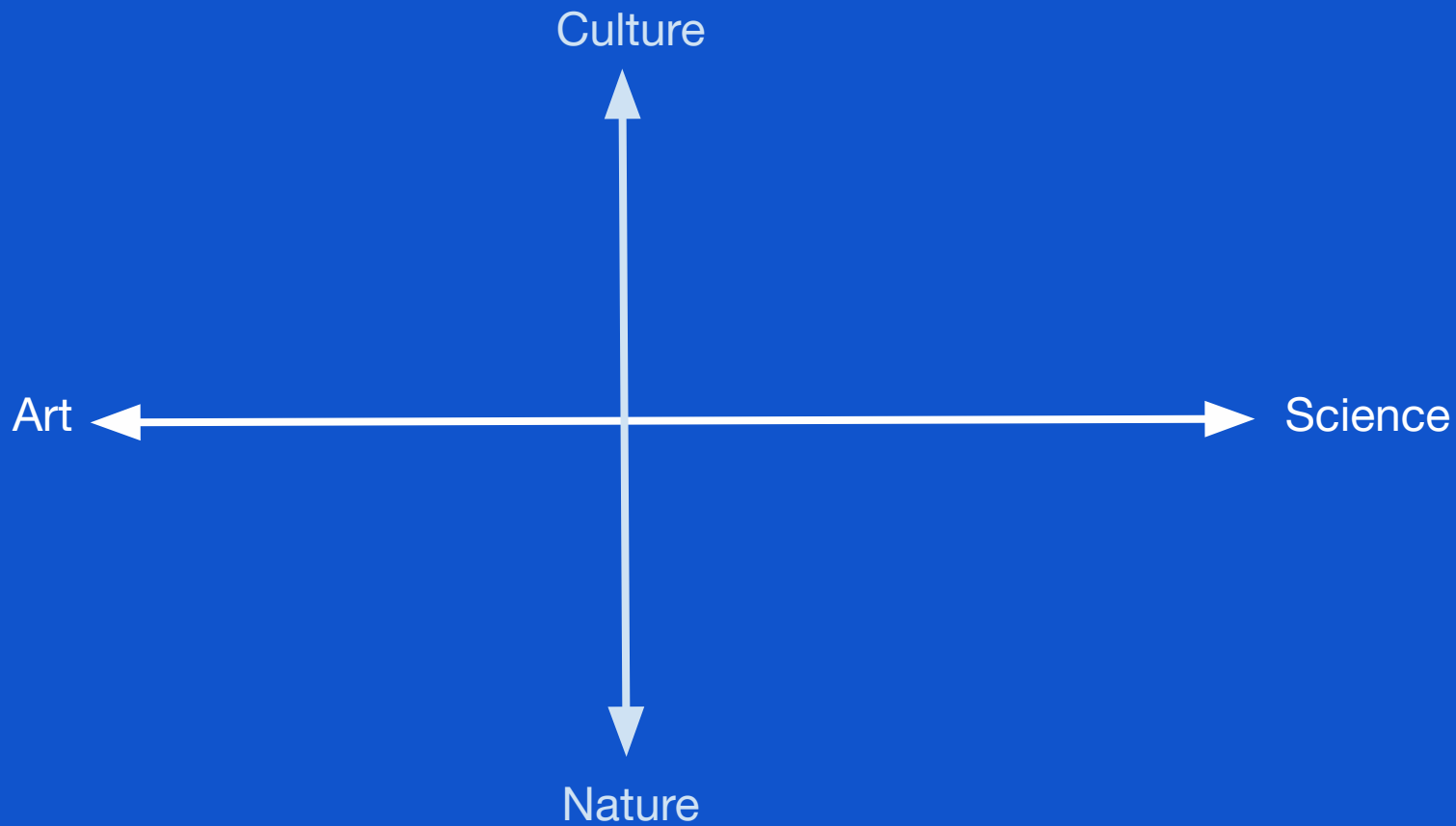


Rolf Inge Godøy



Anne Eline Riisnæs





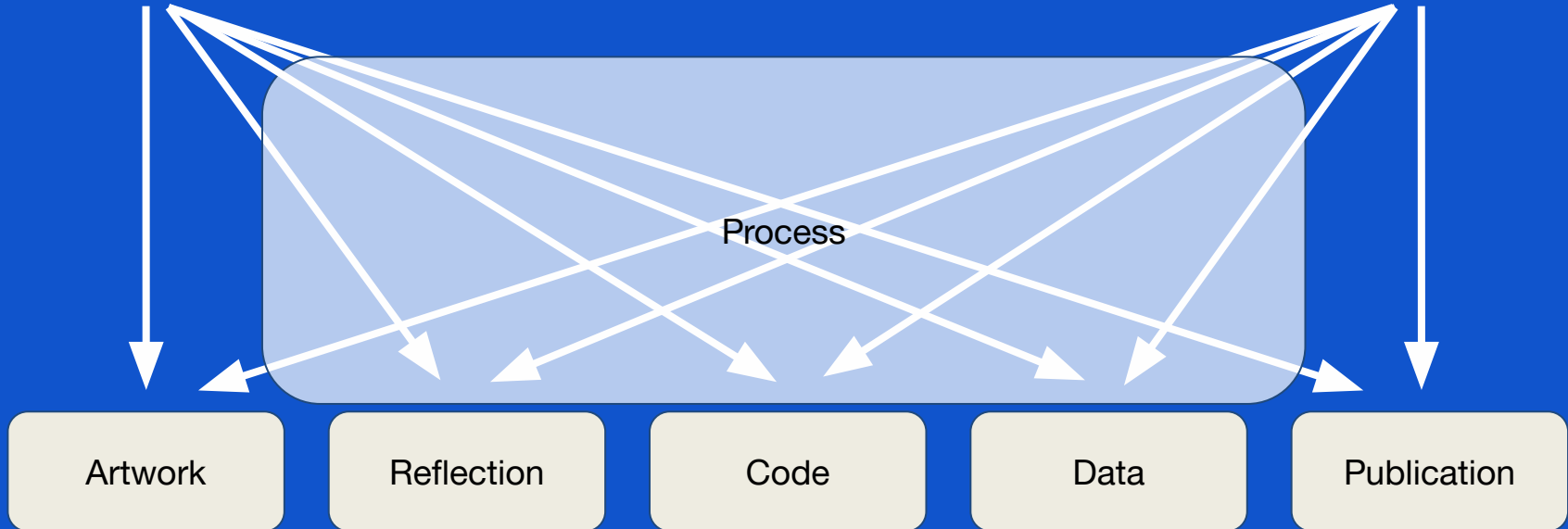
Art



Science

Artistic practice

Scientific practice



Artwork

Reflection

Code

Data

Publication





—2004— 2008— 2011— 2017— 2024—▶

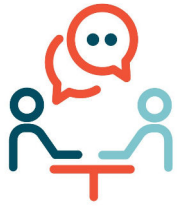


# fourMs

Music, Mind, Motion, Machines







**Motion Capture**  
The art of studying complex human activity

UNIVERSITAS OSLOENSIS  
M DCCC XLI  
UNIVERSITY OF OSLO

Future Learn



2004

2024

**Music Moves**  
Why Does Music Make You Move?

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M DCCC XLI  
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Future Learn

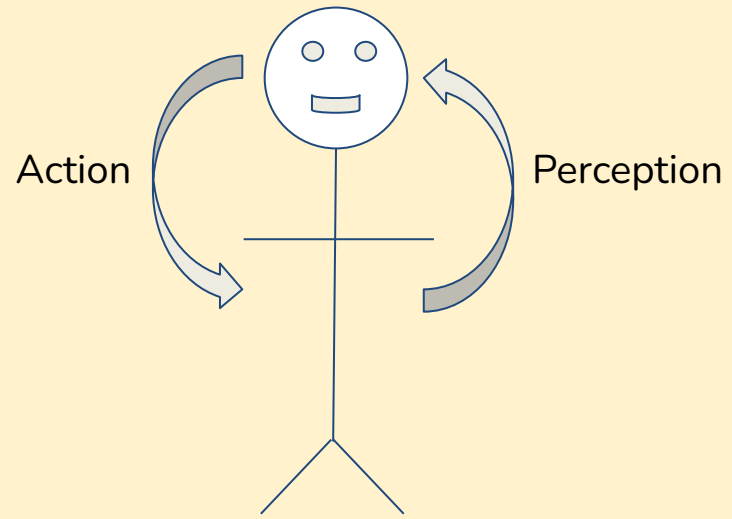
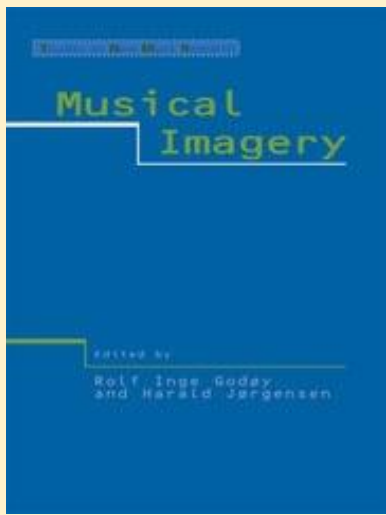


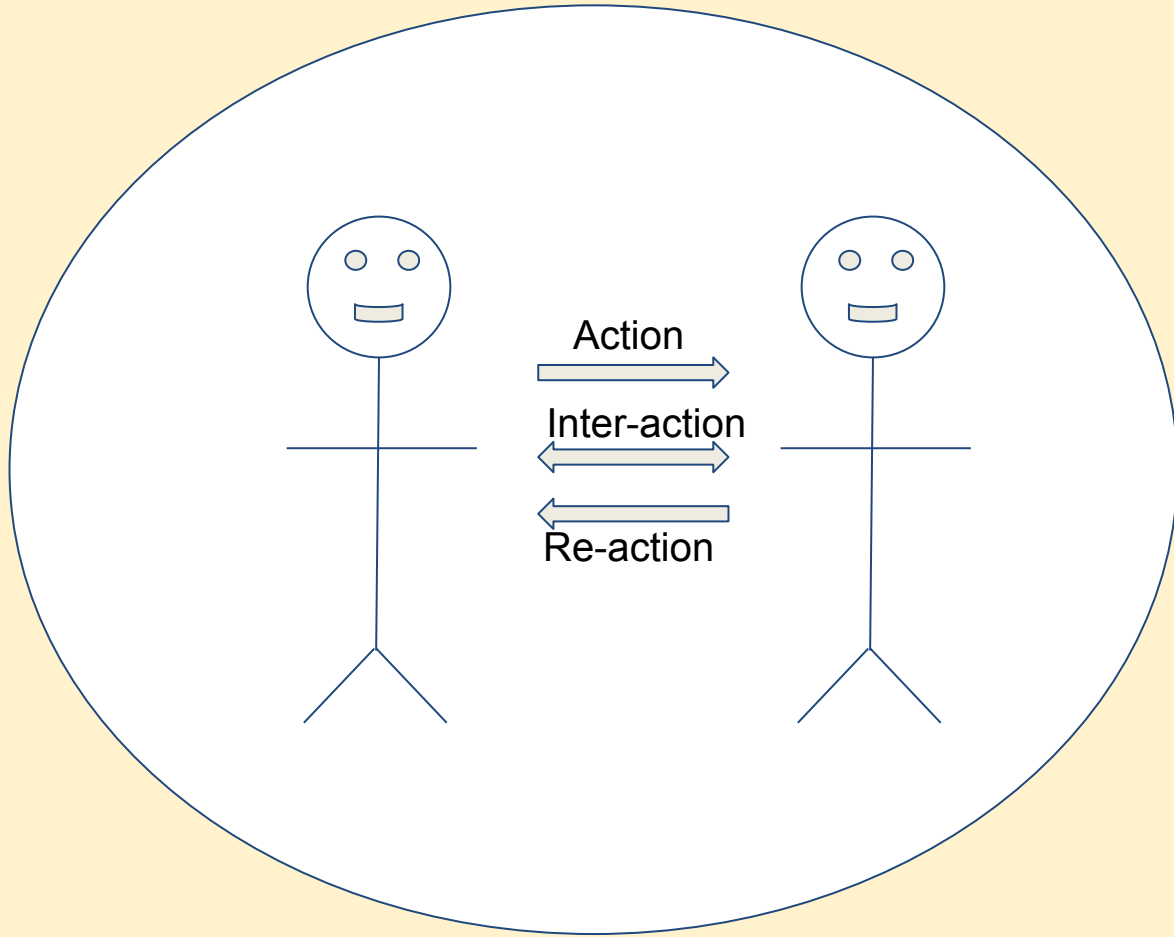
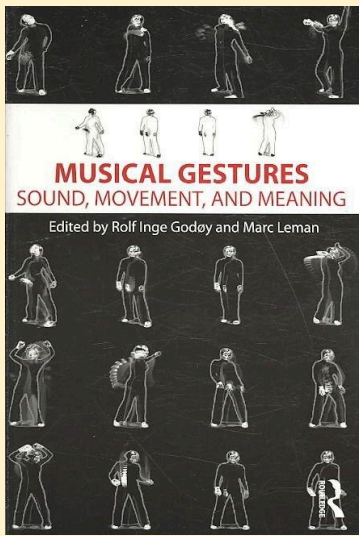
UNIVERSITAS OSLOENSIS  
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UNIVERSITY OF OSLO

**Pupillometry**  
The eye as a window into the mind

Future Learn



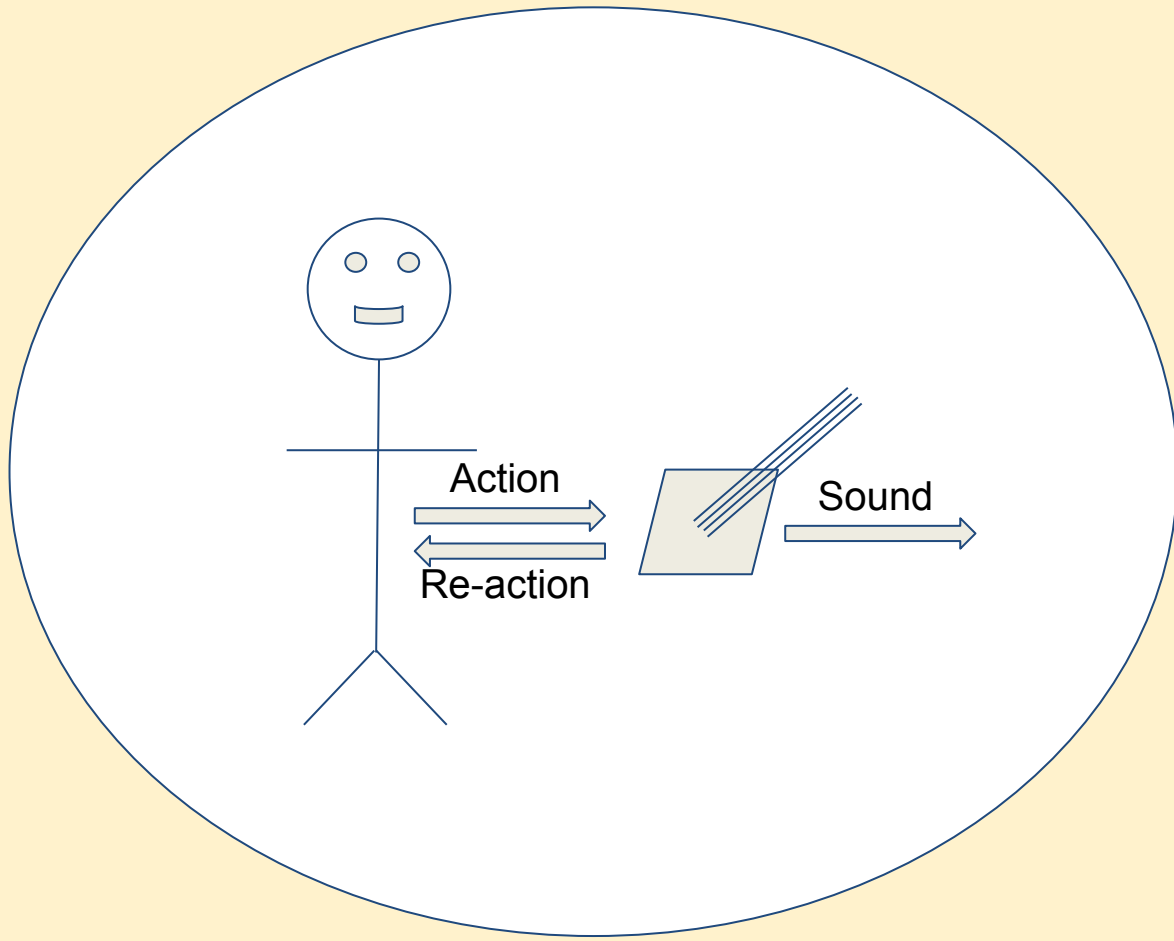




# SOUND ACTIONS

CONCEPTUALIZING MUSICAL INSTRUMENTS

ALEXANDER REFSUM JENSENIUS

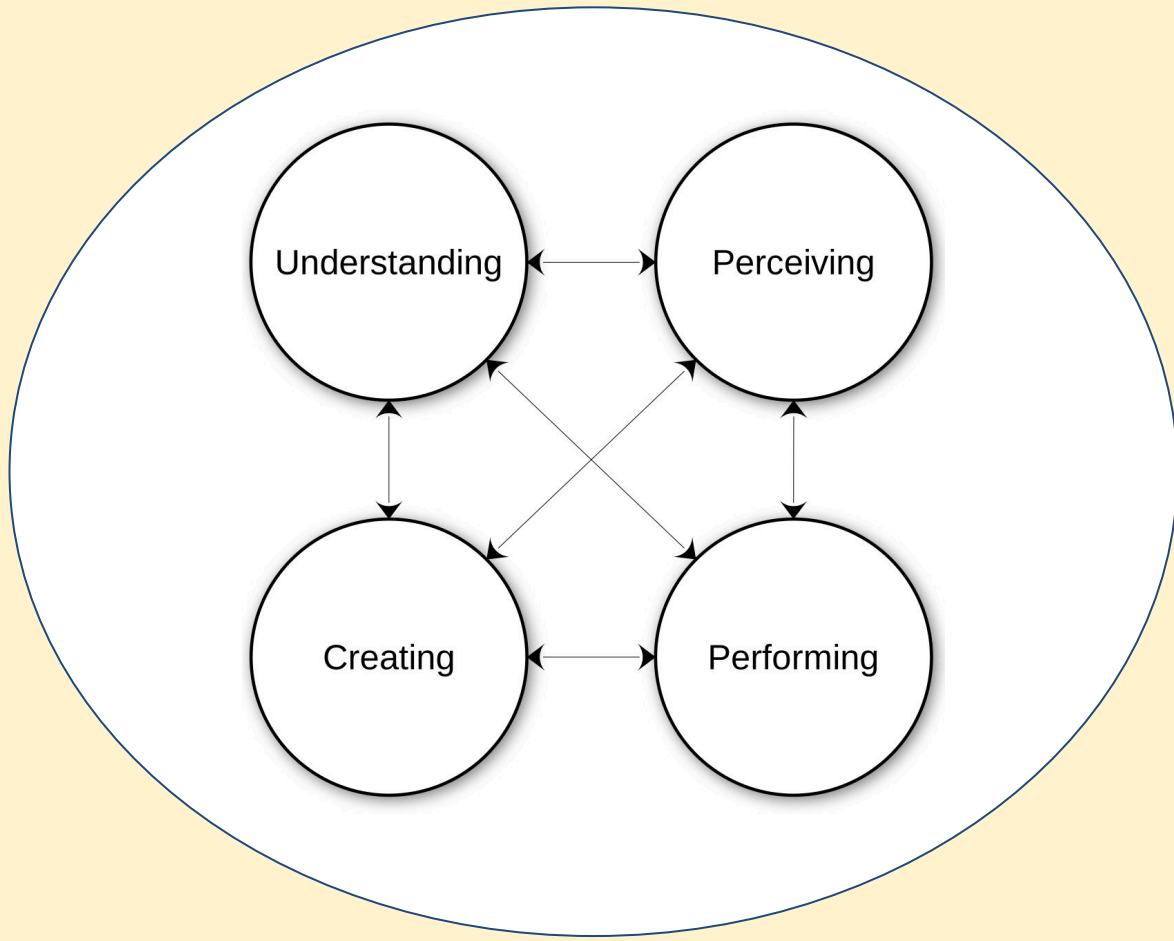




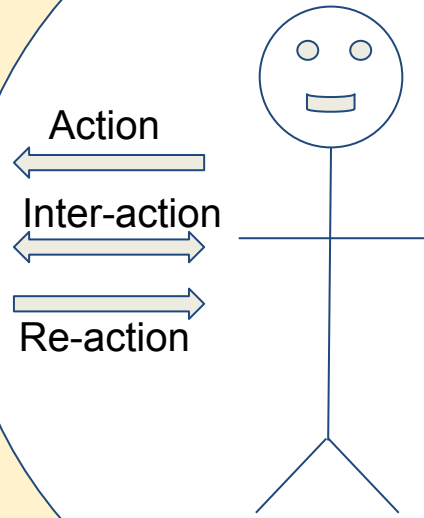
# SOUND ACTIONS

CONCEPTUALIZING MUSICAL INSTRUMENTS

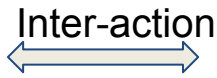
ALEXANDER REFSUM JENSENIUS



Environment



Action



Inter-action



Re-action

**Music**  
Lab





Open Science  $\neq$  Open Research

```
graph LR; A[Application] --> B[Research]; B --> C[Result]; C --> D[Evaluation];
```

Application

Research

Result

Evaluation

Application

```
graph LR; Application[Application] --> Research[Research]; Research --> Result[Result]; Result --> Evaluation[Evaluation];
```

The diagram illustrates a four-stage process. It begins with a black rectangular box labeled 'Application'. A blue arrow points from this box to a large white rectangular box with a blue border labeled 'Research'. Another blue arrow points from the 'Research' box to a smaller white rectangular box with a blue border labeled 'Result'. A final blue arrow points from the 'Result' box to the last white rectangular box with a blue border labeled 'Evaluation'. The boxes are arranged horizontally from left to right, connected by arrows indicating a sequential flow.

Research

Result

Evaluation



```
graph LR; Application[Application] --> Research[Research]; Research --> Result[Result]; Result --> Evaluation[Evaluation];
```

Application

Research

Result

Evaluation

```
graph LR; Application[Application] --> Research[Research]; Research --> Result[Result]; Result --> Evaluation[Evaluation];
```

Application

Research

Result

Evaluation

```
graph LR; Application[Application] --> Research[Research]; Research --> Result[Result]; Result --> Evaluation[Evaluation];
```

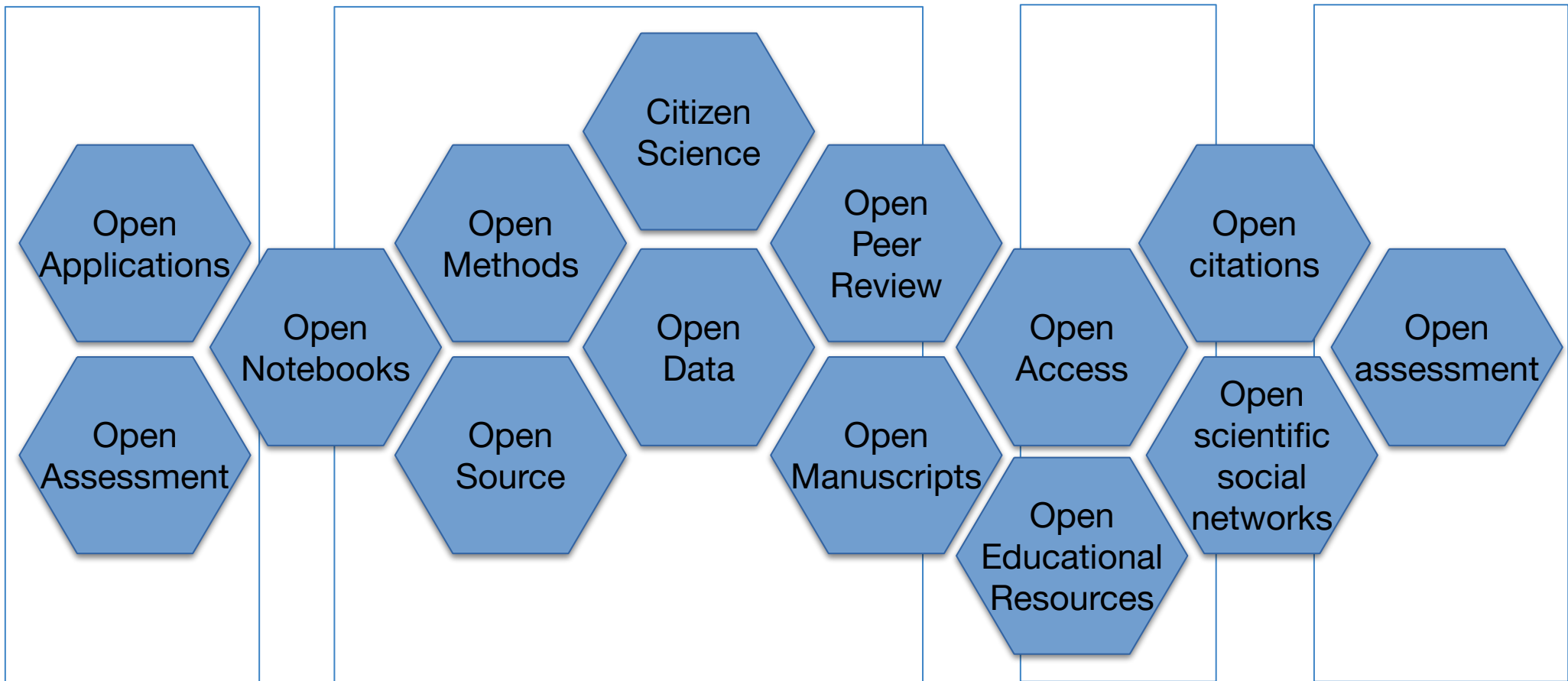
Application

Research

Result

Evaluation







**Findable**



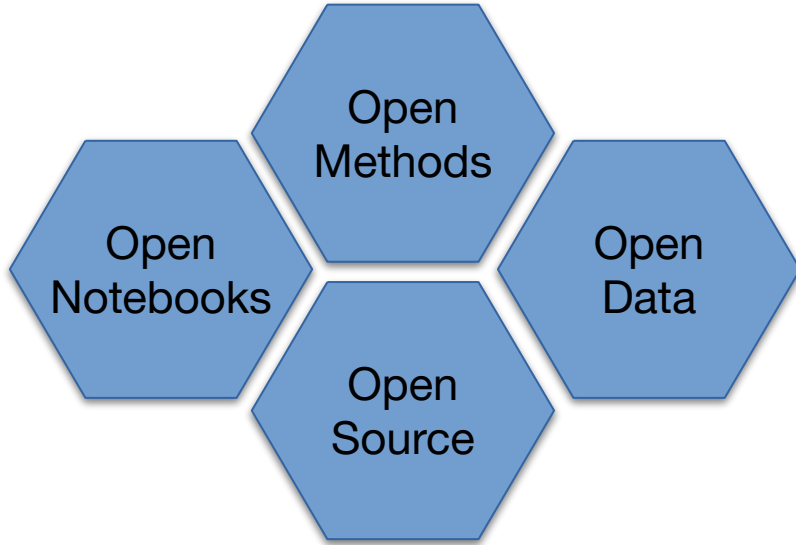
**Accessible**



**Interoperable**

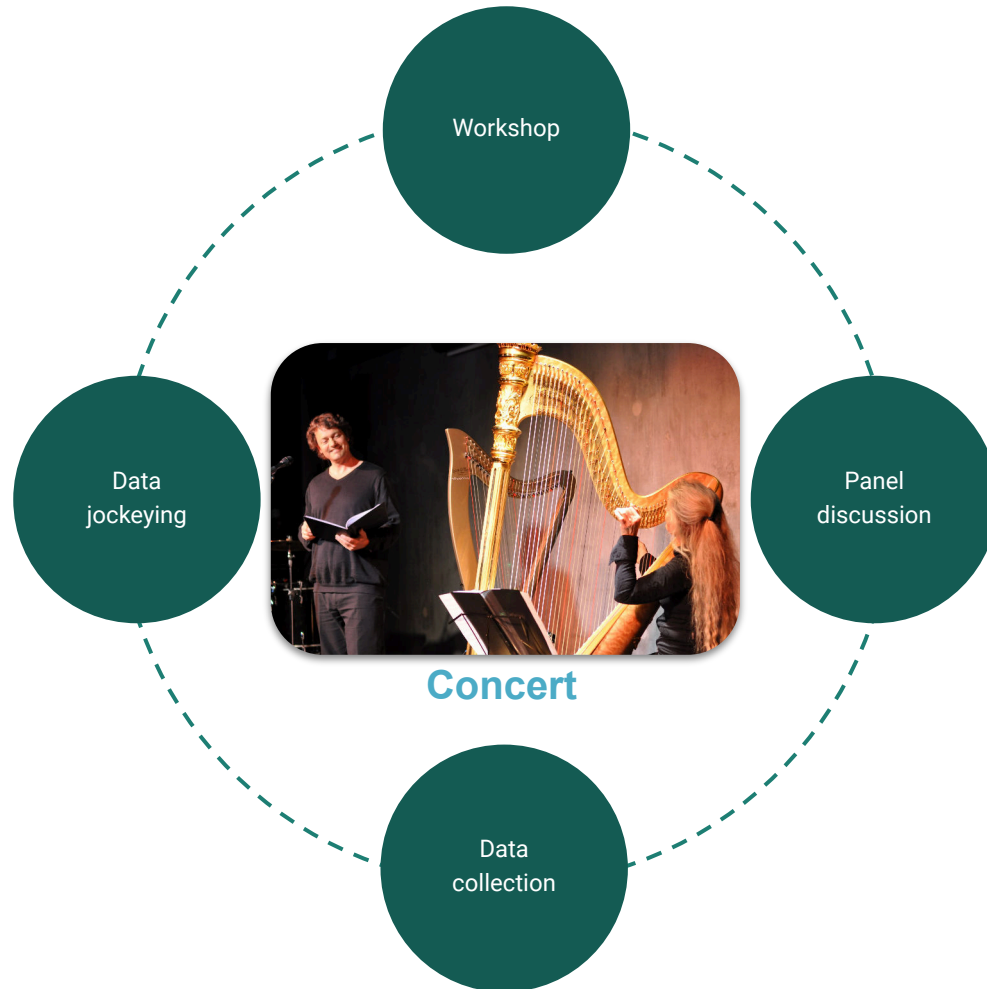


**Reusable**



# Music Lab







Music Lab Vol. 1  
: BIOPHYSICAL MUSIC



Music Lab

MusicLab Vol.2  
BREATH



ha Music Lab

MUSICLAB JULY 1  
LOCKDOWN RAVE LIVE STREAM

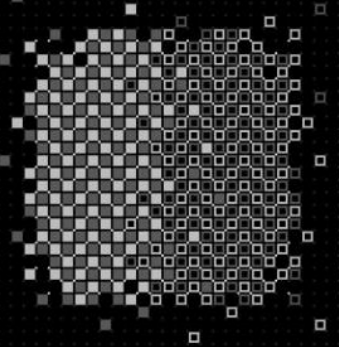
KHOPARZI/  
INDIA  
19:30

RENICK  
BELL/  
JAPAN  
22:30

MUSICLAB VOL 4 - UTOPIA  
KULTURHUSET (LAB) 2. NOVEMBER AT 1PM - 3PM

UiO : University of Oslo Library Music Lab  
2021-2022  
OSLO WORLD  
21.01 - 1.02 2022

MUSICLAB 6:  
HUMAN-MACHINE  
IMPROVISATION



GUITAR:  
CHRISTIAN  
WINTHER  
DRUMS:  
DAG ERIK KNEDAL  
ANDERSEN  
MACHINE:  
CAUI by CAĞRI ERDEM

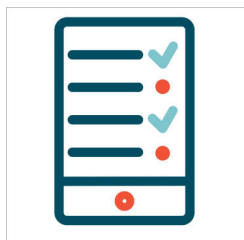
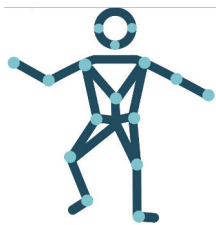
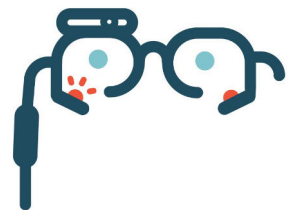
15.04.2021-18:00 CEST  
THE SCIENCE LIBRARY  
(LIVESTREAM)

D&SQ FESTIVAL 2021 Music Lab  
26 oktober 19:15  
STREAM ONLINE

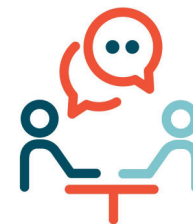
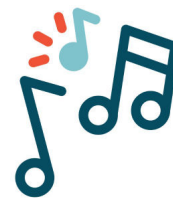
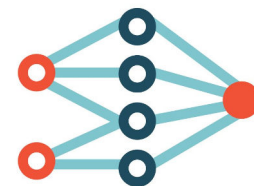
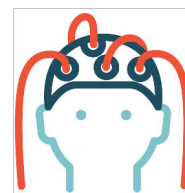
MusicLab 8:  
Synaesthesia

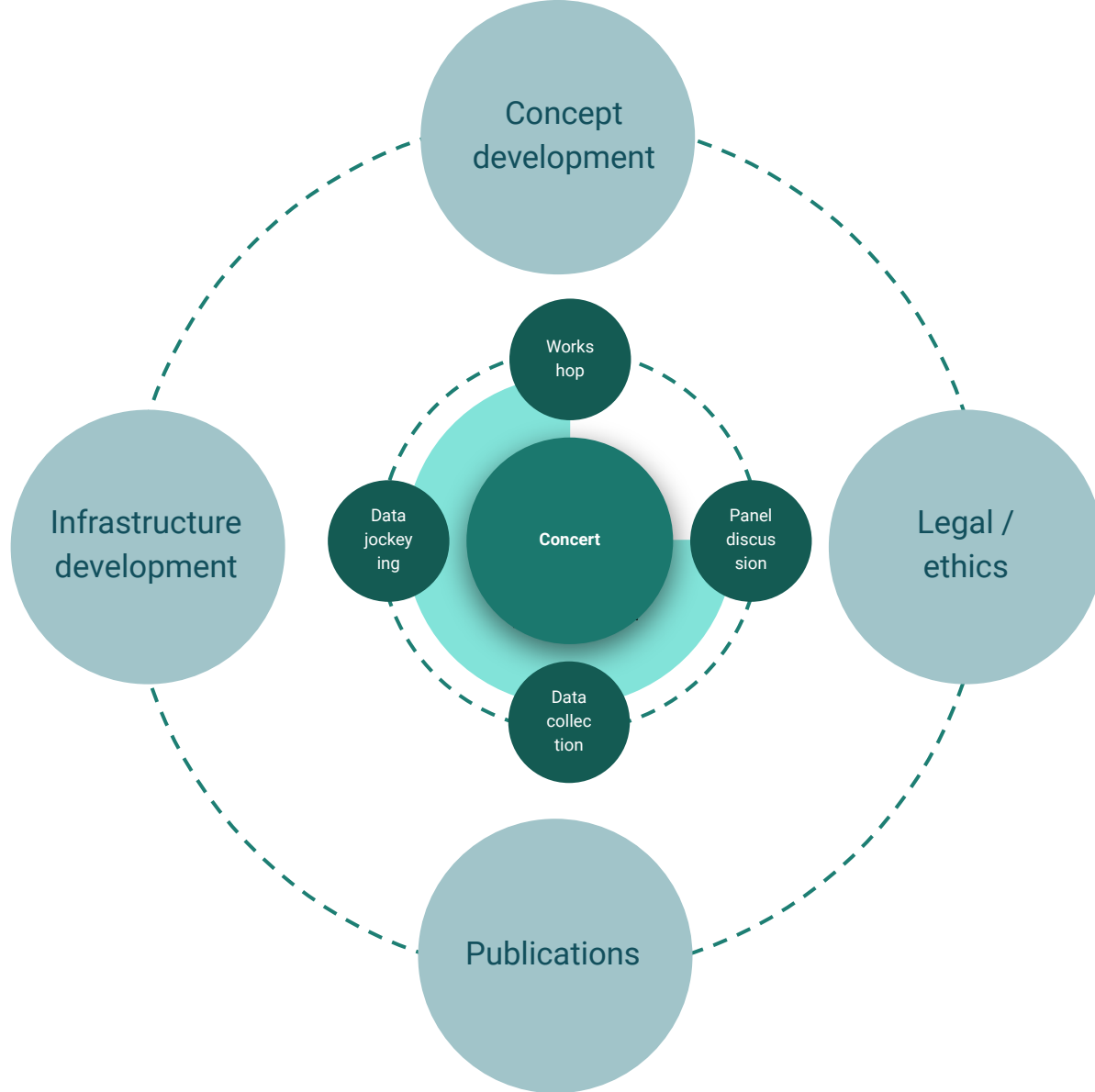


# Music Lab



Data collection





*open*

Challenges with empirical music research?



## **Music research**

Research others'  
musical practice

Music is the research  
object

## **Research music**

Research through/on  
own musical practice

Music is (part of) the  
research result



# Vrengt: A Shared Body–Machine Instrument for Music–Dance Performance

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## ABSTRACT

This paper describes the process of developing a shared instrument for music-dance performance, with a particular focus on exploring the boundaries between standstill vs motion, and silence vs sound. The piece *Vrengt* grew from the idea of enabling a true partnership between a musician and a dancer, developing an instrument that would allow for active co-performance. Using a participatory design approach, we worked with sonification as a tool for systematically exploring the dancer's bodily expressions. The exploration used a "spatiotemporal matrix," with a particular focus on sonic microinteraction. In the final performance, two Myo armbands were used for capturing muscle activity of the arm and leg of the dancer, together with a wireless headset microphone capturing the sound of breathing. In the paper we reflect on multi-user instrument paradigms, discuss our approach to creating a shared instrument using sonification as a tool for the sound design, and reflect on the performers' subjective evaluation of the instrument.

## Author Keywords

Music, dance, EMG, breathing, sonification, sound synthesis, multi-user instruments, improvisation

## CCS Concepts

•Applied computing → Sound and music computing; Performing arts; •Human-centered computing → User centered design;

## 1. INTRODUCTION

In today's experimental performance scene, many musicians are exploring performance practices that approach dance, and many dancers are working with interactive music systems. A challenge in such exploration, however, is fundamentally different intentions ranging from particular embodied practices [36]. For a musician, the sound is the primary focus of attention, and the movements needed to produce the sound (the sound-producing and sound-modifying actions) are the result of that aim. For a dancer, on the



Figure 1: The dancer, blindfolded, in the first live performance of *Vrengt*. (Photo: Sophie C. Barth)

other hand, the movements are the primary focus of attention, and any sonic output is secondary. It is therefore not surprising that the dancer in an interactive context does not intuitively render her movements into instrumental actions for active sound-making, but rather maintains her regular dance-actions influencing the sound generation in an abstract way. Similarly, the musician either takes the role of the composer without active involvement, or, as the performer enacting her own instrument.

In this paper, we continue our exploration of working between dance and music, this time focusing on co-performance on a "shared" instrument. As opposed to creating a system for interactive dance, we wanted to develop what is experienced as one, coherent instrument that enables a true partnership for the musician and dancer. The challenge, then, is to what extent the dancer is able to adopt musical intentions on top of her movement practice, and whether the composer-performer can waive the control of performing while still "playing together"?

## 2. BACKGROUND

### 2.1 Between the conscious and the unconscious

Experiencing the body as part of your subjective presence rather than a mere series of shapes on the stage, is described by dancers as "being in your body" [34]. This is often the result of skill acquisition, which Dreyfus has argued is a con-

# Vrengt: A Shared Body–Machine Instrument for Music–Dance Performance

Erdem, Çağrı; Schia, Katja Henriksen; Jensenius, Alexander Refsum

Chapter; Published Version; Peer reviewed

View/Open

 nime2017-06-017.pdf (811.0Kb)

Year

2019

Permanent link

<http://urn.nb.no/URN:NBN:no-83256>

CRIS

17038

Is part of  
Proceedings of the International  
Conference on New Interfaces for  
Musical Expression

Metadata

[Show metadata](#)

Appears in the following  
Collection

[CRISStin høstingsarkiv \[13998\]](#)

[Institutt for musikkvitenskap \[230\]](#)

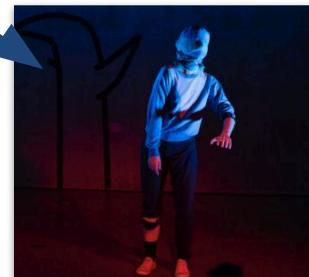
## Original version

Music Proceedings of the International Conference on New Interfaces for Musical Expression, 2019

## Abstract

What if a musician could step outside the familiar instrumental paradigm and adopt a new embodied language for moving through sound with a dancer in true partnership? And what if a dancer's body could coalesce with a musician's skills and intuitively render movements into instrumental actions for active sound-making?

"Vrengt" is a multi-user instrument, specifically developed for music-dance performance, with a particular focus on exploring the boundaries between standstill vs motion, and silence vs sound. We sought for creating a work for one, hybrid corporeality, in which a dancer and a musician would co-creatively and co-dependently interact with their bodies and a machine. The challenge, then, was how could two performers with distinct embodied skills unite in a continuous entanglement of intentions, senses and experiences to control the same sonic and musical parameters? This was conceptually different than they had done before in the context of interactive dance performances.





# Variability of Head Motion and Gaze in String Quartet Performance

Laura Bishop<sup>1,2</sup>, Victor Gonzalez Sanchez<sup>1,2</sup>, Bruno Laeng<sup>1,3</sup>, Alexander Refsum Jensenius<sup>1,2</sup>, and Simon Hoffding<sup>1,2</sup>

<sup>1</sup>RITMO Centre for Interdisciplinary Studies in Rhythm, Time and Motion, University of Oslo

<sup>2</sup>Department of Musicology, University of Oslo

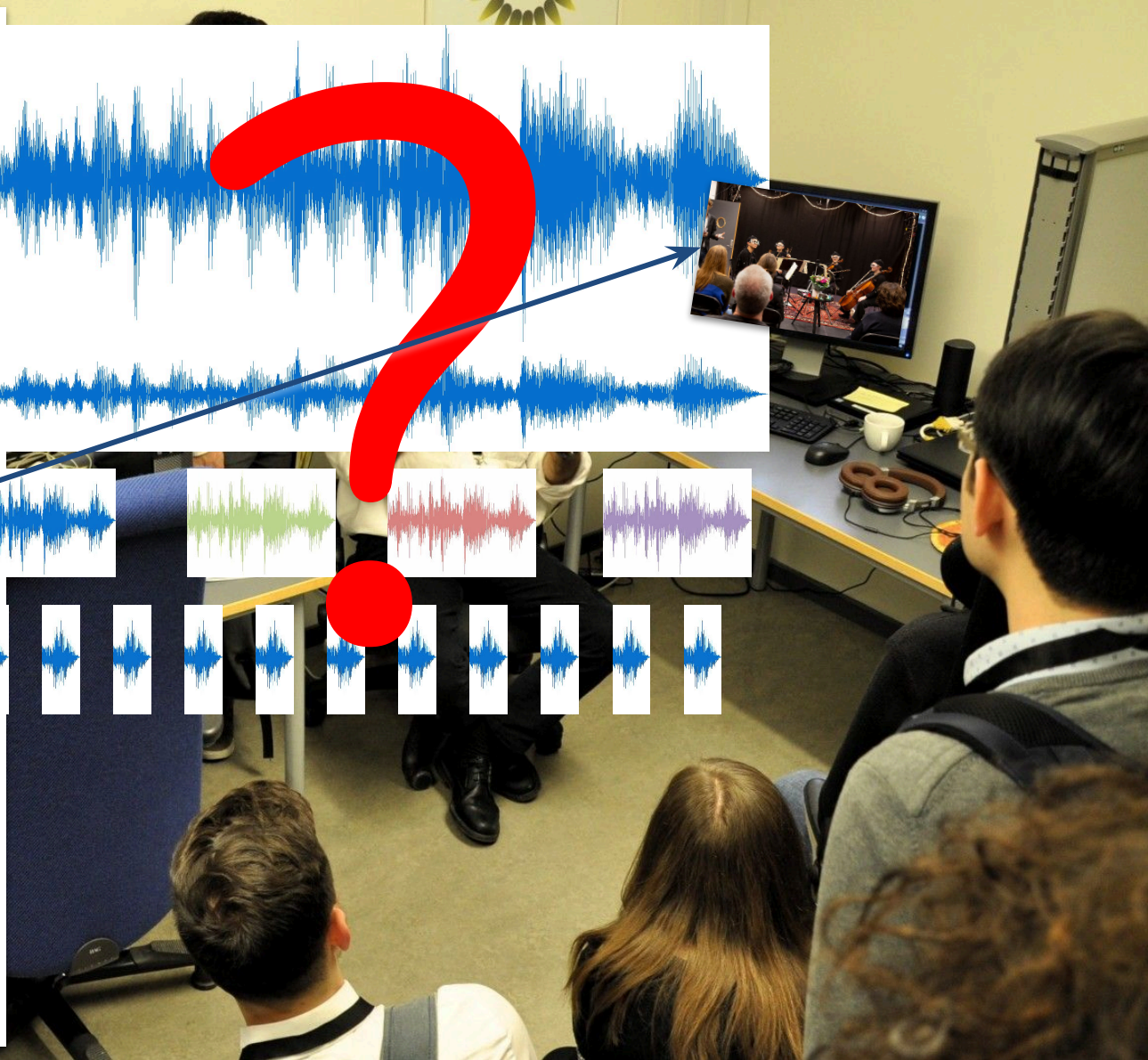
<sup>3</sup>Department of Psychology, University of Oslo



## 1 Introduction

As listeners and observers, we are impressed by the high quality of coordination that skilled music ensembles are able to achieve. Successful coordination may take the form of dialogic call-and-response in a group improvisation, a blending of vocal timbres in a choral performance, the patterning of complimentary rhythms in group drumming, or the collective shaping of time in a classical string quartet performance. Ensembles of all compositions and genres face the challenge of maintaining coordination despite uncertainty over how the performed music will sound. In the case of a string quartet—the focus of the current study—uncertainty arises primarily in relation to how fellow ensemble members may veer from a mutually-decided interpretation.

This paper describes the results of a case study that we conducted as part of an ongoing comprehensive investigation of body motion, mental effort, and physiology in string quartet performance. Participating in the study was a quartet comprising students from a local music academy, who agreed to give a concert in our lab for a live audience. They performed some of their current repertoire while we captured body motion, eye gaze, pupil data, and heart rate. The concert also served as the quartet's semester exam. In addition to the concert, the quartet completed

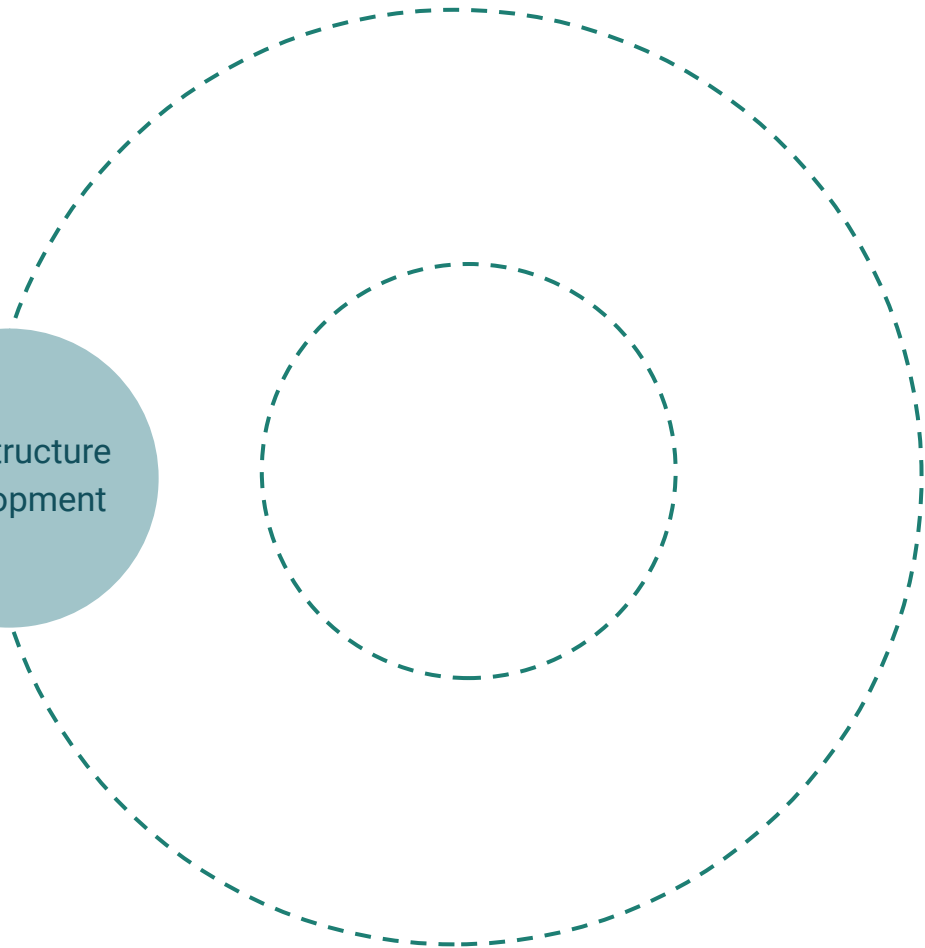






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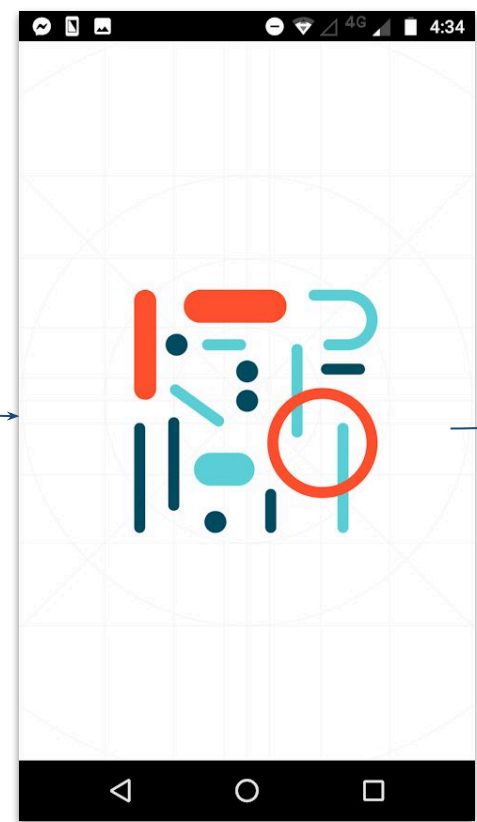
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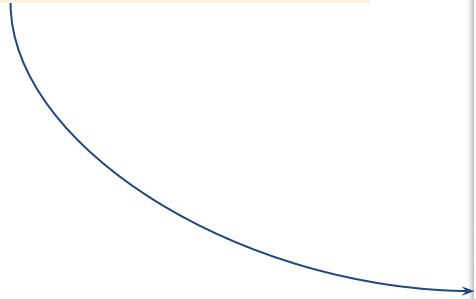


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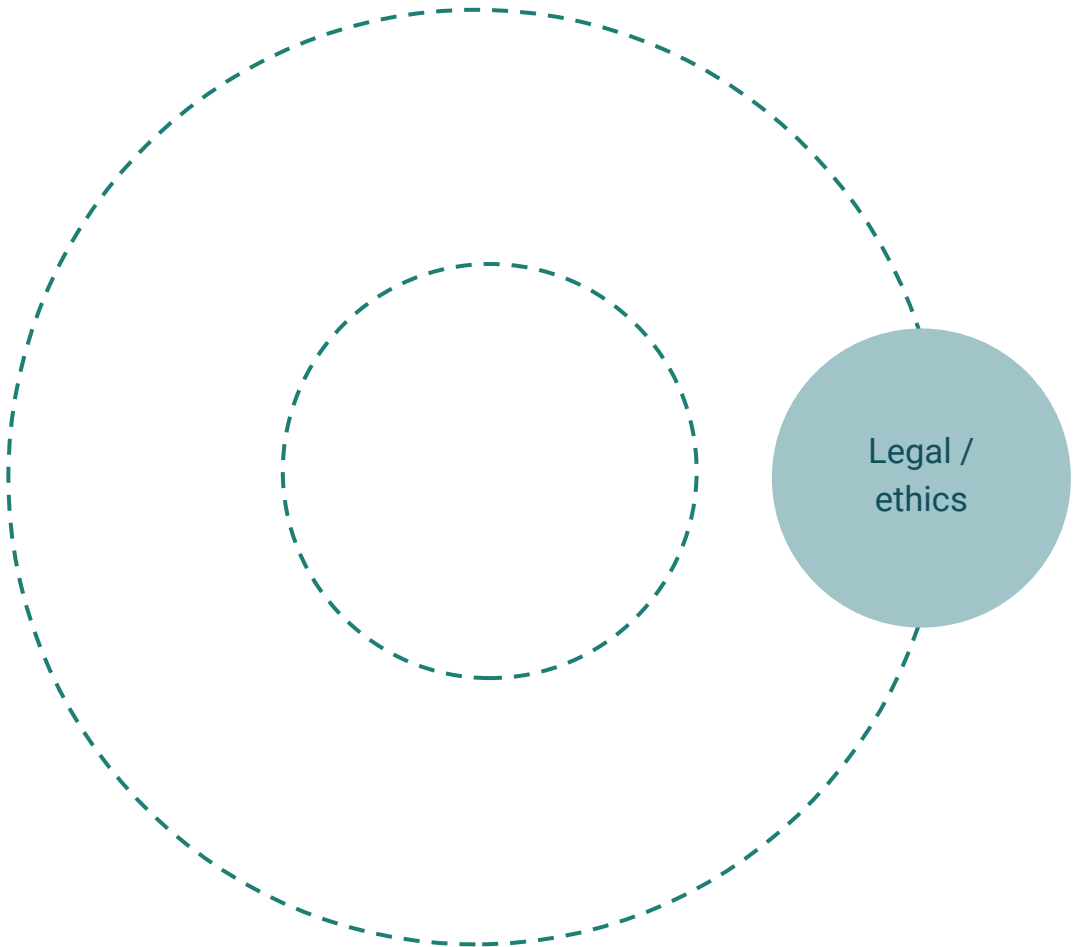
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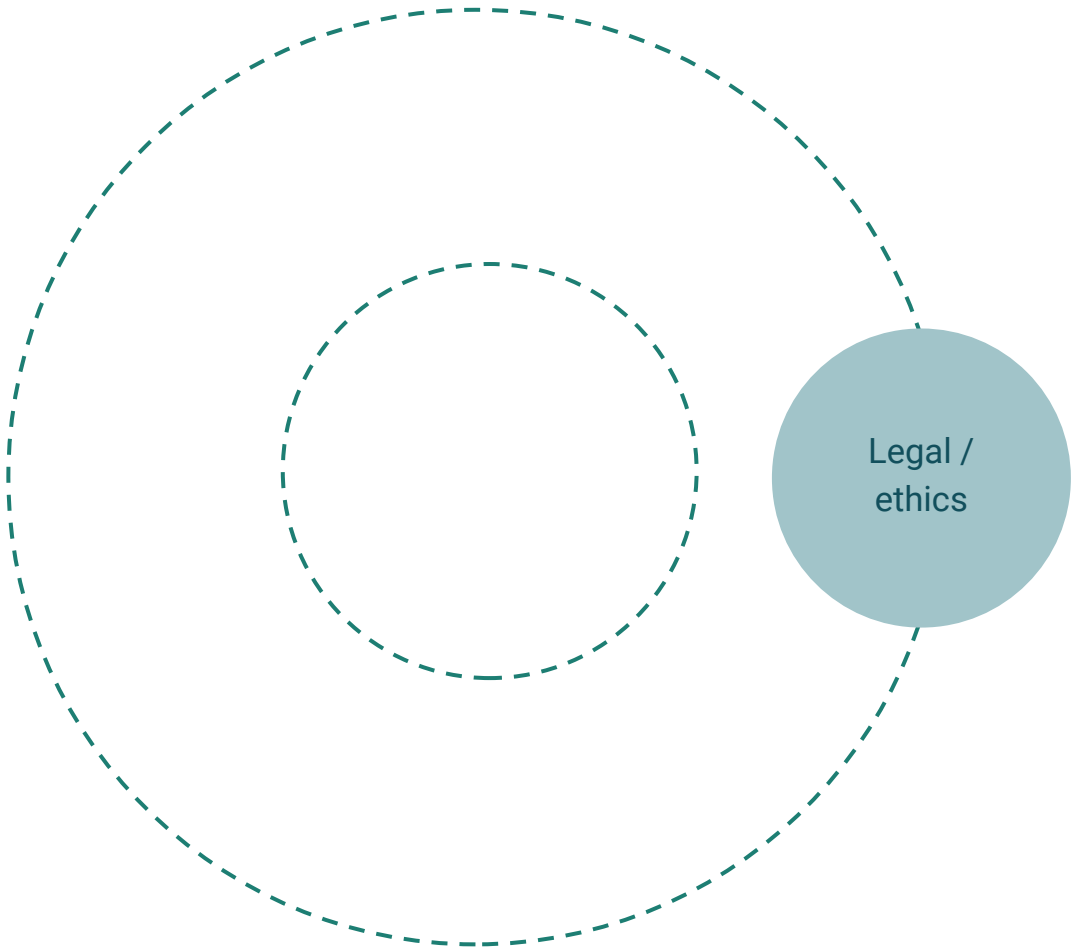






Privacy

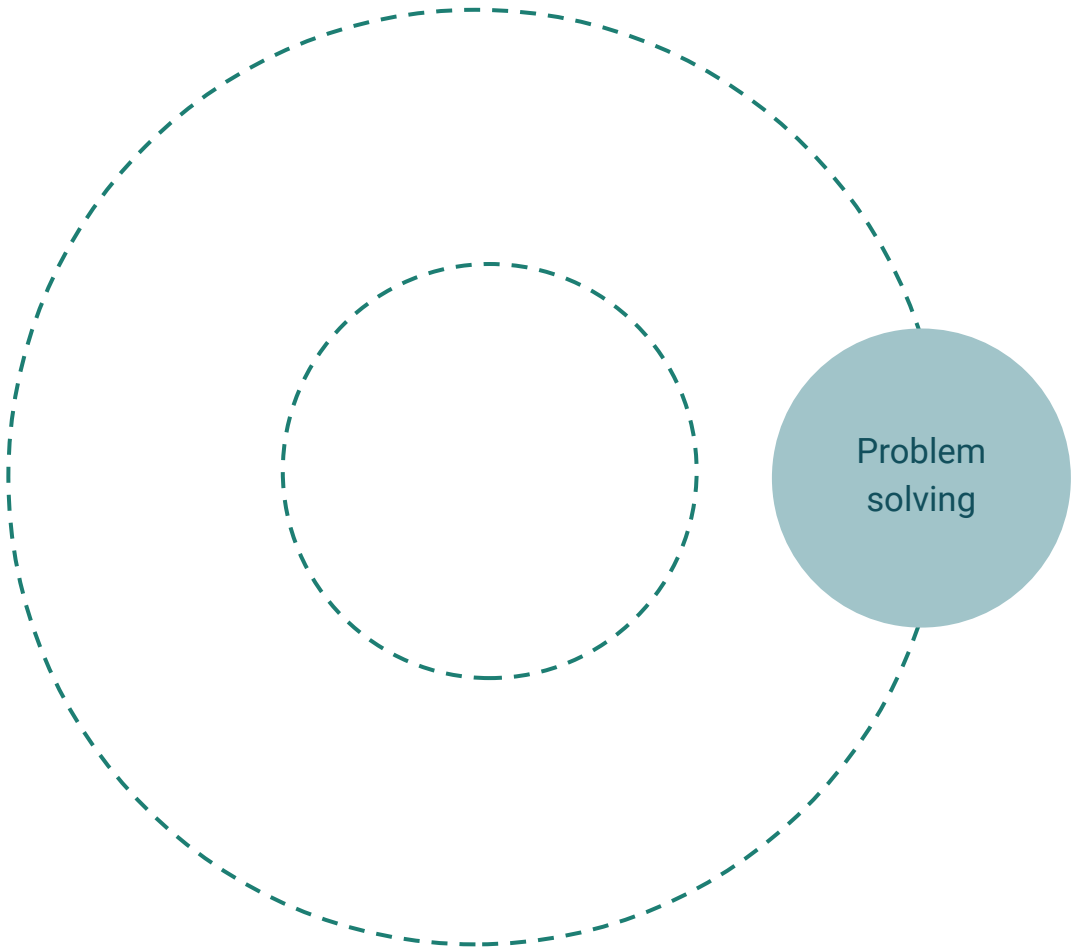
Copyright



Privacy

# GDPR

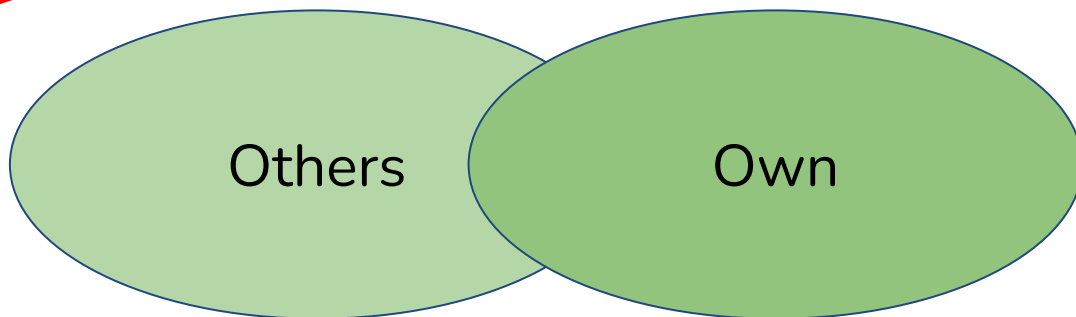
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<b>Level of recognition</b>	May be recognizable	Anonymous	Recognizable
<b>Information</b>	web + signs + aural	sheet + aural	sheet + aural
<b>Consent</b>	Silent	Silent	Written
<b>Legal basis</b>	Task in the public interest	Exempt from consent (no personal information collected)	Consent



Problem  
solving

Copyright

“Just pick a license”



What can I do with  
others' material?

What can others do  
with my material?

Copyright

MusicLab2:

Music by:

- Grieg
- Tveitt
- Nordheim
- Åm
- Performers

Audio+video = synchronization

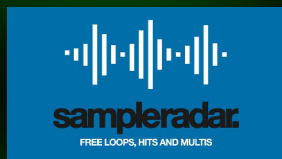
How/where to register?

How to reuse?





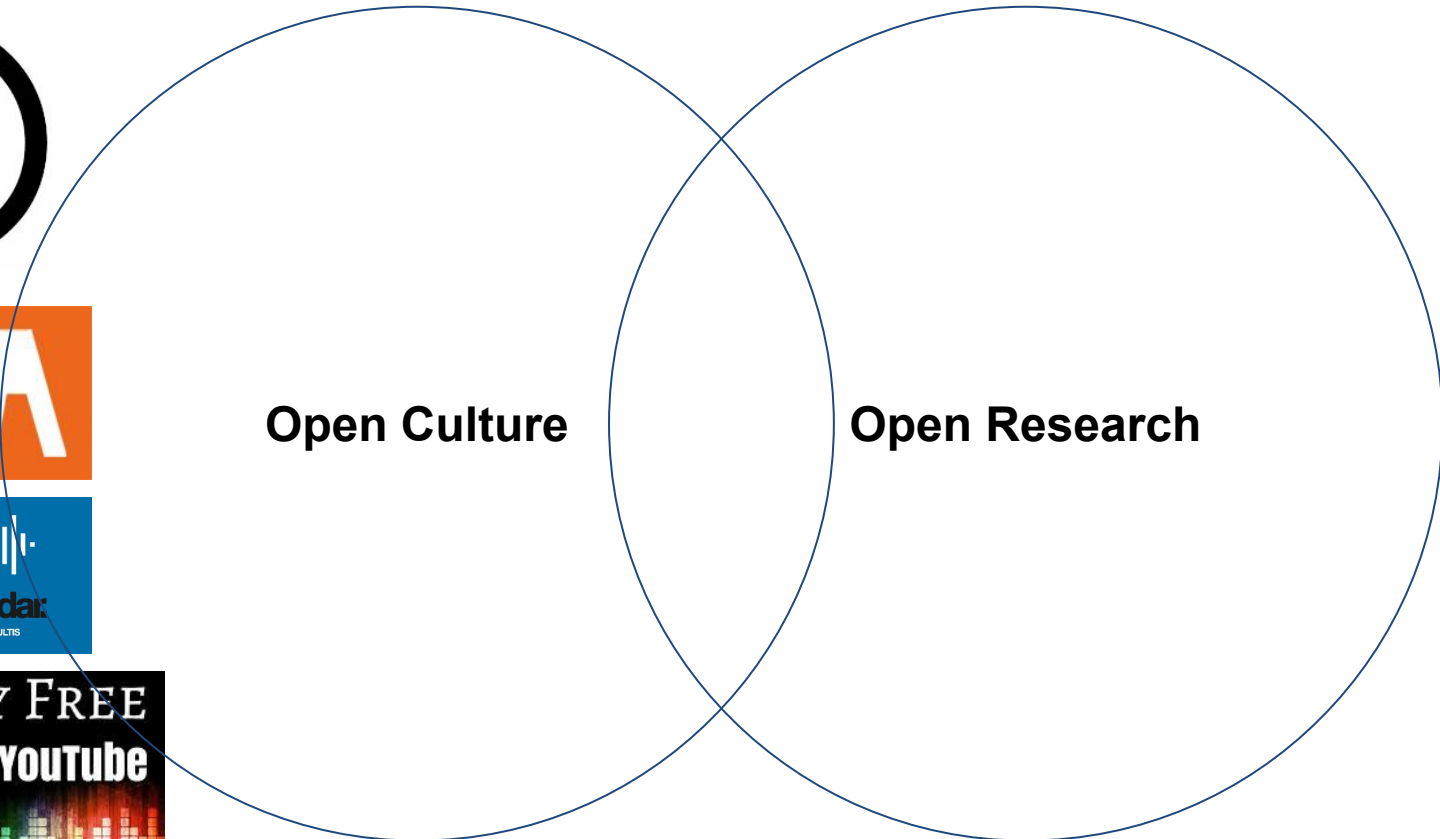
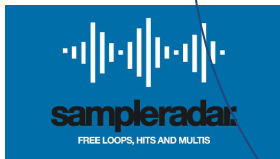
audio  commons



Composers  
Lyricists  
Performers  
Producers  
Dancers  
Photographers  
Film makers

...





Open Culture

Open Research

“Just pick a license”



## Attribution

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Others can only copy, distribute, display or perform verbatim copies of your work



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## Non-Commercial

Others can copy, distribute, display, perform or remix your work but for non-commercial purposes only.











**Velg riktig pose til støvsugeren din.**

Slik gjør du:  
1. Skann QR-koden med mobilkameraet  
2. Skriv din støvsugermodell i søkefeltet  
3. Se utvalget av passende poser i søkeresultatet

Vacuum Cleaner Bags  
4-pack + 1 filter  
AEG / Electrolux / Philips / Volta / Standard Bag.

Vacuum Cleaner Bags  
4-pack + 1 filter  
AEG / Electrolux / Philips / Volta / Standard Bag.

Vacuum Cleaner Bags  
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AEG / Dirt Devil / Electrolux / Samsung / Volta.

Vacuum Cleaner Bags  
4-pack + 1 filter  
AEG / Dirt Devil / Electrolux / Samsung / Volta.

“YouTube-model”

The screenshot displays the YouTube Studio interface. On the left, the channel profile for Alexander Refsum Jensenius is visible, along with navigation options like Dashboard, Content, Analytics, Comments, Subtitles, and Settings. The main area shows the 'Channel content' section with 'Videos' selected. Overlaid on this is the video upload interface for 'StillStanding 031'. The interface includes tabs for 'Details', 'Video elements', 'Checks', and 'Visibility'. The 'Details' tab is active, showing fields for 'Title (required)' (filled with 'StillStanding 031') and 'Description' (with a placeholder text). A 'REUSE DETAILS' link is present. On the right, a video link is shown as 'https://youtu.be/GRD5lqzDCI8' and the filename is 'track5\_trim\_crop\_rot.mp4'. Below the video link, there's a section for 'Thumbnail' with a placeholder image and a 'Learn more' link. At the bottom, a progress bar indicates 'Uploading 62% ... 2 minutes left' and a 'NEXT' button is visible.

## License

Learn about [license types](#).

Standard YouTube License

Creative Commons - Attribution

Allow embedding [?](#)

Publish to subscriptions feed and notify subscribers



2023

## UiO working group recommendations:

- **write** information pages about copyright
- **recommend** some licenses
- **develop** technical systems to support users
- **make** courses for students and staff
- **increase** knowledge among leaders
- **clarify** responsibility among support services

## Copyright challenges in the transition to FAIR research data at UiO - Note from a QualiFAIR working group

Bochynska, Agata<sup>1</sup> ; Bergstrøm, Rebecca Josefine Five<sup>1</sup> 

Refsum Jensenius, Alexander<sup>1</sup>

Show affiliations

The competence hub QualiFAIR (2021-2024) at the University of Oslo (UiO) has been focusing on how qualitative, context-sensitive and personally identifiable data can be made FAIR (Findable, Accessible, Interoperable, Reusable). This note summarizes the findings and main recommendations from the QualiFAIR's Copyright Working Group that worked towards identifying copyright challenges in the transition to FAIR research data at UiO. See "QualiFAIR\_Copyright\_challenges\_UiO\_report\_2024" for the English translation and "QualiFAIR\_Opphavsrettslig\_utfordringer\_UiO\_rapport\_2024" for the original note in Norwegian.

### Files

QualiFAIR\_Opphavsrettslig\_utfordringer\_UiO\_rapport\_2024.pdf

Page: 1 of 5 - Automatic Zoom

### Opphavsrettslige utfordringer ved overgangen til FAIR forskningsdata ved UiO - Notat fra en QualiFAIR-arbeidsgruppe

Agata Bochynska, Rebecca Josefine Five Bergstrøm, Alexander Refsum Jensenius

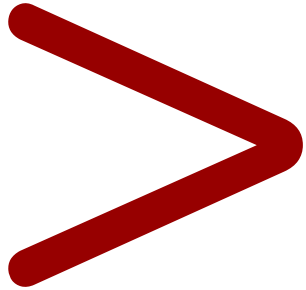
15.02.2024

#### Anbefalinger

Arbeidsgruppen ser behov for å:

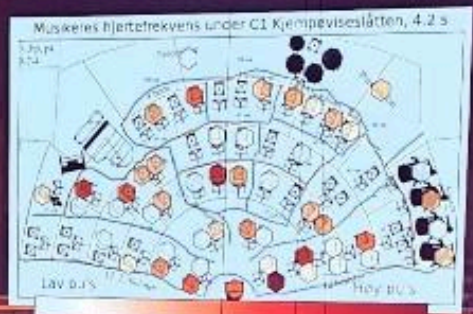
- utvikle informasjonssider om opphavsrett og lisenser for forskere og studenter
- anbefale noen lisenser for ulike datatyper (noen åpne og noen restriktive)
- utvikle systemer som hjelper med lisenshåndtering (på alt fra enkeltfiler til databaser)
- utvikle kurs i opphavsrett for ansatte og studenter på alle nivåer

Policy development



Pilot projects

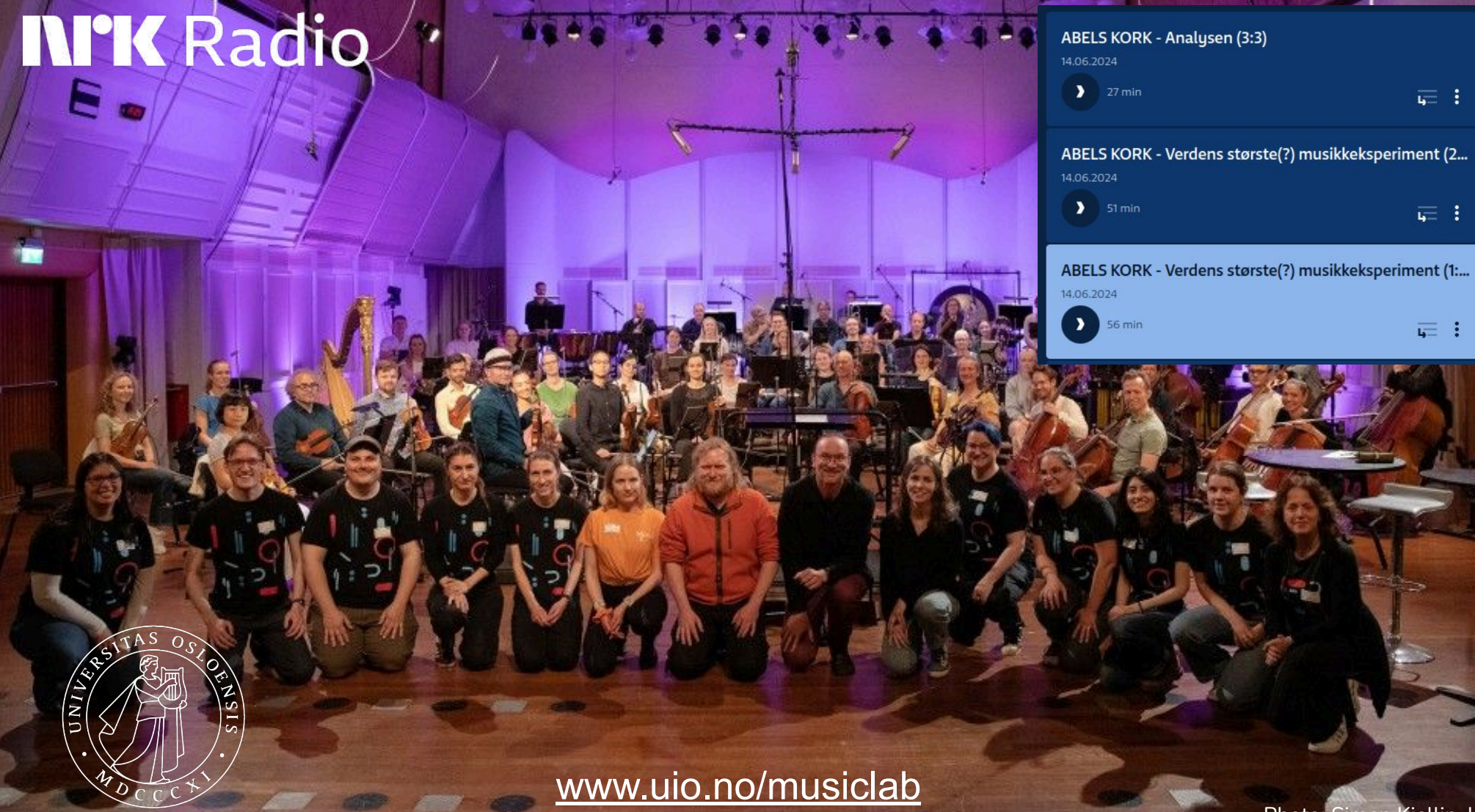
**M**usic  
Lab





# NRK Radio

- ABELS KORK - Analysen (3:3)**  
14.06.2024  
▶ 27 min
- ABELS KORK - Verdens største(?) musikkeksperiment (2...**  
14.06.2024  
▶ 51 min
- ABELS KORK - Verdens største(?) musikkeksperiment (1:...**  
14.06.2024  
▶ 56 min



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Photo: Simen Kjellin, UiO