

Freesound Datasets:

A platform for the creation of open audio datasets

Eduardo Fonseca, Jordi Pons, Xavier Favory, Frederic Font, Dmitry Bogdanov, Andres Ferraro, Sergio Oramas, Alastair Porter and Xavier Serra

name.surname@upf.edu

Music Technology Group, UPF, Barcelona, Spain



Introduction

- ◆ Datasets are key factor in **sound and music computing**. However:
 - lack of **transparency** in their creation
 - not completely **open/shareable**
 - unclear mechanisms for **error ammendment**
 - **not large enough** for current machine learning needs
- ◆ Freesound Datasets: online platform for the collaborative creation of open audio datasets

Our vision

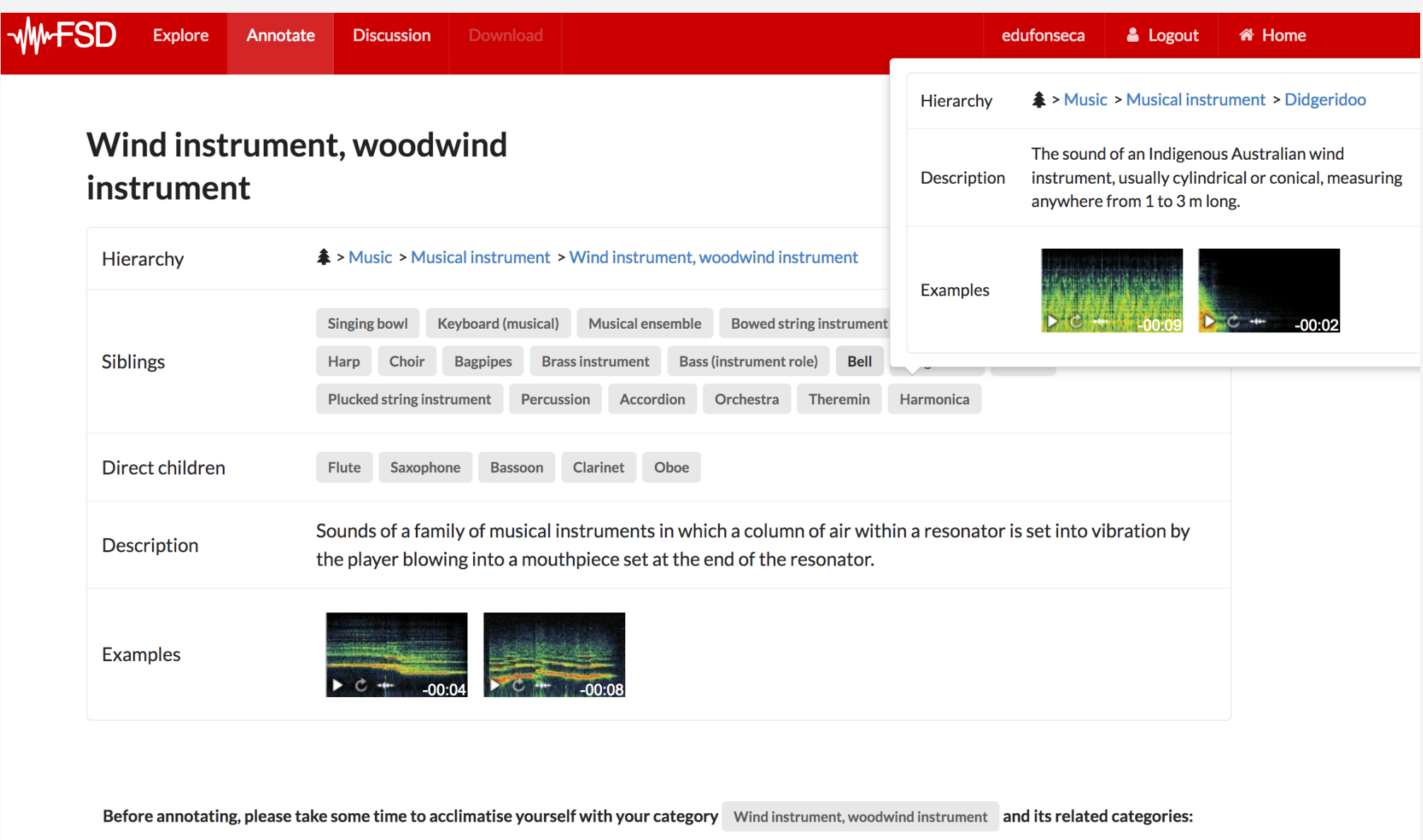
- ◆ **Transparency:** workflow in creation process & content exploration
- ◆ **Openness:** free distribution & reuse
- ◆ **Dynamism:** criticism & proposals in the platform
- ◆ **Sustainability:** community as continuous source of information
- ◆ **How?**



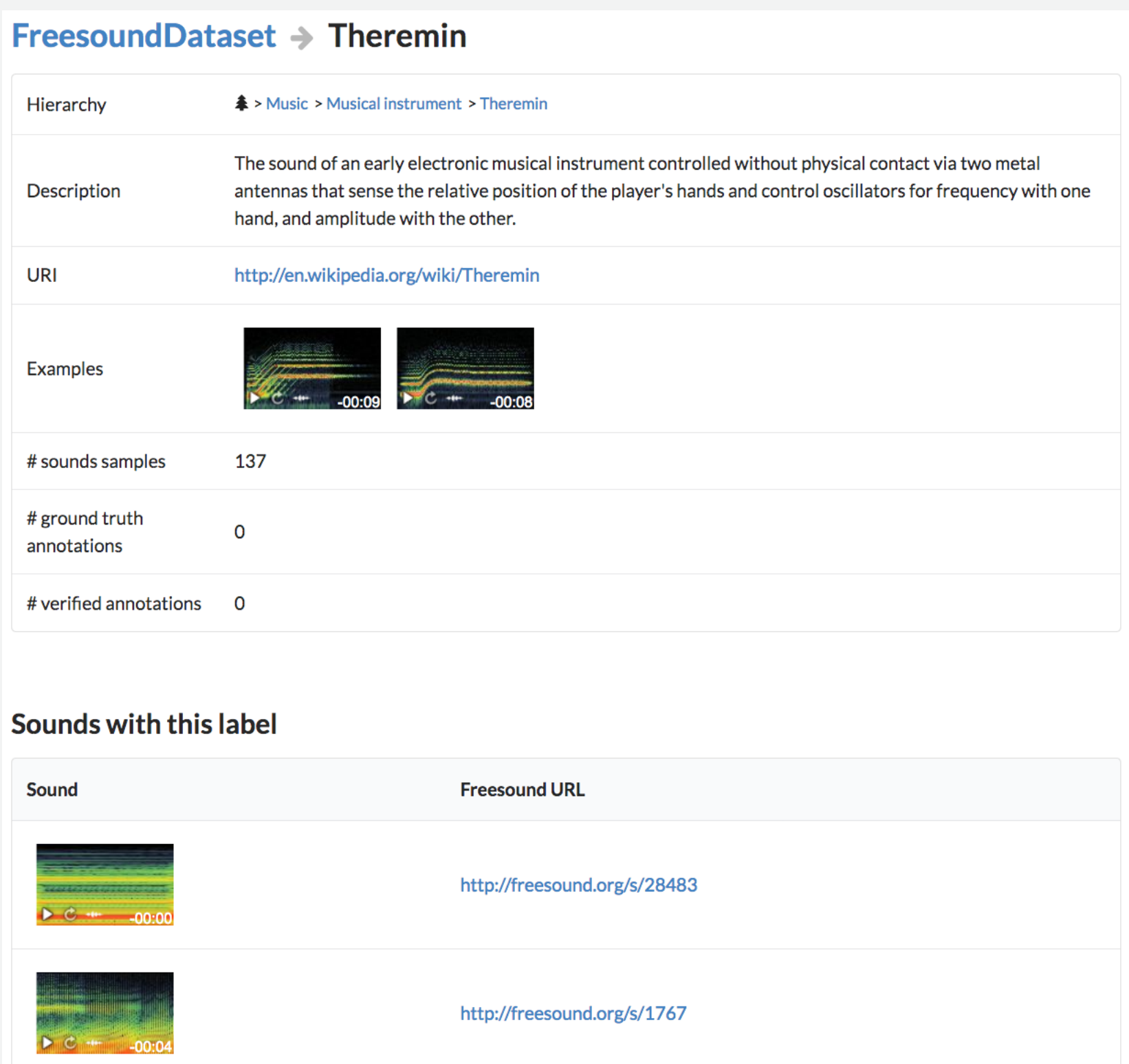
The Freesound Datasets platform - <https://datasets.freesound.org/>

We plan to host several datasets supporting:

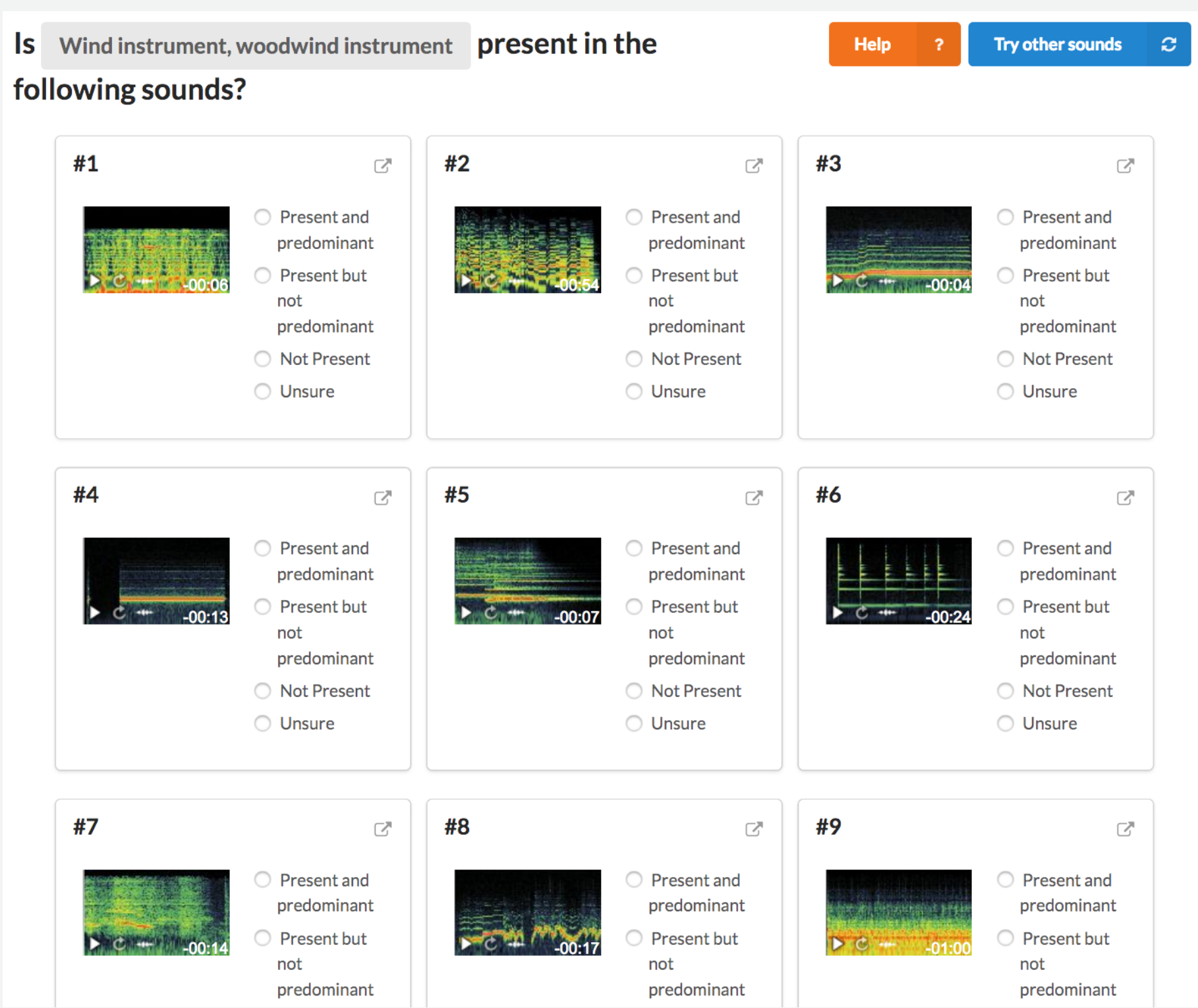
- ◆ **Annotation:**
 - ground truth generation
 - volunteering-based crowdsourcing
 - guidelines & training phase
 - quality control
- ◆ **Dataset exploration:**
 - browsing sounds by categories
 - interactive visualizations
- ◆ **Discussion:**
 - platform: improvements & functionalities
 - datasets: content, collection process, taxonomy
- ◆ **Dataset releases:**
 - time-evolving (quality & quantity)
 - dataset versioning
- ◆ **Download:**
 - waveforms, features, ground truth, metadata
 - Creative Commons licenses



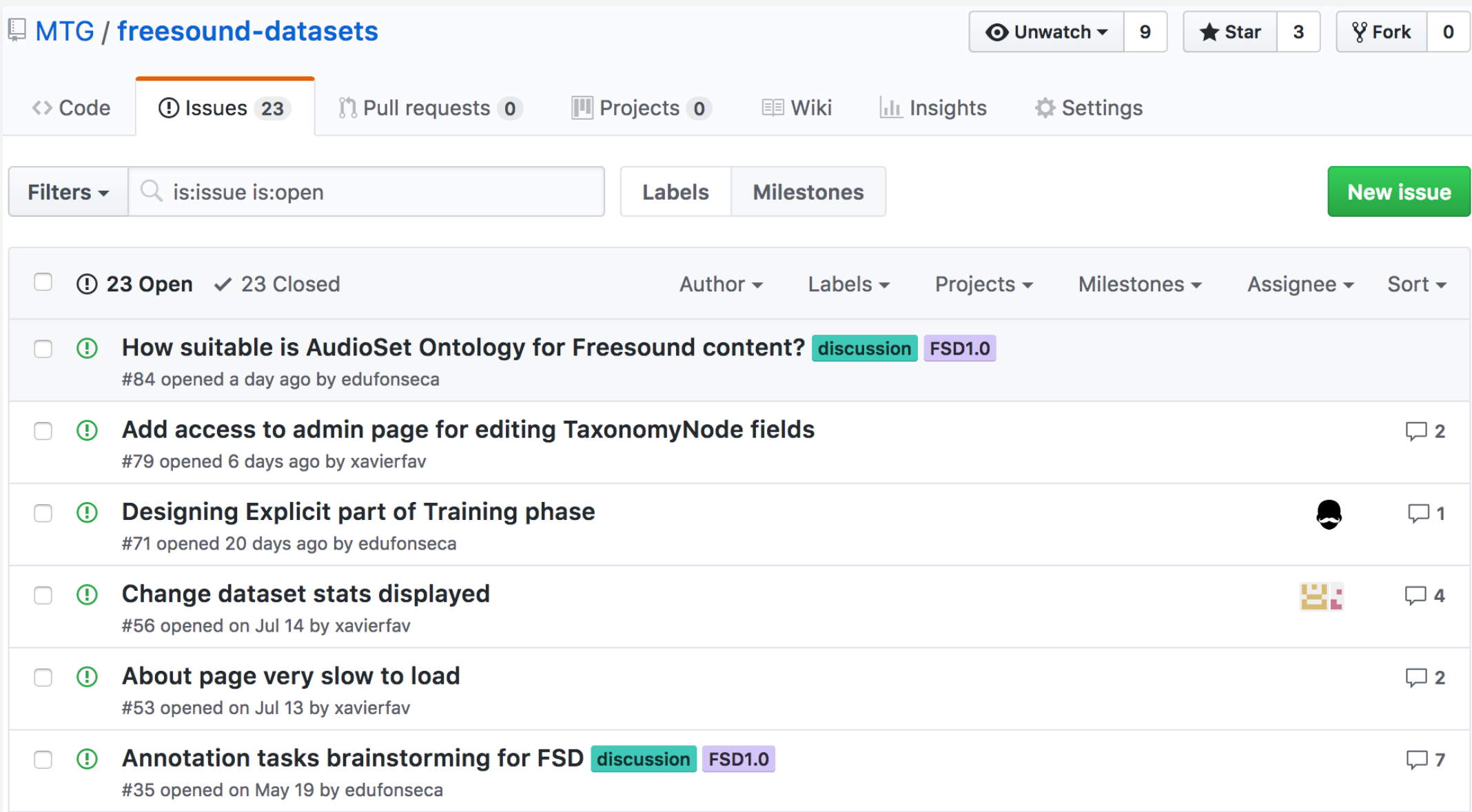
Training phase before annotation



Exploration of a category



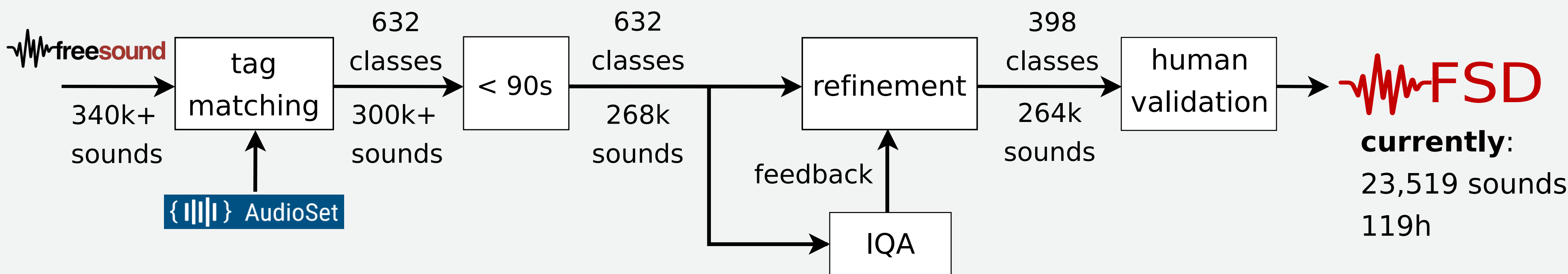
Annotation page for our validation task



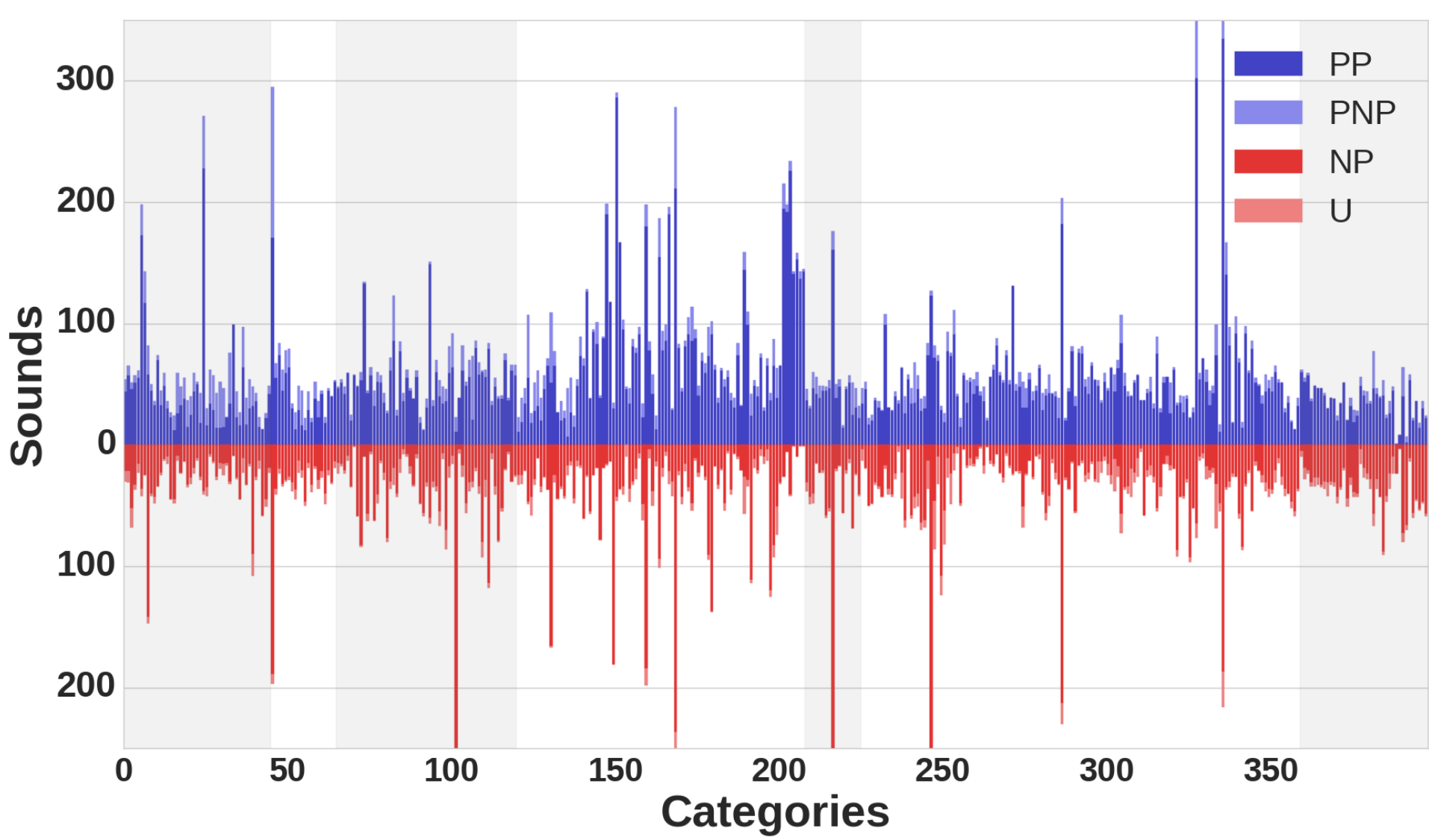
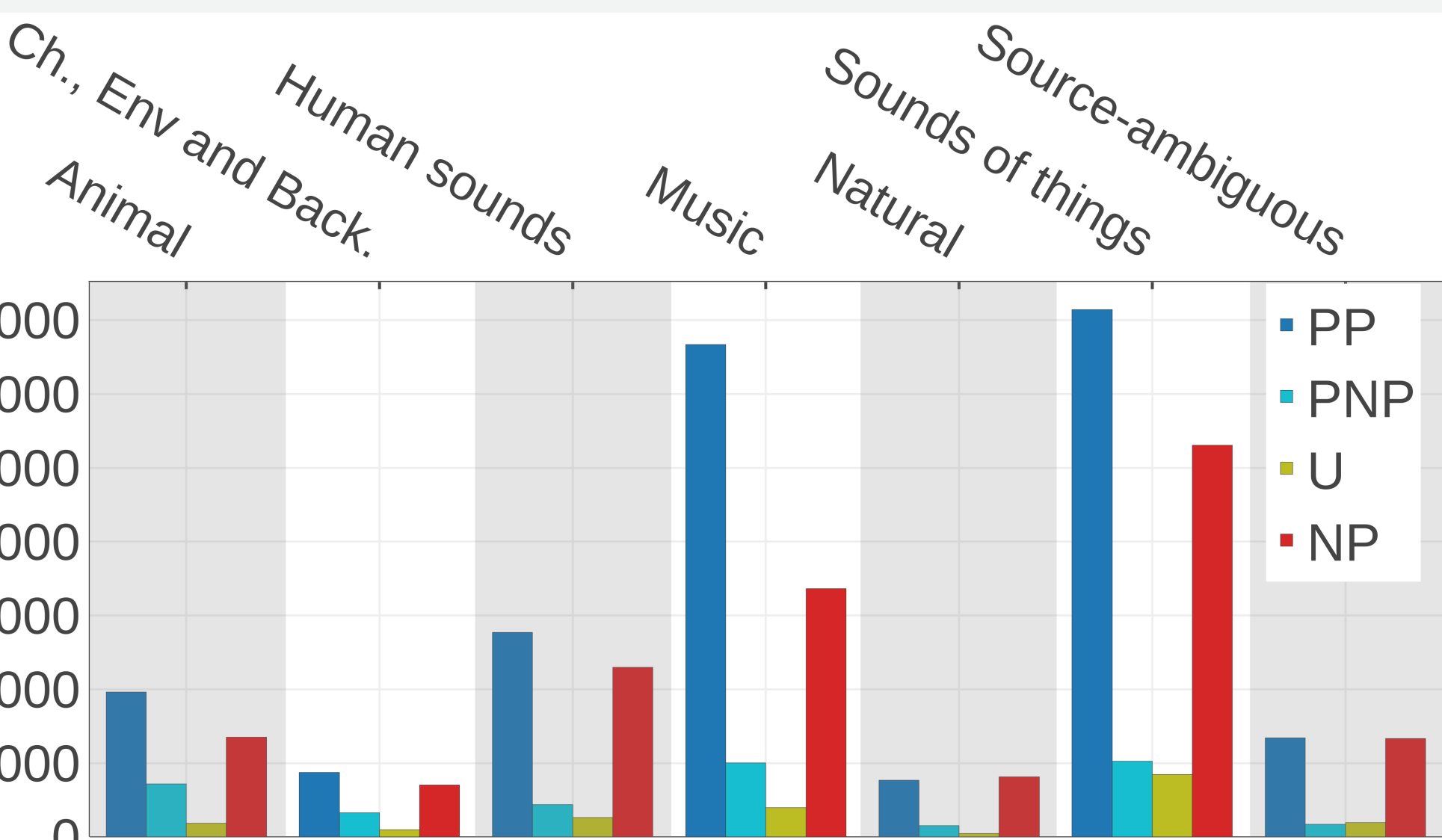
Discussion in GitHub repository

Our first dataset: FSD

- ◆ Audio samples from Freesound
- ◆ Google's AudioSet Ontology [1]
- ◆ **Data gathering and pre-processing**
- ◆ General-purpose & large-scale
- ◆ Audio event recognition



- ◆ **Validating Annotations:** presence of sound category
 - Present and Predominant / Present but not Predominant / Not Present / Unsure



Challenges & future work

- ◆ **Crowdsourcing annotations:**
 - quality control
 - annotator agreement
- ◆ **Mapping** to AudioSet
- ◆ Towards **complete labeling** of samples
- ◆ First **FSD release:**
 - data splits & baseline
- ◆ More **annotation tasks:**
 - timestamps for events
- ◆ More **functionalities:**
 - report mislabelings & faulty sounds

References & resources

- ◆ [1] Gemmeke *et al.* *Audio Set: An ontology and human-labeled dataset for audio events.* ICASSP, 2017
- ◆ **Platform:** <https://datasets.freesound.org/>
- ◆ **GitHub:** <https://github.com/MTG/freesound-datasets>