

Wir leben Fundraising – mit Freude und im Dialog.

**Herzlich willkommen**

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# Artificial Intelligence



- › A system that performs tasks that would require intelligence if performed by humans

# Artificial Intelligence and Philanthropy

- › As AI is transforming society, it is bound to transform philanthropy
- › It is not a matter of “if”, but of “when” and “how” philanthropic organisations will adopt AI and confront its ethical impact
- › But (too) little awareness and attention from the sector so far:
  - For use by philanthropy
  - Impact on society and the communities they serve
- › Philanthropy operates with private logics to promote common good, a privileged position to guide AI towards the latter

# AI and Philanthropy: two areas of focus

- AI for Philanthropy: developing tools that support philanthropic organizations' operations and strategies
- Philanthropy for AI: Leveraging philanthropic organizations' potential to ensure the ethical and inclusive development of Artificial Intelligence

# A promising form of AI for Philanthropy: **Natural Language Processing**

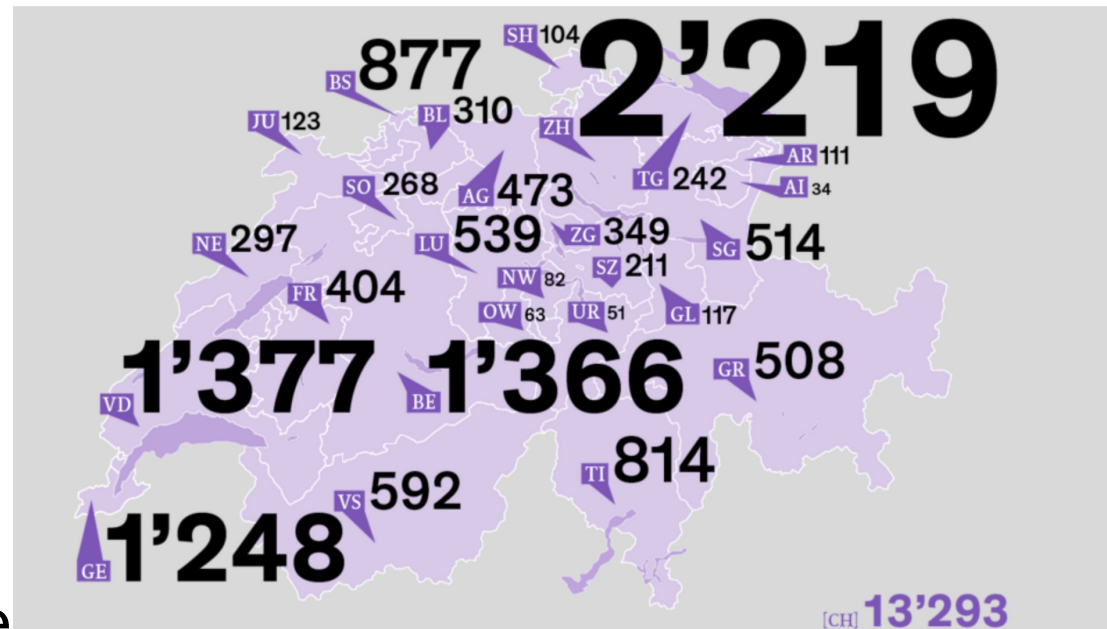
- › Decision tree classification of foundations in International Classification of Nonprofit Organizations (INCPO – International.) categories data = foundations' names - Litofcenko et al., 2019
- › Several methods for classifying foundations in National Taxonomy of Exempt Entities (NTEE – U.S.) categories – Ma et al., 2021

# Supporting Philanthropy Strategic Planning with NLP

- › In what and in how many areas do POs operate?
- › According to which Type do these work (Donors vs. Operating)?
- › Are different Types of POs using a similar language?
- › What motives determine POs engagement?
- › To which extent are the U.N. SDGs addressed by POs?

# Philanthropy in Switzerland – a use case on AI for Philanthropy

- › About 17.000 POs in Switzerland

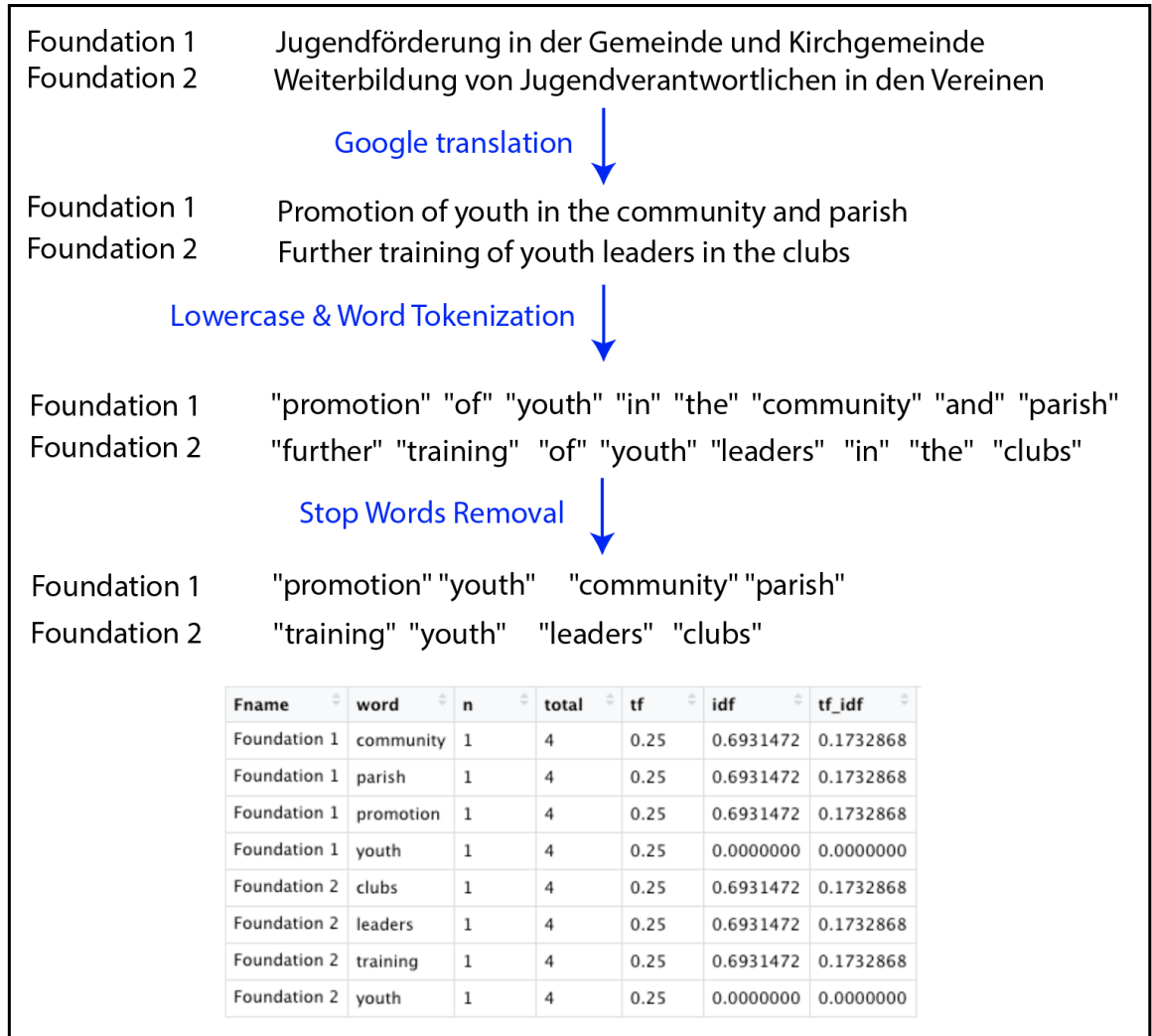


- › No comprehensive database of these POs



# Using AI requires (big) Data

- › Collected Mission Statements from  $\approx$  11.000 Philanthropic Organizations
- › Pre-processed and cleaned the data:
  - Translation to English
  - Calculate importance of each word through TF-IDF method
- › Identified 8485 unique and meaningful words from 10755 POs

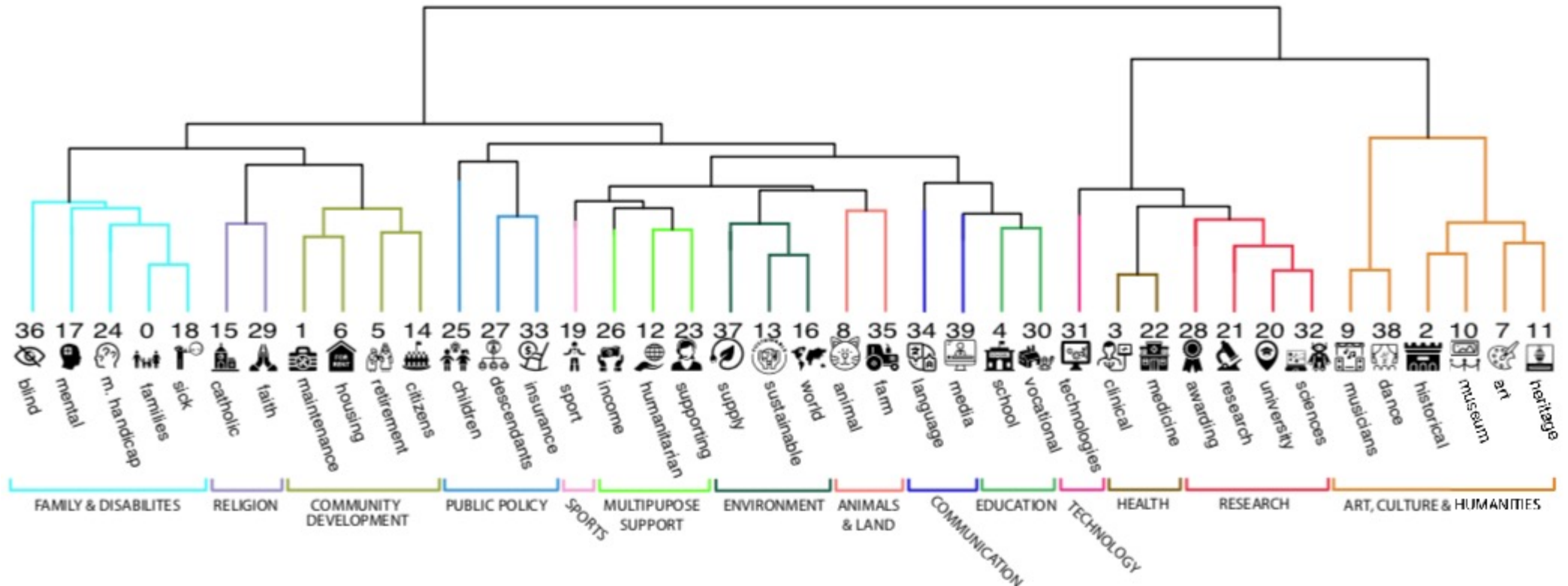


# Our approach in a nutshell

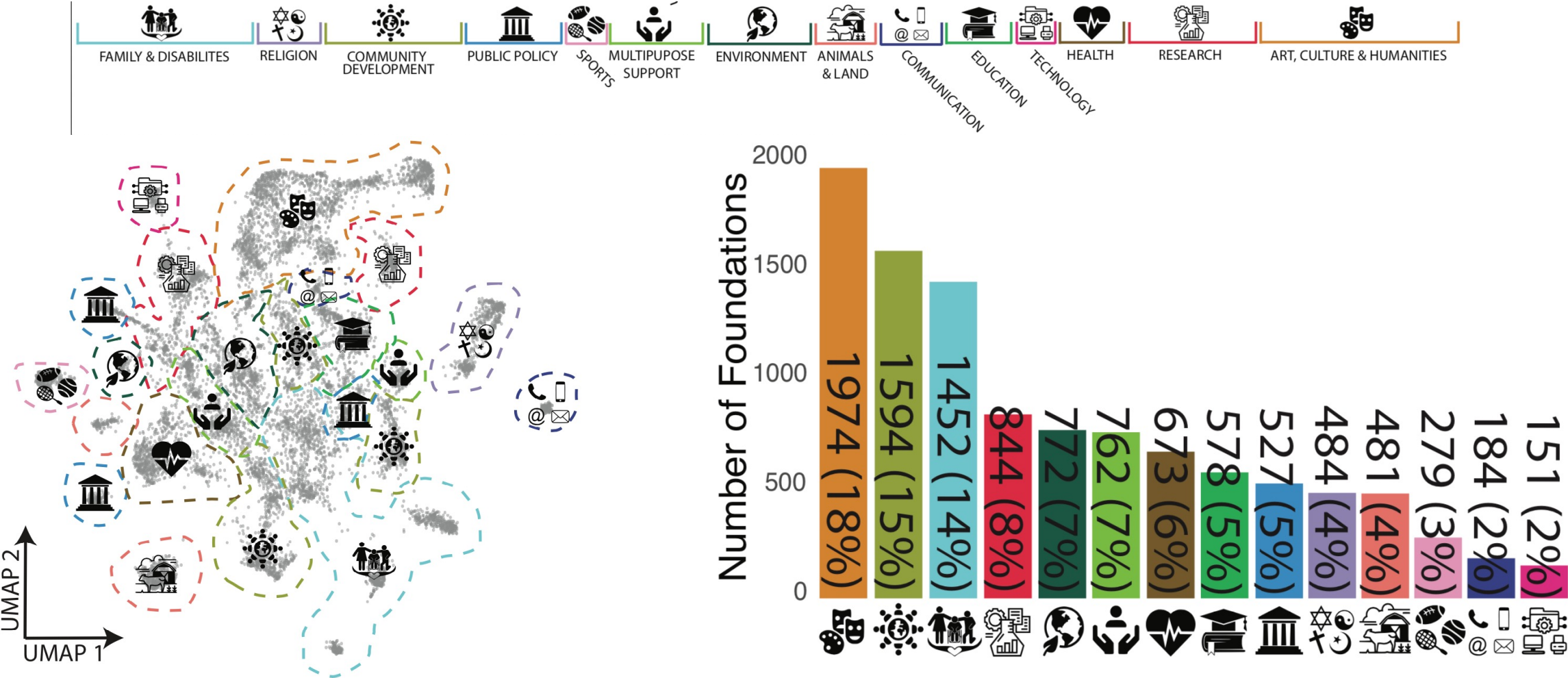
- › Natural Language Processing employing Machine and Deep Learning algorithms to analyze Philanthropic Communications
- › Unsupervised Learning to:
  - Cluster organizations in Areas of Activity;
- › Supervised Learning to:
  - Categorize an organization as Donors **or** Operating
  - Determine overlap in communication used by Donors and Operating
  - Determine Motives driving POs: Moral Values and Emotions
  - Identify engagement of POs with the SDGs

# In what areas do POs operate

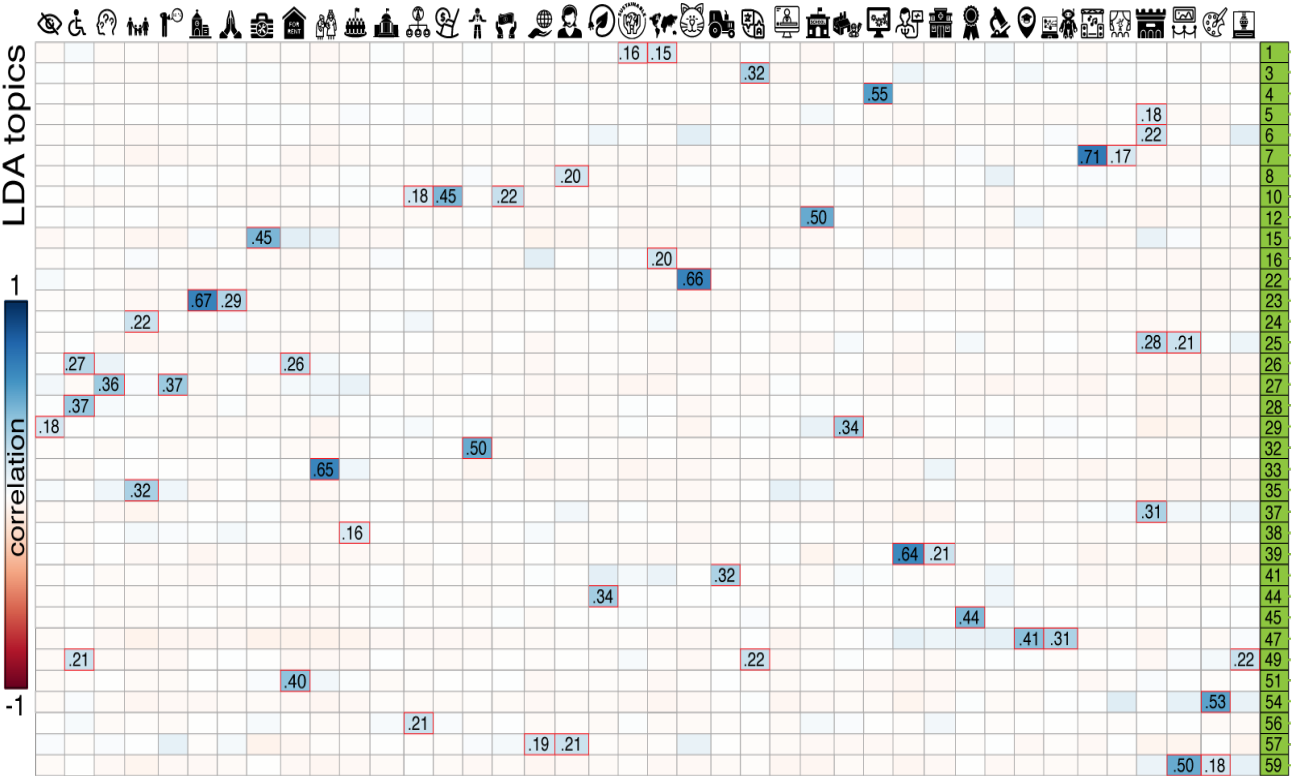
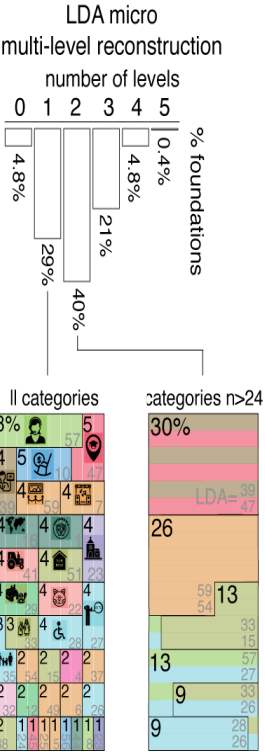
## 40 different Areas of Activity



# In what areas do POs operate



# How engaged is a PO in a given area of activity

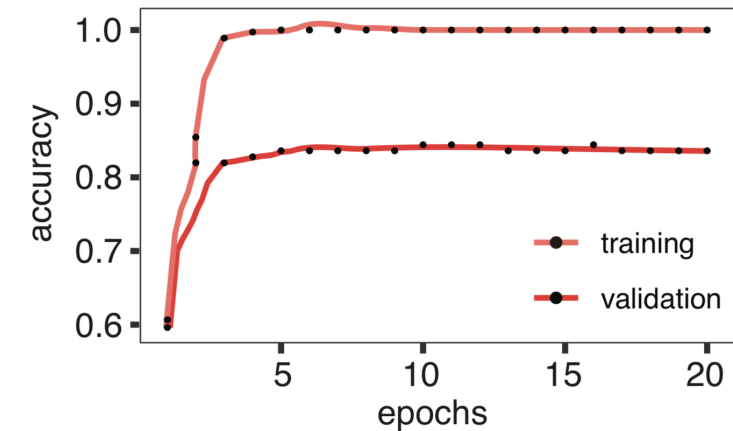
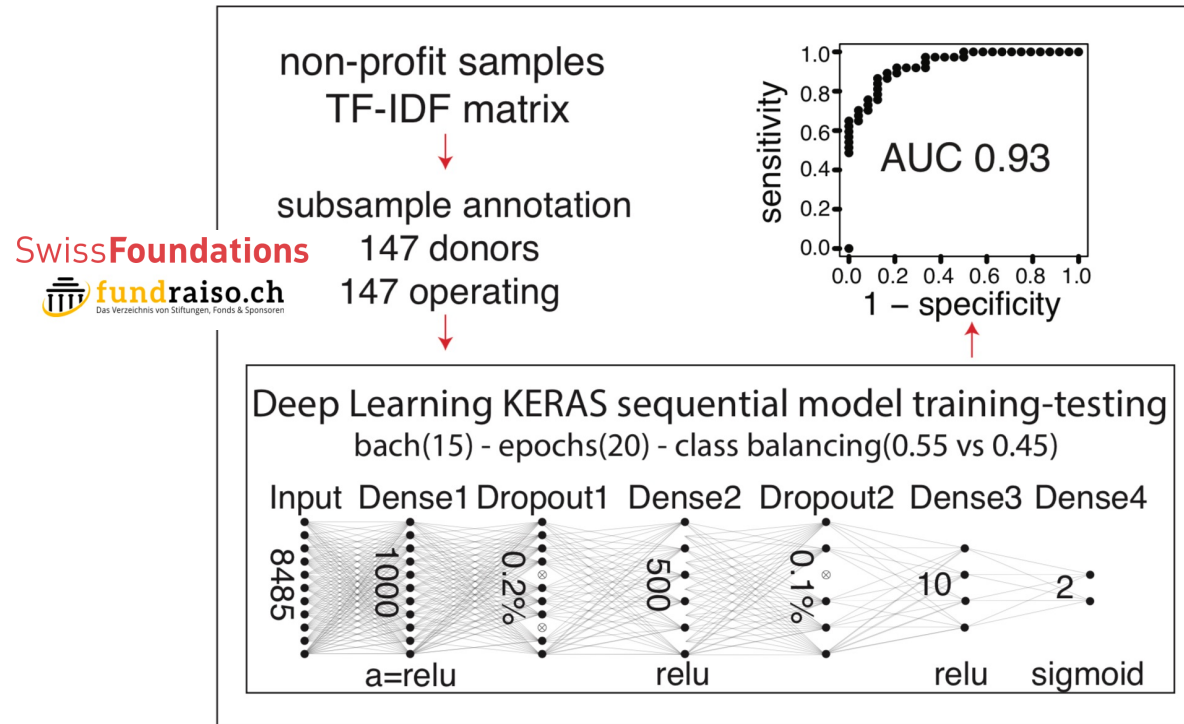


1° - 66% LDA topic 12 – education macrodomain

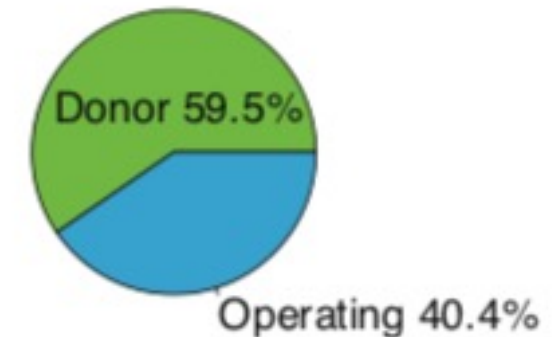
2° - 25% LDA topic 21 – family macrodomain

# Classifying Type of POs

## OPERATIVE MODE PREDICTION

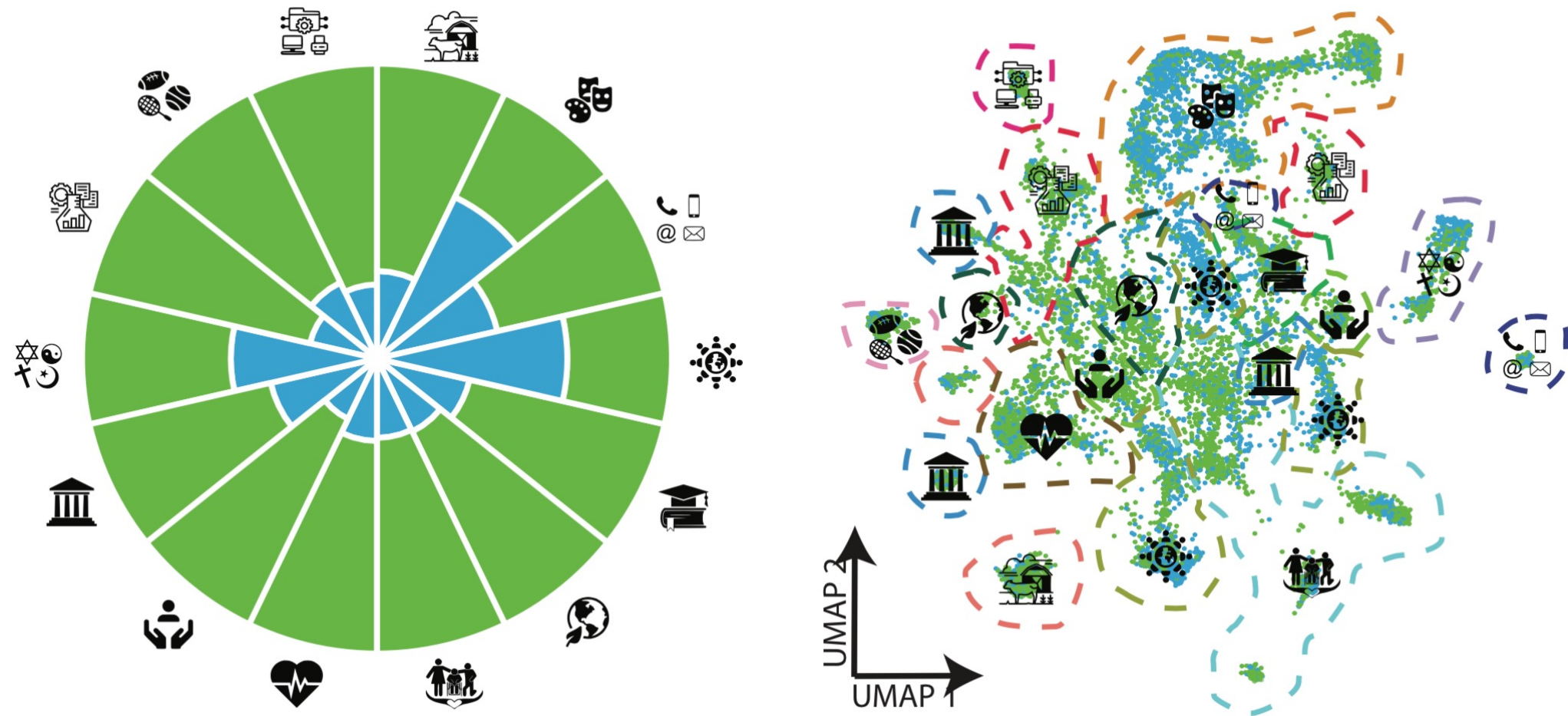


## Prediction Result





# Type of POs Across Areas of Activity



0.2% 98.7% 1.1%

Differential

Overlapping

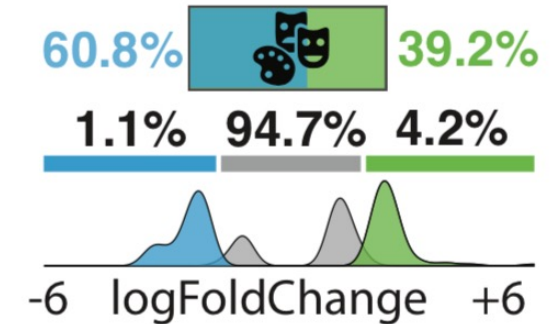
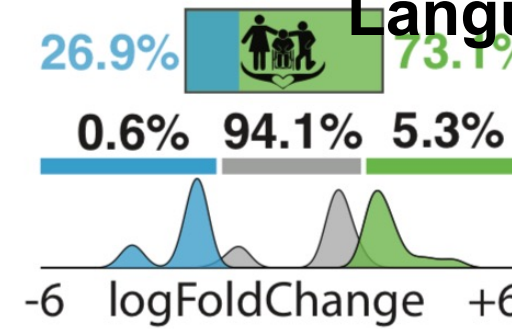
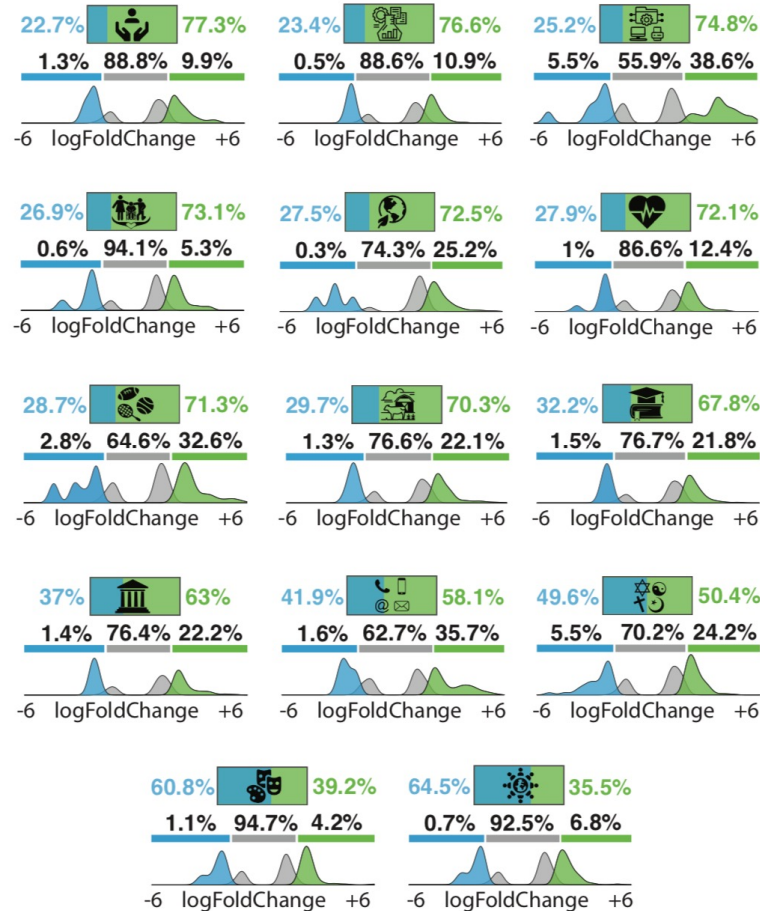
100 Most Generic Words



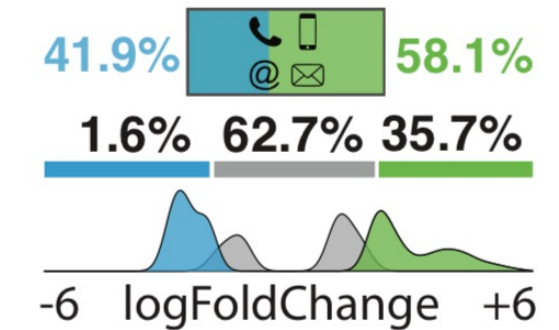
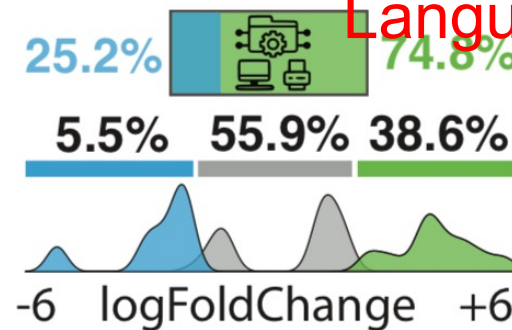


# Language Overlap Differs by Type of Activity

## High Shared Language

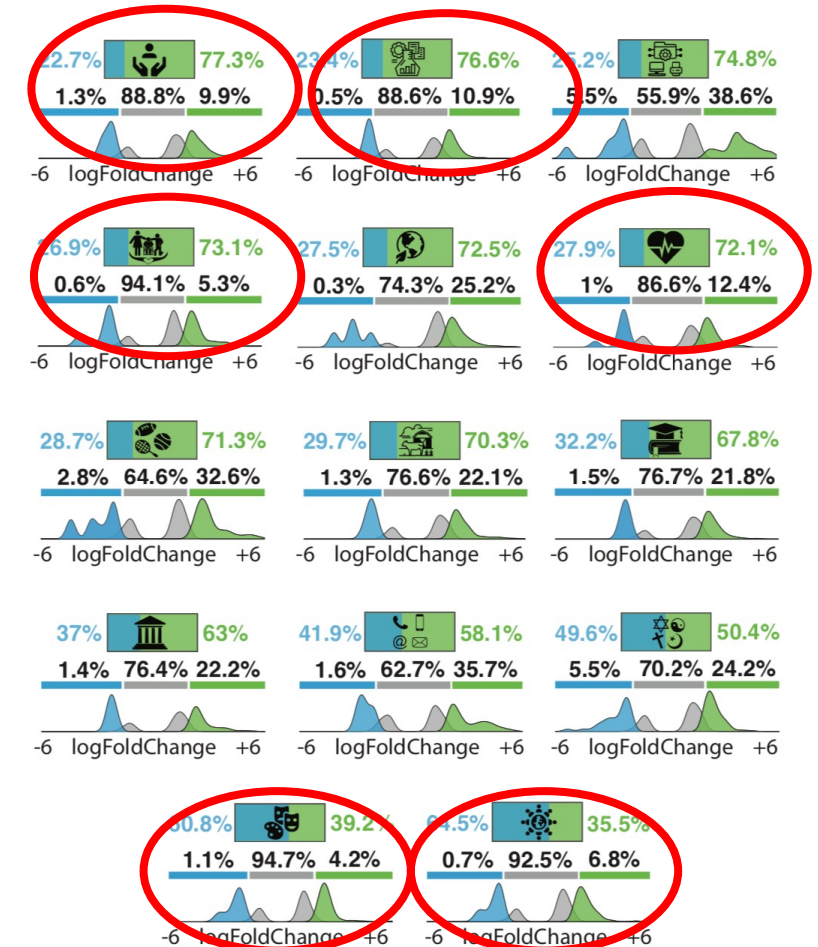
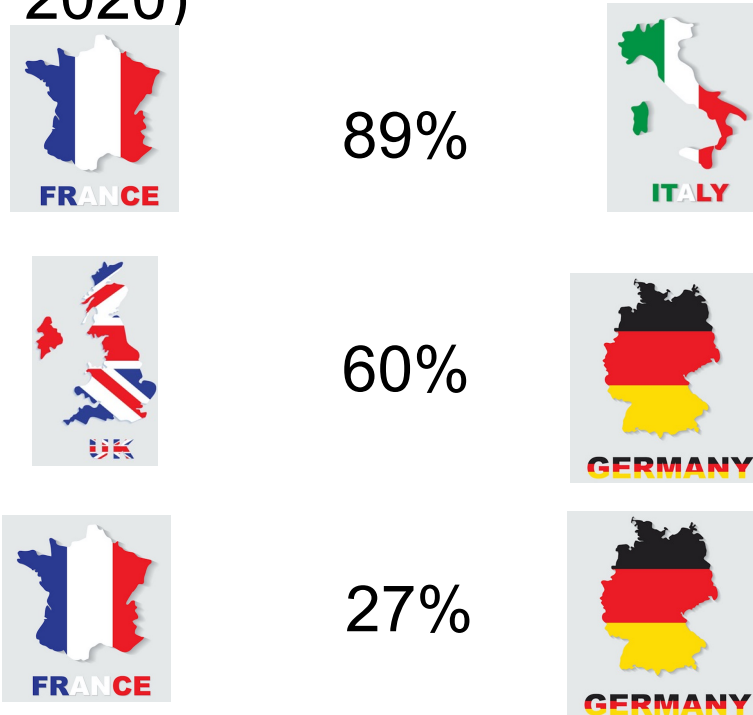


## Low Shared Language

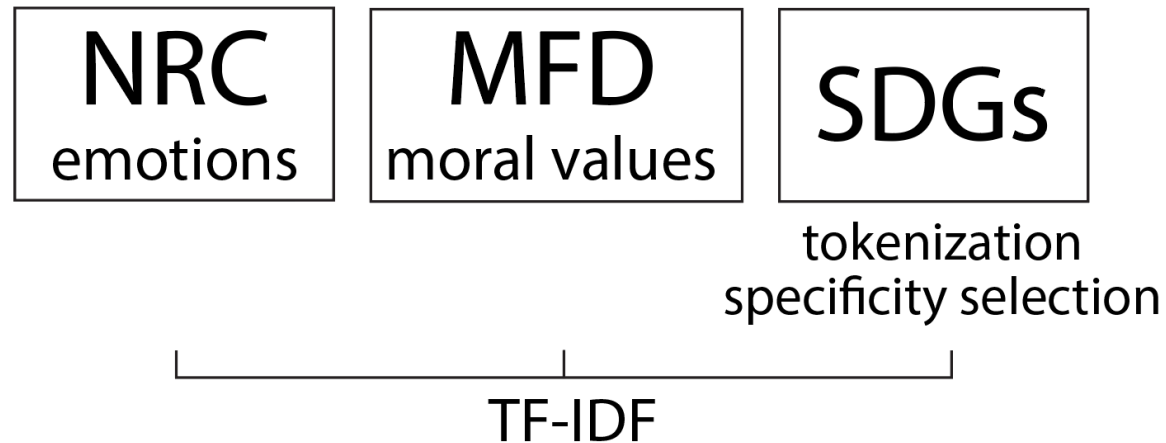


# “Related Dialect” Spoken in 6/14 areas of activity

- › Related Dialects = 85% or more words shared across two languages (Eberhard, D. et al, 2020)



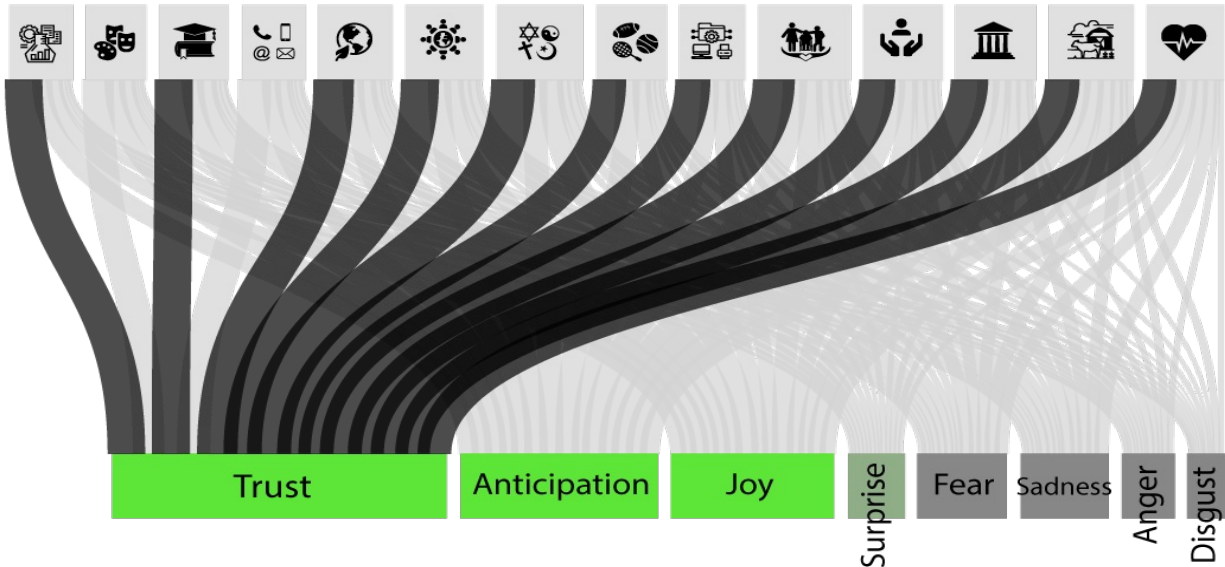
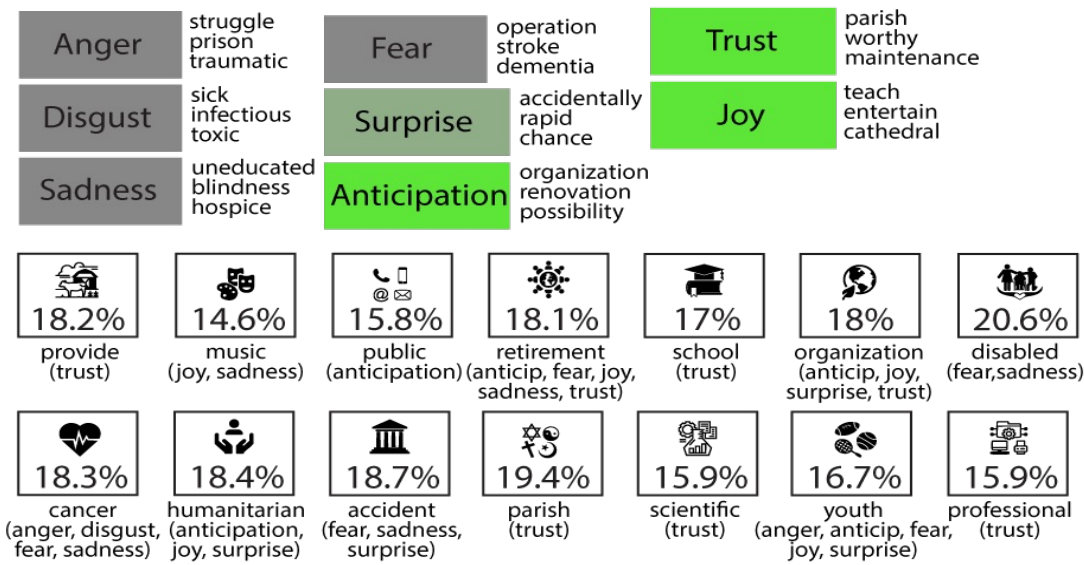
# Investigating Motives: “supervised learning”



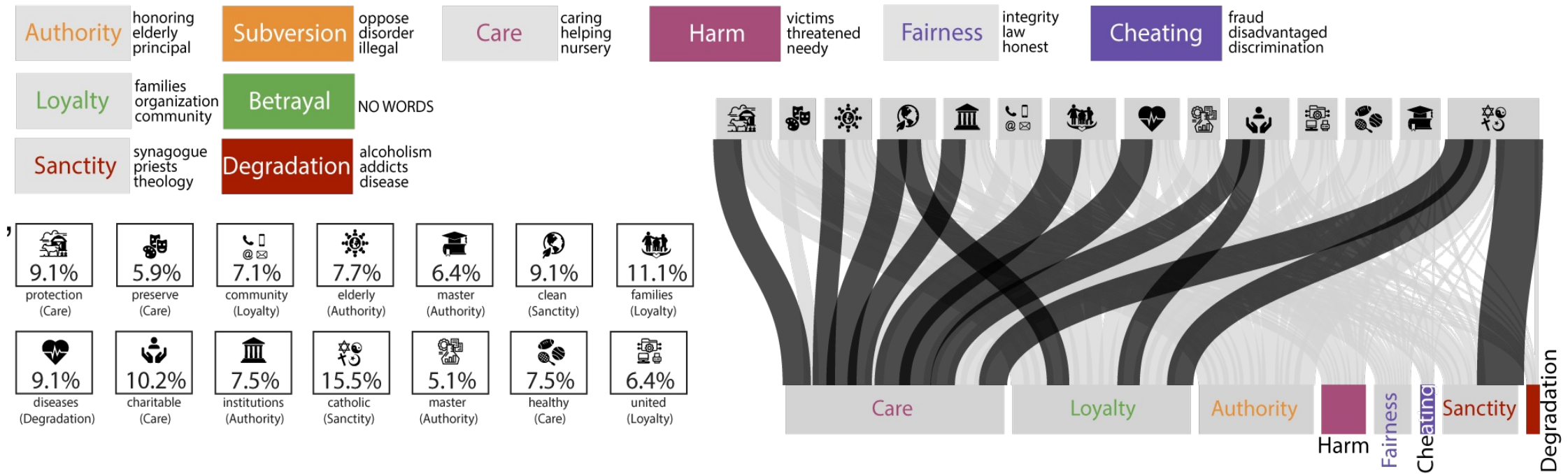
Defining salient words related to  
Emotions, Moral Values and the SDGs.

- › Using these salient words to identify which organizations mention them in their mission statements to infer motives

# Emotions

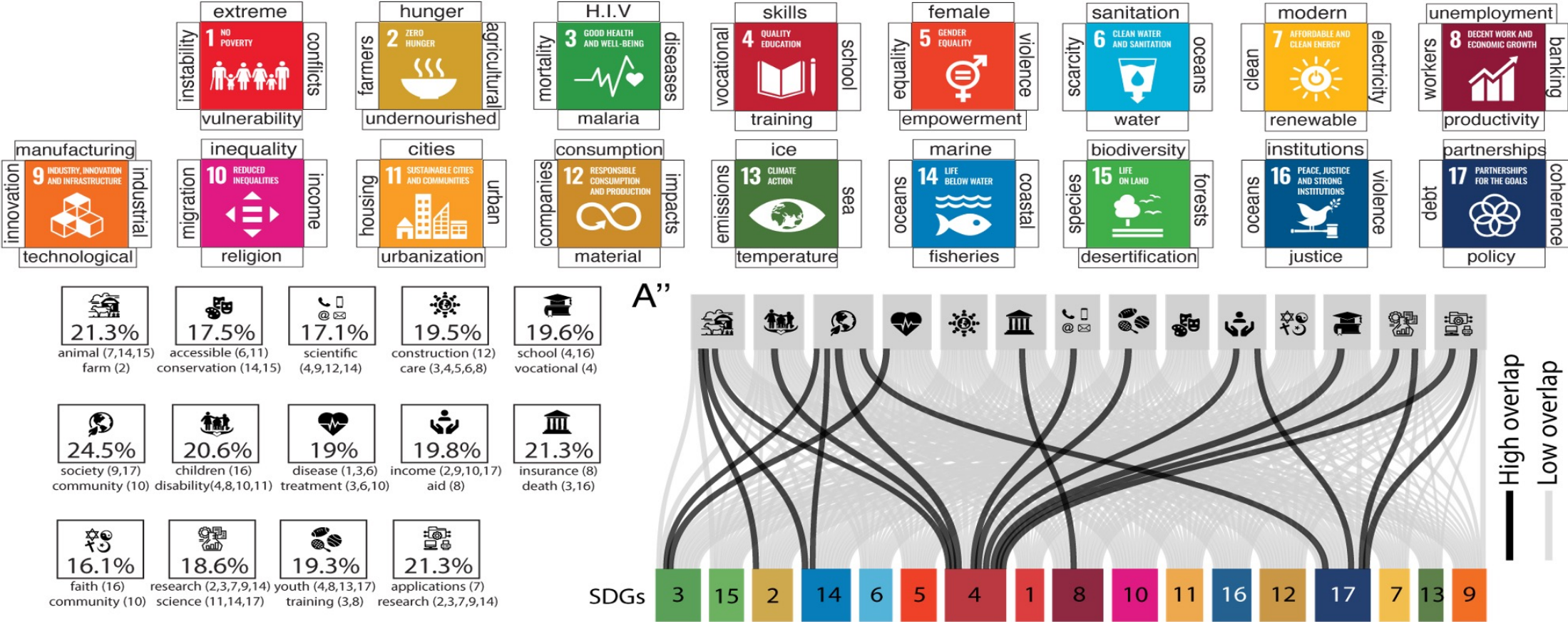


# Moral Values





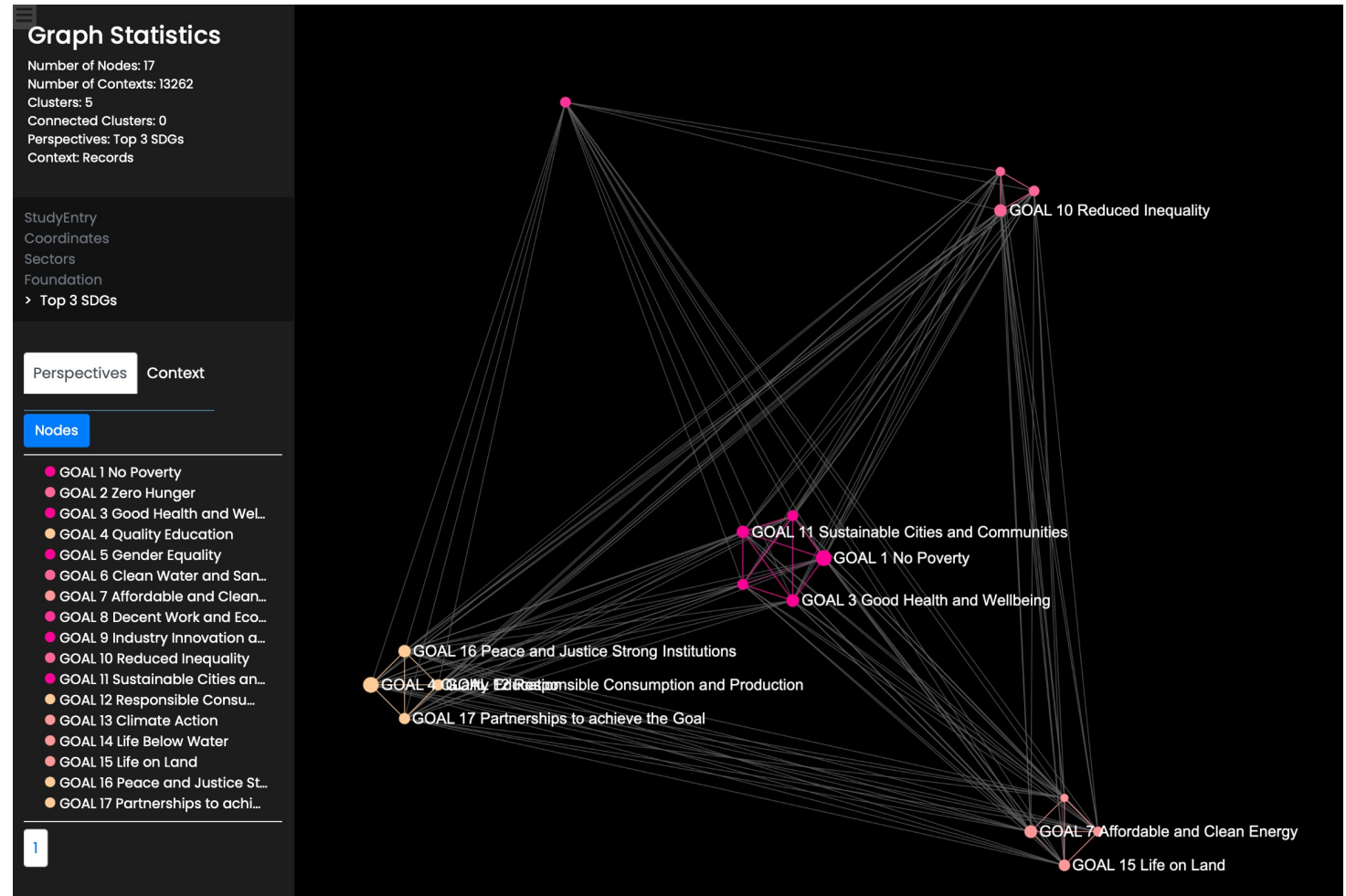
# SDGs



# An interactive Tool Promoting Collaboration

Collaboration Spotting X: a tool developed at CERN to visualize relations between large data

More on this during the workshop



- › AI can empower philanthropic collaboration by mapping POs:
  - Areas & Types of Activity
  - Geographical Distribution
  - Motivations, emotions & moral values
  - Informing Strategic Thinking to align with SDGs
  
- › Key Advantages:
  - Can be used to find patterns too hard for humans to detect
  - Open Access, can benefit from inputs from anyone and easily replicable



# Thanks!



<https://www.unige.ch/BehavioralPhilanthropyLab>

# Fragen und Anregungen?

Die Geschäftsstelle von Swissfundraising steht bei Fragen oder Anliegen immer gerne zur Verfügung.

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