# An Empirical Exploration of Perceived Similarity between News Article Texts and Images

Lucien Heitz, Abraham Bernstein, Luca Rossetto
University of Zurich, Switzerland

Takeaway Message

- We evaluate *perceived image fit* of articles empirically in a crowd-sourced experiment
- We find that while the ground-truth mostly matches well, other images can *match and in parts outperform* it
- We recommend *alternative evaluation* methods for the task that do account for multiple image matches
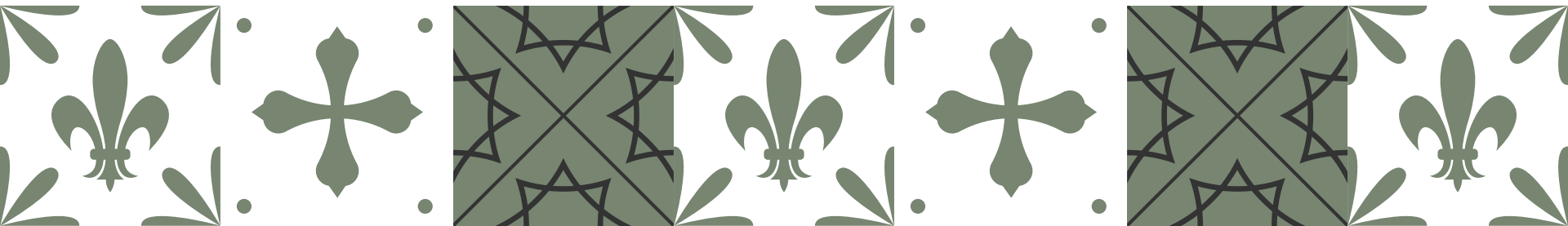
Motivation & Related Work

- NewsImages uses a dataset of article-image pairs…
  - with a 1:1 correspondence of articles and images
  - all 'incorrect' images in the dataset are an equally bad fit
- Looking at press agencies, however, stories are often published by different outlets with different images
- Does the current evaluation reflect the tasks intent?
- Explore different measurements (e.g., TRECVID's InfMAP)
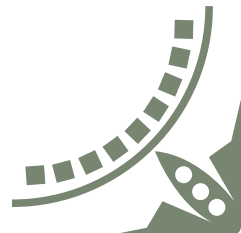
Approach

- We sample a subset of the challenge datasets
- For every sampled article, we showed 4 images:
  - Ground-truth
  - External Stock image (retrieved from unsplash.com)
  - AI-generated image (generated using Stable Diffusion)
  - CLIP-retrieved image (best non-ground-truth result)
- We conduct a survey where participants (N=73) rated the fit between article & lead with an image on a 7-point scale

Results
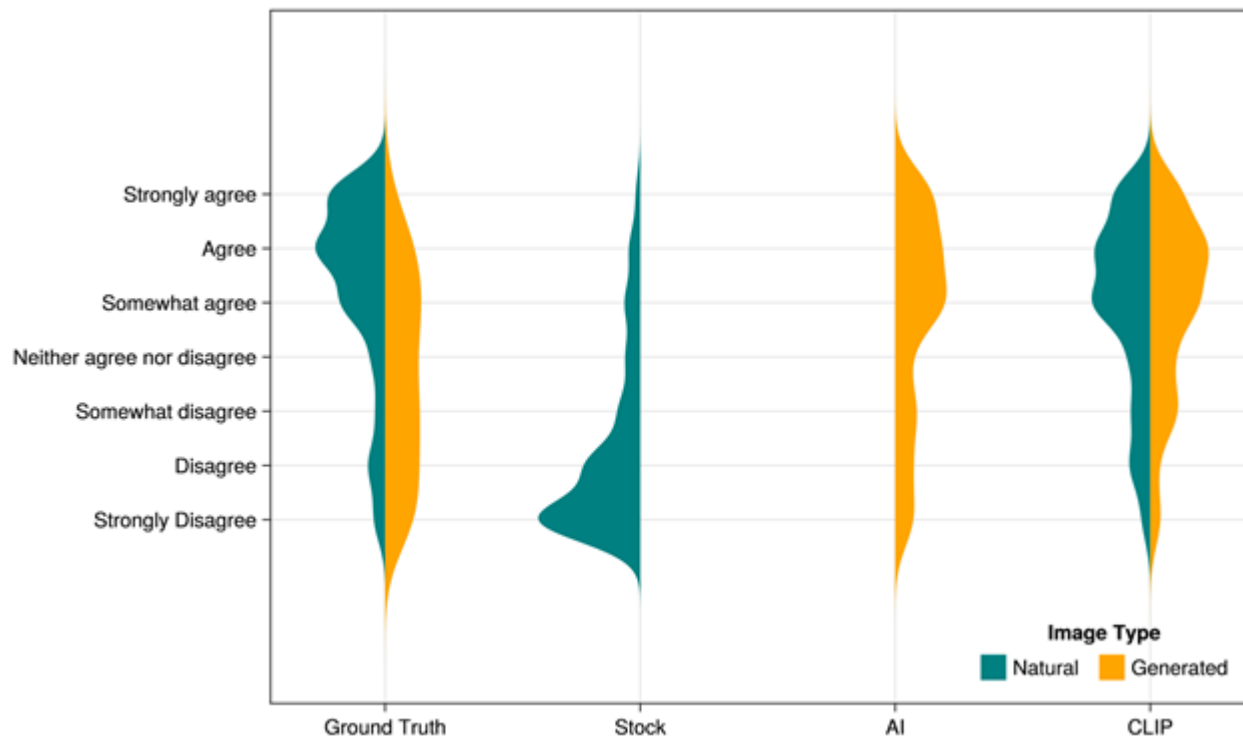
Lessons Learned: Insight

- Ground-truth is often perceived as a good fit, but…
  - other dataset images perform *equally well or better*
  - AI image generated for a *different* article sometimes rated as a better fit than for article it was generated for
- Large variability in ratings of AI images, model selection is important
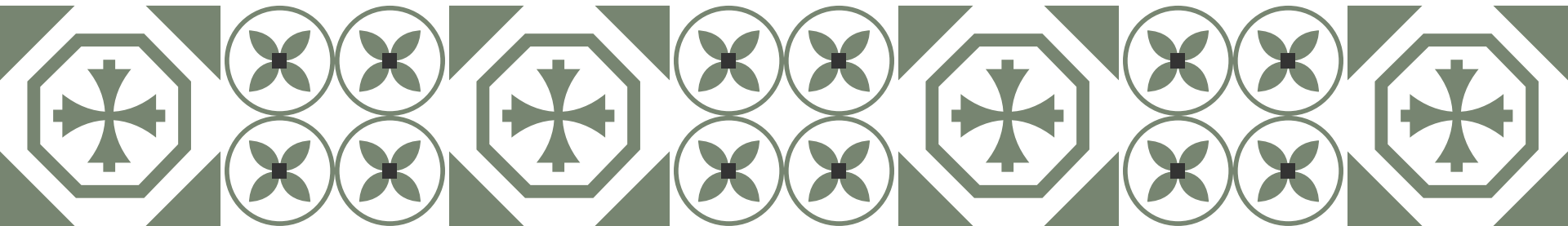
Lessons Learned: Outlook

- The 1:1 matching assumption cannot be confirmed empirically
- Discrepancies between task targets and measurements!
  - Goal discrepancy: Alternative evaluation: ex-post rather than ex-ante evaluation with humans in the loop
  - Methodology discrepancy: Separation of editorially and AI-generated content needed
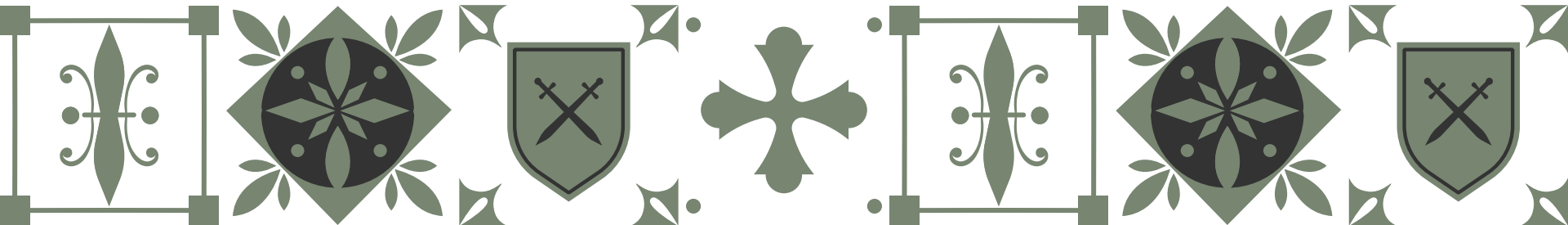
Questions?

Lucien Heitz, heitz@ifi.uzh.ch

Luca Rossetto, rossetto@ifi.uzh.ch