

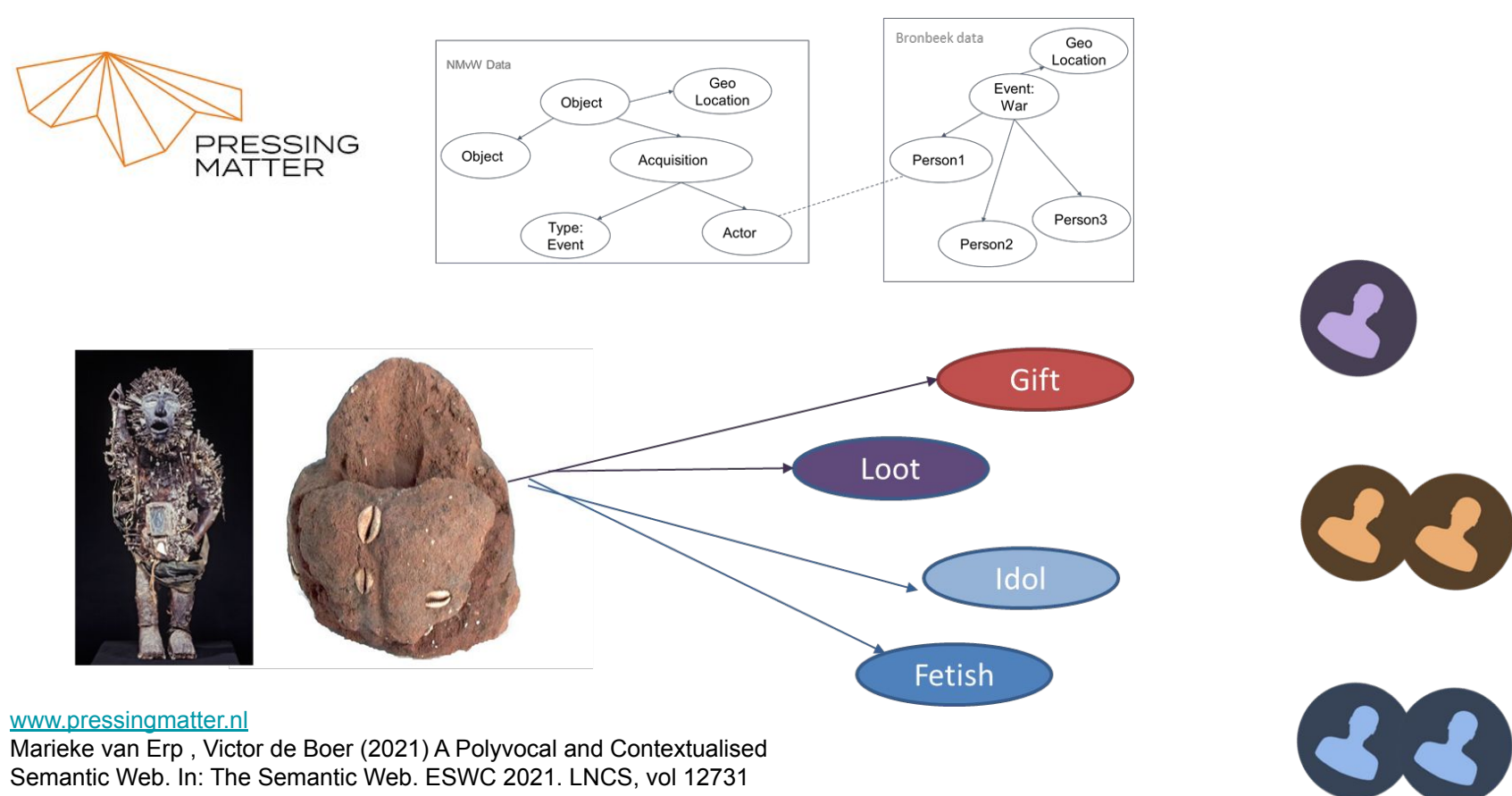
Interaction patterns for polyvocal knowledge acquisition

Project coordinators: Victor de Boer and Shenghui Wang

Problem Description

For Hybrid Intelligence systems to have effective and appropriate interactions with various users, they will need to be sensitive to and aware of the diversity of these users and the **perspectives** they might have. Knowledge Graphs provide representation formats and mechanisms to represent multiple perspectives (Erp and de Boer, 2021).

In this project, we will investigate how **polyvocal, multi-perspective knowledge** can be elicited in Hybrid Intelligence scenarios through **interactions with various end users**. These users will be **diverse** in terms of culture, geography, gender etc. One important research question is how to elicit such information in an **ethical** and **responsible** manner.



Domain

- Heritage institutions (museums, archives, ...) provide access to various users, datasets and knowledge sources.
- For the first case study, we will focus on post-colonial knowledge graphs, working with data and experts from the NMWV and the **Pressing Matter** project.

Challenges

- How can graph pattern mining and user context be combined to identify graph enrichment tasks?
- What are effective and ethical interaction patterns to elicit user context and perspective?
- What are effective and ethical interaction patterns to elicit graph enrichments, while retaining context and perspective?



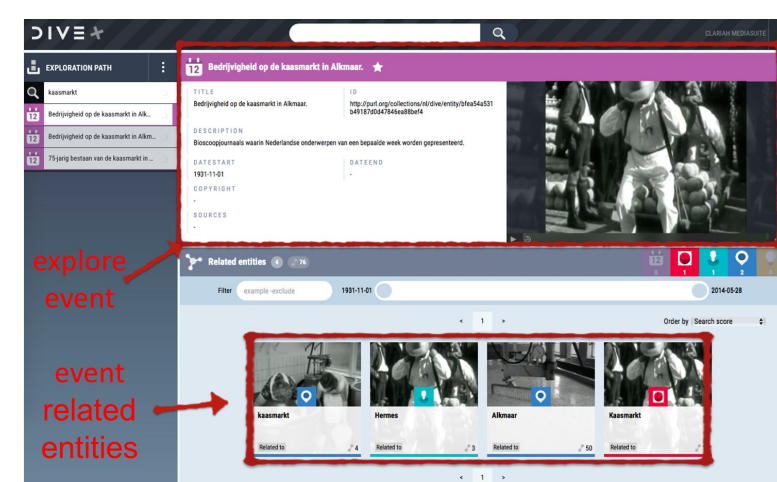
O. Inel et al. (2014). CrowdTruth: Machine-Human Computation Framework for Harnessing Disagreement in Gathering Annotated Data
 J. Gijssbertha (2023) Capturing polyvocality for Colonial Heritage events. VU Msc thesis
www.cultural-ai.nl

Photograph 1: Strike by Weecor employees on the 30th of May 1969. Select a maximum of two terms that apply to what you are seeing on this photograph.



Revolt
 Protest
 Raid
 Strike

	Revolt	Protest	Raid	Strike
Agent 001	1	0	0	1
Agent 002	0	0	0	0
Agent 003	0	0	1	0
Agent 004	1	0	1	0



Conte et al. (2023) Between Data, Art and Meaning. NIAA project de Boer et al. (2017) DIVE+: Explorative Search for Digital Humanities. www.w4ra.org

Modes of Interaction

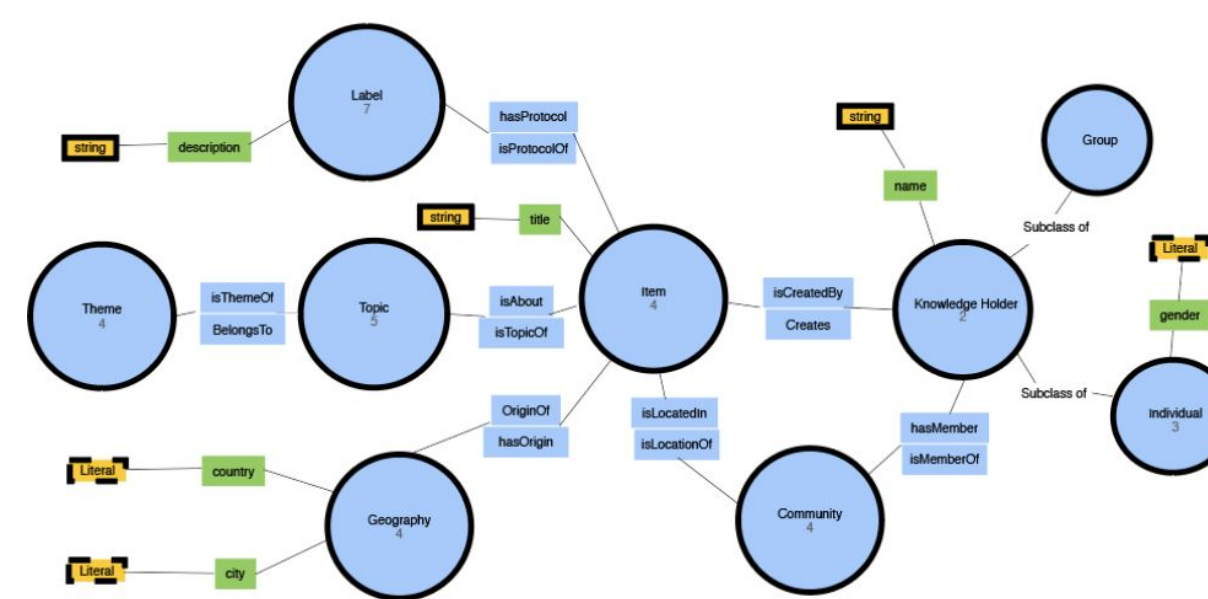
The method will be generic, but should be implemented in a variety of modalities:

- in a web application,
- an interactive VR application or
- an interactive voice response system (IVR).

The research will result in the generic patterns and supporting tooling to implement this in the various modalities and evaluations of these two.

Intended Outcomes

- A set of re-usable patterns for interactive knowledge graph enrichment
- A description of ethical guidelines for identifying and eliciting contextual and perspective features of users
- A tool and method to implement said patterns in at least two modalities
- Evaluation of the patterns through the implementation in at least two use cases, validated through a user experiment where effectiveness of the patterns, the extent to which perspectives are captured and usability are assessed.



Hutubessy, L. (2020) Representing Traditional Knowledge through Ontology. Msc. Thesis UvA



Apply now for our PostDoc position!