

Multivocal Exhibition: a user-centric application to explore symbolic interpretations of artefacts from different cultural perspectives^{*}

Bruno Sartini¹[0000–0002–9152–4402], Andrei Nesterov⁵[0000–0001–9697–101X],
Claudia Libbi^{2,4}[0000–0003–3758–4145], Ryan Brate³, Sarah Binta Alam
Shoilee²[0000–0001–9458–8105], and Savvina Daniil⁵[0000–0001–8888–2869]

¹ University of Bologna, Via Zamboni 33, 40126, Bologna, Italy

² Vrije Universiteit Amsterdam, De Boelelaan 1105, Amsterdam, The Netherlands

³ KNAW Humanities Cluster, Digital Humanities Lab, Amsterdam, The Netherlands

⁴ Leiden University, Leiden, The Netherlands

⁵ Centrum Wiskunde & Informatica, Amsterdam, The Netherlands

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1 Introduction and sources

Linked open data (LOD) allows users to access, explore, and integrate data from different sources. It is used extensively in the cultural heritage field by providing an unprecedented level of access to information, and enabling the development of applications that can be used to explore and identify the relationships between artefacts, places, and people, as well as to trace their origins [1]. By combining LOD from Wikidata [3], the Dutch Museum of World Cultures digital collection⁶, and HyperReal [2], we developed Multivocal Exhibition. An application that lets users explore how one concept is symbolically expressed by different cultural contexts through a 3D exhibition of artefacts. The purpose of this app is to show how different cultures might interpret artefacts and what they depict according to their symbols, in the hope of fostering an open dialogue about uniqueness and similarities of cultures.

Wikidata is a collaborative knowledge graph that offers comprehensive collections of LOD on a diverse range of topics. We extract titles, images, and depicted elements from all the artworks described in Wikidata using its SPARQL endpoint⁷. The digital collection of the Dutch Museum of World Cultures (NMVW) contains metadata about more than 450,000 ethnographic objects, including ancient artefacts, religious icons, and craftwork from a variety of global cultures. We extract images, titles, and descriptions of the artefacts in NMVW from a data dump of the collection⁸. HyperReal [2] is a knowledge graph that contains

^{*} This work was created during the 2022 edition of the HackaLOD Competition <https://hackalod.com/index.php/2022/09/08/hackalod-4-5-november-2022/>

⁶ <https://collectie.wereldculturen.nl/>

⁷ <https://query.wikidata.org/>

⁸ <https://collectie.wereldculturen.nl/thesaurus/>

around 40,000 instances of cultural symbolism. We extracted information about symbols and what they symbolize in different cultures from its data dump⁹.

2 App development, description, and future work

First, we reconciled the depicted elements of artworks in Wikidata with the symbols in HyperReal by matching the corresponding labels (both in English). To associate the artefacts from NMVW with the symbols in HyperReal, we translated the latter in Dutch using the Google Translate API¹⁰ and then performed a string search with the translated symbol on the whole NMVW collection on artefacts' titles and descriptions. Then, we developed a graphical user interface (GUI) using python PyQT package¹¹ that lets users choose a concept (from the symbolic meanings in HyperReal) and up to three cultures of interest. The GUI compiles a JSON file with information about artefacts depicting symbols that symbolize the concept chosen by the users in the context of the selected cultures. This JSON file is then used as a base for a Unity¹² script that automatically generates a 3-room 3D exhibition of the extracted artefacts, each room dedicated to a different culture. In the exhibition, all artefacts come with (i) a description that specifies which symbol(s), in the corresponding culture, refer(s) to the concept chosen by the user, and (ii) a direct link to their metadata pages from Wikidata or NMVW.

Multivocal Exhibition is still a demo¹³. Currently, the app can generate a 3D exhibition with nine artefacts and three rooms, explorable in first-person using a laptop. As future work, we intend to test the app by letting small groups of users experience the Multivocal Exhibition together. We aim to obtain feedback and collect data about any debates emerging from the multicultural perspective provided by this app. We hope to stimulate users to share their perspectives, from their cultural background, about artefacts and their symbolism.

References

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⁹ <https://w3id.org/simulation/data/>

¹⁰ <https://cloud.google.com/translate/?hl=en>

¹¹ <https://pypi.org/project/PyQt5/>

¹² <https://unity.com/>

¹³ The source code and the data used to develop Multivocal Exhibition are available on GitHub at <https://github.com/cultural-ai/HackaLOD>