

Multivocal Exhibition Technical Description

Multivocal Exhibition (if we want to actually call it like this) is an application that lets users explore how one concept is symbolically expressed by different cultural contexts through a 3D exhibition of artefacts. First, we extracted information about artefacts and what they depict from Wikidata (English and Dutch) and the NMVW collection (Only Dutch). We also extracted information about symbols, their symbolic meanings, and the cultural contexts in which symbols symbolise symbolic meanings from HyperReal (a knowledge graph that contains data about cultural symbolism). We have then reconciled the depicted elements of artworks in Wikidata to the symbols in HyperReal by matching the corresponding labels. To associate the artefacts in NMVW with the symbols in HyperReal we translated the latter in Dutch using the Google Translate API and then performed a string search on the whole NMVW collection on both titles and descriptions of the artefacts. Finally, we developed a small GUI using PyQt that let users choose a concept (among all the symbolic meanings present in HyperReal) and up to three cultural contexts of interest. Thanks to the previous reconciliations, the GUI compiles a JSON file that contains information about artefacts belonging to both Wikidata and NMVW that contain symbols that symbolise the concept chosen by the users according to the selected cultural contexts. This JSON file then is used as a base for a Unity script that automatically generates a 3-room 3D exhibition of the extracted artefacts, each room dedicated to a different cultural context. All artefacts come with (i) a description that specifies which symbols, in the corresponding culture, refer to the concept chosen by the user, and (ii) a direct link to all their metadata from either Wikidata or NMVW collection. 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 using LOD.

App-focused Version

Multivocal Exhibition is a creation of the CulturalAI Team from Amsterdam, which is an application that allows users to create their own virtual exhibition. It lets users explore how one concept is symbolically expressed by different cultural contexts through a 3D exhibition of artefacts so that users have the freedom to explore the particular concept from the standpoint of different cultural contexts. In order to achieve that, the team used three different dataset, Wikidata, National Museum of World Cultures (NMvW) object collection and HyperReal (a knowledge graph that contains data about cultural symbolism). Based on HyperReal's listed symbols, artworks that contain those symbols have been retrieved from both Wikidata and NMvW collection. Finally, a small GUI was developed to let users choose a concept (from all the symbolic meanings present in HyperReal) and up to three cultural contexts of interest that leads the user to a automatically generated 3-room 3D exhibition of the extracted artefacts, where each room is dedicated to a different cultural context. 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 using LOD. In short, this application demonstrates how museums can shift the power of control to the visitors themselves.

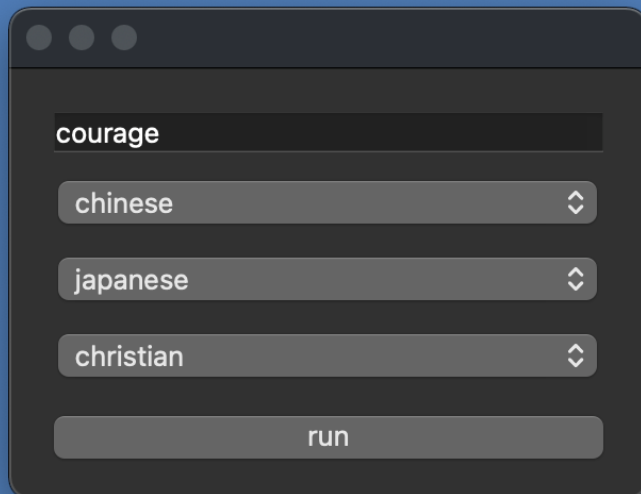
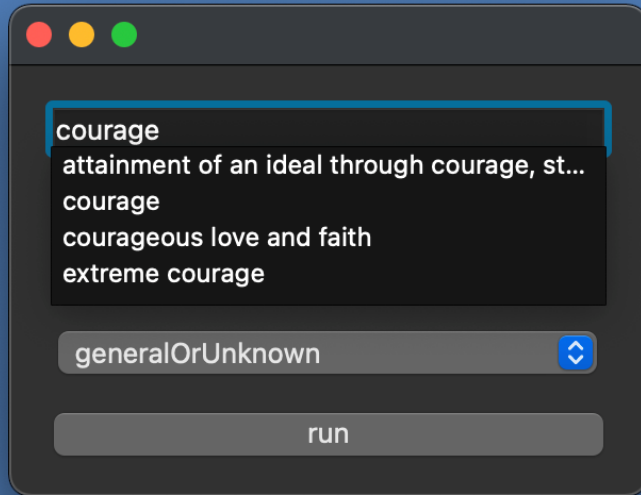
Idea-focused version

In our HackaLOD project that we developed in about 20 hours, we explored how symbols depicted on artworks shift their meaning in different cultures. Let's take Vermeer's "Girl with the Pearl Earring", one of the most famous paintings in European culture. What does a pearl symbolise here? In general, across multiple cultures, it means "femininity". And in Chinese culture, it means "immortality". We know this from a knowledge graph about symbolism called "HyperReal". So, we connected this knowledge graph to artworks available online and discovered that an object on one artwork may have several symbolic meanings depending on a cultural context. Our idea is to broaden our cultural understanding of symbols in artworks because we are often limited by the cultural views we grew up with. For example, how would a Chinese person interpret Vermeer's art from their cultural point of view? Connecting different datasets available in a linked open data format (LOD) together was one of the conditions of the HackaLOD contest. We connected "HyperReal" to one of the largest knowledge graphs on the web, Wikidata, to retrieve objects that artworks depict and their names in two languages, English and Dutch. Then, we searched for related objects in the LOD-collection of the Dutch National Museum of World Cultures (NMVW) which contains more than 400 thousand objects originating from 2 thousand cultures. Such rich cultural information allowed us to contextualise symbolic meanings, so we connected abstract symbolic concepts from "HyperReal" to the objects that have these meanings. For example, in the NMVW collection, we found a Chinese Kakemono depicting Buddha holding a big pearl. This way, we also connected artworks from different cultures on the symbolic level. To let a broader audience explore the symbolic connections in our dataset, we developed an interactive 3D interface. There, a user can select a symbolic concept they are interested in (for example, "femininity") and three cultural contexts (for example, "Chinese", "Christian", "Islamic"). As a result, the 3D visualisation gives a user a unique exhibition with artworks sharing symbolic associations. We called this a "multivocal exhibition" because it gives artworks voices (or interpretations) from different cultures.

Mixed-version

In our HackaLOD project, we explored how symbols depicted in artworks shift their meaning in different cultures. Our idea is to broaden our cultural understanding of symbols in artworks because we are often limited by the cultural views we grew up with. To achieve that, we first matched symbols from HyperReal (a knowledge graph about cultural symbolism) with the English and Dutch names of elements depicted in artworks from Wikidata, one of the largest knowledge graphs on the web. Then, we searched for those elements in the LOD-collection of the Dutch National Museum of World Cultures (NMVW), which contains more than 400 thousand artefacts originating from 2 thousand cultures. Such rich cultural information allowed us to contextualise symbolic meanings, so we connected abstract symbolic concepts from HyperReal to the objects that have these meanings. We used this newly connected data to develop “Multivocal Exhibition”, which is an application that allows users to create their own virtual exhibition. The application starts with a small graphical user interface that lets users choose a concept (from all the symbolic meanings present in HyperReal) and up to three cultural contexts of interest. Users can then explore how their chosen concept (such as “courage”, or “fertility”) is symbolically expressed by different cultural contexts through an automatically generated 3-room 3D exhibition of artefacts that contain symbols of that concept, where each room is dedicated to a different cultural context. “Multivocal Exhibition” shows 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 using LOD.

Images



chinese



**BUNDELS
FAKKELHOUT
VOOR
VERLICHTING BIJ
NACHT**

pine represents
courage from the
chinese viewpoint



**DE GOON
BAHUCHARA MATA**

rooster represents
courage from the
chinese viewpoint



**AYONG TIGER
PLAYING WITH ITS
MOTHER**

tiger represents
courage from the
chinese viewpoint

japanese



**COMMON CARP,
FRESHWATER
CRAYFISH AND
EEL, IN AN
IMAGINARY
FRENCH SETTING**

carp represents
courage from the
japanese
viewpoint



WAYANG KULIT

boar represents
courage from the
japanese
viewpoint