



INSTITUT FÜR DIGITAL HUMANITIES

IV. Presentation

# 12. Communicating the Humanities

Prof. Dr. Martin Langner



https://arvrjourney.com/mixed-reality-for-museums-when-impossible-becomes-possible-7c996e9168e4

Kohle (2013) 131–167; Schreibman / Siemens / Unsworth (2004) Kap. 34 (for Usability); Schreibman / Siemens / Unsworth (2016) Ch. 6; Jannidis / Kohle / Rehbein (2017) Ch. 15



### INFORMATION TRANSFER WITHOUT ACTIVE PARTICIPATION OF THE USER





https://edition-humboldt.de

2

## INTERACTIVE FORMS OF KNOWLEDGE TRANSFER





 $\Box$ 

#### Zahl der Neuinfektionen kann von Angaben des RKI, der Landesbehörden und Gesundheitsämter abweichen. So kommen unsere Werte zustande.

Quelle: RKI (Stand 07.07.2021), Destatis, eigene Berechnung

DER SPIEGEL

5 6 8

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www.teachthought.com

www.duolingo.com









https://www.viveport.com/apps/18d91af1-9fa5-4ec2-959b-4f8161064796/Mona\_Lisa:\_Beyond\_the\_Glass/

### Image: Operation of the second seco





https://www.youtube.com/watch?v=bEp-BmbG6N0 https://www.oculus.com/experiences/gear-vr/1358025144231073/



Visitors also want to get involved in museums, they want to comment and enter into an active dialogue. And sometimes they also want to generate content.

Nina Simon, The Participatory Museum (Santa Cruz 2010)



Exhibition "Manet Sehen" in the Hamburg Kunsthalle



**Deutsches Museum Munich** 



Interaction is not easy to implement in traditional museums due to a lack of staff and for conservation reasons - but it is in virtual museums!

#### Unleash the power of a virtual museum



With Unity or Unreal Engine, a virtual museum can be developed to serve multiple users allowing for content segmentation, better user experience, tracking opportunities, and monetization.

https://3d-ace.com/pressroom/articles/digitizeartifacts-and-secure-worldheritage-virtual-museum When built as an application, a virtual museum is able to transform the experience of a physical museum into a digital environment providing more exclusive services that go beyond just a database of images on a website or device.

Within the virtual museum app, users are not only able to see the world's heritage and history but also interact with it on multiple perception levels, especially in the case of a Virtual Reality (VR) museum.



# Muséum National d'Histoire Naturelle (2018)





# Franklin Institute in Philadelphia (2016)





#### **Space Shuttle Endeavour's Flight Deck**

C 2:00 min

Explore the Endeavour's flight deck in this virtual reality video.Extra lighting highlights the many controls in the space shuttle Endeavour's flight deck. The shuttle&nbsp:crew had to master each one in order to successfully complete missions to space and back. Up to four astronauts occupied this area during takeoff and landing.









# Nationalmuseum in Helsinki (2018)





# Peterson Automotive Museum in Los Angeles (2018)





# Tate Modern in London (2017)





# Kremer Collection Museum (2018)



https://www.youtube.com/watch?v=KWutGZf9wus



# 1. DIGITAL AND VIRTUAL MUSEUMS

# 2. INTERACTION

# 3. DATA MANAGEMENT AND SCIENTIFIC PRACTICE

Definition

Types of Virtual Museums

Good Practice Examples

Museum Communication on the WWW Augmented Reality

Natural Interaction

Gamification

**Crowd Sourcing** 

Usability

Legal requirements Research data Ethical implications





# 1. DIGITAL AND VIRTUAL MUSEUMS





lf *C*DH

"A virtual museum is a digital entity that draws on the characteristics of a museum, in order to complement, enhance, or augment the museum experience through personalization, interactivity and richness of content.

Virtual museums can perform as the digital footprint of a physical museum, **or** can act independently, while maintaining the authoritative status as bestowed by ICOM in its definition of a museum."

http://www.v-must.net/virtual-museums/what-virtualmuseum

http://www.v-must.net/sites/default/files/D3.1\_update.pdf





"The word "museums" includes all collections open to the public, of artistic, technical, scientific, historical or archaeological material, including zoos and botanical gardens, but excluding libraries, except in so far as they maintain permanent exhibition rooms."

http://archives.icom.museum/hist\_def\_eng.html



Boston Museum of Science



"ICOM shall recognise as a museum any permanent institution which conserves and displays, for purposes of a study, education and enjoyment, collections of objects of cultural or scientific significance."

http://archives.icom.museum/hist\_def\_eng.html



Depot of the Berlinische Galerie



"A museum is a non-profit, permanent institution in the service of society and its development, open to the public, which acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study and enjoyment."

http://archives.icom.museum/hist\_def\_eng.html



**GRIMM's World Kassel** 





"Museums are democratising, inclusive and polyphonic spaces for critical dialogue about the pasts and the futures.

Acknowledging and addressing the conflicts and challenges of the present, they hold artefacts and specimens in trust for society, safeguard diverse memories for future generations and guarantee equal rights and equal access to heritage for all people."

http://icom.museum/en/activities/standardsguidelines/museum-definition/



### DEFINITION OF "MUSEUM" OF THE INTERNATIONAL COUNCIL OF MUSEUMS (2019)



"Museums are not for profit.

They are participatory and transparent, and work in active partnership with and for diverse communities to collect, preserve, research, interpret, exhibit, and enhance understandings of the world, aiming to contribute to human dignity and social justice, global equality and planetary wellbeing."

http://icom.museum/en/activities/standardsguidelines/museum-definition/





lf *C*DH

"In tandem with the ICOM mission of a physical museum, the virtual museum is also committed to public access; to both the knowledge systems imbedded in the collections and the systematic, and coherent organization of their display, as well as to their long-term preservation.

As with a traditional museum, a virtual museum can be designed around specific objects (akin to an art museum, natural history museum), or can consist of new exhibitions created from scratch (akin to the exhibitions at science museums)."

http://www.v-must.net/virtual-museums/what-virtualmuseum



EUseum demo (2014)



"Moreover, a virtual museum can refer to the on site, mobile or World Wide Web offerings of traditional museums (e.g., displaying digital representations of its collections or exhibits); or can be born digital content such as net art, virtual reality and digital art.

Often, discussed in conjunction with other cultural institutions, a museum by definition, is essentially separate from its sister institutions such as a library or an archive."

http://www.v-must.net/virtual-museums/what-virtualmuseum



https://www.digitalmeetsculture.net/article/croc-simulates\_ state-hermitage-museums-jupiter-hall-in-virtual-reality/ 2

A virtual museum is 1. a digital entity with characteristics of a museum (see definition ICOM) d.i.

public access to the embedded knowledge systems

- systematic and coherent organisation of its presentation

- long-term preservation of the exhibition.

2. a grouping around specific collection items or newly created exhibitions with reference to digital content of physically existing museums or newly created digital components.









## The traditional core tasks of a museum:

- Collecting
- Preserving
- Research
- Documenting
- Exhibiting
- Communicating

also apply to virtual museums!



lf DH

"Virtual museums are usually, but not exclusively delivered electronically when they are denoted as online museums, hypermuseum, digital museum, cybermuseums or web museums."

http://www.v-must.net/virtual-museums/what-virtualmuseum



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The visitor numbers of traditional museums depend heavily on their web presence!

Ken Johnson, No Detail Goes Unnoticed When Art Is a Click Away, The New York Times Jan. 30, 2015, Section C, Page 27 (<u>https://www.nytimes.com/2015/01/30/arts/</u> <u>design/art-museums-are-increasingly-adding-</u> <u>their-collections-online.html?\_r=0</u>)

Hubertus Kohle, Museen digital. Eine Gedächtnisinstitution sucht den Anschluss an die Zukunft (Heidelberg 2018): <u>https://heiup.uni-</u> <u>heidelberg.de/catalog/book/365</u>

https://weblium.com/blog/10-best-museumwebsite-examples/



The Met Store

Our new catalog is brimming with hundreds of festive finds including ornaments holiday cards and more.

SHOP NOW

Interview with Wangechi Mutu

"Women's bodies are always at the front of so much of the expression, the hostility, the magnificence of how humankind sees itself." WATCH NOW







Become a Member Enjoy free admission, complimentary guest tickets, invitations to exclusive viewing hours, discounts, and more Jater Tobay





Teens Take The Met! On Friday, November 8, 5-8 p.m. teens take over The Met Activities across the Maximum include at making performances, music, and more.

https://www.metmuseum.org

Meet The Last Knight the dis patient glowed transform that if no or of the not powerful rules in European Instay?



"A digital museum is a digital information system, often found on the WWW, which has combined digital reproductions of exhibits under museum objectives. As a rule, the real collection objects are not only formally indexed, but also described in terms of content."

https://de.wikipedia.org/wiki/Digitales\_Museum

https://sammlungen.uni-goettingen.de



Gerät zur Aufzeichnung un Wiedergabe (4)



lf@DH

A hypermuseum represents a personalised collection of multimedia objects from a museum's online offering that can be saved as a new multimedia document (website, PowerPoint presentation, hypertext or Word document, etc.).

http://www.hypermuseum.com





A cyber museum exists only in cyberspace or on the internet and has no physical counterpart.



https://www.daz3d.com/gallery/images/75230/



#### **STATION 1**

Startseite / Raum 2: Digitalisierung von Kulturgütern / Station 1: Digitalisierung verschiedener Medien

#### VERFAHREN ZUR DIGITALISIERUNG VON KULTURGÜTERN WIE KOMMEN ALTE FILME UND TONDOKUMENTE INS NETZ?

Daz Zetalter der Digitalisierung bringt unter anderem auch die Möglichkeit mit sich, Kulturgüter durch verschieden digitalte Medien zu vermitten. Neben verschiedenen Textsorten Konnen auch Bilder, Objekte sowie Audio- und Videodateien zugünglich gemacht werden. Die Digitalisierung von Texten mittels CCR, Double Keying oder Handwirtten Rex Recognition wird als Texhnik zur Verstersteilung von reutogilaulieitent Worterbüchern in Raum 1/Station 2 erläutert. Im Folgenden werden Image Digitalisierung von Audiound Videodateien zugüng diedimensioning reichersbereichen erbeiterbeiten und Videodatens owie die Digitalisierung reichersbereichen erbeiterbeiten und Videodatens owie die Digitalisierung reichersbereichen Erbeiterbeiten erbeiterbeiterbeiten wird Videodatens zwei die Digitalisierung reichersbereichen erbeiterbeiterbeiterbeiterbeiten erbeiter

(Autor: Nicolas Schenk, 30.09.2015)

#### Image Digitalisierung

Was bedeutet Digitalisierung eigentlich? Laut Melissa Terras versteht man darunter die Überführung eines analogen Signals oder Kodes in ein digitales Signal oder Kode (2012: 47). Zum vollständigen Digitalisierungsprozess gehören das Erfassen, das Aufbereiten und das Speichern analoger Informationen auf digitalen Medien sowie die Erzeugung von Metadaten und die Langzeitsicherung.



Scanroboter der Sächsischen Landesbibliothek-, Staats- und Universitätsbibliothek Dresden (Photo: Kay Körner, CC BY-SA 2.5).

Unter Image-Digitaliserung versteht man allgemein das Scannen und Fölografferen von Bildern. Die Qualität der gescannte bzw. fotografferten Bilder Sollte dem Zweck der Digitaliserung erstenchend ausrichten hoch sein. Cerentel solltet dei Bilder bzw. Stelten oder zu digitaliserung ternet unterschledern. Der digitaliserung auf der abgebildet werden, damit erkennbar ist, dass nichts von der Vordera bageschlaftet bzw. Stelten oder stelte solltet dem Zueck der als Grundgag für die weiteren Prozess dient, und Druge abgeschnittet für die weitere wurde. Grundsätzlich werden zwei hen von Digitalisaties und eine unterschledern: Der digitale Master, der als Grundgag für die weiteren Prozess dient, und Druge abgeschnittet für die weitere Norder. Der digitale Master, der die Studies gen für die weiteren Prozess dient, und Druge für die Vorder zwei hen oder basters ald (2, 8, 2) zur bartellung im Weih. Da der der Studiess die Vorder baster die Vorder beiter der Under die Vorder baster baster als (2, 8, 2) zur bartellung im Weih. Da der der studiess die Vorder baster baster. Die die Vorder baster ba

### http://dhmuseum.uni-trier.de



# ARTSANDCULTURE.GOOGLE.COM (Android or iOS App)



#### https://artsandculture.google.com/project/vermeer



# **EXHIBITIONS AS POWERPOINT-FILE**



http://davidleeedtech.blogspot.com/2013/10/virtual-museum-using-google-slides.html



## ARTSANDCULTURE.GOOGLE.COM

#### 

Startseite Erkunden In der Nähe

Profil Q

Höhepunkte



#### Kategorien



Künstler 9.480 Künstler Medien 197 Medien



Kunstrichtungen



Historische Ereignisse 622 historische Ereignisse



Historische Persönlichkeiten 7.543 historische Persönlichkeiten



## ARTSANDCULTURE.GOOGLE.COM





# GOOGLE ARTS & CULTURE

## (https://artsandculture.google.com





ART MYSTERIES



Discover Kehinde Wiley

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HISTORY IN FOCUS



Caminos de Viento Carlos Jacanamijoy 1999



Museum of Contemporary Art Bogotá Bogota, Kolumbien

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Su ancestro indigena se ha ido apoderando del espacio pictórico de Jacanamijoy, cada una de sus obras es una conexión con las fuerzas emanadas de la madre tierra que se concretan en atmósferas y signos llenos de color.






Ground Floor - Egyptian Antiquities - Work in the Fields (room 4)



Bearer of offerings 12th Dynasty, c. 1950 BC Assiut, cemetery Painted ficus wood E 11990



### **ARTSANDCULTURE.GOOGLE.COM** (Google Street View)



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### **Empfohlene Geschichten**

Alle ansehen



### **ART IN BRIEF** Vincent van Gogh

Learn more about the post-impressionist painter



AROUND THE WORLD

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Dolls of the World

How the world's favourite toy looks on different continents



VIRTUAL EXPLORER **Explore Foto Museo Cuatro** Caminos Discover amazing photography from Mexico



VIRTUAL EXPLORER The Elbphilharmonie Hamburg in 360°

Experience a cultural landmark where all music meets



### ART IN BRIEF Meet Yoo Youngkuk

G

Discover the Korean artist's abstract works



~ CULTURE IN BRIEF

### Angkor Wat in Cambodia

Discover one of the largest religious monuments in the world



LITERARY LIVES Explore Virginia Woolf's London

> Get an insight into the places that inspired the author



CONTEMPORARY ART Ming Wong: Next Year

~

Discover the work of the Singaporean artist











# MUSEUMS DIGITAL

- Digitisation of the collections
- Digital analysis of the collection objects
- Collection Management, Museum
   Information Systems
- Virtual exhibitions

s. Master Programm "Digitale Denkmaltechnologien" in Bamberg / Coburg



[www.cam.ac.uk/news/museum-trials-digital-digging-app]

L. Manovich, The language of new media (Cambridge MA 2001).
R. Parry (ed.), Museums in a Digital Age (London / New York 2010).
W. de Jager, Virtual reality and the museum of the future, in: europeana blog: http://blog.europeana.eu/2013/12/virtual-reality-and-the-museum-of-the-future

### METROPOLITAN MUSEUM NEW YORK (HTTP://METMUSEUM.ORG) $\odot$



### A First Look



**Collection Highlights** Browse collection highlights selected by curators from the Museum's seventeen curatorial departments.

**Open Access Artworks** Enjoy more than 406,000 hi-res images of publicdomain works from the collection that can be downloaded, shared, and remixed without

restriction.



Greek and Roman Art at The Met Discover Greek and Roman art in all of its art objects spanning six millennia.

complexity and resonance, with more than 17,000

### Spotlight on the Collection



Ellsworth Kelly Enjoy the simple shapes and bold colors of the American artist Ellsworth Kelly, whose career spanned nearly seventy years.



**Charles Sheeler Photographs** Browse through a selection of this leading American artist's photographs—including pictures he took of objects at The Met.

Netsuke Browse more than 1,000 examples of netsuke-

ornately carved miniatures worn as part of traditional Japanese dress.



ibitions across our three locations

VIEW ALL EXHIBITIONS

### Explore



### MetCollects

MetCollects celebrates works of art new to the Museum's collection through the fresh eyes of photographers and the enthusiastic voices of leading scholars and artists.



**Timeline of Art History** 

The Heilbrunn Timeline of Art History pairs essays and works of art with chronologies to tell the story of art and global culture through The Met collection



**Protecting Cultural Heritage** Director Max Hollein reflects on the multiple roles of The Met and the ways in which he will help lead the Museum on issues of cultural heritage

https://de.wikipedia.org/wiki/Digitales Museum mit Liste Virtueller Museen

# DIGITAL MUSEUMS

- Websites with hyperlinks and video files
  360° panoramas
- Information geared to different user groups
- Individual experience is in the foreground
- High-gloss photos of the collection objects
- Contextualisation through TimeLine, maps, cultural history essays, interviews



three locations.

VIEW ALL EXHIBITIONS

https://de.wikipedia.org/wiki/Digitales\_Museum mit Liste Virtueller Museen

Hubertus Kohle, Museen digital: Eine Gedächtnisinstitution sucht den Anschluss an die Zukunft, Heidelberg 2018





# MUSEUM PORTALS

are web portals (virtual platforms) that bring together and structure information on a specific topic; sometimes also application systems that bundle existing museum databases under a common research interface. Such overarching museum documentation, however, presupposes the use of databases and the use of common standards for the acquisition and digitisation of collection objects.

www.museumaktuell.de/index.php?site=willko mmen&lang=DE

www.museum-digital.de

www.deutsche-digitale-bibliothek.de

www.europeana.eu/portal/de

www.bildindex.de

www.digicult-verbund.de/de





# ADVANTAGES OF DIGITAL MUSEUMS

- Global availability
- Pars pro toto effect
- Networking (possibility of linking)
- The object becomes a source of information
- Individualisation
- Interaction
- Simulation

Disadvantage: Rapid obsolescence



# MEMORIALS: ANNE FRANK HOUSE





## MEMORIALS: ANNE FRANK HOUSE

https://annefrankhousevr.com



https://www.youtube.com/watch?v=HCFUuyi-IIc



# LOST PLACES: TITANIC

### https://www.oculus.com/experiences/rift/1045155438855839/ https://store.steampowered.com/app/741430/Titanic\_VR/



### https://www.youtube.com/watch?v=X4OJI\_J9I5Y





# 2. INTERACTION





# AUGMENTED REALITY



Lucio Tommaso De Paolis – Antonio Mongelli (Eds.), Augmented and Virtual Reality, Second International Conference, AVR 2015 Lecce, Italy, August 31 – September 3, 2015 Proceedings (Heidelberg 2015)

http://electricarchaeology.ca/2015/05/20/low-friction-augmented-reality



# AUGMENTED REALITY





http://www.chessexperience.eu











https://apps.apple.com/de/app/ikea-place/id1279244498

### ③ GOOD PRACTICE EXAMPLE: IKEA VIRTUAL REALITY SHOWROOM









https://demodern.de/projekte/ikea-vr-showroom



# Time Travel. The Städel Museum Frankfurt in the 19th Century

Files Adr + d Ville if if at 2 faller Sign L'Backhuysen Tind . Houchan Claybe Som the for auffin the r d Vilde 1833



http://www.faz.net/aktuell/feuilleton/ausstellung-zeitreise-im-frankfurter-staedel-museum-14457607.html



# ETRUSCANNING







Cerveteri, Etruscan elite tomb (socalled Tomba Regolini-Galassi), excavated in 1836, Finds in the Mus. Vaticani

Project of the CNR-ITABC & Visual Dimension (<u>http://regolinigalassi.wordpress.c</u> <u>om/</u>)



# ETRUSCANNING EEN PERSOON TEGELIJKERTIJD





### TOMBA REGOLINI-GALASSI

### ③ NATURAL INTERACTION IN VIRTUAL SPACES (ETRUSCANNING)





Installation in Amsterdam und Leiden

### NATURAL INTERACTION IN VIRTUAL SPACES (IMAGO BONONIAE)





Interactive Bologna (Imago Bononiae)

http://www.digitalheritage2013.org/imago-bononiae/, www.youtube.com/watch?v=mm08iplSfLA

### NATURAL INTERACTION IN VIRTUAL SPACES (KEYS2ROME)







### AdMotum in the exhibition Keys2Rome

http://vimeo.com/109251310

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Permanente Installation in den Vatikanischen Museen





Interaktive *oscillum* (Allard Pierson Museum)









Rome, Mercati Traianei



### Augustus of Prima Porta





# TANGIBLE INTERFACES









http://www.chnt.at/virtex-atangible-interface-for-museumobjects-and-monuments/ www.youtube.com/watch?v=n Qbdn2NVIIs



# ARA PACIS IN AMSTERDAM



### NATURAL INTERACTION IN VIRTUAL SPACES (TANGIBLE INTERFACES)











### ENAME GAME "EHAM1291"





### https://enameabbey.wordpress.com



# ENAME GAME "EHAM1291"





## ENAME GAME "EHAM1291"



 International and perturgate the first statement of the state a wen fogt mede no alle gaber b at weijed loene de haneffre vaber C Tibes ouer mattine wan torout D to her af toas valien hour tronen menn Er claine nis B at hebbit harde ver vernomen bre ucitit O tenus. What A tie one de heelghe liete ons terre V an dorre biechte entyetemaede a) et groeter pine en vele deum waette tha de ommipotene vertile i oe sor daar toe one moere heren D arhan ghod gheue hendrike B iner shenaten ewelike e mane egyptiace natalica will at dat wi nit adure later tes inertis plus plote la setelesence martinen D te ouce hon noch bidden fal un er preabus. per apin to w aur berven wi onfe fouten met Ex EX PA H odar waer hopen mer no gaen G 10 par not of the anemarien D ien moete stood ghebenedien tises van fonden mer aue Gater almen ghote be hoertien comme te elisen mente noch es hour 6 hole ente fare moeter toeren 0 moatt ternente brioude leeren h och hemontaambren fonde an machme fekerlehe beghnnen C e perfine her in ghebeuven mach a desvort dre her inftaen te weltebtechten wille gljaen fi dar na betren fune meldaet a fins heren fpapen vaer F nde feir de couentre velwaren hoo bie ons allen heefr gemint aut dres fur feker ende shemes eer dan non bede moeder fant 1 wegbe tamberleke famile h me foud in mer waerh winer # monstebringene te dien lande V cinachten om a aerders stioer I at veue ente adaem hadde vloere of ant to wer fo comt facu fere ve el omietten bronfen here f fi hi hadoms to ten Groera D athrest one alwallens tiaerf \_ F rmens hiet weet effee comen a ocht funt er mostiere ofarmen Die ombe radie tre hoever troven & abies land owelke darien dar ellen fiere foren berouwen 1 act hide gaf fin heteribloer & ne tobe sherade op onten here


## ENAME GAME "EHAM1291"





## ENAME GAME "EHAM1291"













Erik Champion, Critical Gaming. Interactive History and Virtual Heritage, Digital Research in the Arts and Humanities (Farnham 2015). Game-engines:

http://unity3d.com

http://www.unrealengine.com/udk/

http://mycryengine.com

http://www.sourcefilmmaker.com/post.php?id=7 948&p=1

Beispiele:

http://www.playthepast.org

http://vimeo.com/25901467

http://www.gamestar.de/spiele/gods-heroes-

rome-

rising/test/gods heroes rome rising,45947,2323



# PROBLEMS



Assassin's Creed Odyssey

- The necessary visualisation creates images in the mind that are no longer open to critical reflection.

 Games tend to avoid complex interactive
"ecosystems" (real simulations are considered quite boring) and inevitably focus on the everyday details of life. This unnecessarily simplifies the content to be conveyed.

- The player learns the complex set of rules while playing. As a result, he is focused on fulfilling the game requirements and overlooks the content to be taught.



## BENEFICIAL GAME DESIGNS



Assassin's Creed Odyssey

- Discursive game environment: questions have to be answered playfully in a discussion.

- performative game environment: in role-playing games, the user appears as a specific character in specific socio-historical contexts. This creates a cultural presence (sense of historical perspective).

 Thesis-based kitset visualisation machines (Champion): hypotheses about historical developments are tested in a detailed simulated environment and can also be changed.



# DEMANDS ON DH GAMES

- Games should be thought-provoking

- Games do not always have to be played according to a rule (subversive practices of counterproductive design)

- Computer games are not the only form of communicating. The educational added value must be emphasised!

 As a museum application, the user often lacks the time to understand a complex set of rules.
The focus must be on understanding cultures, languages or ways of life.

- Simulations must focus on the process rather than the result.



# DEMANDS ON DH GAMES

- Experiencing how people interact with a building or interact with each other should be in the foreground.

- It must be shown how contested knowledge is built.

- The choice of a goal must be more important than to avoid the inevitable steps towards a known goal.

- NPCs (non-player characters, i.e. Al-controlled actors in the game) as persuasive "cultural agents". They should encourage the player to refrain from violent means and give the game a sense of moral responsibility.

#### (C) LEARNING TECHNICAL TERMS









https://dh-games.uni-goettingen.de

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# SOCIAL IMAGE TAGGING

			Suche .
ÜBER ARTIGO BLOG / 😭 / 🖻 ZUR BESTENLISTE Runde 1 von 5 18 Sekunden PUNKTE SCHLAGWORTE DES MITSPIELERS EINGEGEBENE SCHLAGWORTE	5 11 SPIEGEÕO SPIEGEL 5		
Eingabe		surs Children Ditto	

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Chiara Franzoni – Henry Sauermann, Crowd science. The organization of scientific research in open collaborative projects, Research Policy 43, 2014, 1–20 (<u>http://www.sciencedirect.com/science/article/pii/S0048733313001212</u>)



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About Us

# **CROWD SOURCED FORMAL** VERIFICATION





#### **?** WHERE IS USER PARTICIPATION USEFUL?













## USABILITY

describes the value of user-friendliness. If an application or website has a high usability, for example, the loading time is very short and the navigation is very clear.



Loading.....





## USABILITY

This results in five parameters that must be set for a user interface:

- easy to learn
- efficient to use
- easy to remember
- pleasant to use
- generates few errors



# USER EXPERIENCE

on the other hand, means the user experience on a website or in an application. This is primarily about design and joy of use.







# SELECTED MUSEUMS

Virtual Exhibition Tours (<u>https://www.louvre.fr</u>)

Metropolitan Museum of New York (http://www.metmuseum.org/)

Museum of Modern Art (http://www.moma.org/explore/collection/index)

Van Gogh Virtual Museum (http://www.vangoghmuseum.nl/)

Virtual Silver Screen of the Library and Archives Canada (<u>http://www.collectionscanada.ca/silverscreen/</u>)





## **IMAGEABILITY: PANORAMIC IMAGES**

Van Gogh's Van Goghs: Masterpieces from the Van Gogh Museum, Ansterdam Service Leaner at Superior



The Bedroom, October 1885 off on cenves Van Gogh Museum, Amsterdam (Vincent van Gogh Foundation)

Residendio 🚭

This painting, which faithfully reproduces Van Gogh's bedroom in Arles, was part of the decentive program he elaborated for the Yellow Bouse.

It's just simply my bedroom, only here color is to do everything, and griing by its simplification a grander tiple to things, is to be suggestive here of rest or of sleep in general. In a word, looking at the picture ought to rest the brain, or rather the tengonation...The shadows and the cast shadows are suggerented; it is painted in free flat that like the Japanese prints.

- Letter to Ibro, 16 October 1888

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#### Virtual Exhibition Tours (<u>https://www.louvre.fr</u>)











# INTERACTIVITY WITH SCALABLE IMAGES AND TEXTS

Metropolitan Museum of New York (<u>http://www.metmuseum.org/</u>)

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## NAVIGABILITY: SEARCHING UTILITY FOR IMAGES AND TEXTS

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#### Museum of Modern Art

(http://www.moma.org/explore/collection/ind

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# VIRTUAL SPACIALITY: SIMULATION OF A 3D RECONSTRUCTED MUSEUM SPACE

Van Gogh Virtual Museum (http://www.vangoghmuseum.nl/)







## NARRATIVE VIDEOS



Virtual Silver Screen of the Library and Archives Canada (<u>http://www.collectionscanada.ca/</u> <u>silverscreen/</u>)



Terms and Conditions

# **EXPERIMENTAL SETUP:**

- **1. Aims:** users start with a plan of the tasks to be done.
- **2. Exploration:** Users explore the user interface and discover useful actions.
- **3. Selection:** Users select the most appropriate actions to perform their task.
- **4. Evaluation:** users interpret the system's responses and evaluate its progress.

**Result:** The interactive digital museum with scalable images and texts and the virtual museum simulating a 3D reconstructed museum performed better than the digital museum with the search fields for images and texts.

#### EVALUATION OF USABILITY

## NATURAL USER INTERFACES:

Corredato Guerino G., et al., **Conceptual Framework for** Supporting the Creation of Virtual Museums with Focus on Natural User Interfaces, in: Marcus, A., et al. (eds.), Design, User Experience, and Usability: Users, Contexts and Case Studies, 7th International Conference, DUXU 2018, Held as Part of HCI International 2018, Las Vegas, NV, USA, July 15–20, 2018, Proceedings, Part III (Springer, Cham 2018) 490-502.





Respect the diversity of people (Languages, Physical differences)!

Use 360° images for better navigation in the virtual room, where the user can rotate in all possible angles and walk through the museum, as if visiting a physical museum!

Use 3D function so that the works can be rotated horizontally, exploring every detail of the exhibition!

Use the touchscreen interaction of the user, providing better usability and interaction of the same with the software!

Allow the voice command to perform some action, so that the museum becomes more accessible!





Give attention to the questions of physiology and kinesthesia, avoiding difficult movements and very repetitive actions!

Give attention to quantity of information and your exhibition, seeking to promote good visibility of all elements of the interface!



# VR EXHIBITION "BRONZE AGE" BRITISH MUSEUM

https://mw2016.museumsandthe web.com/paper/virtual-reality-atthe-british-museum-what-is-thevalue-of-virtual-realityenvironments-for-learning-bychildren-and-young-peopleschools-and-families/





## WOOFBERT VR



https://www.wearvr.com/apps/woofbert



# KEITH HARING EXHIBITION IM DE YOUNG MUSEUM, SAN FRANCISCO





# EXAMPLE SCENARIOS FROM MICROSOFT HOLOLENS





https://docs.microsoft.com/de-de/windows/mixed-reality/develop/unreal/images/unreal-developer.jpg

#### https://www.youtube.com/watch?v=A784OdX8xzI



lf *C*DH

EXHIBITION "PERCEPTION IS REALITY" AT THE FRANKFURT KUNSTVEREIN https://www.youtube.com/w atch?v=fnVevN2pQCg

OR

# VRHAM! IN HAMBURG https://www.vrham.de/



# WHICH TECHNOLOGY IS BEST SUITED?

- 360°-Content

Photorealistic reproduction of the ACTUAL state, if necessary also of parts that are difficult to reach

- Virtual Reality

Reconstruction and simulation, higher degree of immersion

- Augmented and Mixed Reality

Extension of the exhibition with additional elements

- Cyberspace

Communication across space and time







# HOW CAN MUSEUM VISITORS BENEFIT FROM AR AND VR?

- more space, more time, more peace for exhibited works

- lost or damaged works can be made accessible

- at any place, at any time







# 3. DATA MANAGEMENT AND SCIENTIFIC PRAXIS



PLAGIARISM

Annalena

Baerbock

Jetzt

Wie wir unser

erneuern

Land



#### Aus Baerbocks Buch:

"Insgesamt zehn Staaten traten an diesem Tag der Europäischen Union bei: die baltischen Staaten und ehemaligen Sowjetrepubliken Estland, Lettland und Litauen, außerdem Polen, Tschechien, die Slowakei, Ungarn, die frühere jugoslawische Teilrepublik Slowenien sowie die beiden Mittelmeerstaaten Malta und Zypern. Die EU wuchs von 15 auf 25 Mitglieder – und begrüßte damit rund 75 Millionen neue Unionsbürger\*innen."

#### Passage aus "Vor 15 Jahren: EU-Osterweiterung", <u>Beitrag der "Bundeszentrale</u> <u>für politische Bildung"</u>:

"Insgesamt zehn Staaten traten an diesem Tag der Europäischen Union bei: die baltischen Staaten und ehemaligen Sowjetrepubliken Estland, Lettland und Litauen, außerdem Polen, Tschechien, die Slowakei, Ungarn, die frühere jugoslawische Teilrepublik Slowenien sowie die beiden Mittelmeerstaaten Malta und Zypern. Die EU wuchs von 15 auf 25 Mitglieder – und begrüßte damit rund 75 Millionen neue Unionsbürgerinnen und -bürger."



# PLAGIARISM



Aus Baerbocks Buch:

"Der Wettbewerb scheint auch weltweit eröffnet. In Amsterdam ist ein 130 Meter hohes Holzhochhaus geplant, in Chicago ein 228 Meter hohes und in Tokio eines mit 350 Metern Höhe."

Passage aus <u>"Das HoHo ist das höchste Holzhochhaus der Welt"</u>, erschienen bei "Spiegel Online" am 25. August 2019:

"Und der Rekord dürfte früher oder später ohnehin gebrochen werden: In Amsterdam ist ein 130 Meter hohes Holzhaus geplant, in Chicago ein 228 Meter großes und in Tokio eines mit 350 Meter Höhe."




# PLAGIARISM



#### Aus Baerbocks Buch:

"Gemeinsam mit anderen EU-Staaten und Ländern wie Kanada, die sich bereits auf den Weg gemacht haben, sollte die nächste Bundesregierung daher Kriterien für die Ermittlung eines vergleichbaren und objektiven Wohlstandsindikators entwickeln, der das BIP langfristig ersetzen kann."

#### Passage aus einem Wikipedia-Beitrag über den "Indikator echten Fortschritts":

"Zahlreiche hochentwickelte Länder (insbesondere die Staaten der EU und Kanada) versuchen seit einigen Jahren, gemeinsame Kriterien für die Ermittlung eines vergleichbaren und objektiven GPI zu entwickeln.





# FUNDAMENTALS OF GOOD SCIENTIFIC PRACTICE

In 1997, the DFG formulated general principles of scientific work, e.g.

- to work lege artis,
- to document results,
- to consistently self-doubt all results,
- maintain strict honesty with regard to the contributions of partners, competitors and predecessors







## COPYRIGHT

A **work** is protected by copyright as a "personal intellectual creation" for 70 years after its creation. This includes, among others,

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- cinematographic works
- representations of a scientific or technical nature.







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https://de.wikipedia.org/wiki/Datei:Renate\_Niethammer\_(v.l.),\_Ausstellungs gespräche.jpg





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Attische Amphora (namengebendes Werk des Berliner Malers)



#### Beschreibung

Seite A: Silen Oreimachos beim Leierspiel; Hermes mit Weinkanne und Kantharos Seite B: Silen mit Leier und Kantharos



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grants the author of a scholarly edition, a work or text that is in the public domain as such, the same rights as the creator of a work in the copyright sense (but only for 25 years). The prerequisite is the scholarly production of a previously unknown original text.

#### Vase Details

AVI 2284: Berlin, Antikensammlung F 2160. RF amphora. From Vulci. Berlin Painter. Early fifth. 500-490. Early (ARV[2]).

Decoration: A: satyr and Hermes. B: satyr.

Inscriptions: A: Oqeimax $\{\chi\}$ oc, retr. heqmec. B: Oqoxaq $\{\tau(?)\}$ ec.

**Commentary:** Cleaned in some publications: see ARV[2] 1633. - For earlier attributions see Robertson 303 n. 143, and Beazley (1911). Beazley in his 1964 lecture and Robertson, 69-70 and n. 152 think the subject is connected with the Return of Hephaestus; R. gives bibl. for this view. [But the names of the satyrs hardly fit this.] Messy writing.

**Bibliography:** BAPD: **201809.** – LIMC: **7755.** – **online collection.** – CIG 4 (1855–77), no. 7463. – \*Furtwängler (1885), no. 2160. – \*FR (1904–32), iii, 255-56, pl. 159,2. – Beazley (1911), .... – \*C. Fränkel (1912), 24, 90/d. – \*Beazley (1930), pls. 1-5, 22,2. – ARV[2] (1963), 196/1, 1633. – Para. (1971), 342. – Add.[2] (1989), 190 (much bibl.). – Beazley (1989), 66-68, pls. 38-39. – AttScr (1990), no. 490. – Kossatz-Deissmann (1991), 165 (Oreimachos 1 with much bibl., Orochares 1). – Robertson (1992), 59, fig. 56, 69-70 and n. 152; 303 n. 143.

Author: H.R.I.

Permanent link: https://www.avi.unibas.ch/DB/searchform.html?ID=2429

Additional information?

https://www.avi.unibas.ch/DB/searchform.html?ID=2429





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201809, ATHENIAN, Berlin, Antikensammlung, Berlin, Schloss Charlottenburg, F2160



Vase Number: 201809

- Fabric: ATHENIAN
- Technique: RED-FIGURE
  Shape Name: AMPHORA A
- Snape Name: AMPHORA A
  Provenance: ITALY, ETRURIA, VULCI
- Date: -525 to -475
- Inscriptions: Named: HERMES, OREIMACHOS, OROCHARES
- Attributed To: BERLIN P by BEAZLEY

#### Decoration: A: HERMES WITH OINOCHOE AND KANTHAROS, SATYR WITH LYRE, DEER (ALL NAMED, HERMES, OREIMACHOS)

- B: SATYR WITH KANTHAROS AND LYRE, OROCHARES (NAMED)
- Current Collection: Berlin, Antikensammlung: F2160
- Previous Collections:
  - Berlin, Schloss Charlottenburg: F2160

• Publication Record: American Journal of Archaeology: 83 (1979) PL.17, FIG.18 (PART OF A) Antike Kunst: 49 (2006) PLS.2, 3.1 (A, B, PART OF A) Backe-Dahmen, A., et al., Greek Vases, Gods, Heroes and Mortals (London and Berlin, 2010): INSIDE BACK COVER, 18-19, NO.7 (COLOUR OF A AND B) Beazley, J.D., Attic Red-Figure Vase-Painters, 2nd edition (Oxford, 1963): 196.1, 1638 Beazley, J.D., Attic Red-figure Vase-painters, 1st ed. (Oxford, 1942): 131.1 Beazley, J.D., Attische Vasenmaler des rotfigurigen Stils (Tubingen, 1925): 76.1, 469 Beazley, J.D., Der Berliner Maler (Berlin, 1930): PL.2 (A), PLS.1, 3-5, 22.2 Beazley, J.D., Paralipomena (Oxford, 1971): 342 Boardman, J., Athenian Red Figure Vases (London, 1975); FIG.144 (A), 95, HEAD DETAILS 1 Burn, L., and Glynn, R., Beazley Addenda (Oxford, 1982): 95 Carpenter, T.H., with Mannack, T., and Mendonca, M., Beazley Addenda, 2nd edition (Oxford, 1989): 190 Cartledge, P., Millett, P. und v. Reden, S. (eds.), Kosmos, Essays in order, conflict and community in classical Athens (Cambridge, 1998): 26-27, FIGS.4A-C De Arte: Revista de Historia del Arte: 9 (2010) 23, FIG.5 (DRAWING OF A) Folsom, R., Attic Red-Figured Pottery (Parkridge, 1976): PL.16 (A) Furtwangler, A. und Reichhold, K., Griechische Vasenmalerei (Munich, 1904-32): III, 255, FIG.121, PL.159.2 (A, B) Gehrig, U., Greifenhagen, A., and Kunisch, H., Fuhrer durch die Antikenabteilung (Berlin, 1968): PLS.62-63 (A) Gerhard, E., Etruskische und kampanische Vasenbilder (Berlin, 1843): PL.8-9 Greek Vases in the J.Paul Getty Museum: 2 (1985) 239, FIGS.2-3 (DRAWINGS OF A) Greifenhagen, A., Griechische Gotter (Berlin, 1968); FIG.28 (A) Heilmeyer, W-D., et al., Antikenmuseum Berlin, Die ausgestellten Werke (Berlin, 1988): 124, NO.1 (A)

http://www.beazley.ox.ac.uk/record/D7C46CDB-2678-43D2-86FB-53DDFCD48207





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vorbehalter

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FAIR DATA PRINCIPLES







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# "FAIR Principles"

Research Data (Metadata) should be

- Findable (unambiguously retrievable)
- Accessible (freely retrievable)
- Interoperable (machine-readable)
- Reusable (can be reused)





Robert Galbraith, The Cuckoo's Calling (2013) was written by J.K. Rowling, as could be proven using DH methods of stylometry.







"Being Robert Galbraith has been such a liberating experience. (...) It has been wonderful to publish without hype and expectation and pure pleasure to get feedback under a different name."

Sylvia Hui, J.K. Rowling confirms Robert Galbraith pseudonym, The Boston Globe vom 15.07.2013 (https://www.bostonglobe.com/lifestyle/names/2013/07/14/a uthor-robert-galbraithrowling/s18R562iqUjq7ULqti5GML/story.html)





Composite heterosexual faces











Yilun Wang – Michal Kosinski, Deep neural networks are more accurate than humans at detecting sexual orientation from facial images, Journal of Personality and Social Psychology 2017 (https://osf.io/fk3xr)



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#### Technology

#### FBI, ICE find state driver's license photos are a gold mine for facial-recognition searches

A cache of records shared with The Washington Post reveals that agents are scanning millions of Americans' faces without their knowledge or consent.



A surveillance camera in San Francisco, which recently banned police from using facial-recognition software. (Justin Sullivan/Getty Images)

July 7, 2019

**|↑|** □ 4.5k

https://www.washingtonpost.com/technology/2019/07/07/f bi-ice-find-state-drivers-license-photos-are-gold-mine-facialrecognition-searches/

# ACTING RESPONSIBLY

towards society, colleagues, staff and students should credibly reflect the values and ethical foundation of the Digital Humanities.

Therefore, we will not only use our knowledge and skills within the framework of existing laws and norms, but also decide on the moral level of use.









# CHALLENGES IN DIGITAL COMMUNICATING

- Choice of the appropriate form of mediation and critique of methods
- Reflecting on historical conditionality and aesthetic aspirations
- Expand augmented reality as an experimental field for research theses
- Advocate for socially responsible action



Please outline the possible applications of digital methods in museum work How can the usability of digital museums be evaluated?

What are the foundations of good scientific practice?

Slide 8–13. 28–44

Slide 85–97

Slide 110

What are virtual museums? What purpose do they serve? What do the FAIR principles describe?

How should a DH game be structured? What problems should be avoided?



Folie 1:

Folie 7:

#### ABBILDUNGSNACHWEIS



Folie 64: https://upload.wikimedia.org/wikipedia/commons/b/bb/Class-Walk
, ttps://de.wikipedia.org/wiki/Museumsp%C3%A4dagogik#/media/Datei:Stude _group_at_Musee_d_Orsay.jpg
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