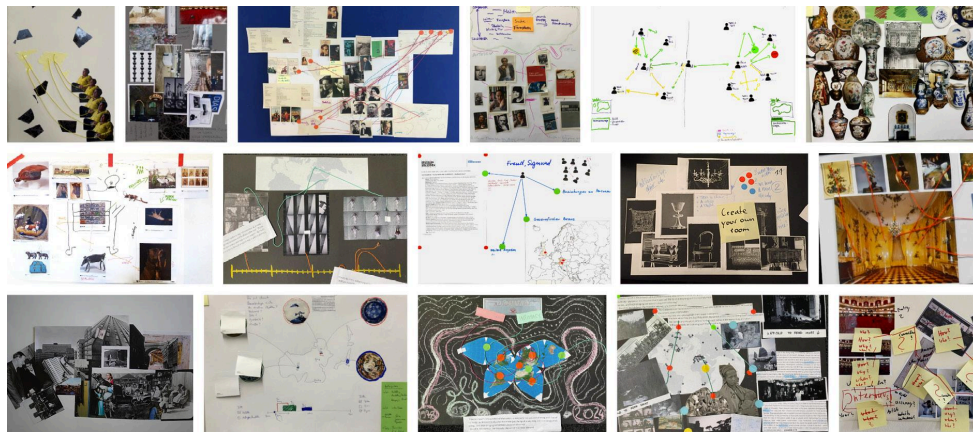


## Laying it all out: Collage as a co-creative method for designing collection interfaces

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**Fig. 1: Collages showcasing the aesthetic diversity in materials, arrangements, and formats.**

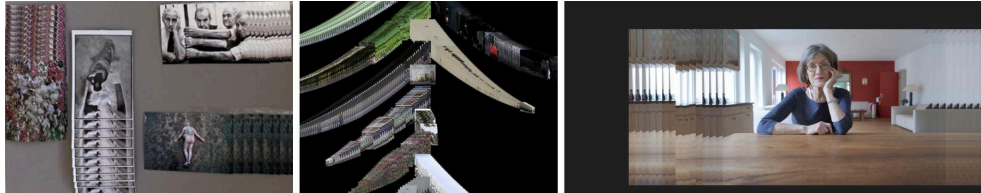
**Abstract:** As a co-creative method, collage can stimulate the design of collection visualizations by integrating diverse materials and perspectives. This retrospective reflects on a decade of workshops with over 15 partners in the arts and humanities, highlighting how this participatory format can bridge diverse backgrounds and generate insights and ideas.

**Author keywords:** co-design, collaboration, information visualization, cultural collections

### Introduction

Designing novel interfaces for cultural collections can be a challenging endeavor, especially when different use cases from focused research to open-ended exploration should be supported (Whitelaw, 2015; Windhager et al., 2019). To involve both collection experts and novices in this design process, we have utilized the artistic practice of collage (see Fig. 1), which combines diverse materials into a novel artwork, for a co-creative workshop format. For the purpose of co-designing interfaces, the process of cutting, folding, arranging, and gluing collection items and data elements proves to be a productive approach to generating ideas (see Fig. 2). Furthermore, the workshop becomes a communicative tool that can dismantle barriers, stimulate discussions about the merit of particular ideas and directions, and benefit the research process.

Through a retrospective, we share insights from co-design workshops that we have conducted over a span of over 10 years, and with more than 15 different cultural collection partners and their data. By describing the workshop method and analyzing the visual arrangements of 101 resulting collages, we reflect on recurring themes and highlight the key mechanisms of this workshop format for the purpose of co-designing collection interfaces.



**Fig. 2: Collages can lead to concrete design ideas: A collage about series in a photo collection (left) led to digital prototypes experimenting with the repetitive nature of photograph series (middle and right).**

## **Related Work**

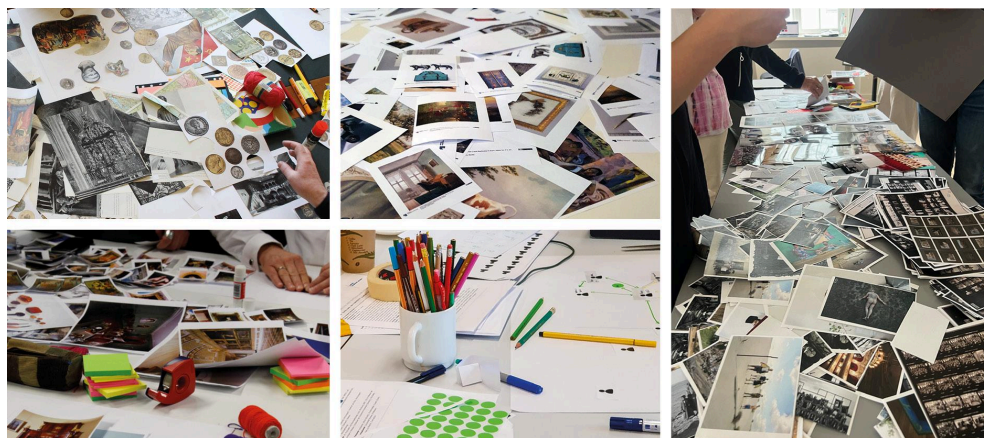
Participatory data and design practices are common in many domains, such as urban planning (Jossin et al., 2023; Hudson and Rönnblom, 2020; Goodwin et al., 2021), sharing of personal experiences (Loukissas and Ntabathia, 2021; Kirby et al., 2021), physics (Dobler, 2017), or explainable AI (Weitz et al., 2024). Collaborative approaches are considered crucial for the domain sensitive design of visualization projects, acting as “creative visualization-opportunities” for interdisciplinary engagement (Kerzner et al., 2019). Within DH projects, several researchers have documented the fruitfulness of collaborative approaches or speculative prototyping, not only as guidance in the design process, but also as a toolset for communication and new research impulses (Dogunke, 2020; Ciuccarelli, 2014; Schofield et al., 2017; Hinrichs et al., 2019).

Building on such previous engagements, our co-creative approach is based on the insight that a deep visual engagement with collection material not only stimulates constructive discussions, it prompts all participants to practically and playfully engage with the data, accommodating different perspectives among collection experts, visualization designers, and laypeople.

## **A retrospective on co-creation with cultural collections**

The method described in the following was carried out for the first time in 2013 (Chen et al., 2014) and was inspired by a workshop that aimed to reimagine the desktop metaphor (Pitsillides and Maragiannis, 2013). It brings together people from diverse backgrounds—some closely connected to or familiar with the collection, and others curious guests (e.g., interested museum visitors, scholars in related disciplines)—to collaboratively develop ideas for collection visualizations and discuss opportunities and challenges. The setting varies depending on the specific collaboration context, but in general requires a room equipped with several tables, craft materials, and a timeframe of 3 to 4 hours. The materials provided typically encompass printed photos of the collection’s holdings, data excerpts,

general visuals such as icons or maps, inspirational material, colored paper, different sets of pens, strings, and more (see Fig. 3). Depending on the documentation needs (photo, audio, video), it is advisable to let the participants know beforehand and prepare a consent form that lists use cases concretely.



**Fig. 3: Materials used in the workshops.**

## Workshop process

- 1. Introduction:** Participants briefly share their professional background and interest in the workshop.
- 2. Input:** A short presentation of the respective collection and ongoing design research introduces participants to key concepts, questions, and topics, engaging both collection experts and guests.
- 3. Collage.** With printed material from the collection and additional resources, the participants craft collages that represent different ways of looking at the collection at hand. A common question for this step is: *What are promising perspectives and pathways into the collection?* The participants should have between 30 to 60 minutes to finish this task. Group work can be considered based on group size and time.
- 4. Discussion.** The resulting collages are presented visibly for everyone taking part in the workshop and discussed one by one. Before the creator of a collage explains their intentions and reasoning, the other participants describe what they see, allowing for unexpected interpretations. Depending on the size of the group, this step might take at least as much time as creating the collages, and often more. For the research process, it is helpful to audio record the discussions.
- 5. Debrief.** Discuss the main points again, reflect on the method, and plan future steps.

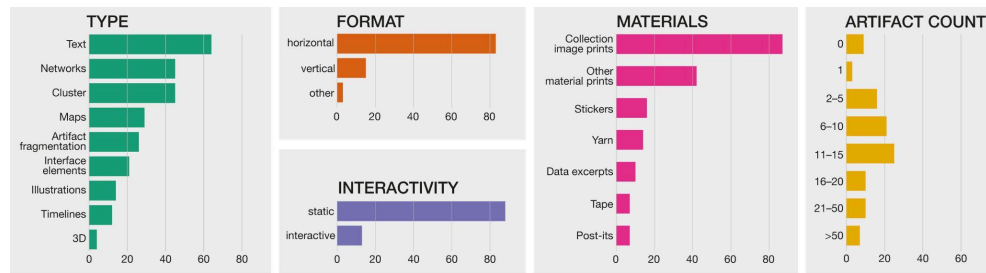
For the research process, the audio recorded discussions, as well as potential other records, can be transcribed, coded, and analyzed later on. They can be used as project documentation, but also for mapping potentials of future directions and planning next steps.

Collection	Year	Participants	Experts	Others	Groups	Collages	Reference
Amber Archive	2013	10	8	2	no	10	Chen et al., 2014
Prussian Palaces and Gardens Foundation Berlin-Brandenburg	2014	11	7	4	no	10	Glinka et al., 2017
East-Asian Porcelain, Prussian Palaces and Gardens Foundation	2015	8	4	4	partly	7	Dilba et al., 2016
Berliner Münzkabinett	2016	10	5	5	no	9	Gortana et al., 2018
German National Library 1	2017	12	10	2	yes	4	Herseni et al., 2018
German National Library 2	2017	12	3	9	yes	4	Herseni et al., 2018
Hausmann, Berlinische Galerie	2017	8	4	4	yes	6	Bludau et al., 2021
Museum for Arts and Crafts Hamburg	2017	6	1	5	no	4	Junginger et al., 2020
Historical Social Network Analysis	2019	10	4	6	no	10	Menzel et al., 2022
Jewish Museum Berlin	2019	8	8	-	no	5	Ehmel et al., 2021
Staatliche Museen zu Berlin	2020	16	8	8	yes	5	Brüggemann et al., 2022
Frédéric Brenner Archive 1	2023	20	13	7	no	15	Bludau et al., 2023
Frédéric Brenner Archive 2	2024	14	7	7	no	12	Bludau et al., 2023

**Table 1: Overview of workshops conducted within cultural collection research projects.**

## Outcomes and recurrences

The introductory paper on this workshop method has already highlighted its benefits, from design and ideation processes to project communication and research (Chen et al., 2014). To broaden this analysis towards the creative outputs and to look for recurring structures, we analyzed 101 collages from 13 workshops that were conducted within research cooperations (see Table 1, Fig. 4). We looked at the format and the material that was used for their creation, and for concrete visualization concepts and forms they represented (e.g., timelines or maps).

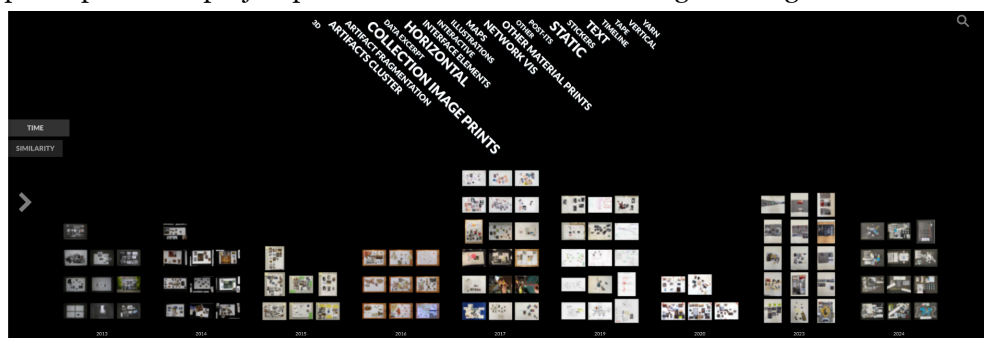


**Fig. 4: Statistical overview of the collage analysis.**

Although the settings of the workshops varied, for instance in whether printed images from the collection were available or whether a dataset was the basis for crafting the collages, we discovered certain patterns:

1. **Focus on collection images.** 90% of participants that were able to work with visual material from a collection used a variety of artifact images for their collages, with an average of 12 images per collage. Other material prints, such as icons or maps, were also present in almost half of the collages, while other material, such as data excerpts, post-its or yarn, was used scarcely.
2. **Common visualization concepts.** 80% of collages had a horizontal design, already hinting at a use case of Web interface design. From established visualization forms, the use of network visualizations (45%) stood out, followed by maps (29%) and timelines (12%). Text was often used in an accompanying or explanatory fashion. 21% of collages drew out concrete interface elements, such as a search box or a favoriting button.
3. **Novelty of concepts.** Almost half of the collages used some kind of clustering technique to combine the collection artifacts in a novel, unique way. One quarter of the collages used fragmented versions of the artifacts, cutting or tearing them into new shapes and/or combining images with each other.

The diversity of general approaches and visual arrangements evident in the collages (see Fig. 5) highlights their crucial role as a springboard for discussions, enabling participants and project partners to deliberate a wide range of design directions.



**Fig. 5: Explorable interface of all analyzed collages, using the VIKUS viewer (Glinka et al., 2017): [uclab.fh-potsdam.de/collagingworkshop](https://uclab.fh-potsdam.de/collagingworkshop)**

## Conclusion

The co-creative workshop method presented here holds a capacity to bridge diverse perspectives, foster creativity, and yield meaningful insights for the design of collection interfaces. Through a retrospective and analysis of the resulting collages, it has become evident how the act of collaging sparks manifold creative ideas, and also acts as a powerful communicative and reflective tool. We hope our contribution encourages other DH projects to implement co-creative methods at different stages of the research process to trigger transdisciplinary ideation, reflection, and exchange.

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