

# Designing collaborations: Could design probes contribute to better communication between collaborators?

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## Abstract

Digital Humanities is an inherently collaborative field of research. The wide range of stakeholders, as well as the ever changing methodologies, hold the potential for innovation but also carry a constant threat of miscommunication. Design is a fixed partner in Digital Humanities and their practices are closely intertwined. However on a practical level, design is most commonly regarded as an implementation technique rather than an equal part of the theoretical framework. We propose to utilize design as a research tool by developing a set of Design Probes which are created to address the specific needs and challenges of collaborative research in Digital Humanities. We describe design and technical implementation methods, as well as the theoretical context and the possible outcome of this proposal.

## 1 Introduction

The majority of research in Digital Humanities (DH) is interdisciplinary. In fact, any digitization process made on previously analog data can be considered as interdisciplinary collaboration, since it involves stakeholders from at least two research fields. Initiatives in DH constantly require researchers from different scientific and cultural backgrounds in order to produce collaborative work.

Interdisciplinary research is often described in professional literature as being difficult to reach its full potential. Because of that the expectations are high. Initiatives that bring together multiple disciplines are expected to go beyond the limits of individual methodologies [9]. Unfortunately, when this vision becomes a reality, scientists enter a new and unnerving territory where they often encounter new and unfamiliar methods, workflows or jargon. The challenge of communication is much greater in the projects.

We suggest Design Probes [7] as a device to mediate between the different project participants. Design probes are reported to provide insights into the personal perspective of the user that are hard to gain otherwise. They are encouraging discussion and stimulating the imagination.

This paper describes the work plan for developing design probes to enhance the capabilities of interdisciplinary collaborations within the field of DH. The project will be carried out during the TEEM'16 conference, in the course of a Short Term Scientific Mission (STSM) as part of Cost European Network of e-Lexicography (ENeL).

## 2 Theoretical Framework

In order to illustrate the potential of design probes for DH, we will provide a short introduction of the theoretical context in which it is situated. In this section we will outline the historical background of design probes; the more general context of Research Through Design [5], and the role of design in general, and design research in particular, in DH.

## 2.1 The Origins of the Design Probes

Design probes are collections of artifacts and tasks intended to enable the user to reflect on his environment and experience in new ways. The original kit, named Cultural Probes<sup>1</sup>, was developed by Bill Gaver, Tony Dunne and Elena Pacenti for the Presence Project that aimed to increase the presence of the elderly in three local communities: Majorstua (Oslo), Bijlmer (near Amsterdam), and Peccioli (near Pisa) [7]. The probes were intended to provide a glimpse into the daily life of the target group. The artifacts in the package were selected in order to encourage a playful, casual attitude from participants. The original kit had the following content:

- Postcards: 8 to 10 postcards with images on one side, and questions on the other side (e.g., “Tell us about your favorite device”).
- Maps: the participants were asked to mark zones on local maps according to instructions.
- Camera: disposable camera with a list of requests for pictures (e.g., something boring, your home, what you will wear today?, etc.).
- Photo album/media diary: a booklet with a request (e.g., “use 6 to 10 pictures to tell us your story”)

The goal of the kit was not to reach an objective representation of the target audience, but rather to elicit insights about their aesthetic preferences, belief system and desires [7].

During the last 30 years design research and its methodologies became an accepted part of Human-Computer Interaction (HCI) research. They came to be a common tool in the design research community as a prevalent method to get information on unstructured problems.

## 2.2 Design as a Research Method

The design probe is one of many methods implemented in the last 30 years by the design research community in an attempt to develop their own epistemology. In the HCI field, design research is widely regarded as a process for engaging massively under-constrained problems [11]. Zimmerman, Forlizzi and Evenson [11] proposed a model that regards design research as a knowledge producing discipline (rather than commercially driven or service providing). They showed how its practices can be regarded as scientific methodologies, which benefit the scientific research. In the interviews they conducted with prominent figures of the HCI community, design research was described as “the discovery of mental models” and “a discipline focused on the whole instead of the parts”. According to their model, collaborations between design research and more traditional scientific methods have many benefits. For example, it allows engagement with unconstrained problems that cannot be easily addressed through science or engineering methods. It also feeds back gaps in behavior theory and unexpected behaviors to the behavioral scientists, motivating new research. The capacity of design research to reflect and change the initial motivation for the research makes it a critical discipline that promotes reflection on the motives, goals and ethics behind a certain technology or method. Therefore, it can serve as a framework for collaboration between scholars from different disciplines. Fallman [4] makes a distinction between research-oriented design and design-oriented research. This division is important when examining the role of design within the DH. In research-oriented design, the final outcome of the process is the artifact, the product is the goal and the research is the means to get there. On the other hand, the goal of design-oriented research is to acquire new knowledge about human behavior and needs in the context of technology. There is no final product in design-oriented research. However, there are prototypes that are used as research tools to reveal new information about the user, the data or a pacific technology.

## 2.3 Digital Humanities and Design

Somewhere during the previous century the field of humanities was gradually divided into two separated yet codependent sub-fields. The first can be summed up as study and analysis. It entails close reading and criticism, done within a very specific field and strictly defined research problem. The second focuses on practice and application. This sub-field is collaborative by its nature, often involving multiple authors and media. It is also strongly influenced by design practices [3].

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<sup>1</sup>The original name was selected due to the focus of the kit on cultural information. Since then, the name “Design Probes” is widely used to describe all type of kits in this genre.

Design, as a creative practice and an implementation technique, plays a fundamental role in the practical side of DH. Recently, “design emerges as the new foundation for the conceptualization and production of knowledge” [3]. As of yet, designers participate more often in a capacity of service providers, rather than members of the steering group. Specifically, they are involved in the implementation process but rarely in the conceptualization.

In addition to the classic humanities’ division mentioned above, DH has a further branch, one that investigates the introspective point of view. It reflects on the nature of digital representation itself, and the methodologies that emerge from this new form of humanities. Our proposal focuses on this perspective. We are set to explore the potential of design probes as means for an interdisciplinary team to engage in self-analysis.

## 2.4 Motivation

The possible combinations of disciplines in a typical DH projects are on a rise. Projects become increasingly ambiguous [3]; scholars from seemingly unrelated fields are required to produce collective work. As a result, field-specific knowledge is constantly communicated to outsiders, which in turn creates new communication challenges.

In the previous section we elaborated on the meeting point of research in DH and Design research as a standalone discipline. We stipulated that while design practices are central to the work-pipeline in DH, it serves a rather instrumental goal of prototype implementation.

We argue that due to the inherently hybrid approach of DH, design research can be beneficial as an evaluation tool. Out of the myriad of participatory design methods developed in HCI, the design probe is a democratic tool that once in place can be used by anyone, and doesn’t need a designer operator. This is an important feature for a tool that is intended to promote communication.

## 3 Designing a Probe for Digital Humanities

The original design probe had many adaptations over the years. The needs and goals of each independent project dictated the content of the kits and the instructions that the participants received. Existing probes can’t be reused ‘as-is’. Each new application has to be analyzed individually. A major aspect of designing a design probe is the need to be specific in the input you ask for, without restricting too much the insights that may come from the probe [6].

In order to develop a probe for DH we need to discover as much as possible on the customary methods and conventions in the collaboration and inner-communication of scholars in DH. To that end we are planning to carry out two participatory design activities:

- Interviews + questionnaires.
- Immersive workshop.

In the next subsections we will elaborate on each of the methods and its role in the design process of the probes.

### 3.1 Interviews and Questionnaires

The goal of the interview is to gain a deeper understanding on how the participants view the process. Namely, we are interested in their subjective opinion on the different aspects of working together with experts from other fields. We intend to survey 8-12 scholars from an array of fields. The questionnaire is designed for experienced researchers that had an opportunity to work on a wide range of DH projects. We will be using the TEEM’16 conference venue to approach suitable candidates.

Due to the limited time frame of this project we decided to reinforce to one-on-one interviews, with an online questionnaire that we will send out via the ENeL network and DARIAH (Digital Research Infrastructure for the Arts and Humanities). Because the survey is conducted in two different procedures, we decided to use a formal and structured questionnaire rather than open-ended interview, as often done in research oriented design.

The collected data is intended to be evaluated and used in the design process. During the conceptualization phase we listed a variety of aspects of DH research and grouped them into six distinguished topics. In our opinion, these categories are general enough in order to provide a



Figure 1: Simulation of the planned workshop (use of image approved by author: Jan Kees Steenman).

comprehensive overview, while sufficiently narrow to produce answers that can be compared to one another:

- Interdisciplinary: challenges of work between disciplines.
- Knowledge/communication: communication of field-specific knowledge.
- Methods: discarding the limitations of individual methodologies.
- Prototypes: the value of prototypes and their implementation process.
- Design: synchronization between the theoretical and the practice.
- Dissemination: the challenges of unconventional publishing.

The one-on-one interviews will be recorded and are planned to last around 40 minutes each.

### 3.2 Description of the Workshop

The second part of the development process is a workshop for DH scholars. The workshop is built around a participatory design game (figure 1) that was designed for the purpose of this meeting. The design of the game (working title: Cards Against DH) is inspired by three unrelated sources:

- Critical Loop [2] is an open source multi-player board game, created in 2015 by the students of the IIT Institute of Design, Chicago. The game offers players an opportunity to discuss the socio-technical aspects of emerging technologies in relation to Internet of things (IoT).
- Connected-Spaces toolkit [1] The Connected-Spaces toolkit [4] was developed for FIMM unConference to facilitate an expert dialogue about mobility. It consists of a deck of cards for the different aspects of prototype design (e.g., Touch-points, Outputs, etc.).
- Cards against Humanity - a very simple party game. Each round, one player asks a question from a black card, and everyone else answers with their funniest white card [10].

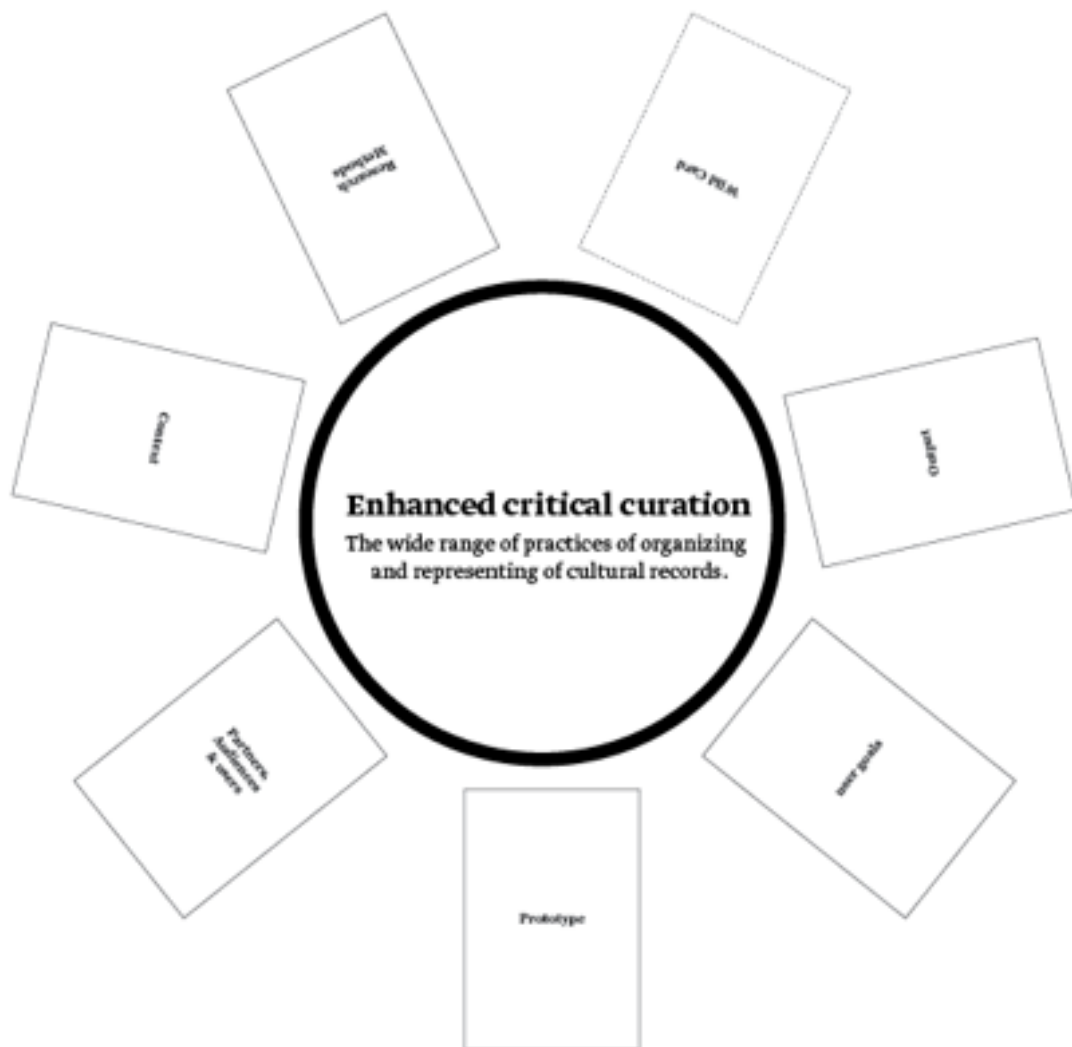


Figure 2: One Hub

The planned game will consist of eight hubs (figure 2) distributed on the table. Each hub highlights an emerging area of experimentation [3] that were chosen by us in order to provide a concrete base for the discussion (e.g., Humanities Gaming, Visualization and data design, Code, Software, and Platform Studies, etc.). There are 7 empty spots around each hub, which the users are expected to fill out using the cards they were dealt.

At the beginning of the session the players have to decide one type of data that they focus their play on (e.g., the collection common plant names in Bavarian dialects). This constraint is necessary in our opinion to prevent the abstracted nature of the discussion from dominating the discourse. A hub is activated by the first player who places a card around it. This player is the coordinator of this hub and has the last word in the decision making process. Once a hub is activated each successive player that wants to add a card has to pitch his idea to the group, and explain why his choice of card is the best course of action for their project. Once the pitch is accepted the owner writes down the specification of the card's component on top of the card and places it in the hub.

The game is designed to bring about a speculative discussion about the practices and ingredients of a DH project. We hope to observe a lively interaction and discussion between the players, for the sake of understanding better the challenges of communication in an diverse group of collaborators.

### 3.3 First Prototype

Once we conduct the interviews and obtain the documentation of the workshop, the development of the first prototype can begin. Our plan is to contrast the issues that were rose by the participants during the workshop, with the inputs from the interview. We hope that the data we will receive will allow us to identify communication "potholes" that are typical to DH collaborations (e.g., it often happens that collaborators do not discuss their personal priorities regarding prototype features before the work is done). Once these are listed, we will look for an alternative way for such information to be communicated. The goal is to recognize the questions that needed to be asked, and raise them through the probes in a way that allows for everybody to be on the same page regardless of their level or their proficiency in the involved research fields.

As collaborative projects are often also international, the communication between members is for the most part digital. Because of that, we suggest to build the design probes as a digital tool.

For hosting and interacting with the probes we will use the free tool Trello [8] a web-based project management application. We chose Trello because its structure allows to present input from multiple contributors in a clear and transverse fashion. As well as the possibility to upload files, keep history of conversations and comments. Its free version is unlimited in time and has all the needed features for our project.

## 4 Expected Outcomes and Outlook

The first Prototype of the Design probes will be ready at the end of the STSM. It is of course unclear how helpful it will be in its initial state. The issues that are surely to rise during the execution, are also hard to foresee. That said, research design is based on iteration; thus, it sometimes results in a re-framing of the initial problem. And because of that it is clear to us that it is a project worth realizing.

We have stipulated throughout this paper that design and design thinking can be regarded as intellectual methods that can help collaborators to reflect and formulate questions about knowledge, to harness social, cultural, psychological or technological constraints, in order to suggest truly novel schemes and approaches. This vision is the main goal of the proposed project and future work on the topic.

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