

Remake/rethink: Expanding on the capabilities of “cultural probes” through interaction principles for long-term interventions in communities

Authors: Scott Townsend

Professor Department of Graphic Design, College of Design,  
North Carolina State University (USA) [sttwn@ncsu.edu](mailto:sttwn@ncsu.edu)

Maria Patsarika Adjunct Professor Humanities and Social Sciences,  
American College of Thessaloniki (Greece) [mpatsarika@act.edu](mailto:mpatsarika@act.edu)

Keywords: cultural probe, design and social innovation, service ecology

## I. Introduction

As interdisciplinary collaborators that combine research with application directly, we are interested in enlarging on methods that “make the everyday world its problematic” (Smith, 1990, p. 28), “...where the body, emotions, and senses are viewed phenomenologically, together with an increased [critical] focus on representation” (Liebenberg, 2009, p. 443). How can methodologies, tools and methods support “data” and interpretation of how the world is experienced and understood by social actors, and how does their participation become part of their own interventions in their communities? For this paper we are interested in examining the space and precedent from participatory design of “cultural probes” (acknowledging their ambiguous position in design and research) along with other methods and methodologies that help to identify, unfold and build on the traces that researchers and community members “leave behind.”

## II. Design and the “social world”

Published In 1971, Victor Papanek’s *Design for the Real World* introduced critiques ostensibly about consumption and green politics. More recently Clarke argues that Papanek contributed to notions of “...a holistic design approach that embraced “design inclusivity...premiered on a broad recognition of social inequality; as summarized by Whiteley, there was “no justification for designing trivial and stylish consumer items for the affluent of the advantaged countries, when the majority of humankind was living below subsistence level” (Clarke 2013 p. 153). In Clarke and Whitley’s re-evaluation, Papanek’s influence on participatory design at the time in the 60’s and 70’s,

especially in northern Europe, has greatly influenced the discourse and practices of contemporary design and social inclusivity.

Over the subsequent decades the growth of globalization, neo-liberalism and technology has created a new awareness regarding the interconnections between social, technological, economic, and historical forces etc. and who and what is dealt out. Contemporary ideas of so-called social design manifests in certain design practices and knowledges with a broader mandate to make change happen through participatory approaches and collective outcomes in addition to market objectives (Armstrong et al., 2014, p. 15). Rather than shying away from the challenges and power issues inherent in a dialogic modus operandi, these perspectives urge a critical examination of the interplay between design and broader structural and cultural issues (e.g. Björgvinsson, Ehn & Hillgren, 2012). This resonates with the early Scandinavian model of participatory design that sought to challenge hegemonic voices and foreground excluded people's voices. However, from a broader interdisciplinary perspective the methods and tools employed in design to empower marginalized people and advocate their social histories and needs often escape critique (Harding, 1993). For example, research on contemporary storytelling employed in truth commissions and advocacy projects is shown to often represent people's complex life histories in reductive ways, through victim typologies and short, emotional narratives that are stripped of context and history. Storytelling practices of this kind tend to individualise collective struggles, while the structures and politics that determine marginalised people's everyday lives and struggles are set aside (Fernandes, 2017).

Design is for the most part still complicit with constructing the social for good or ill, and while designers may attempt to address manifold issues of inclusion and representation as these unfold in the "real world," they are part of complex, technocentric and market-driven systems of governance and production that typically streamline and reduce the complexity of social issues in representations, in what is broadly perceived still as a process of reductive "problem solving." Methods chosen in design practice are often chosen arbitrarily. This "toolbox mentality" stems from an acceleration and acceptance of instrumentalist values that have become the core of design, business, and education considering increasing conflicts in social and cultural realms. Consequently, design interventions and modernist-inspired solution finding continue to be critiqued as abstracting and devaluing lived, material experiences, instrumentalizing community knowledge and compromising people's agency, while potentially exacerbating complex problems (Escobar, 2018).

Neo-liberal market-based values when applied to all sectors (education, the economically disenfranchised, issues diversity of social practices and values in communities, etc.) based on instrumentalism is at odds with a more "ontological" framework advocated by Willis et al as an extension of inclusivity, and in which reflexivity can be argued for as a component (for more on Willis' position, see *Ontological Designing— Laying the Groundwork* 2006; many of the ideas have connections to some of the work of Bruno Latour). Methods and "tools" have an embedded "intentionality" in how they in turn shape perceptions and experiences of the user (or participant) by their perceived affordance and use in context. To quote Willis—

To attempt to delineate a field of operation of ontological designing is to face the impossibility of defining the world. But because ‘design’ is still generally associated with a narrow range of activity, some preliminary distinctions are needed. Ontological designing as a condition of being could be seen as inhabiting three continuous inter-connected regions:

1. as it applies to conventionally considered designed things — e.g., buildings, manufactured objects;
2. extending on from this there is the ontological designing of material and immaterial infrastructure e.g., management systems, of information technologies, of communication systems,
3. and then there is the ontological designing of systems of thought, of habits of mind.

(Willis, p. 91)

While design readily embraces the social with democratic claims, such as “everybody designs” (Manzini, 2015), viewing the world through a holistic mindset of interdependence, it is still governed by a toolbox mentality made manifest in design practices and visual representations of the world (Julier & Kimbell, 2019). A toolbox mentality, we argue, reflects an instrumentalist rather than a more reflexive approach to understanding the social, potentially missing culturally embedded nuances and indexical forms of representation, among other things –what we will refer to as “traces”– in the way in which people give meaning and form their social practices; and the way in which researchers engage with and interpret these social practices, informed by their disciplinary-led traditions.

### III. Framework

Our investigations combine reflexive research, namely a critical approach to disciplinary and knowledge given understandings and boundaries (Giroux, 1988), and designing from “sense making” to eventual “problem solving” as a co-design process. This places design and research in the community as dialogical and responsive. Our starting point is based on principles of design and social innovation, where local resources, practices and knowledge are key, specifically expanding on Manzini’s ideas of “diffuse and expert” design (Manzini 2015, p. 50).

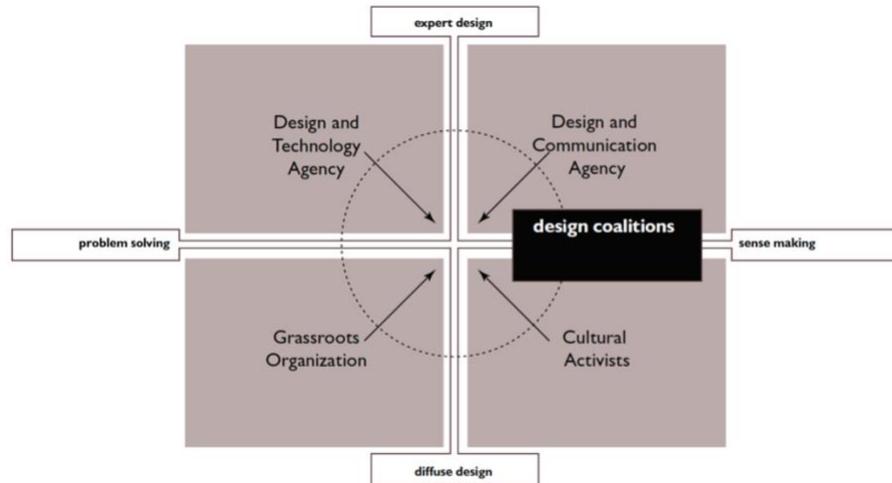


Fig. 1. After Manzini 2016, modified.

“Sense making” in local settings is based on examining the “traces” (in the sense of semiotics, i.e., indexical forms of representation) of people/communities. Since this model implicitly is based on “border crossings” between different groups (cultural, disciplinary) the role of interpretation must be consciously and reflexively constructed (Liebenberg, 2009) to understand attitudes, practices, and experiences. “Problem solving” in the latter design proposals is most useful where the actual production of a solution is more reliant on the communities’ shared expertise and technē. The community/network can become co-authors and influence the ongoing changes and design interventions concretely as an adopted change in practice and agency. As design becomes more situated and experience-oriented, a cycle can be created, reminiscent of participant action research (Santos 2013; Fals Borda & Mora-Oseo 2003) for example sense making and problem solving are reliant upon veridicality and judgement about changes in lived material experiences—does change adequately respond to ongoing issues of people and communities? How do groups and individuals dynamically respond to each other? How do other ideas and resources, through a larger social and economic realm get synthesized into a local context?

IV. The problem with cultural probes as one aspect of “sense making:” a shift to closed interpretations

Cultural probes have been extensively discussed in design research and practice as enabling users’ culturally embedded and contextual understandings and experiences to emerge and inform the design process (for example, Graham et al., 2007; De Leon & Cohen, 2005; Gaver et al, 2004; Gaver, Dunne & Pacenti, 1999). Broadly speaking, probes are shown to invite users’ open, informal, inspirational, and playful perspectives and chance observations; provide a trigger for memories and ongoing dialogue with design participants, while also giving informants control over their use, especially when given to them to autonomously record and reflect upon their understandings and the collectivities they draw upon. While Gaver et al. (2004, p. 56) caution against “scientific” uses of probes,

acknowledging that “the returns are layered with influence, ambiguity and indirection,” the idea still is that designers take away users’ perspectives, “while explicitly maintaining room for their own interests, understandings and preferences” (ibid). Even when members are encouraged to directly reflect on their ways of being, Collins and Evans (2015, p. 15) argue, this is not a straightforward process: “descriptions of a social world by its members often draw upon received ideologies or myths, rather than social life as it is lived. Probes must go beyond this [...] to enable participants to make their taken-for-granted assumptions and practices more visible.” Much of the literature discussing probes neglects to document what happens between probe and design, and thus fails to account for the interpretation and implementation process that takes place. As a result, both the role of the designer as sole interpreter and the subjective and situated nature of probes’ responses are downplayed (Boehner et al., 2007, p. 1081-1082). Critics (e.g., Boehner et al., 2007; Dourish, 2006; Matthews and Hörst, 2008) have problematized the shift from a seemingly open to a closed interpretation of people’s perspectives, typically represented and abstracted through digital or other media, rather than presented and, even, debated within the situated activities in researcher-community member encounters. More broadly, an interrogation of the “virtualism” of design methods is voiced by Julier & Kimbell (2019, p. 19): “Illustrated outputs of social design, such as personas or user journey maps, can travel through networks of project partners detached from specificity and grounded actuality. Persons are actual, but personas are virtual. Such virtualism masks the reproduction of inequalities by performing change that cannot actually happen.”

Much of the debate on probes and their uses in participatory design derives from associations with ethnographic methods. Probes, however, were not intended to generate data in the first place, whereas ethnography in fact goes beyond data gathering to analyse sociocultural meaning and practices embedded as they are in specific settings (Boehner et al. 2007, p. 1083). An analogy between probes and fragments on the one hand, and ethnographic methods and traces on the other hand, as we perceive it, might be useful, the first point to inspirational, yet elusive and sporadic clues that are highly subjective; the second enable traceable associations with cultural, meaning-making practices within community settings. Considering the limitations of cultural probes, as well as their controversial appraisal in relevant literature, they have been characterised as a “discount ethnography” technique (Dourish, 2006, p. 548), symptomatic of a lack of clarity about the role of the researcher, and the process of generation and interpretation of data. This challenges designers to capture the “actual” in situated environments, in distinction to the play of mediated symbols; or, more specifically, how the world is experienced and interpreted by social actors and how change manifests itself in people’s lives, as well as the potential for design to develop into a socially embedded practice.

We would like to extend uses of cultural probes toward amplifying local culture, as intermediaries between the past and the present while encouraging locals to articulate future possibilities. We appreciate the subjective engagement that cultural probes encourage and their idiosyncratic character that highlights participant biographies, however we also aspire to see them embedded in cultural and social practices providing occasions for enacting social and cultural

meaning and articulating complex narratives and a dialogical zooming in and out across space and time that brings forward traces of history and social issues, as well as subjective realities and understandings in the here and now.

Case study 1; ongoing design interventions Kefalonia Greece

“Sense making”

As a separate project one of us (Townsend) originally developed an inquiry into local perceptions of history and community in southern Europe vis a vis EU identity and the role of design and branding. One of these communities was in Greece, originally starting as inquiry into local perspectives on issues of austerity. The original 2015 interviews were unstructured based on personal biography. Narratives developed out of personal experiences keyed to historical markers, for example the Civil War era, a devastating earthquake that depopulated the island after 1953, economic development in the 80’s and 90’s, and the current austerity and post austerity period. Working with a community network in Kefalonia, and the Ionian Center for Arts and Culture subsequently developed into a long-term engagement with design and social innovation, where student teams from the US (College of Design North Carolina State) and students from the American College of Thessaloniki (Greece) worked with community stakeholders and networks of academics and government authorities in the ministries of Education and Culture.

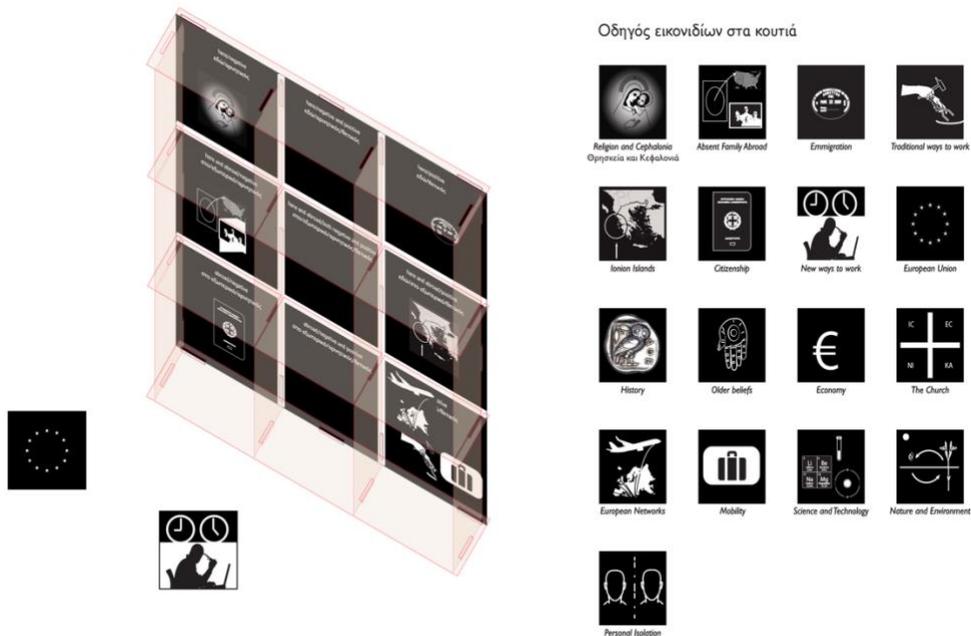


Fig. 2. Matrix.

Consequently, a hybrid research method was developed based on cultural probes and ethnographic methods. From initial interviews, common references were used to develop a “negotiating tool” based primarily on local practices. This combines the fragmentary and ungrounded qualities of a cultural probe with more traceable ethnographic methods that connect back to social practices and shared interpretations between participants and researchers. Second round interviews took place in the interviewees’ suggested location. Participants were encouraged to invite a colleague or friend, while following local practices of “coffee and food” brought into the space. The artifact is designed to be cheap and portable and can be placed on a desk or kitchen table, used in mediating, and visualizing different experiences and points of view between the two participants. These negotiations are independent of the researcher and take place between the two participants. These discussions build out to shared personal biographies and include negotiating individual and collective values, or experiences as chronological narratives, followed by collective experience sharing, leading to negotiated values. Unstructured group and individual interviews were conducted, and key themes emerged from the gathered data. Later in 2019, archaeological documentation as part of our ongoing collaboration along with local archive research helped us to understand historical (archive) and place-based (site photos) references, especially regarding social practices, extended family connections, and key historical recollections.

Common references from initial interviews.

- 1- Local identity
  - The role and practice of religion
  - Traditional ways to work
  - Nature and environment
  
- 2- Regional identity
  - The Greek Orthodox Church
  - History
  - Older beliefs and practices
  - The economy
  
- 3- Greek citizenship/cosmopolitanism

- European networks
- Mobility
- Science and technology
- The European Union

#### 4- Diaspora identity

- Emigration
- New ways to work
- Personal isolation

#### Case study 2

In this case study, ethnographic methods broadened to include public discussions of experiences and values, where motivated community stakeholders initially solicited designers in solving immediate problems. Discussions included local institutional stakeholders in education; the 35<sup>th</sup> Ephorate for Prehistoric and Classical Antiquities, the Focas-Kosmetatos Foundation, higher education institutions, and other ongoing community initiatives. Based on long term exchange, a common concern centered on preserving place based local identity while creating a sense of cosmopolitan engagement in the EU and elsewhere. Specific needs of strengthening community engagement in museum and educational engagement were discussed. Currently many local institutions use entrepreneurial strategies working with national and international networks that are combined with local and community resources. The first multi-stakeholder effort is now strategically focused on museum practices, education, as well as more user-centered proposals for connecting with diaspora communities through digital networks. The first design proposal is about modification of practices in local education in secondary schools as an educational unit in instruction. This shifts museum education directly to educational institutions that have human and capital resources, while increasing intergenerational participation through interviews, photo documentation and historical preservation and archiving as an augmentation to local museums.

#### Design proposal

##### *Project 1*

Transitioning from participatory research to an actual design project, this design intervention aids in negotiating interpretations of local histories in an educational unit in a high school curriculum. Students at the 2<sup>nd</sup> Secondary School of Argostoli will interview members of their family and community who experienced and remember key

events and social practices in the 1950s. In doing so, they will also document and describe the significance of an object, photo, or other thing that holds personal significance to their interviewees and is associated with the era.

The data out of students' initial research will be analyzed and documented in digital template/archives that the school will maintain for the community to enrich with future community research. The digital template, audio-visual data from students' interviews, and printed examples of the collected artifacts will all be exhibited in a day event co-organized with, and intended for, the school and local community. Engagement in the community context helps in negotiating a common place-based history along with understanding both larger social and political etc. connections in local place-making. Photographs are based on individuals' objects and spaces and acts as a prompt for recorded interviews. Open-ended assessments are shared, looking for connections or "thematic" clusters of common community experiences.

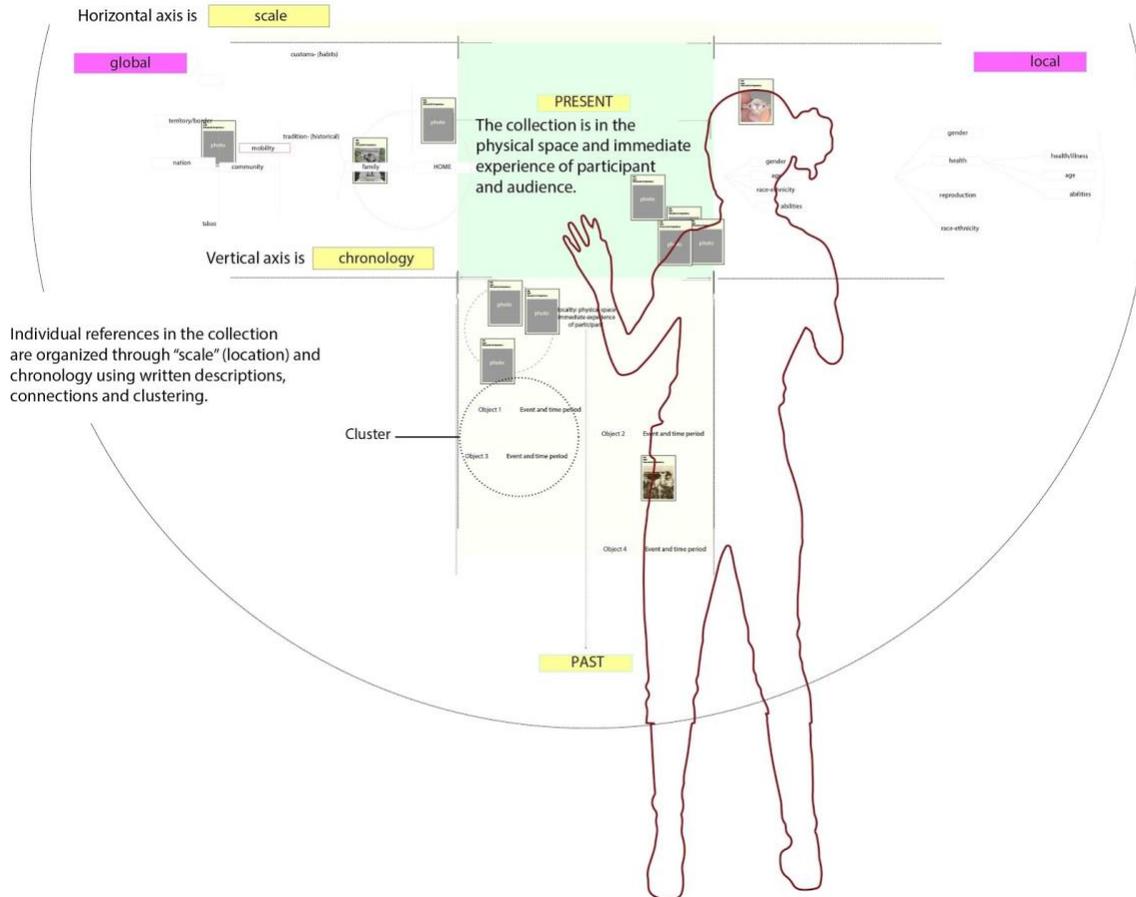


Fig. 2. Organizing image and text.

Project two includes augmenting local historical collections in museums. Each recreated object is based on a first-person story within larger historical events. The objects are inspired by the common objects that are displayed in the museum and are similar to museum interpretative practices. Additional programming can be created through modifying the itinerary to include other settings and locations and can be self-guided with reusable pamphlets or through simple websites optimized for mobile phones, or part of a formal tour that can be combined with events in the museum directly. Daily informal encounters with the installations act as a reminder of historical events in the spaces that they occurred in.

Graduate research group: case study three (Carl Broaddus and Kathryn Mullis)

In a graduate research group one of us (Townsend) is leading in the Department of Graphic Design, North Carolina State University, students are provided a framework for exploring reflexive methods in communities to ongoing community participation in design solutions, which oft time are about community representation, design of services and long-term changes in social practices. Conceived as a “making seminar,” within the existing course structure of the Master of Graphic Design program at North Carolina State University, the course structure provides background and experimentation in developing a hybrid series of modest probes equally based on reflexive ethnographic methods (such as Liebenberg) and the legacy of cultural probes from design.

“Sense making”

In one two-person team, semi-structured interviews were conducted in the LGBTQ community with stakeholders that are involved in non-profit community organization, regarding local history and community. Additional methods included site surveys of locations, literature review, and GIS data on support for different initiatives such as state-wide referendums on LGBT issues. Stakeholders include sexual minority elders as an underserved population facing generational differences; healthcare providers who may not all understand fears sexual minority elders have about access and discrimination; sexual minority youths that can benefit from knowing history and benefit from learning how others deal with trauma and hate; and isolated older adults that may interact with sexual minority elders and may participate in services that can be tapped into.

As LGBTQ rights become law in the United States, some members of the community have begun to consider generational issues and experiences including social isolation of people over 50. The social forces that shaped this generation are now “historicized.” The experiences of Stone Wall (1969), HIV/AIDS and the Reagan era of the 1980’s, and “don’t ask and don’t tell” policies of the 90’s, popular culture and social practices etc. have helped shape a shared identity. For younger people in the community, these circumstances are seen as increasingly remote regarding their own sense of community and identity. Secondly, isolation can be understood as social isolation as well as geographic isolation especially in rural areas of the state.

The team's initial discussions centered on the following questions: what are the generational differences within the LGBTQ community? How do elderly sexual minorities seek out community and where is it found? What are causes of isolation within sexual minorities and what are the barriers to overcoming it? As part of ongoing research leading to participation in the design process for an eventual design proposal, a modified "probe" was created based on ideas that came out of initial interviews, and as an extension into ethnographic methods. In these interactions, participants redefined the initial assumptions of the researchers about what constitutes a "neighborhood" to a concept of "social network" that is based on daily and weekly routines of social contact outside of a traditional neighborhood, a fundamental issue in dispersed "exurban" US communities like the "Triangle" region in North Carolina. Follow up unstructured interviews based on individual maps led to descriptions of activities and valuations given by the interviewee. The nodes on the map led to relational understandings between the different subject matter covered, often including conditional circumstances or "compare and contrast" between things that might be understood as opposition or conflicts by the participant for example the relative value of work versus home and family).



## Stakeholder Probing

After **1** researching articles on **2** sexual minority isolation, we reached out to two key leaders in the local LGBT community **3** to explore the concept of isolation, but more importantly, the wicked problems that sexual minorities face in the Raleigh area. Our key findings:

social isolation is the biggest issue sexual minority youths face

sexual minority youths are not a monolith

isolation in the elder community is a more wicked problem

partnerships with organizations (networking) is key

but realities of youth make the drivers of isolation hard to parse

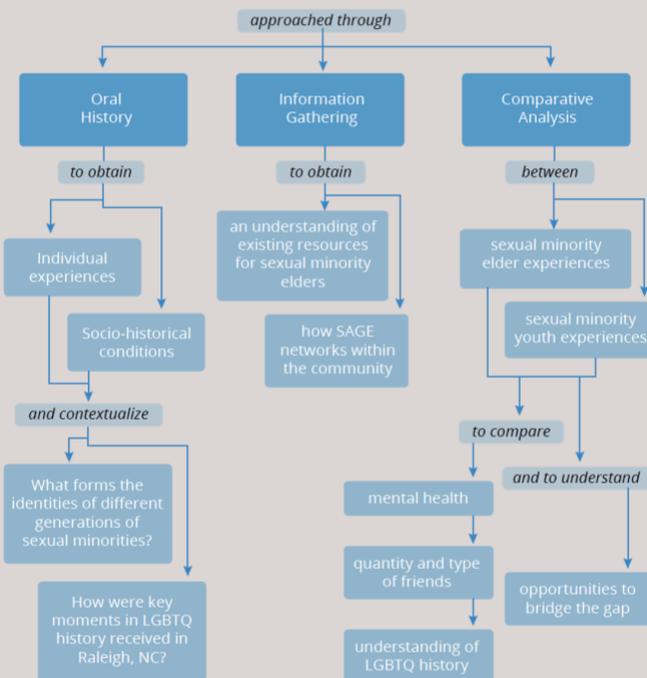
distinctions between identity and youth isolation may not matter



data on sexual minority youths & elders is thin



## Interview Prep Mapping **4**



## Stakeholders

### Sexual minority elders

- underserved population
- generational differences

### Sexual minority youths

- may not know history
- may deal with trauma or hate differently
- generational differences

### Mental healthcare providers

- want to help
- may not be accessible
- could have valuable insights

### Healthcare providers

- want to help
- discrimination? access?

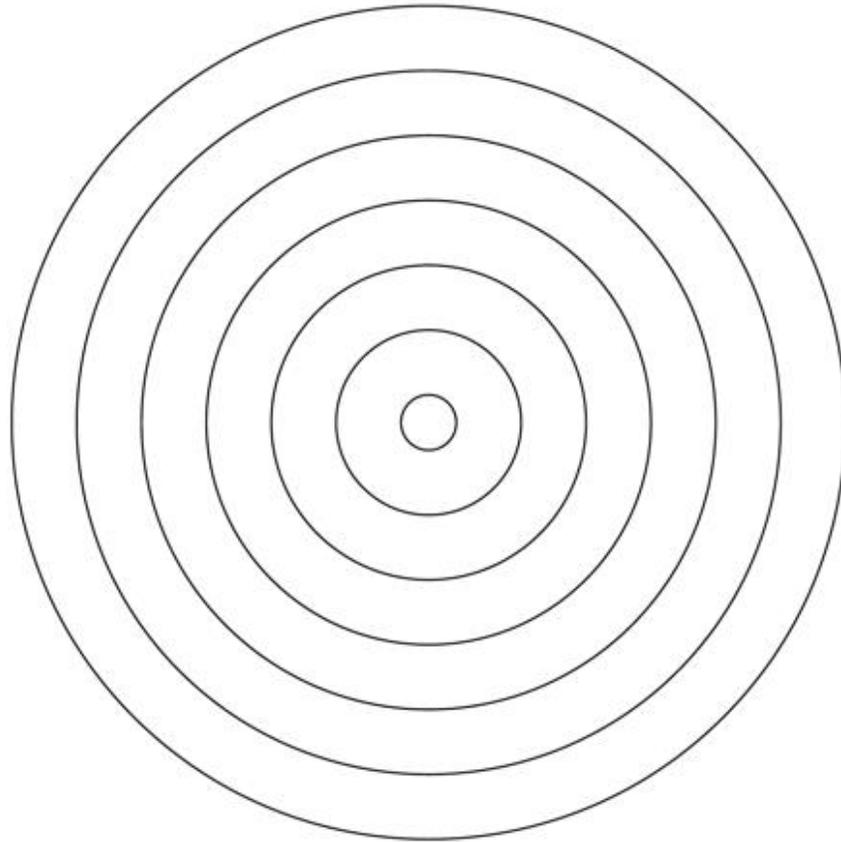
### Isolated older adults

- may interact with sexual minority elder people
- may participate in services that could help



## SAGE Program Coordinator Interview **10**

Fig. 3. Stakeholder inventory.



---

## Show us what your community looks like!

This activity is meant for you to visually assemble your best approximation of what community looks like for you. *How do you complete this activity?*

1. Print sheet.

2. Write elements of your community into the small circles on the next sheet, one per circle. There is also a list of elements to consider, but don't feel you have to a) use *only* them, or b) use them *all*. The only one you must use is the pre-labeled circle, "Me!"

3. Cut out the circles on which you've written.

4. Arrange the circles on the map to represent your community.

5. Draw lines between "Me!" and circles that are most important. Draw dotted lines for those that are somewhat important. And draw no line between circles you feel little connection with.

6. Take a picture and send to Carl at (919) 649-0339.

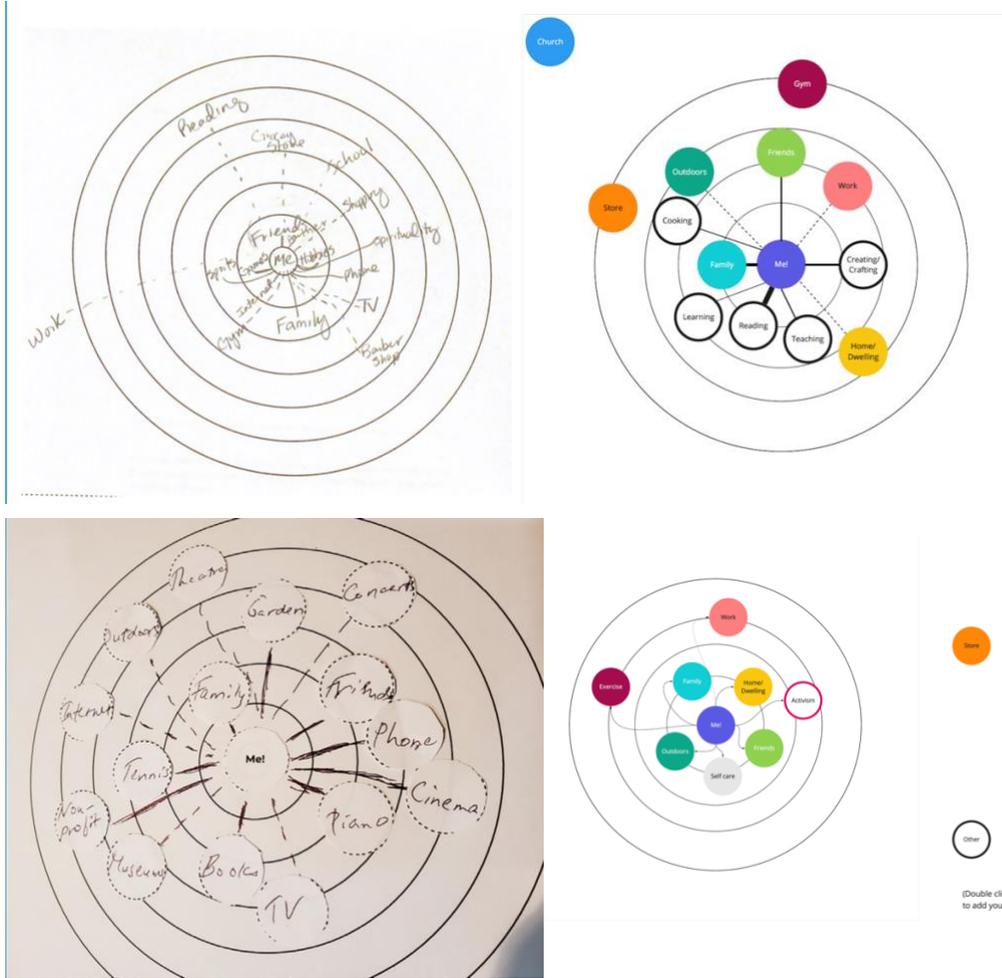
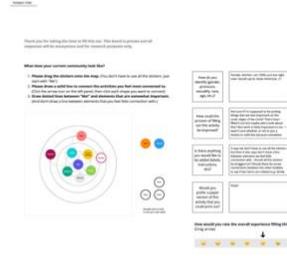
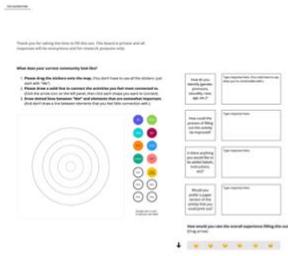


Fig. 4. Maps from participants and worksheet.

# Data

# Interviewee 2

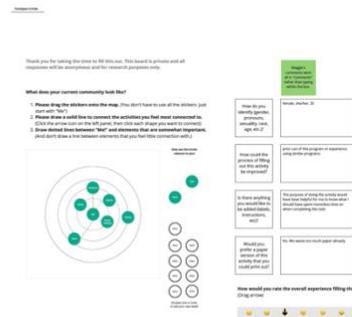
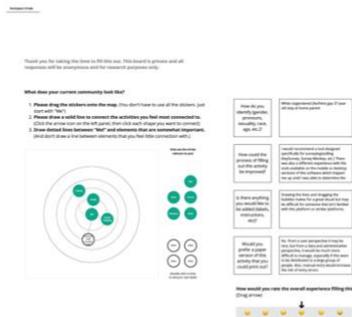
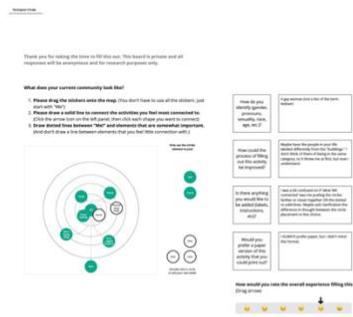
# Participant 1



# Participant 2

# Participant 3

# Participant 4



# Participant 5

# Participant 6

# Participant 7

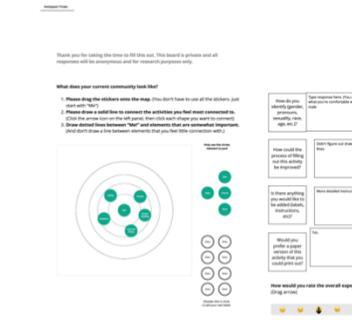
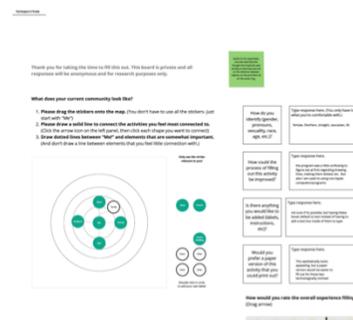


Fig. 5. Maps created by participants.

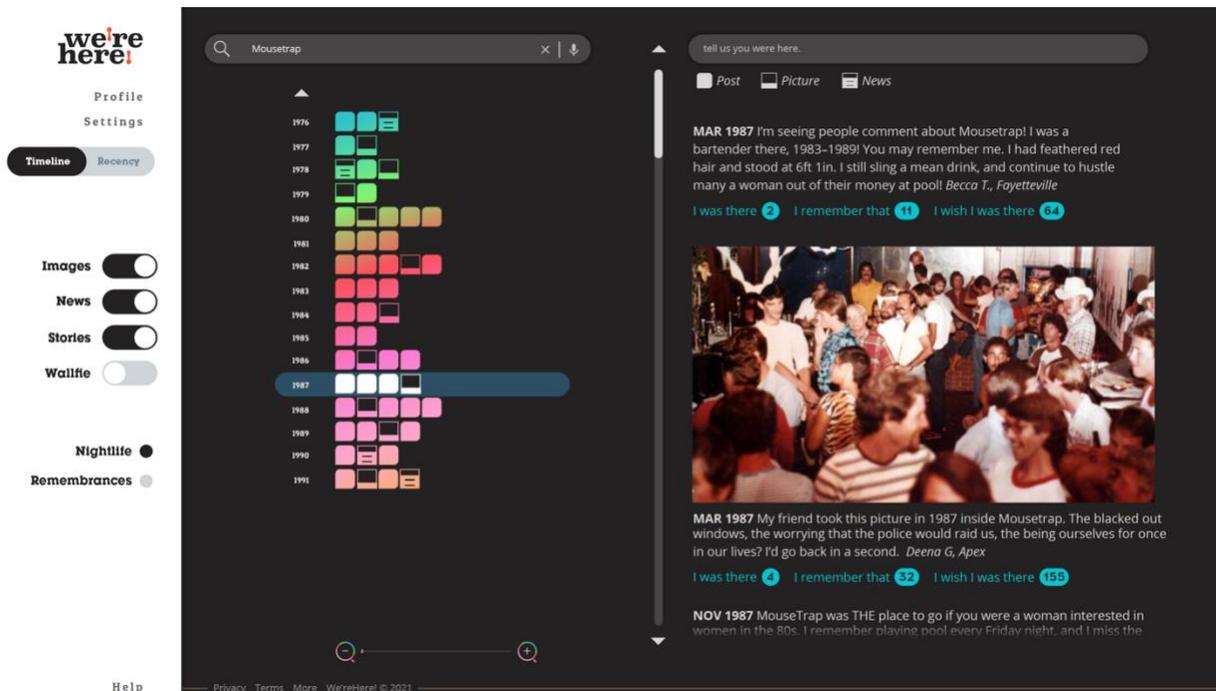


Fig. 6. Granular timeline designed to accommodate personal anecdotes within a larger shared history.



Fig. 7. Larger outreach in community.

Design proposal: “We are here— a Pride Raleigh Reclamation Project.”

“We are here” is an umbrella term for a locally-based project aimed at exploring and supporting 50+ sexual minorities and their concerns. This service design project is part of a larger movement, the Pride Raleigh Reclamation Project. PRRP works to reconstruct and preserve the history of sexual minorities in Raleigh and

surrounding areas, and partners with the LGBTQ Center of Raleigh and the City of Raleigh to address community needs and lobby for and against legislation in an effort to reach equal status and consideration. PRRP will use initial community outreach through the design intervention to hone the concept of “We’re Here!” to the point where it can begin funding efforts. The initial proposal centers around a timeline-based website that allows people to record personal, historical, and landmark-based moments for sexual minorities in the Raleigh area over the past century. The concept extends to a Pride Park, with primary focus being the Community Wall, where people can take selfies and group photos and a digital wall mirroring the website timeline, where users tap on posts, photos, and news articles over time. Phase 2 builds on the first phase, spreading community to harder-to-reach targets like closeted individuals.

In these examples, the responsive modification of various “probes” in response to discursive discussion and shared interpretations between the researcher and participant creates a dialogical space that can provide a space for participatory design. Objects as design prototypes along with open storylines (or scenarios) of use can lead to a more “ontological design” framework through ongoing designing as social practices. Participatory design as an ongoing social practice in the community is processual as an ongoing and evolving “design intervention” rather than a final designed solution, supporting Willis’s notion of a more ontological approach to design based on interconnections between objects, infrastructure, and “habits of mind.”

## Conclusion

In this presentation we reflected on the ways in which design methodologies and tools, specifically cultural probes, can fundamentally shape the exchanges between researchers and community members, including their interpretation and presentation of resulting data, risking fragmentation and abstraction of both parties’ roles, experiences and input in the participation process. We then presented three case-studies where cultural probes reflected community members’ social and cultural practices as they developed in researcher-participant interactions. In certain design interventions, especially those related to social practices, a more connected “conversation” can take place. In this manner, working in communities can become a form of “public ethnography” as an effort to understand and analyse social practices from multiple knowledge and disciplinary perspectives; define social problems that often go unrecognised, and; explore the subjective experiences of individuals without, however, prioritising them over systemic social problems.

Conceptualising designing with communities as a form of public ethnography can add social value to design. Design-led and instrumentalised approaches and tools were previously shown to standardise and channel peoples’ lived experience in typified representations and exclude design participants from interpretation, thus rendering them mere informants. Ethnography, however, is “particularly suited for showing complex social relations” and requires that that researcher is in context and loses control over ideas (Vaughan, 2005, p. 412-413). Ethnography can benefit,

too, from design's problem-solving approach, proactive practice and interventions, by sustaining dialogue with the community in ongoing co-creation (Segelström & Holmlid, 2015, p. 141). Ingold (2014, p. 388) calls this process *edification* (after Rorty, 1980), i.e. the process of keeping the conversation going and responding to community needs with long-term and open-ended commitment and attentiveness. We view this process as a fruitful synergy between design and ethnography, one that moves beyond the centrality of methods, still dominant in design practice, but still expands on the affordances of cultural probes and other engagement methods to engage researchers and community members as socio-cultural beings in context.

## Notes

Armstrong, L., J. Bailey, G. Julier, and L. Kimbell. (2014). *Social Design Futures: HEI Research and the AHRC*. Brighton: University of Brighton.

Björgvinsson, E., P. Ehn, and P.-A. Hillgren. (2012). Agonistic Participatory Design: Working with Marginalized Social Movements. *CoDesign* 8(2–3): 127–144.

Boehner, K., Vertesi, J., Sengers, P. and Dourish, P. (2007). How HCI Interprets the Probes. *CHI 2007 Conference Proceedings, Designing for Specific Cultures*, April 28-May 3, San Jose, CA, USA.

Clarke Alison J. (2013). Actions Speak Louder. *Design and Culture*, 5(2), 151-168, DOI: 10.2752/175470813X13638640370698.

Collins, H. and Evans, R. (2015). Probes, Surveys and the Ontology of the Social. *Journal of Mixed-Methods Research*, 11(3), 328-341. DOI: 10.1177/1558689815619825

De Leon, J.P., and Cohen, J.H. (2005). Object and Walking Probes in Ethnographic Interviewing. *Field Methods*, 17(2), 200–204. DOI: 10.1177/1525822X05274733

Dourish, P. (2006). Implications for Design. CHI 2006 Conference Proceedings, *Design: Creative and Historical Perspectives*, April 22-27, 2006, Montréal, Québec, Canada

Escobar, Arturo. (2018). *Designs for the Pluriverse Radical Interdependence, Autonomy and the Making of Worlds*. Durham and London: Duke.

Fals-Borda O., & Mora-Osejo, L. E. (2003). Context and diffusion of knowledge. *Action Research*, 1(1), 29-37.

Fernandes, S. (2017). *Curated Stories: The Uses and Misuses of Storytelling*. Oxford University Press

Gaver, B., Boucher, A., Pennington, S. and Walker, B. (2004). Cultural probes and the value of uncertainty. *Interactions-Funology*, 11(5), 53-56.

(originally) Gaver, B. Raby, A., Pacenti, E. (1999). Design: Cultural Probes. *Interactions*. VI.1 January/February 1999. <https://interactions.acm.org/archive/view/jan.-feb.-1999/design-cultural-probes1>

Giroux, H. (1988). Border pedagogy in the age of postmodernism. *Journal of Education*, 170(3): 162–181.

Graham, C., Rouncefield, M., Gibbs, M., Vetere, F. and Cheverst, K. (2007). How Probes Work. *OzCHI 2007 Conference Proceedings*, 28-30 November 2007, Adelaide, Australia.

Harding, S. (1993). Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective. *Feminist Studies*, 14(3), 575–599. DOI: 10.2307/3178066.

Ingold, T. (2014). That's enough about ethnography! *HAU: Journal of Ethnographic Theory*, 4(1), 383-395. DOI: <http://dx.doi.org/10.14318/hau4.1.021>

Julier, G. Kimbell, L. (2019). Keeping the System Going: Social Design and the Reproduction of Inequalities in Neoliberal Times. *Design Issues*, (35)4, 12-22. MIT Press.

Liebenberg, L. (2009). The visual image as a discussion point: increasing validity in boundary crossing research. *Qualitative Research*, 9(4): 441–467.

Manzini, E. (2015). *Design When Everyone Designs an Introduction to Design for Social Innovation*. Cambridge USA, London: MIT Press.

Matthews, B. and Horst, W. (2008). What can we learn from the probes? The role of interpretation in contributions to knowledge. *Working Papers in Art and Design*, Vol. 5.

Santos, Doris. CHAPTER TWENTY-FOUR: (Participatory) Action Research and the Political Realm Counterpoints, 2013, Vol. 354, Qualitative RESEARCH: A Reader in Philosophy, Core Concepts, and Practice (2013), pp. 492-513

Segelström, F. and Holmlid, S. (2015). Ethnography by design: On goals and mediating artefacts. *Arts & Humanities in Higher Education*, 14(2), 134–149. DOI: 10.1177/1474022214560159.

Smith, D. (1990). *The Conceptual Practices of Power: A Feminist Sociology of Knowledge*. Toronto: University of Toronto Press.

Vaughan, D. (2005). On the relevance of ethnography for the production of public sociology policy. *The British Journal of Sociology*, 5(3), 411–416. DOI: 10.1111/j.1468-4446.2005.00074.x

Willis, A.M. (2006). Ontological Designing—Laying the Groundwork. *Design Philosophy Papers*, 4 (2), 69–92. Taylor and Francis.