NAVET Method Catalog Volume 1, February 2021

This is the first volume of the NAVET method catalog. An attempt to collect and compare examples of methods and methodological concerns that emerge from the interdisciplinary work of the Small Visionary Projects that NAVET is funding.

For more information, please visit www.kth.se/navet.

Contents

1   Production Novellas

Anna Holmquist, KTH, anna@folkform.se, Mats Magnusson, KTH, Johanna Rosenqvist, Konstfack.

The Production Novella as Method in Craft-Based Design and Artistic Research

The overall research approach in this project is inspired by *Research Through Design* (RtD) (Frayling, 1993). RtD generates knowledge through the practice of making and designing innovative artifacts, models and prototypes, and reflecting upon them. The research projects evolved from observa-

tions and reflections on design practice work at studio Folkform in Stockholm. The research project contributes to the field of practice based research where designers use their own work as an outset for reflection and knowledge production. Practice-based research is an original investigation undertaken in order to gain new knowledge partly by means of practice and outcomes of that practice. The starting point for revealing the micro-mechanisms leading towards Innovation Through Tradition (ITT) are put in the spotlight through a series of design experiments. The design results are experiments working with the Swedish furniture and accessories industry, and series of industrial interventions illustrating the different tensions between traditional materials, forms, and manufacturing techniques.

The specific methodological approach used in this project is the writing of production novellas, in combination with visual material and with research through design. The chosen method allows us to identify and reflect upon design practices, in terms of the use of materials, forms and manufacturing processes, and thereby shed new light on the role played by tradition in product design. In their work on emergent methods Nagy Hesse-Biber and Leavy (2008) argue that a method gap occurs when tradition comes out short in relation to innovation – a question that engages scholars in architecture, art and design (McNiff, 2013; Rendell, 2010). Leavy (2009:10) argues that artistic practice and qualitative research can be viewed as crafts and that qualitative researchers 'compose, orchestrate, and weave', (emphasis in original). In this project, examples from case studies in practice-based design research are used, focusing on the creation of new meaning in the design of a series objects.

By working with the tensions between the methodological tradition of

experience centered and culture-oriented narrative research and innovative forms of writing personal narrative Holmquist introduces fragments of writing memories from her Production Novellas. The production novella borrows inspiration from Livholts' (2015a; 2015b) untimely academic novella writing which includes diverse writing strategies and visual representations such as writing memories and letters, research poetry and photography. This narrative experience writing allows the artist and designer to re-visit and think through the materials. The writing of small stories inspired by individual memory work (Livholts, 2015b), promotes fragments or scenes from the manufacturing written by the researcher who re-constructs stories about the becoming of the cabinet. It is here seen as central to work with concrete detailed representation to promote seeing, feeling, colours and to include unexpected moments - a phone call, an invitation, a co-creator. In this way moments nourish the possibilities to create mo(ve)ments to includes the production process (see also Livholts, 2015a). Thus constructing narrative experience becomes a tool to reflect on how the different tensions between tradition and innovation played a central role in the design processes. The experience-based narrative approach derives among other from Bruner (1991: 5-6) who has emphasised that physical objects are central in the creation of meaning. Emphasising that knowledge and skills cannot automatically be transferred between cultures and domains, he draws attention to intimate interconnections between cultural and contextual interpretations, life and art. The narrative scholar Squire (2008) develops a set of characteristics for what she calls experience-centred and culture-oriented narrative research approach. She highlights the importance to focus on themes rather than events, working from different cultural contexts, and materi-

als, such as memories, letters and photography. Central for Holmquist's projects is the creating of narrative meaning in the process where she as an artist and designer works with materials and designing of physical objects such as furniture in different contexts. As Squire (2008:44) describes, researchers in this tradition may work thematically drawing on a wider framing of narratives of cultural and national contexts, reconstructing stories across time and place. Viewing narratives as experience-centred are helpful for craft-based research of understanding through practice and knowing what is known. For further reading on the method see the academic article by Holmquist et al published at Wiley Publishing, titled *Reinventing Tradition in Crafts-Driven Innovation-Exploring the creation of new meaning through forms, materials and manufacturing processes*.

2   Transforming the Colonial Archive

Celilia Järdemar, Konstfack, Rob Comber, KTH.

Transforming the Colonial Archive - Methods

This project, a part of the larger VR project called "Reframing the Encounter" run by Cecilia Järdemar, Freddy Tsimba and André Yoka Lye, set out with the goal to develop a prototype for the return of an archive of glassplate negatives and films photographed by Swedish missionaries in the Congo Free State between 1890 – 1910.

The aim of the project was to work collaboratively with artists and a group of female engineers in the Democratic Republic of Congo, and, going forward, a broader Congolese public, in order to explore what an interactive archive object could be, an object that when finished will be placed

in the National Museum in Kinshasa and the Congolese villages where the images were once created.

Following the onset of the travel restrictions by CoViD19, the collaborative and localising work in Kinshasa has had to be reformulated into mostly digital collaborations with a smaller number of participants. The project utilises a research through design methodology, which employs design practices, prototype development and social scientific methods such as interviews, to create knowledge on human conditions, contexts and practices. Through the processes of making and designing a postcolonial archive we begin to raise questions on the archive itself, the colonial impulses of categorisation and its values in, for instance, algorithmic image classification, feminist methods for appropriation of photographic practice, and material explorations on weaving and projection, among many more

As an example, we have begun to explore how best to order the materials in the archive. Some possible examples include chronologically, according to location, or according to user-generated tags. Given the relative lack of curatorial work historically attached to the glass plates, and the colonial nature of existing metadata, how is it possible to create a decolonial display of the images?

The complexity of the archive is amplified by the multiple possible entry points and uses of the images today, including learning about earlier customs and traditions, searching for family members and understanding the history of the missionary villages. Together these provide a rich and challenging space to produce knowledge.

Our research through design process will work through 3 main stages:

1. Between now and the end of November, we will work towards lightweight prototype technologies that allow us to talk with members of the Congolese collaborators and public via workshops in Kinshasa facilitated by Cecilia.

2. Following the workshop, we will iterate and develop on the ideas and curatorial practices that accompany and result from the design engagements in November.

3. We will work towards a more realised prototype of one interaction technique or materiality for deployment to rural, source villages in the Congo in the summer of 2021.

3   Designing the sound of the future

Roberto Bresin, KTH, roberto@kth.se, Sandra Pauletto, KTH, Jarmo Laaksolahti, KTH, Claudio Panariello, KTH, Erik Gandini, SKH.

Methods used in the project

Roberto Bresin, Sandra Pauletto, Jarmo Laaksolahti, Claudio Panariello, KTH Erik Gandini, SKH

In this project we aim to develop new methods for the sound design of everyday scenarios inspired by combining methods in documentary filmmaking and sound computing. The new methods will make it possible

to apply knowledge and experience from the sound of the present to the design of the sound of the future.

During the project we have been working with the following methods:

- Design fiction

- Sonification of information

- Analysis of sound design practice in creative documentary filmmaking

Design fiction

Design Fiction is an approach for creating accessible visions of the future as if it was already here, expressed in familiar formats such as product catalogues, newspaper articles, manuals and so forth (Bleecker 2009). The format makes visions concrete through down to earth examples in the sense that they are not described as hypothetical research results but rather as products, services and other things that future people would encounter in their everyday life. The familiar format encourages readers to treat fictive technologies as real and thereby reach beyond questions of whether it would work or not. Instead it leaves room for engaging in questions of how such technologies fit into the overall narrative of the world they exist in. Usually such worlds are not expressly formulated, but rather emerge in the gaps and blank spaces left in the description. This puts a focus not only on possible developments but also the possible consequences for people's lives, both positive and negative. We organized a workshop in which twenty-three participants predicted both positive and negative sonic future scenarios, including both lo-fi and hi-fi sound-

scapes, new sonic interfaces, and in which people will be able to control and personalize soundscapes (Bresin et al. 2020).

Sonification of information

Sonification is defined as "the use of nonspeech audio to convey information. More specifically, sonification is the transformation of data relations into perceived relations in an acoustic signal for the purposes of facilitating communication or interpretation" (Kramer et al., 1999). We used sonification for representing with sound the dramaturgy of the software processes involved in the shut-down of a computer. Software processes and their complexity are invisible to users and sound can raise awareness in future applications. This will be used as a first sound sketch for the design of a sound which will be used in a documentary scene in which computers in an open-plan office environment are shut down in the afternoon with the purpose of forcing office workers to stop their work.

Analysis of sound design practice in creative documentary filmmaking

The goal of this part of the project is to investigate how creative professionals, such as directors, editors and sound designers, think and make decisions about sound when they develop complex fictional or non-fictional worlds. Previous studies by Pauletto have shown the advantages of exploring existing approaches to sound design in media production for the development of future sound technology (e.g. Pauletto, 2017). In this context, creative documentary filmmaking, a genre to which Erik Gandini´s documentaries contribute to, is of particular interest as it explic-

itly and fundamentally addresses the fuzzy boundary between factual and fictional.

Through a textual analysis of Erik Gandini´s documentary films, and in particular their use of sound and music, we explore how sound can be used as a way to cross the border between diegetic and non-diegetic, present and potential worlds. Through semi-structured interviews with the creative professionals working in these films, we identify how the sound design process in creative documentary making unravels through concerns, discussions and technical solutions.

References

Bleecker, J. (2009) Design fiction: A short essay on design, science, fact and fiction. Near future laboratory, vol. 29, 2009.

Bresin, R., Pauletto, S., Laaksolahti, J., Gandini, E. (2020). Looking for the soundscape of the future: preliminary results applying the design fiction method. In Sound and Music Computing Conference 2020.

Kramer, G., Walker, B. N., Bonebright, T., Cook, P., Flowers, J., Miner, N., et al. (1999). The Sonification Handbook

Report: Status of the Field and Research Agenda. Report prepared for the National Science Foundation by members of the International Community for Auditory Display. Santa Fe, NM: International Community for Auditory Display (ICAD).

Pauletto, S. "Embodied Knowledge in Foley Artistry," in The Routledge Companion to Screen Music and Sound, : Routledge, 2017, p. 338.

4   Digital Bodies: Motion Capture Acting

Jonas Beskow, KTH, Simon Alexanderson, KTH, Alejandro Bonnet, SKH, Matthew Allen, SKH.

Digital bodies is a NAVET project investigating motion capture (Mocap) acting. In contrast to real-world acting, actors in Mocap scenario are typically not represented by their own bodies. Instead, they act with a digital body that may look very different both in size and shape. In order to assess the effects of this transformation, both from an acting and a spectator perspective, we have conducted several workshops and studies.

Workshops

(Esther Ericsson, Matthew Allen, Alejandro Bonnet, Stephen Rappaport, Simon Alexanderson, Eva Székely, Jonas Beskow)

We conducted four workshops, each with one actor wearing a Mocap suit and a face tracking helmet. The performance was transferred to different digital avatars in real-time and projected as a virtual "mirror" to the actor. The workshops focused the following questions:

1. How does the visual style of the characters (ranging from cartoon style to realistic) affect the acting?

2. What topics and scenarios are useful for improvising material to data-driven modelling of human behaviours?

3. In order to quickly create new characters and animating them in real time, we developed a pipeline from Reallusion Character Creator to Unity. The pipeline allowed for customizing style (ranging from stylized cartoon characters to realistic), clothing, and body and facial features.

Study

(Robin Kammerlander, Simon Alexanderson, André Pereira + actors from StDH and teateralliansen)

We conducted a combined quantitative and qualitative study to explore how immersion into virtual reality (VR) may help actors act with different shaped bodies. We implemented a system for multi-party acting in VR and evaluated how acting in VR affects the sense of body ownership and immersion compared to a standard Mocap session in an empty studio. We also assessed the effects qualitatively with open-ended questions to the participants. The study has been submitted to IEEE-VR.

5   Knitting concrete

Helena Westerlind, KTH, Ulrika Mårtensson, Konstfack.

Our project explores potential technology transfers between two material practices generally considered to be widely apart: that of knitting and concrete construction. This is made possible by the use of 3D printing in which the shaping of concrete takes place, not through the imposed rigidity of static mould, but along a programmable path performed by a digital machine. This departure from traditional formwork-based techniques represents not only a technological shift, but also an opportunity for re-evaluating norms and conceptions that hitherto have produced concrete as a monolithic and uniform material. To unlock the potential of the additive process, we take inspiration from practice of knitting - a craft with

a long tradition in forming a continuous length of filament into complex material structures.

Together with colleagues at Konstfack the project will explore adaptations of knitting techniques for 3D printing concrete. The overall goal of the project is to find out how principles of knitting can provide new means of controlling the density, porosity, and surface articulation in the shaping of concrete.

The explorations and adaptations of techniques between knitting and concrete 3D printing is based on the development of prototypes in clay, a material that offers a great resemblance with the properties of fresh concrete but is much more flexible and convenient to be printed at a smaller scale. For this purpose, we developed our own delta 3D printer adapted for printing with clay. This development is based on a Kossel Rep-Rap with custom parts and firmware. This open-source platform that gave us enough freedom to customise all the parts needed for the development, such as adapting the machine to work with two colours simultaneously.

This will be achieved by studying various knitted stitches, pattern techniques and methods for applying these patterns into advanced topological shapes through the fabrication of prototypes in clay. The findings will inform the development of a graphic interface in which patterns can be programmed and translated automatically into fabrication instructions for the 3D printing machine.

6   Transforming Practices

Lina Persson, SKH, Anna Björklund, KTH.

For us the transdisciplinary method in this project stems from a drive to gather around something we all find important, sustainability, but from different viewpoints and with different methods.

Life cycle assessment (LCA) as method is always multidisciplinary in the sense that experts in LCA need to collaborate with experts in the field of application in order to untangle how that field can be described with a life cycle perspective. In this case the LCA is applied on artistic processes and film production, a somewhat less standardised processes than e.g. in the transport industry. Therefore, we plan to have a bit more agile analysis process with dialogue with film team students to allow for discussions and more general understanding of the varying degree of climate impact

of the different aspects of the film making process. To have LCA as an active collaborator in the artistic process also opens up for artistic methods such as performativity, in the way it may shift how we see what we are doing while we are doing it and thereby shifting what we are doing.

In the artistic practices quantitative methods can play a role in breaking with internalized and normalized outdated structures or unjust privileges. When you are used to privilege, equality feels like oppression. Therefore, it can be necessary to measure our behaviour in order to render our privileges visible. In this quantitative analysis we hope to bring forth a discussion of climate-justice in relation to artistic practices and productions.
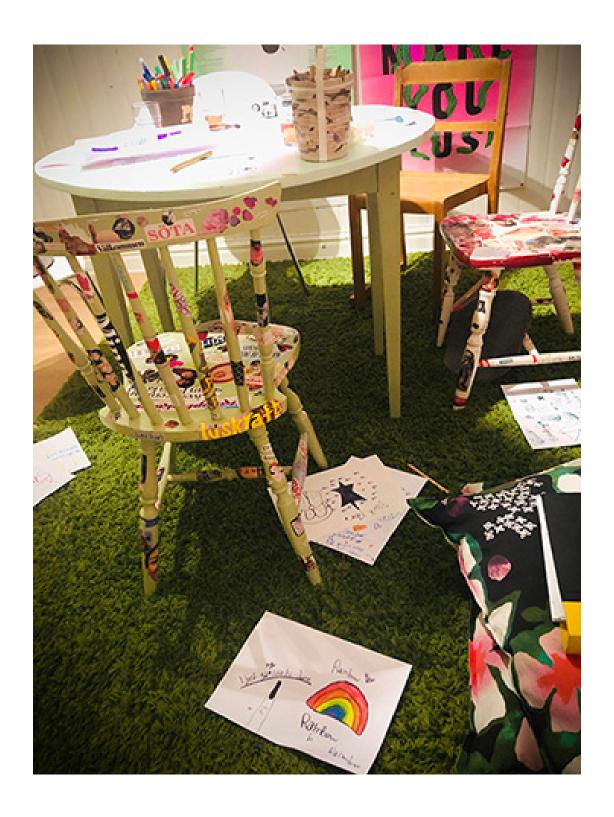
7   Cultural right of public access

Miro Sazdic Löwstedt, Konstfack, Meike Schalk, KTH.

Exploring technologies for sustainable practices in the built environment and innovation of place by means of artistic practice, pedagogy, architecture, urban planning, visual culture and ethnography.

We aim to investigate community-oriented artistic practices amongst- and together with children and young people to collectively examine in what ways creative practices can become meaningful tools for children and young people to explore their own questions about how it is to be in the world. How to make, name, materialize, portray and share the worlds they are part of.

Planning and preparations of workshops to be launched in the spring of 2021 involving following methodologies:

- *Participatory action research* where we create a mobile site by having introduced as a starting point a caravan, with the option to be transformed into a laboratory / studio / workshop for site specific creative production. Ethnographic methods like hanging out together with young people at Tjejhuset and Hovsjö fritidsgård in Södertälje, exploring everyday interests or questions that could become material for workshops.

- *Microscale workshops* where we initiate test rounds. Ideas for workshops are being proposed, such as photography and illustration at Tjejhuset with invited professional photographer and illustrator, and

the prospect of constructing an own Monopoly game at Hovsjö fritids-
gård.

- *Seminars.* On November 23rd Stockholm based MYCKET collabora-
  tion and Hamburg based Sibylle Peters are invited to share their ex-
  periences of projects directed towards youth participatory action re-
  search at a Konstfack Common Seminar.

- *Intersectional knowledge production*, where students within the Teacher
  Education at Konstfack and KTH School of Architecture are invited
  to explore built environmental learning (or spatial pedagogies) and
  methods for learning collectively.

- *Interdisciplinary collaborations* with institutions and players from cur-
  rently diverse branches such as school, lifelong learning, the munic-
  ipality, civil society actors, cultural actors, and others. Currently, we
  are in dialogue with Tjejhuset and Hovsjö fritidsgård. In concert, a
  dialogue has also been initiated with Livet Bitch! and Grafikens Hus
  in Södertälje.

Methods are expected to be negotiated and re-negotiated as the col-
laborative workshops evolve, as will which players to invite to work and
formulate the workshops together with us*. *An essential factor to be taken
into consideration is the current pandemic, which might require alternative ap-
proaches and methods for when/how workshops will be allowed to happen.*

8   Browser Chance Music

Benoit Baudry, KTH, Henrik Frisk, KMH.

Browser Chance Music is at the intersection of software art and interactive sonification. In this project, we let citizens experience two disparate layers in the act of web browsing. On the one hand the visible and simple graphical interface that the users know from their daily browsing actions. On the other hand we sonify and visualize the vibrant, high frequency, completely invisible software activity that occurs in the browser to fetch and display the web pages that users visit. This software activity spans a wide scope of operations from network connections, script code download, image and content rendering. Through sound, we explore the rich software execution, which is usually invisible on a regular interaction with software applications. One challenge we face in this project relates to the significant gap of temporality between the two phenomena: the visible act of browsing is performed at the speed of humans clicking

buttons or swiping screens; meanwhile, software that runs in the browser to let humans access the world wide web, operates at a radically different speed, up to thousands of operations per second.

Since the project started, we have performed two different incarnations of BCM.

The first incarnation let the participants interact with the installation through their personal device (smartphone or laptop). They connected to a specific wifi hotspot on which we could capture all the network activity between the device and the world-wide web. While the participant browsed the web, checked social media or chatted with friends, we displayed, in real time, audiovisual representation of the high-frequency network activity running in the wifi hotspot. This installation was performed as part of the Visualia festival in September 2020, in Reaktorhallen. https://rethread.art/projects/bcm.html

The second incarnation let the participants interact with the installation through a dedicated web browser. This is a key methodological difference, since visitors experience the web through a device and a browser that is not 'theirs'. In exchange, we were able to capture more accurate and complete data, and thereby letting them experience audiovisual feedback much closer to the users actions. The installation sonifies accurately the contrast between the user intention (visit one page, click one link) and what the browser needs to perform to deliver the intention (interact with a wide variety of companies and data centers worldwide, in order to receive and display all the content of the page). This installation was displayed at Tekniska Museet on a large screen and sound system in a dedicated room during höstlovet in October 2020.

https://rethread.art/projects/pellow.html

9   Fictitious Soundscapes

Kjetil Falkenberg, KTH, Sandra Pauletto, KTH, Ricardo Atienza, Konstfack, Klas Dykhoff, Uniarts. Advisor on disability and method: Rumi Hiraga, NTUT Japan.

Status report

As an effect and later a countermeasure to Covid-19 restrictions, the project was delayed until late autumn 2020 and its scope was changed. To have studies involving hearing impaired, who would not unlikely be overrepresented in the risk group for virus infections, was judged to be impractical. Following this change, the project research questions and goals were adjusted.

Main question: What are the sound preferences among hearing impaired (HI) for a future urban soundscape?

Research questions: Will a higher-order interface give similar designs as a lower-order? (we only test higher-order in this experiment) Will HI create similar designs as NH? Does preference of design and designer correlate with hearing ability?

Experiment scenario: We present one scenery of a future urban street corner featuring three fictitious vehicles: a fleetingboard (flying skateboard), a gyrochair (wheelchair on two fat tyres), and a hangflyer (a flying copter which you hang on to). The view is static, but the vehicles and people are moving in a loop.

We present one higher-order design interface built in WebAudioXML. The sound designer mixes short looped samples (up to a second long or so) and a few effects to these (such as delay effects, pitch shift, ...). Also, each vehicle type has one additional control parameter: steering, acceleration, and elevation.

The experiment consists of design sessions with HI and NH groups of pupils from Alviksskolan, followed by listening experiment including new groups of HI and NH at the same school. Output: Although there are aspects of interfacing and sound design, a focus on accessibility and HI is primary. If we get conclusive results, we can give recommendations for future design processes for this particular user group, and not least if it would be necessary to consult HI.