

Introduction

The protocol document for interdisciplinary research aims to provide useful references and guidelines for institutions, funding bodies, individual researchers and interdisciplinary research groups. The document takes into account a wide number of experiences and visions on interdisciplinary work. It is an open document under ongoing reviewing and discussion.

This document presents guidelines for institutions, funding bodies, interdisciplinary researchers and groups. It is the result of the exchange of experiences and the theoretical discussion among the participants in two workshops.

The first draft was edited by Simon Penny, based on input from participants in Synergies Workshop on Interdisciplinary Research June 28-30 2013, and especially Roc Parés, Mara Balestrini and Swen Seebach.

The second draft was edited by Tere Badia and Marta Gracia, based on inputs from participants in WIRKT Workshop on Interdisciplinary Research and Knowledge Transfer July 10-12 2014, and especially Swen Seebach and Josep Perelló.

Both workshops were organised and hosted by Hangar in Barcelona under the auspices of Softcontrol (European Commission - Culture Programme 2007 – 2013). The last version of the Protocol and the documentation of the workshops is available on the online platform [Grid_Spinoza](#).

About Hangar

Hangar is a centre for art research and production, offering support to artists since 1997.

Hangar's mission is to support the visual artists and creators during the different phases of their art production processes as well as to contribute to the best development of their projects. For doing so, Hangar facilitates them equipments, facilities, production assistance and a suitable context for experimentation and free knowledge transfer.

The centre offers an array of services and a framework that allows for the research and development of art productions in their entirety, or partially. Hangar follows up on the results by including the projects in various networks and platforms, or by detecting possibilities for their incorporation within other fields.

At an international level, Hangar has carried out more than 50 artists exchanges with other centers around the world. Since 2007 it participates as a partner in several European cooperation projects, most of them in the frame of the former Culture programme and in the field of new technologies applied to art and creativity.

Moreover, since 2010, Hangar has developed different contexts and methodologies for the transfer of knowledge, methodologies and results between different disciplines. This has been done in the framework of the project Grid_Spinoza (www.gridspinoza.net) and

some European cooperation projects such as Soft Control (www.softcontrol.info – still ongoing).

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1. Arguments for interdisciplinary research.

Interdisciplinarity has two main areas of value, one is pragmatic, the other epistemological.

The pragmatic aspect lies in solving complex real-world problems, minimising unintended side effects and creating new narratives to observe a phenomena. The complexity of situated problems requires diverse input.

Interdisciplinarity is generally recognized as a key technique for generating new knowledge and solving hard problems in emerging and changing technological, environmental, social contexts, such as global communications, ubiquitous computing, emerging digital cultures and their legal and political aspects, global warming and sustainability problems.

As with the pragmatic aspect, in the epistemological aspect, interdisciplinarity helps to solve boundary problems and has a mediating function between disciplines. The epistemological aspect involves negotiation of the relationships between disciplines and interrogation of the coherence of assumptions and methods.

Interdisciplinarity encourages reflexive consideration of disciplines. Philip Agre called this Critical Technical Practice. It reveals operational metaphors and methodological errors and exposes hidden assumptions of disciplinary cultures by denaturalization and interrogating operational metaphors and structuring narratives. It can help find disciplinary lacunae and extend disciplinary research scope/paradigms. It allows mediation between disciplines and helps get into the gaps between the so-called 'silos'. The 'silo' metaphor, commonly deployed in commentaries in English, sees disciplines as

rising like columns over time. As they get higher, they both reinforce their own conventions and cross communication between silos is reduced.

Niklas Luhmann explained interdisciplinarity in terms of the cybernetic notion of the observer of the second order. Someone who does not see just the object through the eyes of the discipline but who, thanks to his distance, sees and can reflect on the object, the discipline, and on the bonds between them, which may transpire to be questionable.

Interdisciplinarity in this case would mean to create a position beyond disciplines. Roland Barthes identified a similar condition when he said - *"In order to do interdisciplinary work, it is not enough to take a 'subject' (a theme) and to arrange two or three sciences around it. Interdisciplinary study consists of creating a new object, which belongs to no one."*

Applying the methods of one discipline to the material of another can produce valuable productive outcomes or results of interdisciplinary research. In his work *Cognition in the Wild*, Ed Hutchins' approach to distributed cognition opened up cognitive science by challenging its methodologies to account for problems outside the normal problem set. In the social sciences, mixing methods from anthropology, social psychology and sociology has contributed to important epistemological turns.

Academic research (often characterised as the 'Ivory Tower') is perceived to be isolated and not responsive to real (public, citizen) problems. "Real life" is about real life problems which may not stop at disciplinary boundaries. Interdisciplinarity opens inquiry to diverse participation, as indicated in the concerns of citizen science initiatives.

2. Disciplines as cultures

The 'Silo problem' is a way of describing the self-defining and self-justifying quality of disciplinary formations. It also draws our attention to the inaccessibility of the spaces between the silos.

Disciplines are not absolute, they are historically contingent, they arise and decay. The existence of Interdisciplinarity is a symptom of disciplinarity (and their lacunae). Disciplines emerge out of interdisciplinary initiatives. Examples in recent decades include women's studies and gender studies; science and technology studies, media studies, game studies, software studies, computer science and informatics. We can also see interdisciplinarity as historically prior. The Greeks worked with geometry, physics, biology, in an interdisciplinary and applied way. Disciplines are platonic ideal types, which support increased specialisation and abstraction but also detach research from worldly questions.

Methodologies which are standard in one discipline are often unknown in another. For instance, Grounded Theory, Discourse Analysis, qualitative interview, methodologies from social science are not taken seriously in 'harder' sciences, even in economic studies.

Knowledge and practices are discipline/domain specific. The very act of transferring 'data' or ideas from one discipline to another often results simplistic interpretations due to the shift in disciplinary cultural references. An example might be the use of J. J. Gibson's notion of Affordance in Design and HCI. Of course, such 'misinterpretations' which occur as terms drift across epistemological territory are often themselves generative.

3. Difficulties and challenges encountered in interdisciplinarity

- a) **Trust.** Trust concerns to the need to be able to trust in the continuation of a project in which you invest, but it also concerns to trust in the other participants of the project. What sacrifices am I/is my discipline ready to make? What moral setting can we agree upon? Furthermore trust has to do with the fairness of the distribution of resources and the benefits.
- b) **Mutual recognition.** It takes time and effort for people from different disciplines to understand each other's ways of seeing. People from different disciplines make assumptions about what the other disciplines are about, think they understand their languages. A possibility is accepting ignorance and being humble about knowledge on other arenas.
- c) **Legitimacy of all participants and balanced participation.** Interdisciplinary projects imply finding strategies to include a diverse number of people from different disciplines. This however, demands on the one hand side communication and negotiation processes that are reconised and seen as legitimate by all participants, a balanced and open participation of actors from various sectors, and possibilities for renegotiating at least some of the established rules, norms and demands according to new participants and shifting needs. It is evident that the needs and demands to settle in concrete demands, aims and goals are different from actor to actor.
- d) **Problems of communicating across disciplinary boundaries.** Virtues for participants in interdisciplinary projects include humility, reflexivity, diplomatic skills and general goodwill. Participants who are committed to the world-view of their own discipline will struggle and will create impediments for the group.
- e) **Problems of commitment and continuity.** How can continuous engagement be guaranteed? This depends on the type of interdisciplinarity and on the organization within such a project – hierarchical, symmetrical, collaborative.
- f) **Problems of funding and support.** Dependent on the project type there are different funding issues.
- g) **Milestones, benchmarks and evaluation criteria.** Criteria for evaluation and even completion which hold in disciplinary contexts may not hold in the interdisciplinary realm. Continuous negotiation of goals and criteria is a necessary aspect of an interdisciplinary project .
- h) **IP and appropriate credit.** Participants in interdisciplinary projects should accrue the kinds of rewards which are of value in their worlds, personal and professional.

- i) **Institutional support.** Funding bodies and institutions actively (though not intentionally) impede interdisciplinary projects by ascribing value to only certain kinds of outcomes – a grant, a peer reviewed paper. Allowing credit for an exhibition, a film, or a protocol they contributed to would encourage interdisciplinary work.

4. Interdisciplinary Project Scenarios and Structures

- Individual
- Small group informal and community driven groups
- Small academic group
- Large scale institutional and multi-institutional groupings
- Special purpose top down instigated/funded projects – often military –ie paradigmatically, Manhattan Project.

Interdisciplinary projects can have a diverse range of organization types: hierarchical, symmetrical, collaborative. They can involve both paid and voluntary work and can be anonymous. Geographically distributed and Internet coordinated projects are increasingly common. Open source software development is a well-known case of voluntary, networked and often anonymous collaboration. This also involves development of collaborative infrastructure, ie, collaborative platforms, protocols and tools such as Codendi, Redmine, ProjectPier.

5. Approaches for Interdisciplinary projects

- Problem driven approaches, driven by government agencies, NGOs, foundations, patrons.
- Open exploration - emergent goals.
- Community identified goals.
- Interdisciplinary subcontracting. In some large scale scientific research grants, the public education and dissemination pieces are subcontracted to artists, curators, bloggers or citizen organisations. Such an approach is pragmatic and effective but may not contribute to negotiation of disciplinary world-views etc.

Common goals without common ground. It is possible to imagine that intelligent people of goodwill can come together to achieve a goal which they share, and for which they are motivated to work, both because they believe in the goal and because they will depart with a reward in a currency they can use. The solution to such a problem is not the subjection of all participants to one disciplinary worldview, nor the assumption of the possibility of universal language that will undergird the enterprise, but rather the recognition that knowledge and experience are fundamentally heterogeneous and that common languages must be negotiated.

The process itself can stimulate interdisciplinary action. Make the process itself pleasant. Personal bonds and shared experiences can be a good basis for working together, as well as the satisfaction of working with a community. Shared experiences often contribute to working together. Shared events, research trips, shared humour and myths contribute to the building of community coherence.

6. Process of project development

6.1 Problem framing

The history of large-scale engineering is littered with projects which get the right answer to the wrong problem. Any interdisciplinary project must begin with an analysis of the 'Big Picture', to ensure the right questions are asked. Who sees the big picture? Global Economic/Social/Environmental/Political contextualization. Importance of involving 'Big Picture people'. Appropriately chosen artists can often play a key role due to the professional formation of artists as interdisciplinary integrators and discerners of cultural and environmental patterns. They serve as observers of the second order and as a nodes (in Castells sense).

6.2 Research Methodologies

- Mixed methods approach
- Action research
- Grounded theory (anthropology says its really just anthropology)
- Critical design
- Participatory design
- Ethnomethodology
- Actor network theory
- Pickering's Mangle – performative and representational modes
- Activity theory
- Process ontology

Mike Michael argues for the "idiotic method", wherein the idiot as a revealing and critical role, asking the right uncommon questions:

<http://www.cci.edu.au/node/1491>

6.3 Methodologies to enhance interdisciplinarity

An interdisciplinary approach is a key component of the sustainability of any sector. However, there are considerable barriers to implement interdisciplinary projects.

One of the problems trying to define a successful methodology of interdisciplinary research is to confuse this with:

- Methods/methodologies to stimulate interdisciplinary research
- Methods/methodologies to create communities
- Methods/methodologies to invite actors from different communities and to keep open to new influences
- With methods

Therefore, research methodologies are often defined as experimenting, and gaming. While interdisciplinary research is growing there is no common glossary, no focused communication platform and no commonly shared research framework. Interdisciplinary research utilizes a broad, but not clearly defined set of methods for knowledge production. But interdisciplinary research must be clearly framed, including the use of a common terminology and the development of a broad suite of appropriate methods.

However, a discussion on interdisciplinary research methodologies might sharpen the difference between disciplines i.e. between artists' methods (open processes) on one and scientist's methods on the other (clearer methodologies).

An experimental methodology: the experiment in the laboratory/experiment in the wild (to be developed further).

7. Outcomes

Academic outcomes

Non-academic, non-textual (performative) outcomes.

- Material artifacts (txtmob)
- Artworks, installations, exhibitions (non didactic?)
- Civic projects (library, science shop, living lab)
- Citizen mobilization

Collective practices, creation of durable social bonds between researchers,

- New knowledge,
- New critical approaches (such as Actor Network Theory)
- New disciplines
- New interdisciplinary research centers.

8. Assessment, Indicators, Reporting, Dissemination

Some considerations regarding indicators of evaluation for interdisciplinary research projects: :

1. There is a central conflict on whether there should be fix indicators to evaluate an interdisciplinary project or whether they should be created ad-hoc. Maybe a negotiation between the two positions would be useful, as it widely coheres with the conflict between funders (fix indicators) and receivers (flexible/ad-hoc indicators).
2. There is a crucial question on when we should evaluate – pre- or post- project, and whether the evaluation in two phases should use the same indicators.
3. There is a crucial difference between the indicators measuring the political impact (media, size, visitors) and the scientific impact (meaning, new knowledge). Both types of indicators are different and have to be treated as different groups.
4. There is a difference in how evaluators and evaluated see and understand the meaning of indicators.
5. A central topic of indicators in order to evaluate projects circulates between chosen and imposed indicators. A possible way to deal with evaluation would be to combine chosen and imposed indicators, to invite evaluators to understand the self-chosen indicators at the beginning of a project. This would demand to

explain the indicators that have been chosen in a way that others can understand their use value. However, the evaluation and consequently the negotiation process between chosen and imposed indicators might need to take place twice – at the beginning and at the end of the research. The researcher should have the chance to explain why he/she sees other indicators valuable for evaluating his/her research at the end.

The role of the expert:

An important question is the role of the expert (who evaluates interdisciplinary research projects). Funding bodies might need to recruit new experts for new interdisciplinary research fields. However, it is not sure whether an established disciplinary evaluator might not be much milder than an interdisciplinary evaluator understanding interdisciplinarity in one way or the other.

Some possible assessment criteria and indicators:

- Has the researcher, the project attracted further funding? (Potential of the researcher, project)
- Invites the project to co-productive practices with other disciplines, projects, civil society?
- Can the project adapt to new needs and demands that might occur in the course of research/production?
- Does the project contribute to a transformation/ metamorphosis of those who participate?
- Does it and how does it transform space?
- How does the project capture and use the experience of the visitors?
- The application of one result, knowledge or method to other contexts, which means taking something, that has a proven value in one context/discipline, in order to look at another context/discipline. A project in which the meaning of a concept of one discipline is widened/translated to one or more other disciplines is also valued positively.
- If a project allows the participants to transform a model of one discipline by means of knowledge from another discipline . Has the project the capacity to solve or to contribute to solve the problem that it raises?

Reporting methods:

- Reporting on methodological innovations
- Reporting failure

The problem with institutionally defined approaches is that the assessment criteria already define possibilities, terms on which success is defined, and mitigate against 'surprises – ie identification of circumstances which lead to reflection, changing paradigms etc.

9. Challenges for institutions and funding bodies

Provide opportunities for open-ended creative experimentation which may have no short term market application.

- Foster investment not only in technical infrastructure or in traditional, 'content', but also in media projects that create access and participation.
- Make small-scale and short-term project funding available.
- Provide for long-term structural support.
- Create structures that support projects based on methodology as opposed to subject
- Promote "cross bridges" between university departments, research labs etc.
- Recognize non-traditional outcomes – such as public manifestations, documentaries, etc.
- Support and fund applied to science labs in universities (support actively interdisciplinary work), give accreditation for interdisciplinary contributions, pay extra-money for interdisciplinary contribution in universities (courses, presentations, lab work).
- Support investigation within the "wild".

10. Economy of knowledge transference in interdisciplinary research

Participation, openness and transparency might be helpful to give something back to actors involved in a research. But some questions rises from that: Is the bazaar (the market) not hierarchic? Is value really fairly distributed in a horizontal context? Who will contribute to co-design practices? Who will use open data? Everyone? These questions shed doubt on such value distribution practices.

Even if not value in themselves, we list below five points which might be helpful in order to understand that the Value and the Economy of an interdisciplinary research project might need to be measured on various terms not just in scientific terms. Especially when political bodies fund they might be interested in other value forms, as by the help of them other non-scientific actors might become engaged.

- Community building
- Reputation
- Objective accomplished/achievement of the mission
- Monetary Value
- Ecological Value

Do we need new value forms in/for interdisciplinary research?

1. It might be important to understand the debate on value as a political debate and to discuss value and value production with funding bodies.
2. It might be useful to think about different forms of social organisation in interdisciplinary projects, demanding for different forms of value distribution.
3. Bonding – people from the same group, Bridging – groups with same ends, Linking – groups with other ends might be understood as valuable in itself.

11. Practical tips for survival, success and sustainability

People who have had deep experience or education in two or more particular disciplines or arenas may be of value in facilitating interdisciplinary activity or at least in understanding some of the challenges.

Humility in accepting one's own lack of understanding in an area is key. Tied to this is the problem of commonly held prejudices or distrust in other principles. Scientists may assume that art is simply trickery (which, even if it was, might not be a bad thing) or artists may assume that scientists think simplistically or mechanically about the world and are incapable of lateral thinking.

Confrontation as well as agreement should be expected and permitted. There should be a means of encouraging critical discussion without taking it personally.

Dangerous tendencies and recommended solutions:

- Communicate early and often – face to face
- Communicate at the beginning via metaphors and visualizing language
- Try to make assumptions and expectations explicit at the outset.
- In all research steps ensure that you agree: what is the issue, problem?
- Create shared experiences with others, despite the project itself : e.g. being in one building, working on one table, creating shared events.
- Diplomacy - manage and nurture relationships
- Be humble - avoid disciplinary hubris
- Mutual respect - Don't be patronising. Sometimes encountered when ie engineers and computer scientists 'speak down' to artists, but just as often the opposite.
- Share work, rewards and recognition

Appendix 1

[RESEARCH ARTS](http://www.research-arts.net/ra_researching.html) sept 2013,
http://www.research-arts.net/ra_researching.html

I includes recent papers by Penny, Parés and Seebach :

What do we mean with interdisciplinarity and why do we care? By Simon Penny
A physicist, a sociologist and an artist come into a bar... - What is the impact of humor on different types interdisciplinary projects? By Swen Seebach.

The cultural relevance of interdisciplinarity in the context of an unsustainable technified hyper-consumeristic society. By Roc Parés.

Appendix 2 – General reference Texts, examples of methodological critique

Hubert Dreyfus – What computers still can't do.
Philip Agre – Lessons Learned in Trying to Reform AI
Emily Martin- The Egg and the Sperm.

Anthony Chemero - Rat behavior experiments (need ref)
Ed Vul - Voodoo correlations in fMRI studies. <http://www.edvul.com/voodoocorr.php>
Voodoo Correlations are everywhere <http://pps.sagepub.com/content/6/2/163>
"In general, paradigms can be understood as conventional setups for producing idealized, inflated effects."

White Paper on the Interrelation of Art, Science and Technology in Spain. (Even though the economical historical context has changed a lot since the mid 90's I still suggest reading the Conclusions and Recommendations in pages 149 to 154. RP- need ref)

ONTOLOGY AND ANTIDISCIPLINARITY Andrew Pickering in A Barry and G Born (eds), *interdisciplinarity: reconfigurations of the natural and social sciences*.

ART-SCIENCE From public understanding to public experiment
Georgina Born and Andrew Barry. *Journal of Cultural Economy*, Vol. 3, No. 1, March 2010 ISSN 1753-0350 print/1753-0369 online/10/010103-17– 2010 Taylor & Francis
DOI: 10.1080/17530351003617610

Appendix 3 – examples of interdisciplinary (art/design) projects

Alviso's Medicinal All Salt. all-salt.com/ <http://vimeo.com/14827462>
Crowd memo – pampas project <http://crowdmemo.wordpress.com/>
Center for postnatural history <http://www.postnatural.org/>
Protei <https://sites.google.com/a/opensailing.net/protei/>
Crochet coral reef <http://crochetcoralreef.org/>
Coal powered computer. Harwood.

Appendix 4 – Some examples of interdisciplinary sustainability projects, Living labs, citizen science, studies of embodied practices, etc.

"The Cook, the Farmer, His Wife and Their Neighbour", Amsterdam, 2009: a participatory project by the Slovene artist and architect Marjetica Potrč (b. 1953) and Wilde Westen, a group of young designers, architects and cultural producers, combines visual art and social architecture to redefine the village green.
(http://stedelijkindestad.nl/projects/in_west/posts/stedelijk_goes_west_the_cook_the_farmer_his_wife_and_their_neighbour_)
This initiative transformed a public non-walkable green space into a common scale vegetable garden, and an unused room at Lodewijk van Deyssestraat 61 into a neighbourhood kitchen. This bottom-up organization of urban landscape gave the neighbours access to and use of public property, and therefore questioned the exclusion of access (e.g. the kijkgroen) associated with the regime of private property. The project raised the question of the commons, and of the ability of user communities to define effective access and usage rules. (More: http://www.research-arts.net/hinterfragen/ra_questioning_sharedspace.html)

Pia Lanzinger. "Petzer Freedom", 2011. Petze, a village in Lower Saxony, experimented a development from an original farming village to a housing development in a catchment area of a large city. Car mobility and changing habits have caused a loss of communicative structures. Some villagers missed therefore an informal meeting place in the village, partly because Petze as a "street village" has never had a village square. The project "Petzer Freedom" picked up this request by initiating the design of an appropriate place. Step by step, through various events, actions and installation interventions the shape the village square became a form and was established as an open space. With a proposal for the structural transformation an additional input for further use and appropriation was given, that remain left to the residents.

More (German): http://www.pialanzinger.de/download/deutsch/PL_PetzerFreiheit.pdf

Science Shops

Science shops, as small entities that carry out scientific research in a wide range of disciplines – usually free of charge and – on behalf of citizens and local civil society. The fact that Science shops respond to civil society's needs for expertise and knowledge is a key element that distinguish them from other knowledge transfer mechanisms.

Different types of interfaces exist between researchers and society, one of which are the 'Science Shops', organisations created as mediators between citizen groups (trade unions, pressure groups, non-profit organisations, social groups, environmentalists, consumers, residents association etc.) and research institutions (universities, independent research facilities). Science shops are important actors in community-based research (CBR). There are many differences in the way Science Shops are organised and operate, as well as some important parallels.

More: <http://www.livingknowledge.org/livingknowledge/science-shops>

The international Living Knowledge Network (LK) aims at giving citizens access to scientific research. The network is for people interested in building partnerships for public access to research. Members of the network exchange information, documentation, ideas, experiences and expertise on community-based research and science and society relations in general.

More: <http://www.livingknowledge.org/livingknowledge/>

The PERARES (Public Engagement with Research And Research Engagement with Society) project aims to strengthen the interaction between researchers and Civil Society Organisations (CSOs) and citizens in Europe. 26 partners from 17 countries (Science Shops, social organizations, universities and a research funder) will jointly organize transnational debates on scientific research and set up new Science Shops in 10 European cities. The project runs from 2010 until 2014.

Science Shop Bonn, WILA Bonn: "Outrage over the fact that scientists conduct their research in their ivory tower to no benefit of the public gave students and scientists the impulse to create the Wissenschaftsladen Bonn in 1984. Since then it has been our goal to bridge the gap between scientific findings on one hand and questions by the layperson on the other. With 30 employees and a turnover of about two million Euros our non-profit organization has never been this successful. In addition, it is also the largest science shop worldwide."

More: <http://www.wilabonn.de/en/>

The Science Gallery in Dublin, - a 'science gallery' shopfront by the university.
<http://sciencegallery.com/>

Machine project in LA is a grassroots organising center running workshops on everything from circuit bending to fallen fruit.

Center for PostNatural History, Pittsburgh.

"Volpelleres Library Living Lab Project"

A question to be raised within the Library Living Lab Project project would be how to find new ways to deal with the stored knowledge of libraries but also of collections and archives of scientific objects. "RE-VALUING ARCHIVES" of knowledge to pioneer new views on the problems of the 21st century. You can find an article about this issue here: "What does an ethnographical museum have in common with a museum of natural history? How does the methods and procedures used to examine the 'scientific objects' in their collections compare. The article examines scientific objects, such as stuffed animals, which have been taken out of the context of their historical archives. It also studies how ethnological artefacts, such as weapons, are liberated from the patina of their colonial past.

The trend to re-evaluating archives is illustrated by two examples. Firstly, by introducing the research of visual artist Richard Schütz. His work not only alters the meaning of artefacts from collections through visual storytelling, but also encourage us to envision their future. Secondly, the innovative concept of the exhibition "Object Atlas" of the Weltkulturen Museum / Frankfurt is presented, where innovative research methods have enabled artists and museum staff to take on new roles in their research relationship. Both approaches show how collections can further develop their potential to pioneer new views on the problems of the 21st century."

More: http://www.research-arts.net/uebersetzen/ra_translating_nat-cult-collections.html

- a) how could we foster a library profile activating participation in sustainability issues
- b) how can we add the local people stories and experiences: Volpelleres storytelling, this gives the people a possibility to make a dissemination of their local projects and to get engaged in the library project
- c) how can local people get involved in political processes, into the development of a more deliberative democracy than the present representative model: Volpelleres delegates, specific people become delegates of their concerns, scientists help them to develop their problems, and mediators empower them to talk and negotiate directly with local politicians. They get a course in capacity building to look through the eyes of politicians to discuss for instance sustainability issues and conflicts, to develop their own view on political policies.

A key goal would be to link the Library Living Lab Project to the UAB Campus: how could we foster a library profile capable of translating the public demands on research and to make scientific results accessible to questions raised by the civil society.

Embodied practices

Anette Rose "Encyclopaedia of Handling". 2006 - 2010.

<http://www.cluster-berlin.de/anette.html>

http://www.humtec.rwth-aachen.de/index.php?article_id=786&clang=1

"...Encyclopaedia of Handling shows my artistic research as a part of the working process. In the course of this long-term project I am thus building up an archival collection in order to show the current and future working and production conditions that determine social practices."

Phil Niblock THE MOVEMENTS OF PEOPLE WORKING, 1974

www.xtr.com/artists/phil-niblock/ Niblock's films and videos play an important role in his presentations. His films portray human labour in its most elementary form. Construction work, harvesting, planting and fishing – physical exertion, with the help of basic tools. They are scenes of people in non-industrialized communities doing manual labour involving continually repeated movements, while their faces are often kept outside the frame.