



Swiss Inter- and Transdisciplinarity Day

How to develop a successful inter- and transdisciplinary proposal
Bringing together researchers' and funders' perspectives

Lucerne, 7 November 2016

University of Lucerne

POSTER COLLECTION

Table of Contents

Artemis Alexiou , Manchester Metropolitan University <i>Transdisciplinarity, Triangulation, and „Double-Loop“ Learning: An Inclusive Approach to Feminist Media Historical</i>	1
Michèle Amacker, Sebastian Funke, Andrea Graf, Isabel Häberli , Interdisziplinäres Zentrum für Geschlechterforschung, Universität Bern <i>Framing-Phase des transdisziplinären Forschungsprojektes „Sustainable Care Farming in Switzerland“</i>	3
Panayotis Antoniadis, Ileana Apostol , Nethood <i>MAZI: A DIY networking toolkit for location-based collective awareness</i>	5
Alexander Brandies, Mandy Dotzauer , Deutsches Zentrum für Luft- und Raumfahrt (DLR), Institut für Verkehrssystemtechnik, Braunschweig <i>Transdisciplinary approaches in practice-oriented research projects as combination of method and methodology: Consideration of need as well as requirement analysis and integration</i>	7
Fabio Cova Caiazzo¹, Aline Michel², Olivier Schinz³, Dimitri Bocquel⁴, Rudolf Schmitt⁴, Glenn Flückiger⁵, Marc-Olivier Gonseth³, Stefano Mischler¹, Régis Bertholon², Laura Brambilla² ¹ Tribology and Interface Chemistry group, EPFL, Lausanne, Switzerland ² Haute Ecole Arc Conservation-Restoration, HES-SO, Neuchâtel, Switzerland ³ Musée d’ethnographie de Neuchâtel (MEN), Switzerland ⁴ Institute of Life Technology, HES-SO Valais, Sion, Switzerland ⁵ Institute of systems engineering, HES-SO Valais, Sion <i>CANS – Conservation of cAns in collectioNS</i>	9
Robert Home , Research Institute of Organic Agriculture FiBL <i>Strategies for Better Gardens: Integrated Analysis of Soil Quality, Biodiversity, and Social Value of Urban Gardens</i>	11
Kristine Lund , CNRS, University of Lyon <i>Academic Colleges in Lyon and St. Etienne: organizing the higher education and research landscape for the IDEX (Initiative d’Excellence)</i>	13
Joan Muela Ribera¹, Yoriko Masunaga^{2,3}, Fatou Jaiteh^{2,3}, Susanna Hausmann-Muela¹, Koen Peeters Grietens^{2,3} ¹ Partners for Applied Social Sciences PASS-Suisse, Neuchâtel, Switzerland ² Department of Public Health, Institute of Tropical Medicine, Antwerp, Belgium ³ Medical Research Council Unit, Fajara, The Gambia <i>Formative research for transdisciplinary action: integrating community-derived solutions into an epidemiological trial design for malaria elimination in the Gambia</i>	15
Francine Pellaud, Ignacio Monge , HEP PH Fribourg <i>ENGAGE’: ENseigner les sciences au PRIMaire, un GAGE d’avenir. Proposition pour continuer le projet ENGAGE en Suisse au niveau primaire</i>	17
Jeanine Reutemann , Institute Aesthetic Practice and Theory, University of Applied Sciences and Arts Northwestern Switzerland, FHNW <i>Stakeholder Video Interviews: Co-Design of Scientific-Cinematic Data</i>	19
Flurina Schneider, Theresa Tribaldos , Centre for Development and Environment (CDE), University of Bern <i>Enhancing transformative research for sustainable development: mutual learning between research programmes</i>	21

Transdisciplinarity, Triangulation, and 'Double---Loop' Learning: An Inclusive Approach to Feminist Media Historical Research

Artemis Alexiou, Manchester Metropolitan University

Patricia Leavy argues that 'transdisciplinary research practices are issue- or problem-centered approaches to research that prioritize the problem at the center of research over discipline-specific concerns, theories or methods'.¹ Accordingly, this PhD project followed a transdisciplinary approach, and offered 'a new way of thinking'.² In other words, I followed a 'social justice oriented approach to research' in which I integrated diverse 'resources and expertise from multiple disciplines' in order to 'holistically address a real-world issue'.³ In particular, after I identified an absence of transdisciplinary and/or inclusive design historical studies on late nineteenth century general feminist periodicals, I sought to resolve this problem by contributing a design / media / gender historical study which considered producers as well as readers / users / contributors / consumers in equal terms, and examined not only the anchor text, but also the paratexts attached to and around it, treating the periodical 'as an autonomous [design] object of study'.⁴

During the framing phase, I first had to locate a suitable methodological framework that would allow an inclusive approach to the analysis of the late nineteenth century feminist periodical, which was a complex communication medium in its own right, capable of creating an 'original experience'.⁵ To that end, I followed a transdisciplinary approach to media historical research by adopting Gerard Genette's concept of the paratext as my methodology, and applying the concept of triangulation to my methods of analysis and archival access.⁶ This poster presentation, inspired by the concept of double-loop learning, provides a reflective account of the challenges of doing transdisciplinary research, focusing on: a. the framing stage, such as the problems of reviewing existing methodologies, and choosing the appropriate methodologies to combine; b. the analysis stage, such as the problems of adopting an inclusive approach to historical inquiry, communicating specialist terminologies and theories to non-specialist and/or cross-disciplinary audiences, and combining theory with practice to name but few.⁷ Subsequently, this poster presentation will further contribute to the study of inter-/transdisciplinary research methods and application, in the hope that researchers and funding bodies will continue to experiment with and support an inclusive approach to research.

¹ Patricia Leavy, *Essentials of Transdisciplinary Research: Using Problem-Centered Methodologies* (California: Walnut Creek, 2011), p. 35.

² Roderick J. Lawrence and Carole Despres, 'Futures of Transdisciplinarity', *Futures*, 36 (2004), 397-405 (p. Ananta Kumar Giri, 'The Calling of a Creative Transdisciplinarity', *Futures*, 34 (2002), 103-15 (p. 103).

³ Leavy, p. 35.

⁴ Sean Latham and Robert Scholes, 'The Rise of Periodical Studies', *PMLA*, 121 (2006), 517-31 (p. 517).

⁵ Marie-Laure Ryan, 'Narrative and Digitality: Learning to Think with the Medium', in *A Companion to Narrative Theory*, ed. by James Phelan and Peter J. Rabinowitz (MA: Blackwell, 2005), pp. 515-28 (p. 516).

⁶ Gerard Genette, *Paratexts: Thresholds of Interpretation* (Cambridge: Cambridge University Press, 1991); Wendy Olsen, 'Triangulation in Social Research: Qualitative and Quantitative Methods Can Really be Mixed', in *Developments in Sociology: An Annual Review*, ed. by Martin Holborn and U. Haralampos (Ormskirk: Causeway Press, 2004), pp. 103-118.

⁷ Chris Argyris, 'Teaching Smart People How to Learn', *Harvard Business Review*, 69, pp. 99-109.

Transdisciplinarity, Triangulation and 'Double-Loop' Learning: A Holistic Approach to Feminist Media Historical Research

| Artemis Alexiou / a.alexiou@mmu.ac.uk | Manchester Metropolitan University |

The Project

Patricia Leavy argues that 'transdisciplinary research practices are issue- or problem-centered approaches to research that prioritize the problem at the center of research over discipline-specific concerns, theories or methods'.¹ Accordingly, 'Design, Media, Gender Politics: The Paratext in the Late 19th Century Feminist Periodical (Britain c. 1888-1899)' is a PhD thesis that follows a transdisciplinary approach, and offers an innovative way of studying Victorian periodicals. In other words, it follows a 'social justice oriented approach to research' which integrates diverse 'resources and expertise from multiple disciplines' in order to 'holistically address a real-world issue'.²

In particular, after I identified an absence of transdisciplinary and inclusive design historical studies on late nineteenth century general feminist periodicals, I sought to resolve this problem by contributing a design/media/gender historical study which considered producers as well as users/contributors/consumers in equal terms, and examined not only the anchor text, but also the paratexts attached to and around it, treating the periodical 'as an autonomous [design] object of study'.³

The 'Female Principle'

In recent years there has been a shift towards an interest in feminist media studies, however, the vast majority of communication, media, and design historical studies seem to focus on the canon of the media ecology, whilst at the same time appearing disjointed, and departmentalized. As a result, truly interdisciplinary and transdisciplinary research practice usually takes place within a few niche groups, whilst others continue to apply methodologies and methods that are based on a 'male principle'; meaning that they typically adopt designer-oriented, formal, and fixed approaches to doing research.⁴

This PhD thesis argues 'against the personality cult, pointing to the collective and cumulative dimension present in most, if not all, design', and by adopting an inclusive approach demonstrates that a holistic approach to periodical research is plausible, though certainly more challenging.⁵ In other words, this project follows an approach that is based on a 'female principle', which denotes that it is user-oriented, functional, flexible, organically-ordered, complex, socially-oriented, slowly-growing; holistic.⁶

The Framing Phase

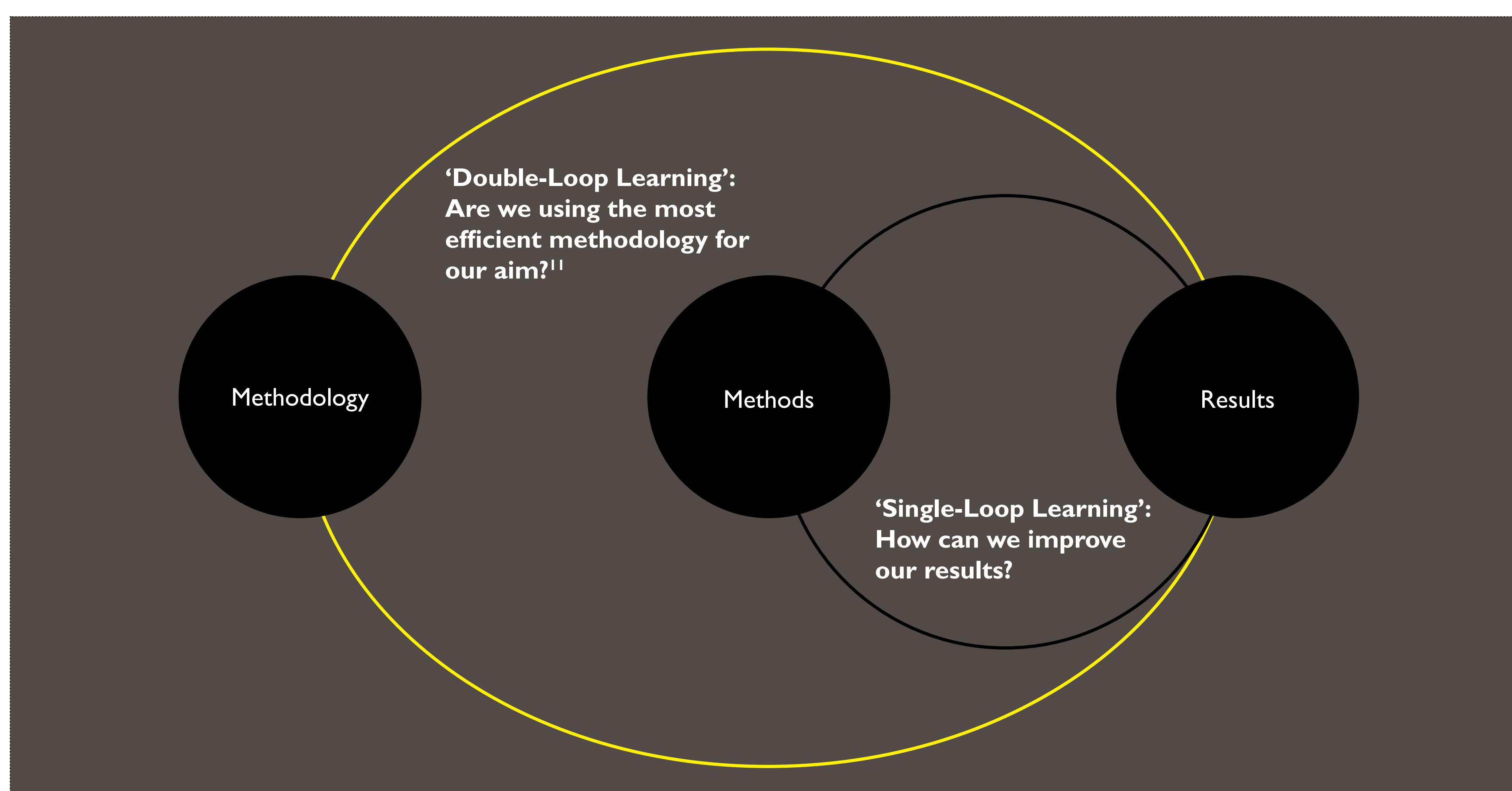
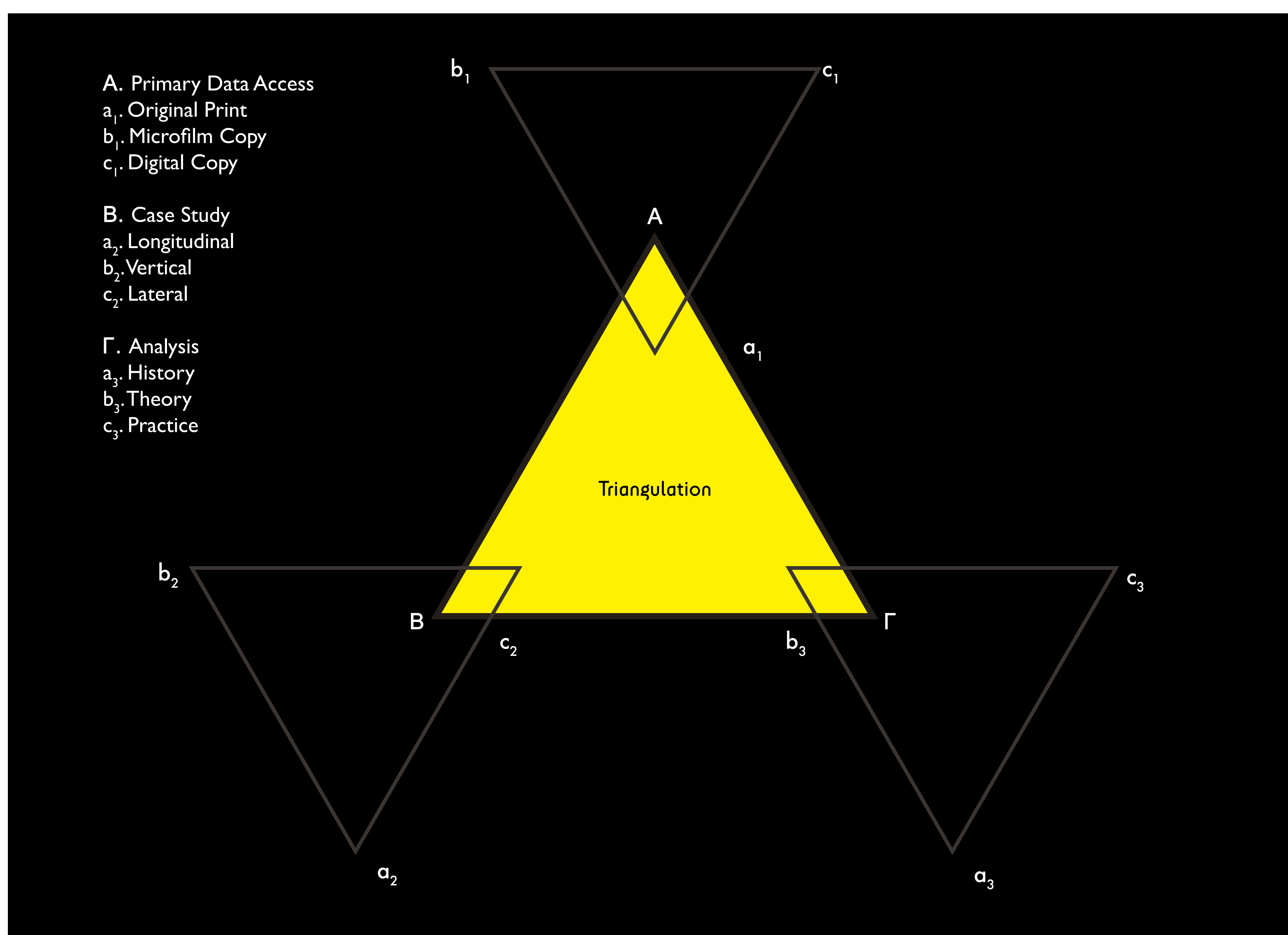
Whilst surveying the existing periodical studies literature, and evaluating the methodologies employed by researchers, I realised that none of them was able to bring together the textual, the visual, as well as the material characteristics of the periodical. Genette's paratextual approach, however, is capable of truly recognising the peripheral, whilst being adaptable without being restrictive, and can be combined with other theories. In this case I combined the concept of the paratext with that of triangulation; a concept that allows the researcher to examine 'data validity', while also considering and evaluating the issues associated with 'paradigmatic boundaries'.⁷

Conclusions

This PhD project put transdisciplinarity proper to the test by drawing 'on knowledge from disciplines relevant to particular research issues or problems while ultimately transcending disciplinary borders and building a synergistic conceptual and methodological framework that is irreducible to the sum of its constituent parts'.⁸ Indeed, the process was never meant to be straightforward nor easy; yet this project demonstrates that although a transdisciplinary, holistic approach to design historical and feminist media historical research can be time-, resource- and labour-intensive, it is definitely much more prosperous, rewarding, and scientifically accurate.

Transdisciplinarity can be defined as 'a holistic vision; a particular method, concept or theory; a general attitude of openness and a capacity for collaboration; as well as an essential strategy for solving complex problems'.⁹

Triangulation is 'based on the logic that researchers can move closer to obtaining a "true" picture if they take multiple measurements, use multiple methods, or examine a phenomenon at multiple levels of analysis'.¹⁰



References

1. Patricia Leavy, *Essentials of Transdisciplinary Research: Using Problem-Centered Methodologies* (California: Walnut Creek, 2011), p. 35.
2. Ibid.
3. Sean Latham and Robert Scholes, 'The Rise of Periodical Studies', *PMLA*, 121 (2006), pp. 517-531 (p. 517).
4. Marie-Laure Ryan, 'Narrative and Digitality: Learning to Think with the Medium', in *A Companion to Narrative Theory*, ed. by James Phelan and Peter J. Rabinowitz (MA: Blackwell, 2005), pp. 515-28 (p. 516).
5. Jan Michl, 'On Seeing Design as Redesign: An Exploration of a Neglected Problem in Design Education', *Scandinavian Journal of Design History*, 12 (2002), pp. 7-23 in Kjetil Fallan, *Design History: Understanding Theory and Method* (London: Bloomsbury, 2010), p. 8.
6. Margrit Kennedy, 'Seven Hypotheses on Female and Male Principles in Architecture', *Heresies*, 3 (1981), pp. 12-13 (p. 12).
7. Lotta Vikstrom, 'Identifying Dissonant and Complementary Data on Women through the Triangulation of Historical Resources', *International Journal of Social Research Methodology*, 13 (2010), pp. 211-221, quoted in Christina Hughes and Rachel L. Cohen, 'Feminists Really Do Count: The Complexity of Feminist Methodologies', *International Journal of Social Research Methodology*, 13 (2010), pp. 189-196 (192).
8. Leavy, p. 35.
9. Tobias J. Klein, *Voices of Royaumont* (Oxford: EOLSS Publishers Co. Ltd., 2000), pp. 3-12 (p. 4).
10. Julie Wolfram Cox and John Hassard, 'Triangulation', in *Encyclopedia of Case Study Research*, ed. by Albert J. Mills, Gabrielle Eurepos and Elden Wiebe (Los Angeles: SAGE, 2010), pp. 944-948 (p. 944).
11. Chris Argyris, 'Teaching Smart People How to Learn', *Harvard Business Review*, 69, pp. 99-109.

Michèle Amacker, Sebastian Funke, Andrea Graf, Isabel Häberli, Interdisziplinäres Zentrum für Geschlechterforschung (IZFG) der Universität Bern

Das Projekt sustainable care farming beleuchtete vor dem Hintergrund nachhaltiger Entwicklung, unter welchen Bedingungen bezahlte Care-Arbeit im ländlichen Raum geleistet wird. Dabei wurden soziale Dienstleistungen untersucht, die sich an Kinder, Jugendliche sowie pflegebedürftige Menschen richten und von landwirtschaftlichen Betrieben erbracht werden (care farming). Diesen Angeboten liegt die Vorstellung zugrunde, dass das Umfeld eines Bauernhofes eine gesundheitsfördernde Wirkung besitzt. Für die Bauernfamilien stellen diese bezahlten Dienstleistungen einen Nebenerwerb dar. Sie werden hauptsächlich von Bäuerinnen und teilweise unter prekären Bedingungen erbracht, wie erste Auswertungen zeigten.

In der 15-monatigen Framing-Phase arbeitete eine transdisziplinäre Forschungsgruppe am Interdisziplinären Zentrum für Geschlechterforschung der Universität Bern, bestehend aus verschiedenen AkteurInnen aus den Bereichen Landwirtschaft, bäuerliche Ausbildung, Sozialpädagogik, Behörden und Wissenschaft, daran, den Bereich care farming in seiner Komplexität und Diversität besser zu verstehen (Systemwissen) und gemeinsam die Herausforderungen zu benennen (Zielwissen). Dies mit den Zielen, eine für Praxis und Wissenschaft relevante Fragestellung für einen umfassenden Forschungsantrag zu formulieren, einen innovativen transdisziplinären Forschungsansatz zu entwickeln, den Austausch und die Vernetzung unter den AkteurInnen sowie den Wissenstransfer in die universitäre Lehre zu fördern.

In der ersten Phase des zyklischen Forschungsprozesses wurde zuerst eine Literaturrecherche durchgeführt. Zudem wurde eine Inhaltsanalyse von Abschlussarbeiten des bäuerlichen Lehrgangs „Betreuung in der Landwirtschaft“ erstellt. Die Ergebnisse wurden in zwei Workshops anhand diverser Reflexionsmethoden, wie zum Beispiel des World-Cafés, mit der transdisziplinären Forschungsgruppe diskutiert und durch ihr Wissen und ihre Erfahrungen ergänzt. In einer zweiten Phase eruierte die Forschungsgruppe zwei Themenfelder mit prioritärem Handlungsbedarf: Einerseits die Betreuungsarbeit und andererseits ein komplexes Themenfeld von Finanzierung, Anerkennung und Qualität. Zudem wurde ersichtlich, dass eine grosse Wissenslücke besteht hinsichtlich der unterschiedlichen Perspektiven der diversen Personengruppen, welche die Betreuungsleistungen nutzen.

Auf Basis dieser Ergebnisse begann die Feldforschungsphase, in der Interviews mit ausgewählten ExpertInnen geführt wurden, um die Themenfelder Betreuungsarbeit, Finanzierung, Anerkennung und Qualität zu vertiefen. Die Resultate dieser Projektphase wurden abermals in einem Workshop mit der transdisziplinären Forschungsgruppe reflektiert. Als Ergebnis konnten in einer dritten Phase mehrere Fragestellungen für zukünftige Forschungsvorhaben formuliert werden. Die Herausforderung besteht nun darin, Finanzierungsquellen für diese verschiedenen Arten von Fragen zu finden, da sie sich im Grad ihrer Anwendungsorientierung teilweise erheblich unterscheiden.

Im Weiteren konnte eine intensive transdisziplinäre Zusammenarbeit über verschiedene Disziplinen der Praxis und Wissenschaft hinweg etabliert werden, die stets von einer offenen und konstruktiven Atmosphäre geprägt war. Ein weiteres Ergebnis dieser Zusammenarbeit stellt die gemeinsame Vernetzungstagung im November 2016 dar, bei der die identifizierten Herausforderungen mit einem breiten Publikum an AkteurInnen und Interessierten diskutiert werden.

Sustainable Care Farming

Prof. Dr. Michèle Amacker
Sebastian Funke
Andrea Graf
Isabel Häberli

The framing phase of a transdisciplinary study

What is Care Farming?

The term «care farming» refers to **paid family integrated care** for children, juveniles and adults **on farms**, for educative or therapeutic reasons or due to other care dependencies.

Care farming seems to be a **strategy of diversification** for farms. **Mostly the farmer women** have the main responsibility for the care farming services and the clients.

Objectives

1. Examine the complexity and diversity of the topic care farming (systems knowledge)
2. Identify the challenges (target knowledge)
3. Common definition of the research problem
4. Define **relevant research questions** for practice and science
5. Create and explore innovative transdisciplinary research collaboration
6. Foster the sharing of knowledge between academics and non-academic stakeholders
→ **Networking Conference**

Funding

- Network for Transdisciplinary Research td-net (Sustainable Development at Universities Programme)
- University of Bern

Current challenges

Difficulty to secure funding...
... for a following research project
... for applied research questions
... to continue transdisciplinary collaboration



Td research group

- **Relevant stakeholders** from agriculture, agricultural education, social pedagogy, public authorities
- **Scientific research team ICFG**



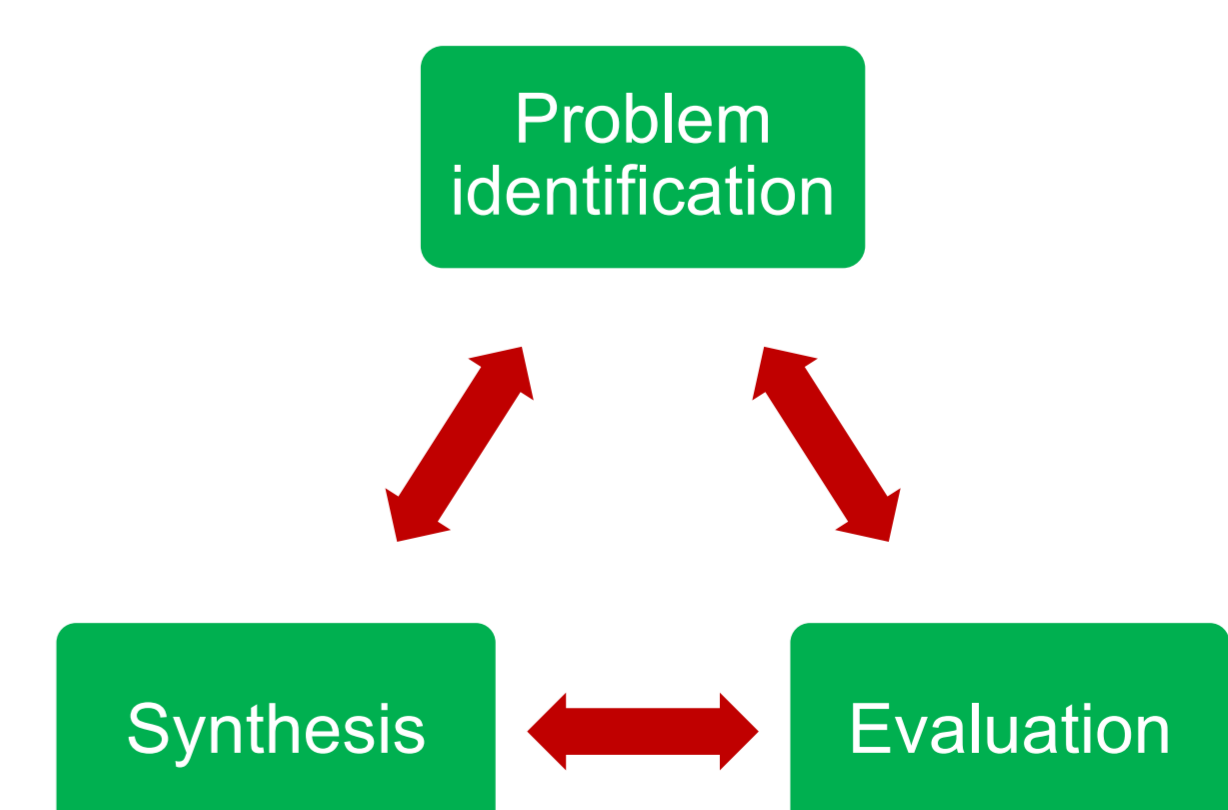
Requirements for participative collaboration

- Create a respectful atmosphere based on an understanding of equality
- Empowerment and encouragement of stakeholders
- Acknowledgement in terms of financial compensation for participation
- Transparent information (meeting minutes, planning etc.)
- Long-term collaboration



Td workshops

- Identification of stakeholders, challenges, research questions
- Recursive research process



- Knowledge sharing
- Participative methods

Panayotis Antoniadis, Ileana Apostol, Nethood

Despite numerous research work and different technological solutions for the design of information and communication technologies (ICTs) for communities, there is a long way to understand the complexity introduced by the hybridity (digital and physical) of contemporary space. For this, the question of interdisciplinarity in the design of the hybrid urban environment becomes urgent. Social scientists need to become more aware of the capabilities of technology, and also have to get involved in the design processes, while engineers should engage with legitimate local social issues and their inherent complexity, going beyond simple optimization techniques and data analysis.

MAZI, <http://mazizone.eu>, is a EU Horizon2020 project under the CAPS (collective awareness platforms for sustainability and social innovation) program, which is structured around a combination of theoretical and critical interdisciplinary methodologies integrating concepts and methodologies developed in the fields of urban studies, design research and computer science, and a transdisciplinary approach around the development of the MAZI toolkit as a “boundary object” within concrete pilot studies in different European cities. More specifically, they are the young cooperative housing and living projects in Zurich; Berlin's neighbourhood academy and the urban garden prinzeessinnengarten; Deptford's network of local communities, organizations and activists in London; and the nomadic group unMonastery .

Into the MAZI project, Verein Nethood, nethood.org, brings significant experience and expertise in interdisciplinary research on the concept of hybrid space design. Its co-founders Panayotis Antoniadis and Ileana Apostol have played a key role, through the organization of several interdisciplinary events, in introducing the concept of DIY networking to the field of urban planning, as well as important concepts from urban studies to the engineering community active in building ICTs for urban environments. In MAZI, NetHood's main contribution is to facilitate interactions between the highly diverse mix of partners and the creation of an overarching research framework that will make sure that the different perspectives and methodologies will be integrated into a meaningful approach. The outcome of this process will be materialized in the design and implementation of the MAZI toolkit and the cross-fertilization between the different pilot studies, with significant impact both for the theory of interdisciplinarity and for the empowerment of citizens in shaping together their urban hybrid space.

Key reference:

P. Antoniadis and I. Apostol, The right(s) to the hybrid city and the role of DIY networking Journal of Community Informatics, special issue on Community Informatics and Urban Planning, vol. 10, 2014. Available at: <http://ci-journal.net/index.php/ciej/article/view/1092/>

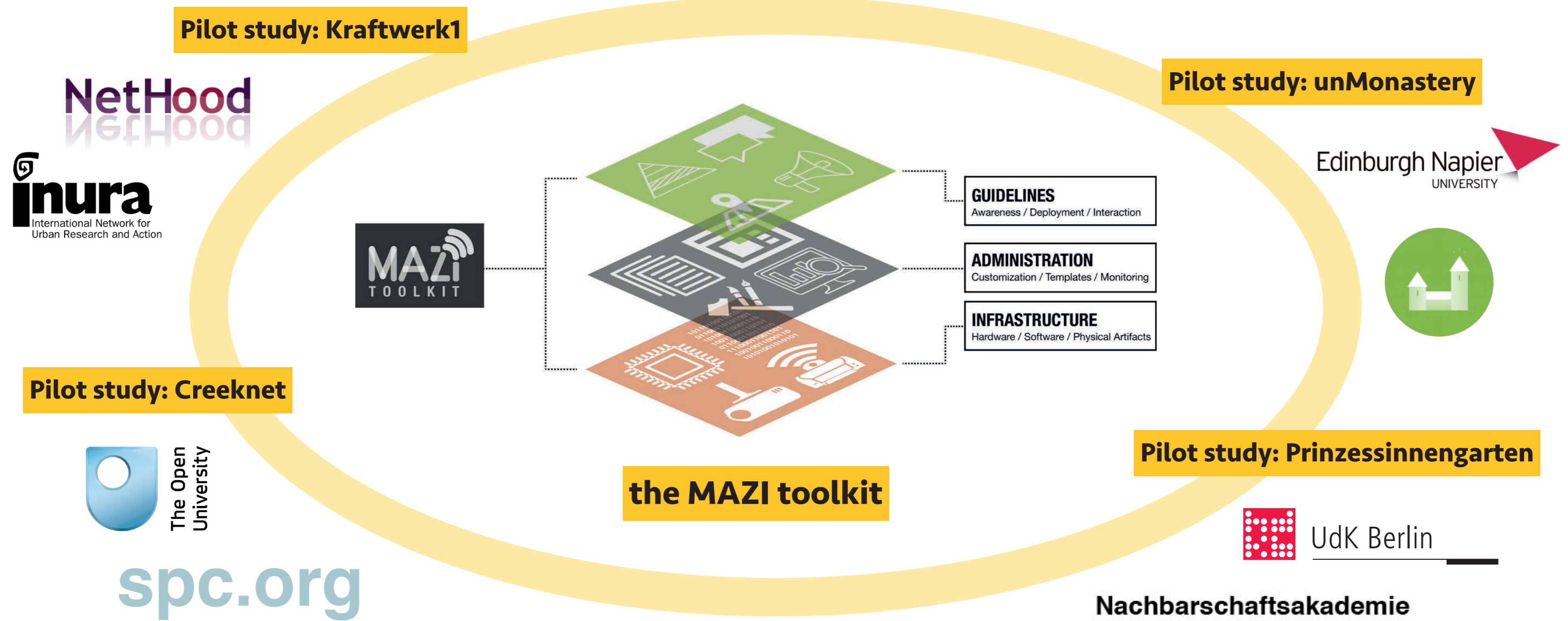
MAZI

μαζί (mazi) [greek] adv: together; jointly

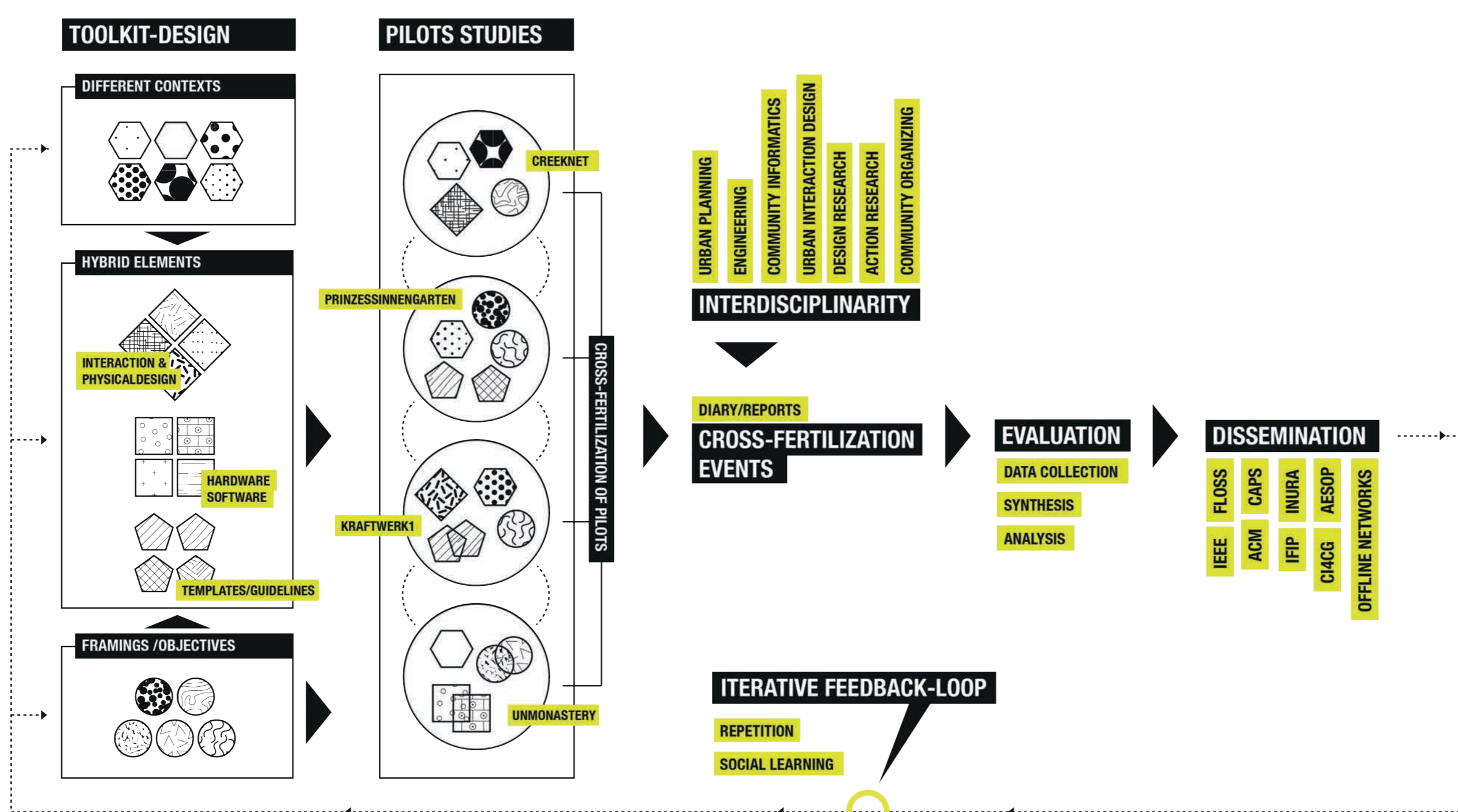
DEVELOPING A DIY NETWORKING TOOLKIT FOR LOCATION-BASED COLLECTIVE AWARENESS

The MAZI toolkit as a boundary object

Project Coordinator:  University of Thessaly



MAZI Project interdisciplinary methodology



MAZI Project Partners:

- University of Thessaly, Greece
- NetHood, Zurich, Switzerland
- Edinburgh Napier University, UK
- Berlin University of the Arts, Germany
- The Open University, UK
- INURA Zurich Institute, Switzerland
- SPC, London, UK
- Prinzessinnengarten, Berlin, Germany
- unMonastery, nomadic group

WWW.MAZIZONE.EU

Transdisciplinary approaches in practice-oriented research projects as combination of method and methodology: Consideration of need as well as requirement analysis and integration

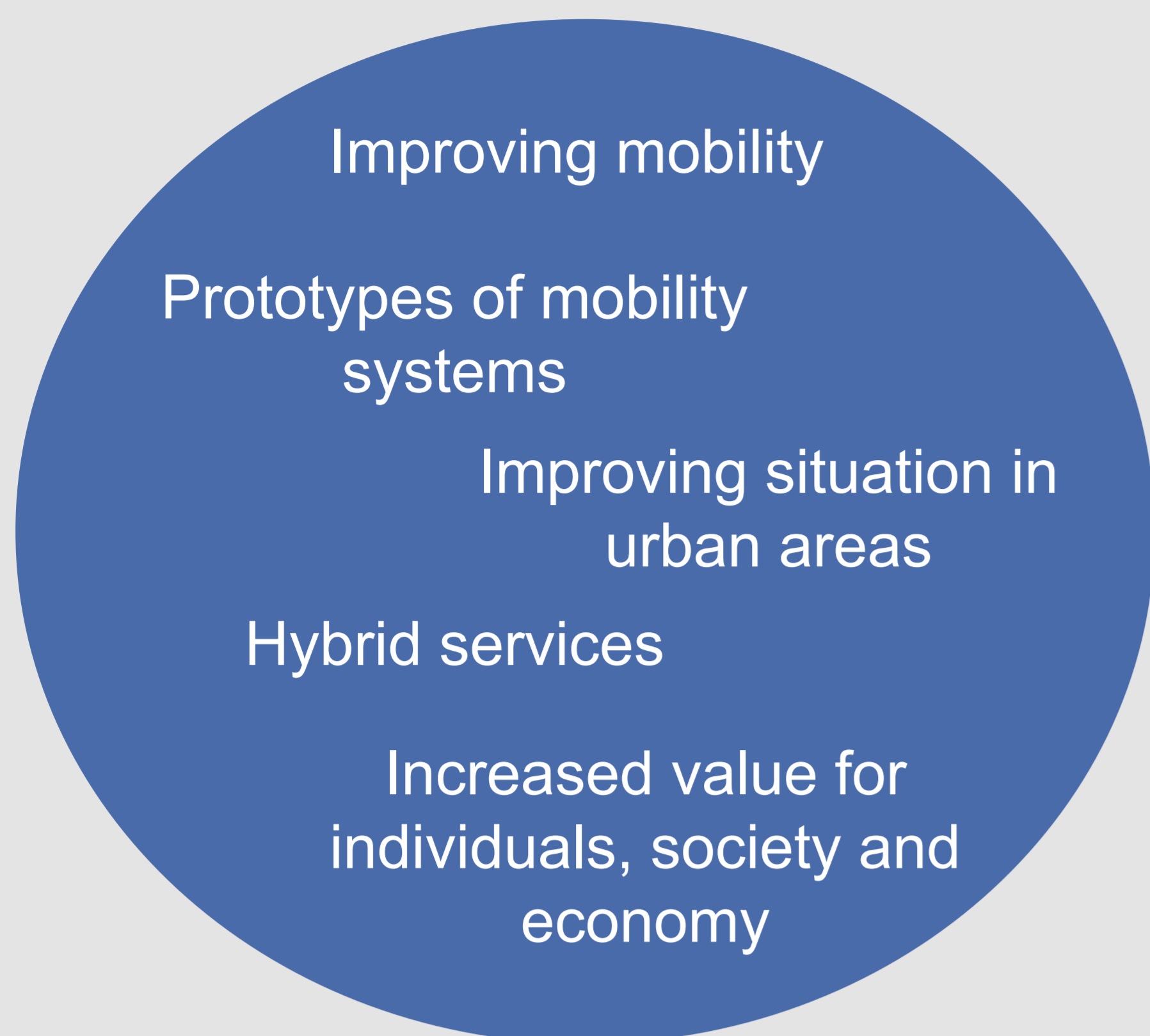
Alexander Brandies, Mandy Dotzauer, Deutsches Zentrum für Luft- und Raumfahrt (DLR), Institut für Verkehrssystemtechnik, Braunschweig

Successful transdisciplinary approaches require the integration of method and methodology into an approach. Methods concern the concrete activities when following an approach, while methodologies address the theory and the way of thinking behind the execution of methodical activities. In practice-oriented research, controversial opinions exist about the optimal balance between methodical and methodological considerations. Putting more effort into the consideration of methodology in comparison to method is criticized as leading to approaches not being practice-oriented and having limited capability to be used in practice-oriented research projects. At the same time, it is argued, that the importance of methodology cannot be denied, particularly in trans- und interdisciplinary projects. It was shown that methods successfully used in research of a certain discipline, may fail when used by researchers of another discipline, due to different methodologies within different disciplines. Considering time as a limited resource, this leads to the question of how to balance method and methodology in the design of transdisciplinary approaches for practice-oriented research projects. Thereby approaches of need as well as requirement analysis and integration are examined in research projects aspiring the development of prototypes of hybrid services. A respective approach balancing method and methodology is outlined and implications for further developments are discussed.

Need and requirement analysis and integration – Balancing method and methodology

Background, motivation and focus

Profound goal



Challenges



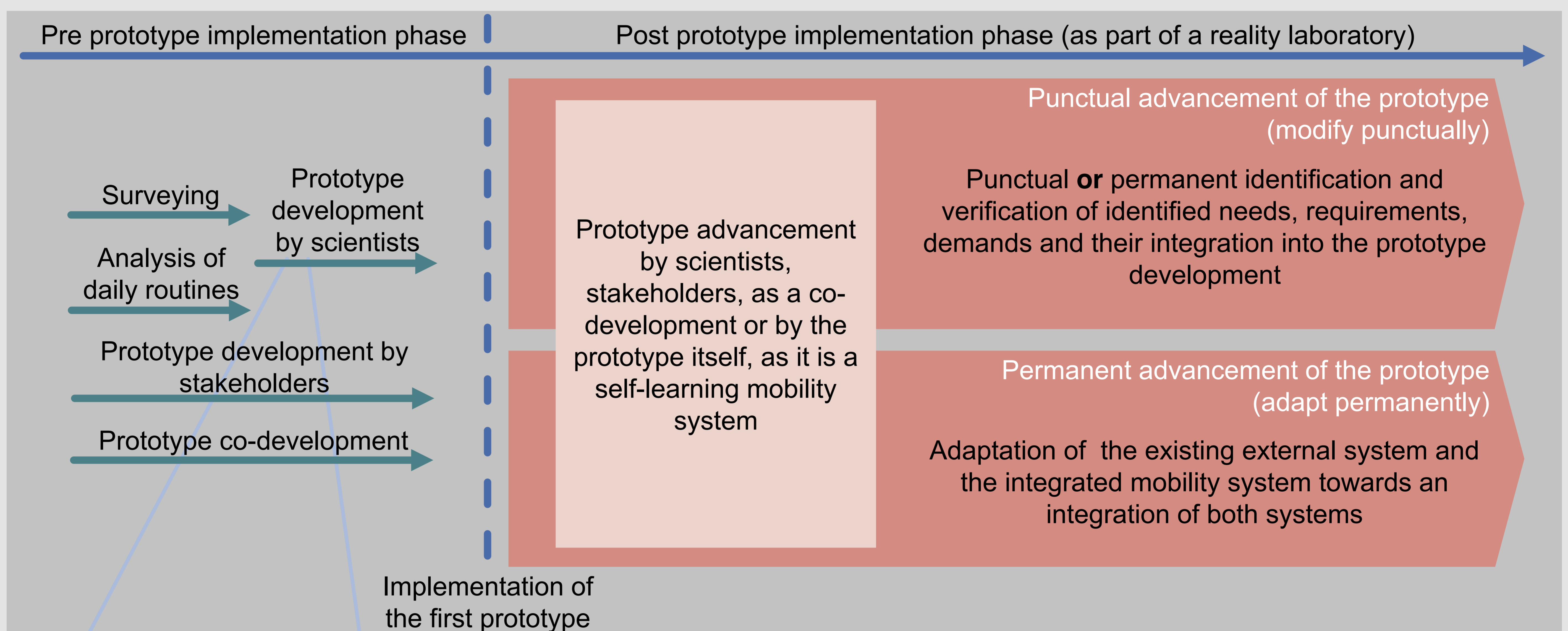
Solution



Method is defined as concrete activities when following an approach.

Methodology is defined as theory and ways of thinking behind the execution of methodical activities.

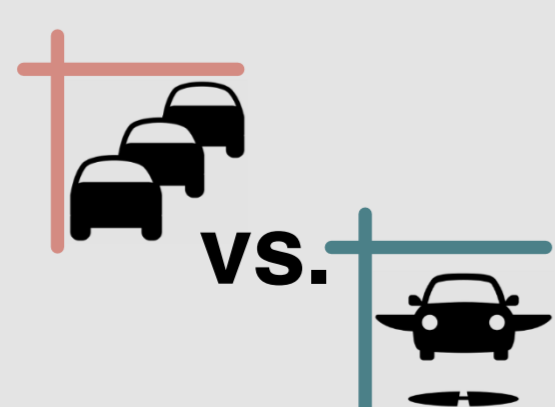
Approach of collecting, analyzing, and integrating needs, requirements, and demands



Experiences in balancing methodological and methodical focus

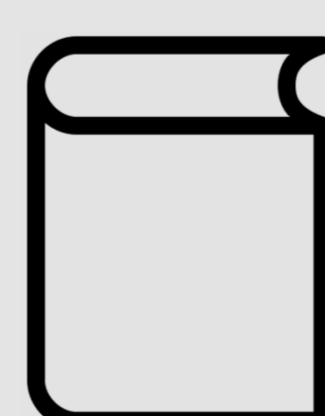
Focusing on method over methodology (example of a morphological analysis)

- Required steps have been carried out
- Two types of results
 - Before expected, losing creativity and stakeholder orientation
 - System changing, in favor of stakeholder orientation
- Thinkable options have been considered but the thinkable differed

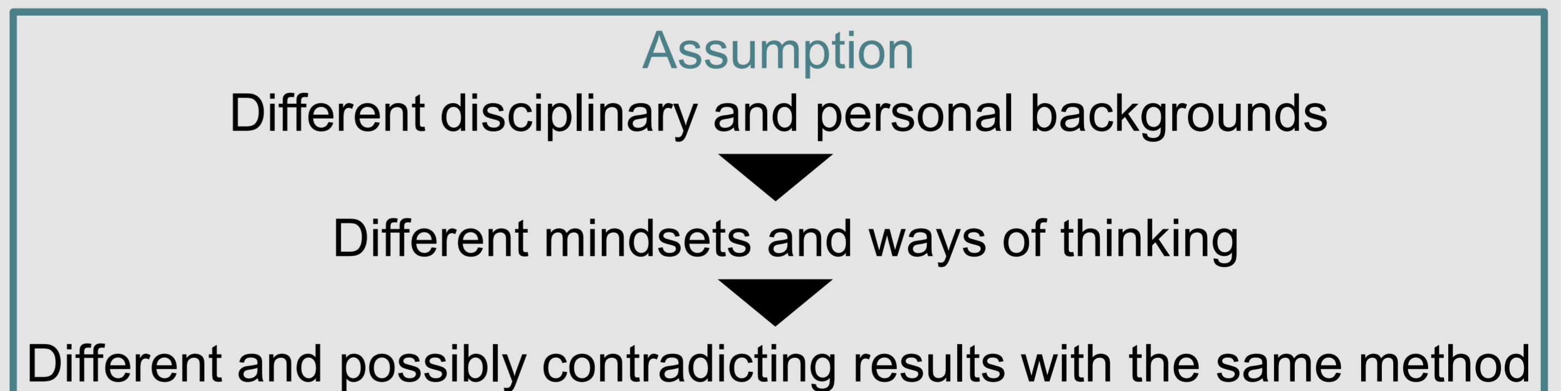


Focusing on methodology over method in the development of an approach

- Purely theoretical approach
- Hardly practice-oriented approach
- Difficult to use the approach in practice oriented research projects



Analysis and implications for further development and further research



- Important issue in transdisciplinary research projects since they integrate different backgrounds
- Amount of adequate focus on methodology depends on the different ways of thinking of participating actors and methodologies behind used methods
- Small sample requires further investigation of experienced phenomena



Credit to icon designers: Evgeni Moryakov (traffic jam), Gregor Črešnar (flying car), Romzicon (book), Symbolon (brain), Arthur Shlain (list), all from Noun Project.

Fabio Cova Caiazzo¹, Aline Michel², Olivier Schinz³, Dimitri Bocquel⁴, Rudolf Schmitt⁴, Glenn Flückiger⁵, Marc-Olivier Gonseth³, Stefano Mischler¹, Régis Bertholon², Laura Brambilla²

¹Tribology and Interface Chemistry group, EPFL, Lausanne, Switzerland

²Haute Ecole Arc Conservation-Restauration, HES-SO, Neuchâtel, Switzerland

³Musée d'ethnographie de Neuchâtel (MEN), Switzerland

⁴Institute of Life Technology, HES-SO Valais, Sion, Switzerland

⁵Institute of systems engineering, HES-SO Valais, Sion

Cultural heritage consists in artworks (painting, sculpture...) but also in usual and everyday objects (tools, machines...) sometimes unexpected, such as food preserves. Patented at the early 19th century, cans attest not only to the industrial development but also became one of the symbols of consumer society. Cans represent an important technological innovation that permitted the scientific and military expeditions from the 19th century to nowadays. After having improved supplies of goods in warfare, they changed eating habits and also women's status by reducing the time allocated to the meal preparation and contributing toward developing women's professional activities. From the middle of the 20th century, cans also started being incorporated in contemporary art as reflection on consumer society.

Nowadays, cans are represented in several museum collections as witnesses to different time periods and significances. However, their conservation is particularly problematic. In fact, severe corrosion phenomena occur due to interaction with the environment as well as between the organic content and the metallic sealer. Currently, there are no conservation-restoration interventions available that allow the long-term preservation of complete cans (container and content). Stakeholders have no option but to either preserve the containers eliminating the content or let unavoidably the degradation processes go further. In order to overcome this situation and improve knowledge about cans, the CANS project proposes to develop a treatment methodology, respectful of the material authenticity and cultural values of these composite objects and solutions in terms of preventive conservation. To achieve these objectives, the following scientific and technologic research activities are carried out throughout the project:

- Investigation on the cultural values and functions of cans in our society from their production to integration into heritage collections.
- Identification of the principal problems of their conservation-restoration in different museum collections,
- Assessment of the relations between observed degradations, environmental conditions and cans composition (materials used, forms, contents...).
- Investigation on the mechanisms involved in the long-term degradation of both containers and contents.
- Proposition of preventive conservation methodologies and possible interventions.

This project constitutes an interdisciplinary research that brings together conservation scientists, corrosion specialists, conservators, anthropologists and food technology experts. The CANS project aims at improving the knowledge about the degradation phenomena of cans present in collections by understanding the mechanisms involved and proposing innovative conservation methodologies.

The CANS project is funded by the Swiss National Science Foundation in the category of interdisciplinary projects (grant n. 152946).



CANS project

Conservation of cAns in collectionNS

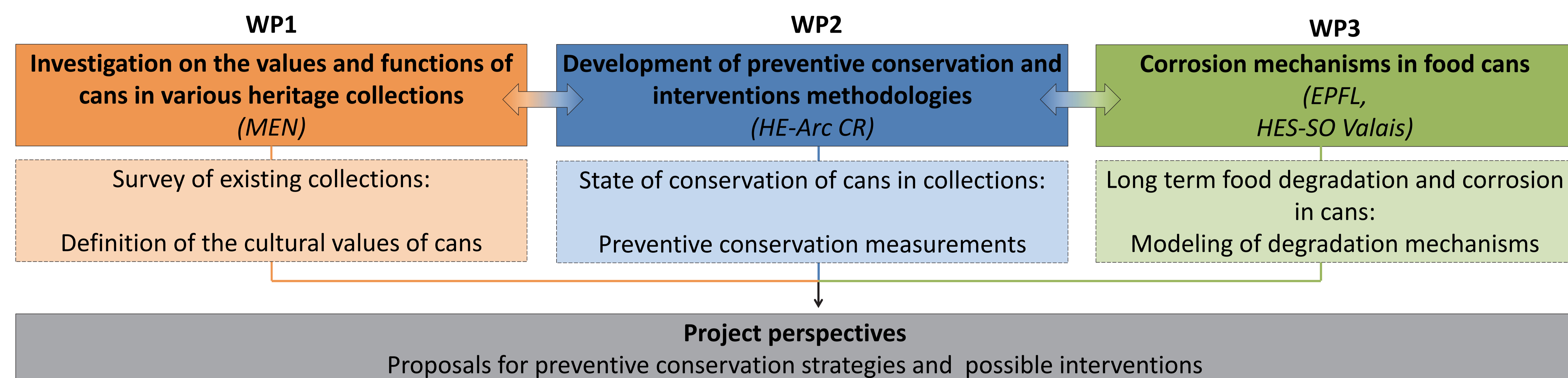
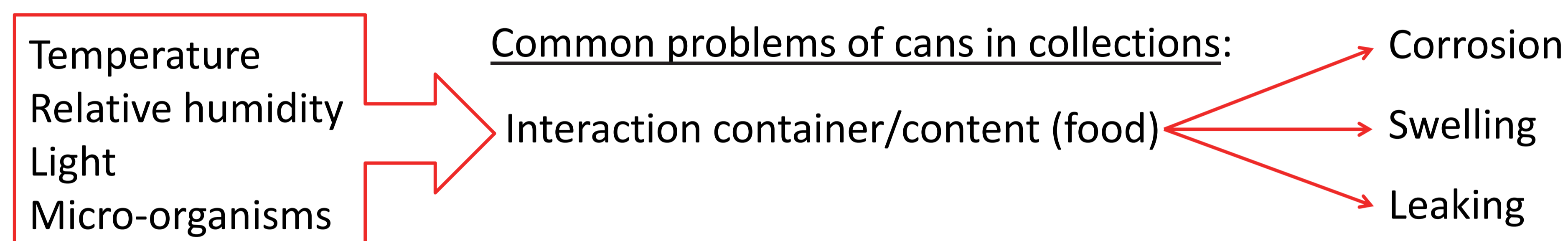
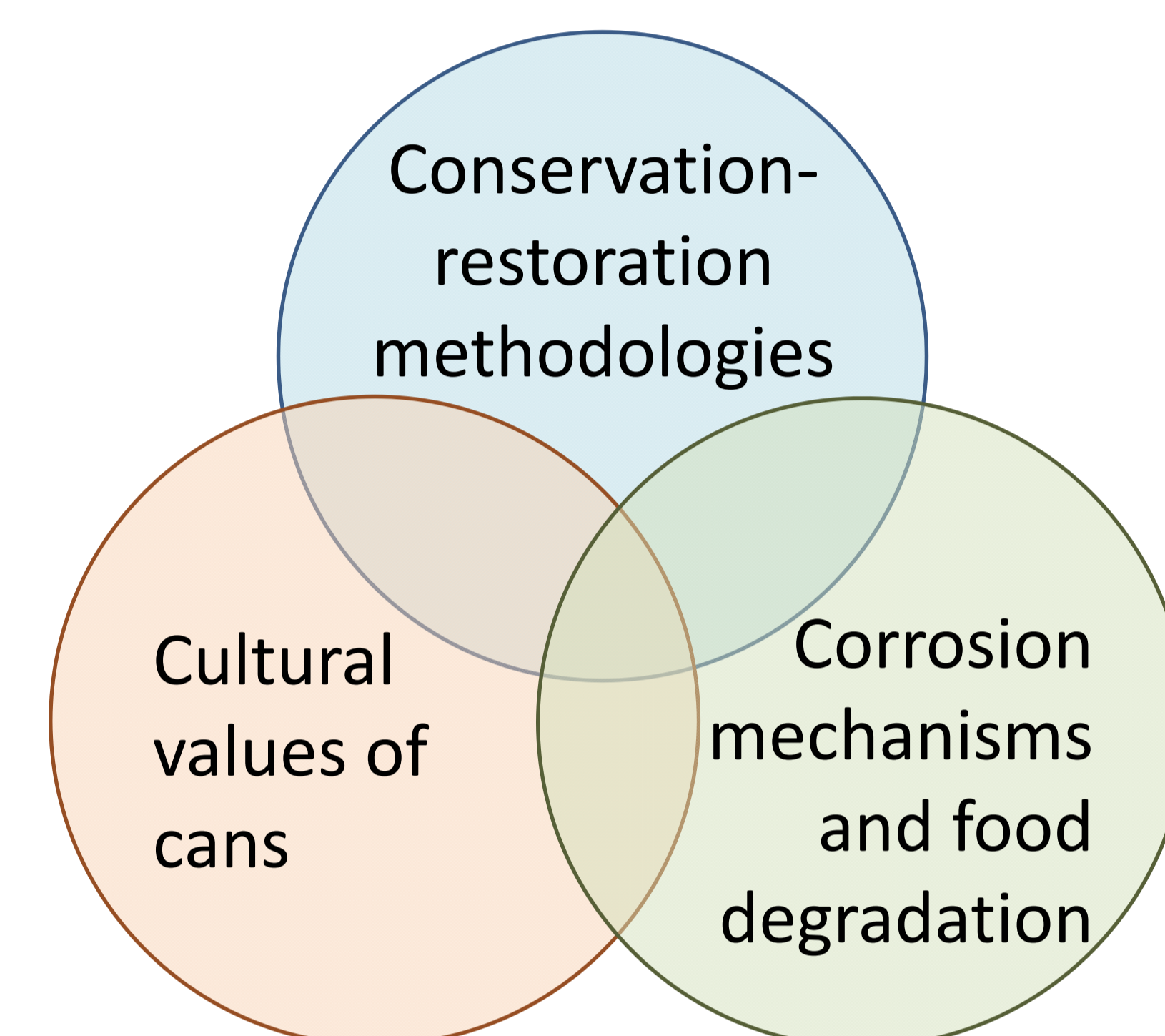
Fabio Cova Caiazzo¹, Aline Michel², Olivier Schinz³, Dimitri Bocquel⁴, Rudolf Schmitt⁴, Glenn Flückiger⁵, Marc-Olivier Gonseth³, Stefano Mischler¹, Régis Bertholon², Laura Brambilla²

¹Tribology and Interface Chemistry group, EPFL, Lausanne; ²Haute Ecole Arc Conservation-Restauration (HE-Arc CR), HES-SO, Neuchâtel; ³Ethnography museum of Neuchatel (MEN); ⁴Institute of Life Technology (ITV), HES-SO Valais, Sion; ⁵Institute of systems engineering (ISI), HES-SO Valais, Sion

Cultural heritage consists in artworks (painting, sculpture...) but also in usual and everyday objects (tools, machines...) sometimes unexpected, such as food preserves. Nowadays, cans are represented in several museum collections as witnesses of different time periods and significances : from industrial evolution to food habits. They are also present in modern and contemporary museums, often used as symbols of consumer society.

CANS project (Conservation of cAns in collectionNS) is an **interdisciplinary research** that brings together **conservators-restorers** and **conservation scientists** from the HE Arc CR, **corrosion scientist** from the EPFL, **anthropologists** from the MEN and **food technology experts** from the HES-SO Valais.

The objectives of CANS are to improve the **knowledge** about cans, to develop **treatment methodologies** respectful of the material authenticity and **cultural values** of these composite objects and to propose solutions in terms of **preventive conservation**.



HE-Arc CR

1. State of conservation of cans in collection
2. Recommendations for Preventive conservation
3. Development of conservation-restoration treatments
4. Development of minimal-invasive opening tool

EPFL

- Modeling long term corrosion of cans using:
1. Effect of the critical species contained in foods
 2. Electrochemical tests
 3. Surface characterization



HES-SO Valais

Food deterioration inside the cans:

1. Measurement of cans deformation due to swelling phenomena
2. Analysis and quantification of the gas developed inside the cans
3. Food analysis (pH, microbiology, color, texture, chemical species)

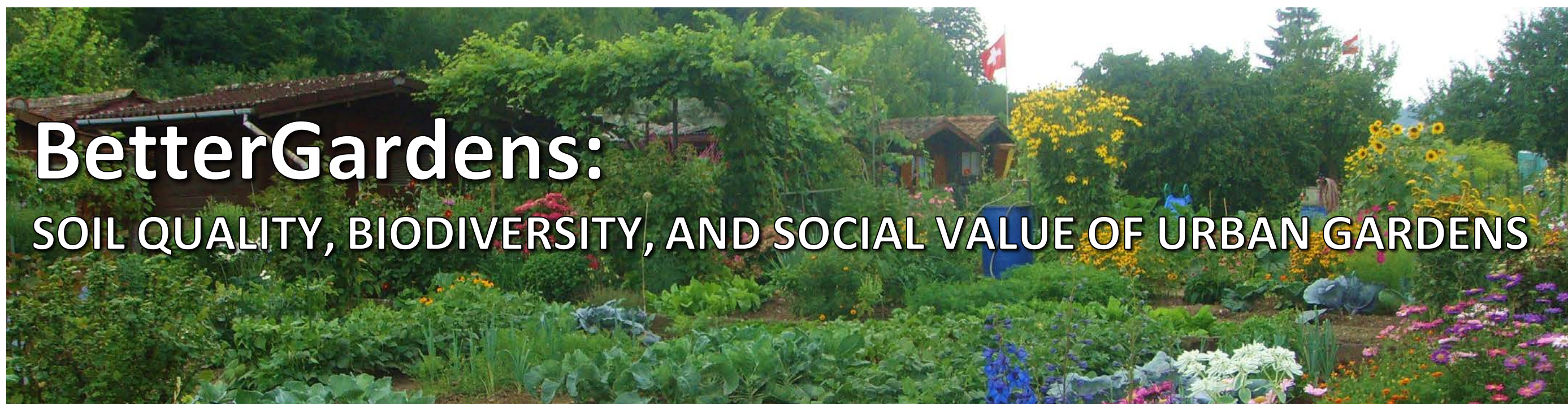
MEN

1. Survey about the presence of cans in different museums and collections
2. Research on the cultural values of cans and on the importance of the different parts of the can (container, content, label).
3. Produce a *vademecum* for the conservation of cans in collections: suggestions for existing collections and for new acquisitions.

Strategies for Better Gardens: Integrated Analysis of Soil Quality, Biodiversity, and Social Value of Urban Gardens

Robert Home, Research Institute of Organic Agriculture FiBL

Urban gardens are often contested spaces but provide socio-cultural ecosystem services as well as habitats for above and below ground fauna and flora. The goal of this study is to examine the relationships between policy and garden management practices (in private and allotment gardens); and the effects that these practices have on the social value, biodiversity, and soil quality of gardens. The study is based around 4 subprojects to assess: A) the influence of policy on management practices and the motivations for gardeners to implement particular management practices; B) the social values of different kinds of gardens and the outcomes gardeners experience; C) the effects of management practices on the chemical, biological and physical soil properties; and D) the contribution of urban gardens to the different aspects of biodiversity, including their contribution to maintaining above and below ground ecosystem processes and services. The study will take place in Bern, Lausanne and Zürich; cities in the Central Plateau region that has experienced particularly high levels of biodiversity decline in recent years. Understanding the relationships examined in this study will allow the formulation of 'best practice' methods for sustainable garden management with regard to social outcomes, soil quality and biodiversity; and the development of targeted strategies to encourage such practices. The integrated assessment of the social and ecological value of urban gardens can also contribute the formulation of targeted education strategies to sensitizing the population to the value of threatened urban gardens.



BetterGardens:

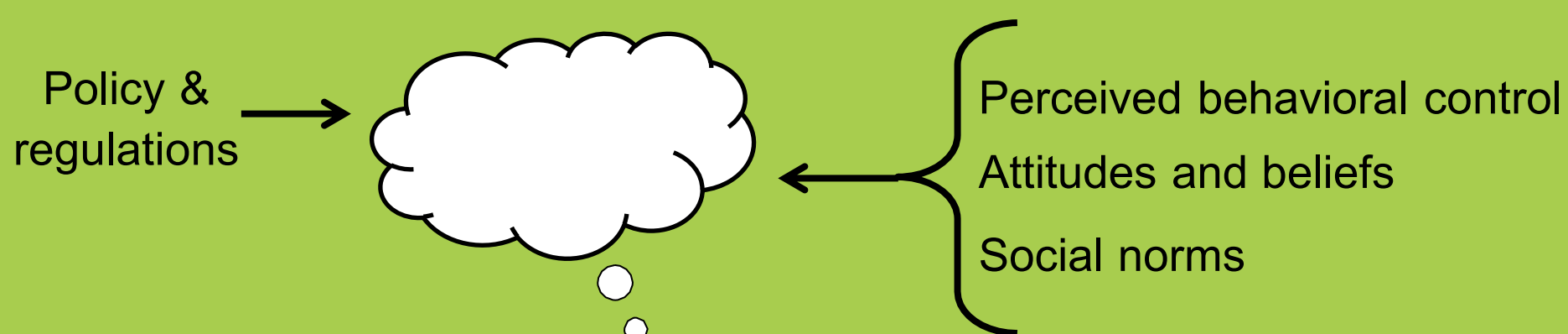
SOIL QUALITY, BIODIVERSITY, AND SOCIAL VALUE OF URBAN GARDENS

What are the social, ecological and soil sustainability impacts of urban garden cultivation under various management concepts in Swiss cities?

FiBL

Matthias Stolze
(Project coordinator, task leader)
Robert Home
(Post Doc. researcher)
Heidrun Moschitz
(Post Doc. researcher)
Ingrid Jahrl
(PhD student)

Factors Influencing Gardeners' Behaviour



Gardeners choose management concepts (e.g. organic) to achieve their goals, which are guided by the influencing factors.



The management concept that is chosen has consequences for the gardener, the soil, and biodiversity in the garden.

Outcomes for Gardeners



- Restoration
- Psychological well-being
- Physical health
- Social contact and cohesion
- Place attachment
- Fruit, vegetables, flowers etc.

Outcomes for Biodiversity



- Biodiversity
- Plant-insect interactions
- Functional diversity
- Ecosystem processes
- Ecosystem services
- Interactions with soil

Outcomes for Soil Quality



- Soil biodiversity
- Physical soil properties
- Soil chemistry
- Soil fertility
- Litter decomposition
- Relationship with biodiversity

WSL

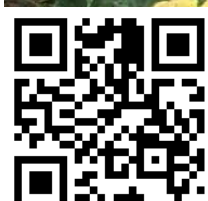
Nicole Bauer (Task leader)
Christopher Young (Post Doc. researcher)

WSL

Marco Moretti (Task leader)
David Frey (PhD student)
Simon Tresch (PhD student)
Andrea Zanetta (PhD student)

FiBL

Paul Mäder (Task leader)
Andreas Fliessbach (Post Doc. researcher)
Simon Tresch (PhD student)



www.bettergardens.ch
www.fibl.org
www.wsl.ch

This research is financed by the Swiss National Science Foundation: Sinergia, and runs from January 2015 until December 2017.

The study will take place in Bern, Lausanne, and Zürich .

Herding the cats: managing teaching and researcher stakeholder representation in proposing innovative and interdisciplinary research ideas

Kristine Lund, CNRS, University of Lyon

Thirty-one higher education institutions in Lyon, and neighboring St. Etienne, France are organizing themselves into eight academic colleges. These latter are:

- Arts, culture, design, architecture
- Lettres, Langues, Philosophie
- Sciences sociales
- Droit, économie, gestion
- Education, cognition, langage (EduCoLa)
- Sciences formelles et de la nature
- Sciences de la vie et de la santé
- Ingénierie et technologie

The goal of these academic colleges is to collectively elaborate, and share information that falls into the perimeter of the college, in order to develop synergies between disciplines. This information includes undergraduate and graduate degrees, national evaluations of these degrees and of research structures, and definitions of new teaching and research positions at the different higher education institutions. In addition, on the basis of these evaluations and on emerging research themes, each academic college is currently building a prospective document (limited to 10 pages) that will develop the strategic project of the college. It will include goals concerning teaching, research, international collaborations, professional training, how the college's disciplines can contribute to environmental concerns, and propositions for establishing relations with local and national organizations involving the development of innovation, research, and teaching. Finally, the prospective document will contain propositions for putting together proposals that will potentially be funded by the French government, should Lyon succeed as one of the cities granted in late 2017 the status of initiative of excellence (IDEX).

I am the coordinator of EduCoLa, a college that includes the academic disciplines involved in educational, cognitive, and language sciences and am organizing the writing of this prospective document, involving around 15 people that represent (often in a directorship capacity) a selection of teaching and research structures in the Lyon and St. Etienne regions. We have a first working committee meeting in mid October and we have funding to organize a workshop that should also contribute to writing the document. I can share the analysis I performed of our scientific perimeter in order to orient consensual decisions about committee representativeness and the issues that were raised during the initial writing of our prospective document, based on methods that I hope to implement. That said, if I can attend the Swiss Inter- and Transdisciplinarity Day 2016, I hope to gain insight on how I can better design the process in order to deliberately frame our prospective document so that the different disciplines and stakeholders are adequately represented. In addition, it could be interesting to develop methods to compare strategies across academic colleges.

Formative research for transdisciplinary action: integrating community-derived solutions into an epidemiological trial design for malaria elimination in the Gambia

Joan Muela Ribera¹, Yoriko Masunaga^{2,3}, Fatou Jaiteh^{2,3}, Susanna Hausmann-Muela¹, Koen Peeters Grietens^{2,3}

¹ Partners for Applied Social Sciences PASS-Suisse, Neuchâtel, Switzerland

² Department of Public Health, Institute of Tropical Medicine, Antwerp, Belgium

³ Medical Research Council Unit, Fajara, The Gambia

Introducing an innovation requires locally adapted and context-appropriate implementation strategies. The success and sustainability of these strategies depend on a concerted action of relevant stakeholders, which in turn depends on the integration of scientific and non-scientific bodies of knowledge to support problem-solving efforts. A key question is how to do this in practice.

We addressed this question in a recently started randomized controlled trial in the Gambia, aimed at testing a novel approach to eliminate malaria in low malaria transmission settings. The epidemiological hypothesis of the so-called “Reactive Household-based Self-administered Treatment (RHOST) Trial” is that in areas of low transmission most malaria parasite carriers are asymptomatic and clustered around clinical malaria cases at the household level. Therefore, treating not only the actual patient who has been diagnosed with malaria at the health center, but all individuals residing in the patient’s household, should reduce the human reservoir of infection and possibly interrupt transmission.

The RHOST trial is carried out by a multidisciplinary team, including epidemiologists, medical anthropologists, health systems researchers, and health economists. But the biggest challenge for the success of the trial relates to community understanding, acceptance and implementation of the intervention in the affected households. To identify and integrate appropriate community and other stakeholders-derived solutions into the trial design, we are applying a formative research approach, i.e. research carried out before and during the intervention to determine and refine the implementation design.

Formative research is flexible but solid research that permits to adapt the RHOST trial design to the local context. The methodological approach is based on grounded theory and mixed methods. To achieve incremental improvement, it includes making changes and monitoring results, then adjusting. This is done through a systematized five-steps formative research process, allowing us to capture emerging themes relevant for the project, detect enablers and obstacles, elaborate solutions as problems arise, and actively engage local communities.

First results show an amazing creativity and simplicity of community solutions, while at the same time creating an increasing sense of community ownership. The continuous reality check and refinements, accompanied by solid research, makes formative research a promising approach for putting transdisciplinary projects into practice.

Formative research for transdisciplinary action: engaging the community for malaria elimination in the Gambia

Joan Muela Ribera^{1,3}
 Yoriko Masunaga^{2,4}
 Fatou Jaiteh^{2,4,5}
 Joseph Okebe⁵
 Susanna Hausmann-Muela¹
 Umberto D'Alessandro^{5,6}
 Koen Peeters Grietens^{2,4,7}

¹PASS Suisse, Neuchâtel, Switzerland
²Institute of Tropical Medicine, Antwerp, Belgium
³Universitat Rovira i Virgili, Tarragona, Spain
⁴Amsterdam Institute of Social Science Research, The Netherlands
⁵Medical Research Council Unit The Gambia
⁶London School of Hygiene and Tropical Medicine, London, UK
⁷School of Tropical Medicine and Global Health, Nagasaki University, Japan⁵

I Introduction

Introducing innovations require locally adapted and context-specific implementation strategies. The success and sustainability of these strategies depend on a concerted action of relevant stakeholders. This, in turn, depends on the integration of scientific and non-scientific bodies of knowledge to support problem-solving efforts. A key question is **how to do this in practice**.

We addressed this question in a recently started randomized controlled trial in the Gambia, aimed at testing a novel approach to malaria elimination. The epidemiological hypothesis of the so-called "Reactive Household based Self-administered Treatment (RHOST) Trial" is that in areas of low transmission most malaria parasite carriers are asymptomatic and clustered around clinical malaria cases at the household level. Therefore, treating not only the actual patient who has been diagnosed with malaria at the health center, but *all* individuals residing in the patient's household, should reduce the human reservoir of infection and possibly interrupt transmission.

2 Formative research

To identify and integrate appropriate scientific and community-derived solutions into the trial design, we developed a formative research (FR) approach. FR is **flexible** but **solid** research for iteratively **adapting** the RHOST trial design to the local context (1).

A **systematized five-stages process** permits to **capture emerging themes** relevant for the project, detects **enablers** and **obstacles**, elaborates **solutions** as problems arise, and actively **engages local communities**.

Formative research: flexible and solid

Stage 1. Baseline research

Research through a mixed methods approach on:

- (i) health system, social and epidemiological context
- (ii) enablers and obstacles for the implementation
- (iii) stakeholder analysis

Stage 2. Developing implementation strategies with community stakeholders

Structured and analysed research results from stage 1 provides the information for jointly elaborating implementation strategies with community stakeholders in participatory workshops (PWs). PWs bring the "community voice" (project concerns and practical ideas) into the implementation design.

Stage 3. Transdisciplinary design and implementation

With all the relevant information from stages 1 and 2, the project team (epidemiologists, health systems researchers and social scientists) designs and implements, in a transdisciplinary way, a detailed step-by-step treatment distribution strategy, adequate health messages and their dissemination through IEC activities.

Stage 4. Monitoring and evaluation (M&E)

Using mixed methods, an M&E strategy is iteratively applied in order to detect and adjust implementation problems as well as to measure process outcomes and project impacts.

Stage 5. Dissemination of results

RHOST strategy and results are disseminated to (i) villagers from the implementation and control arms, (ii) health workers from the study area, (iii) the Gambian Ministry of Health, (iv) the scientific community, and (v) NGOs.

3 Transdisciplinary actions

A cascade of problems

For RHOST, trial participants suffering from malaria have to follow three steps. Under real life conditions, each step faces important obstacles that need to be overcome.

A A person with malaria symptoms goes to the health centre. If tested positive, s/he (the patient) will receive standard malaria treatment as well as full doses of pre-packaged and labelled antimalarial treatment for *all* household (HH) members.

Access to treatment faces many obstacles because:

- (i) Peaks of malaria cases coincide with the rainy season and a heavy workload on the farms (i.e. shortage of cash, bad state of the roads, limited means of transportation, loss of working time)
- (ii) Availability of medicines in health facilities is unpredictable

B The patient/caretaker distributes treatment to all HH members except children <5 kg and pregnant women in the first trimester

Distribution of antimalarial treatment to all suitable household members is complex, with great risk for confusion:

- (i) Six weight categories, each with a specific dosage (i.e. six different treatment dosages to be distributed)
- (ii) Most of the villagers are unable to read the indications on the medicine bags (high illiteracy rate in the study area)

C Household members should take the medication for three days

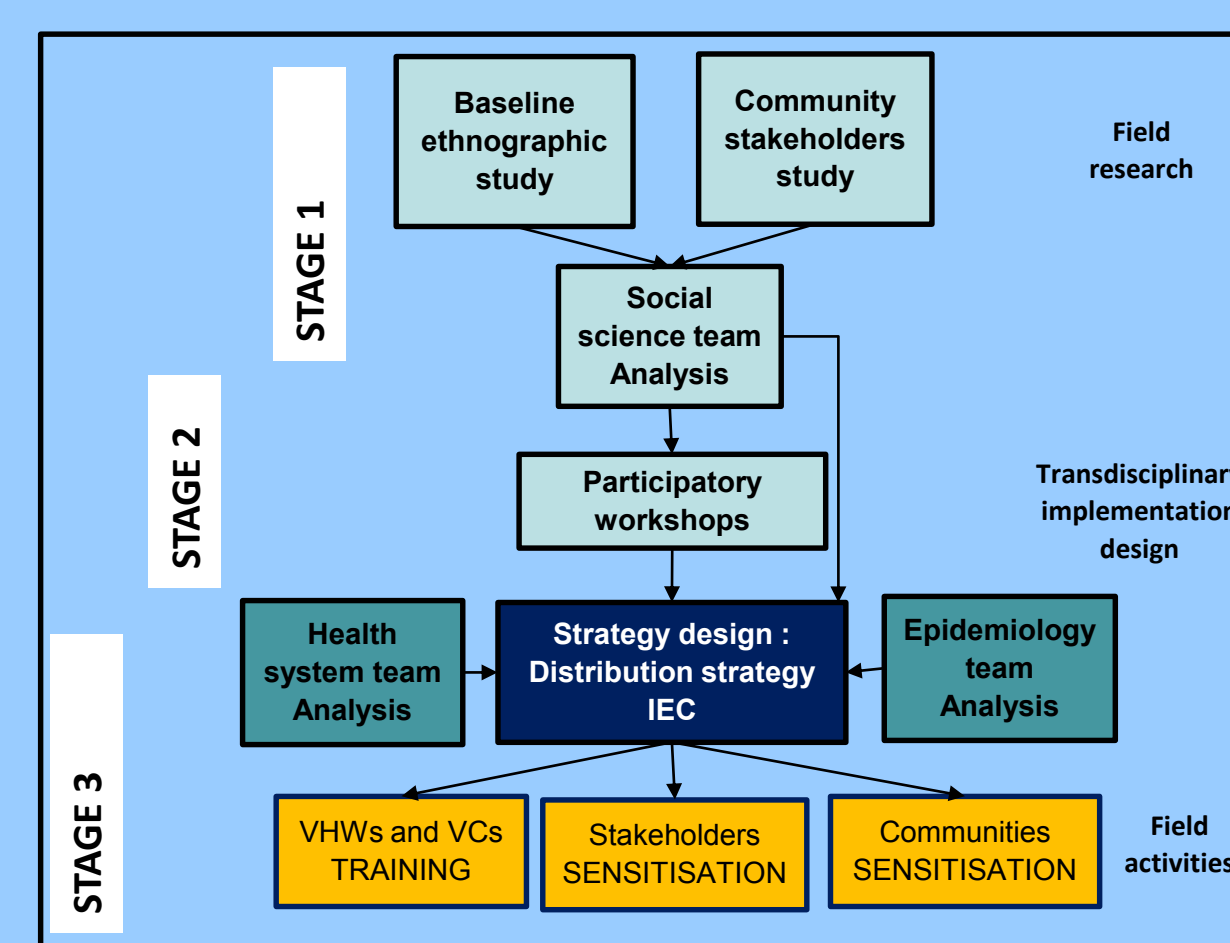
Adherence to antimalarial treatment faces problems due to low perceived need:

- (i) Household members receive treatment without feeling ill
- (ii) Except for children under 5 and pregnant women, malaria is not perceived as a life-threatening disease
- (iii) Fears of antimalarials due to adverse drug reactions and risk of abortion may exceed the perceived benefits of treatment

Finding solutions

The trial is carried out by a multidisciplinary team (epidemiologists, anthropologists, health system researchers and health economists), with the active participation of key community stakeholders from each intervention village.

Searching for solutions in a transdisciplinary way takes place in stages 2 and 3 of the FR process.



A Improving access to treatment

Most of the **access** problems are structural and difficult to solve in the trial context. After careful deliberation with stakeholders, we concluded that strengthening front-line health care workers through existing structures and roles as the simplest and most sustainable solution, i.e. to actively involve Village Health Workers (VHWs) in RHOST approach and to assure their reliable provision of Rapid Diagnostic Tests and antimalarial drugs.

Expected outcomes of this implementation are:

- (1) Treatment-seeking will be shortened and encouraged
- (2) Impact of treatment-seeking on work will be reduced
- (3) VHWs' position at village level will be reinforced.

B Improving distribution of drugs to household members

For **distribution**, two ideas were developed in the participatory workshops and integrated in the RHOST implementation design:

- (1) Literate community volunteers can help distributing drugs
- (2) Stickers on the drug sachets with the image of animals representing different weights of dosage categories.



Animal	Weight	Strength	Number
	5-7	20/160	1/2
	7-13	20/160	1
	13-24	40/320	1
	24-36	40/320	2
	36-75	40/320	3
	>75	40/320	4

C Improving adherence

To improve **adherence**, the communities have to perceive RHOST as a relevant intervention. Although perceptions of health-related risks are low, people fear the economic impact of malaria (treatment and transportation costs and productivity loss). Interventions aimed at protecting the household as unit of production are highly valued. In this sense, villagers understand adherence as a sign of responsibility towards the entire household and the village. IEC emphasises that RHOST is a household based intervention. In addition, community stakeholders suggested that treatment be provided in the households by household heads as leaders of the therapy management group.

Transdisciplinary processes

Formative research is a well structured process, and each solution follows, with variations, a similar path. For example, ethnographic research (**stage 1**) permits a deep understanding of the access problem and its economic implications. In parallel, the stakeholders analysis and the health system study permit to know the social status, role and realities of Village Health Workers. In **stage 2** the access problem was discussed with community stakeholders, who advocated for a stronger role of VHWs. With this information, researchers from the health system, anthropology and epidemiology teams carried out a SWOT analysis by comparing VHWs vs. Project Nurses (**stage 3**).

4 Conclusions

Formative Research provides a structure and tools for flexible but solid research, and action adapted to different contexts. Although FR is a complex process involving researchers from several fields and different stakeholders, the aim is to find simple, applicable solutions, such as the animal stickers or the involvement of VHWs in the project.

5 Note

(1) Formative research as applied to RHOST is inspired by the works of Mark Nichter and the SEPA approach developed by CIET



*ENGAGE ' : ENseigner les sciences au PRIMaire, un GAGE d'avenir
(Proposition pour continuer le projet ENGAGE en Suisse au niveau primaire)*

Francine Pellaud, Ignacio Monge, HEP PH Fribourg

Nous sommes actuellement des partenaires du projet européen ENGAGE, qui durera jusqu'à la fin mars 2017. Le projet est en train d'offrir aux enseignants en sciences des ressources qui permettent de traiter en classe des dilemmes socio-scientifiques. Les élèves visés, de 11 à 16 ans, sont alors motivés pour apprendre la science et la technologie derrière ces questions ; en même temps, chaque ressource vise l'entraînement dans une compétence. Nous avons, en effet, identifié une série de compétences qui viennent structurer la démarche d'investigation, celle-ci étant nécessaire dans la résolution du problème socio-scientifique posé. Il y a à la fin mars 2016, en Suisse, 286 utilisateurs enregistrés ; nous comptabilisons 1827 événements de téléchargement.

Les ressources Engage sont de nature transdisciplinaire, dans le sens qu'une ouverture au-delà d'une ou plusieurs disciplines est indispensable dans la démarche d'investigation pouvant mener à la résolution du dilemme en question.

Si bien depuis le début du projet nous avons surtout interagi avec des enseignant-e-s du secondaire I (élèves de 12-15 ans), nous avons eu aussi des échanges avec des enseignants du primaire et avec des étudiant-e-s qui se préparent pour y enseigner. En concret, nous avons suivi des travaux d'adaptation de deux ressources au niveau du cycle 2. Ces expériences ont été très informatives et nous ont révélé le potentiel de l'approche utilisée par Engage pour créer des matériels très utiles dans le primaire. Nous pensons qu'il y a également un potentiel important quant à la contribution que ces moyens d'enseignement peuvent faire pour le développement personnel des élèves.

Tenant compte de l'inertie et de l'impact, que nous jugeons positif, de ce projet en Suisse, nous voulons poursuivre l'expérience pédagogique, en nous concentrant spécifiquement sur le niveau primaire. Cela a du sens, il faut le signaler, dans le contexte professionnel où nous nous trouvons à la HEP PH Fribourg, entourés de collègues qui ont des compétences multiples et riches pour ce niveau d'enseignement.

Proposition de projet

ENGAGE' : ENseigner les sciences au PRIMaire : un GAGE d'avenir

Dr. Francine Pellaud et Dr. Ignacio Monge, HEP PH Fribourg

L'inter- et la transdisciplinarité sont incontournables dans la résolution de dilemmes socio-scientifiques

Rendre les sciences et la technologie engageantes pour tous

Contribuer à l'épanouissement et au savoir être dans la société

Notre expérience préalable :
le projet européen ENGAGE

Ce que nous voulons faire :

FRAMING du projet

Exemples d'adaptation de ressources



La ressource "Bannir les sodas ?", prévue pour une seule leçon au cycle 3, a été adaptée à une classe du cycle 2 (élèves de 10 ans), en juin 2016.

Résultats préliminaires :

- Les élèves sont enthousiasmés par le sujet et par la manière de l'aborder
- L'enseignant a grandement apprécié ces ressources, tout en proposant des modifications importantes :
 - un investissement de temps plus important (3 à 4 heures au lieu d'une seule)
 - un accompagnement scientifique conséquent doit être proposé



Spécial COP21 : 2 degrés

Un enseignant du primaire ayant participé à un cours en ligne et à un atelier, a intégré et adapté dans ses leçons l'approche ENGAGE, en particulier le débat en classe. Il participe à notre réflexion dans la construction de ce projet

ENGAGE et formation initiale HEP PH Fribourg

Les moyens ENGAGE ont été proposés dans la formation initiale des étudiant-e-s à la HEP Fribourg

- L'accueil de ces ressources a été très favorable
- 2 étudiants démarrent une recherche préliminaire sur le matériel "Manger des insectes"
- Les étudiant-e-s ont posé des commentaires sur le site, en ligne, avec des propositions d'adaptation

Plan de recherche

Le projet porte sur 3 années consécutives, à savoir :

- 1) Adaptation des ressources existantes ou création de nouvelles mieux adaptées au cycle 2, en conservant l'aspect « clé en main ».
- 2) Evaluation de la pertinence de ces outils auprès des enseignants et des élèves, à travers des questionnaires et des entretiens.
- 3) Les enseignants développent eux-mêmes, en collaboration avec leurs élèves, des ressources qu'ils mettront à leur tour à disposition des autres enseignants. Nous désirons ainsi initier une plateforme collaborative pour les enseignants primaires. Pour clôturer ce projet, un concours sera ouvert aux classes qui présenteront des ressources complètes destinées à alimenter le site collaboratif et une journée « scientifique et festive » sera offerte à « La Maison de la Rivière » (Morges).

LE CONSORTIUM ENGAGE

- 14 institutions de 13 pays, avec une riche expérience dans :
- l'enseignement des sciences basé sur la **démarche d'investigation**
 - la recherche et l'innovation **responsables**
 - la **formation** des enseignants
 - et le développement de **programmes**

LE CONSORTIUM ENGAGE (collaborateurs)



Coordinateur :
Tony Sherborne & équipe UK
en Suisse :
Francine Pellaud, Prof. HEP
Ignacio Monge, collaborateur
scientifique
HEP PH Fribourg

Alexandra Okada, Andi Bullough,
Aristides Protopsalis, Claire Potter,
Darius Dapkus, Dury Jacobs, Elin
Leirvold, Elisabetta Parodi,
Fotini Chairasia, Gabriel Georgiou,
Gemma Young, John Wardle,
Kathy Kikis-Papadakis, Laura
Georgiou, Maria Evagorou, Mario
Barriga, Matteo Merzogora, Misuro
Vanucci, Mihai Bizoi, Pat Morton,
Philippa Hulme, Sonia Helzner,
Sylvia Alcaraz, Vanessa Mignan,
Yael Schwartz



Buts d'ENGAGE

- Aider les **enseignants**
 - à aborder des sujets et des applications de la **science contemporaine** qui **concernent** les apprenants
 - développer des **compétences** en vue de la **recherche et l'innovation responsables**
- Aider les **apprenants** à acquérir une **base solide** de connaissances et compétences pour faire face aux sujets socialement vifs en lien avec les sciences qu'ils rencontreront dans leur vie

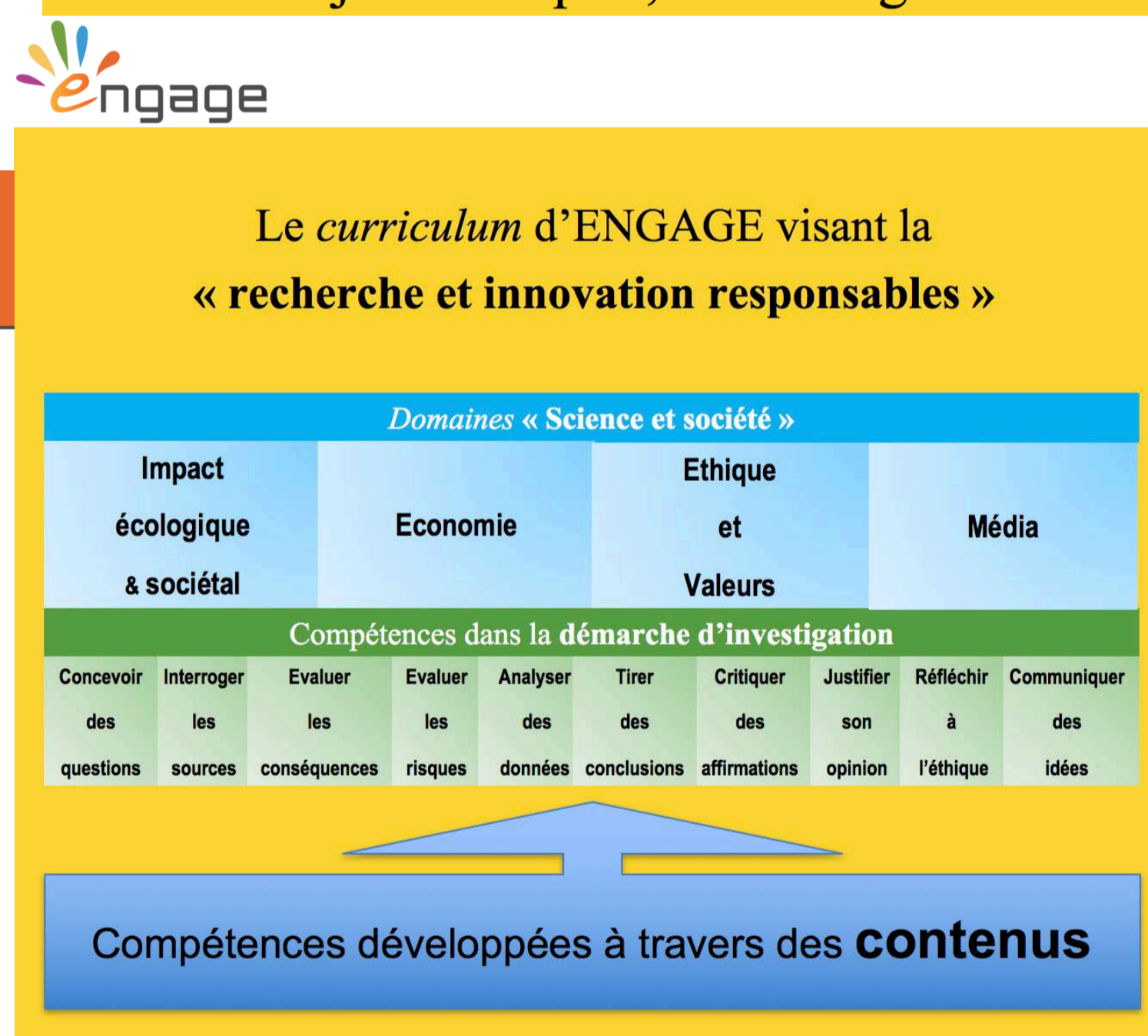
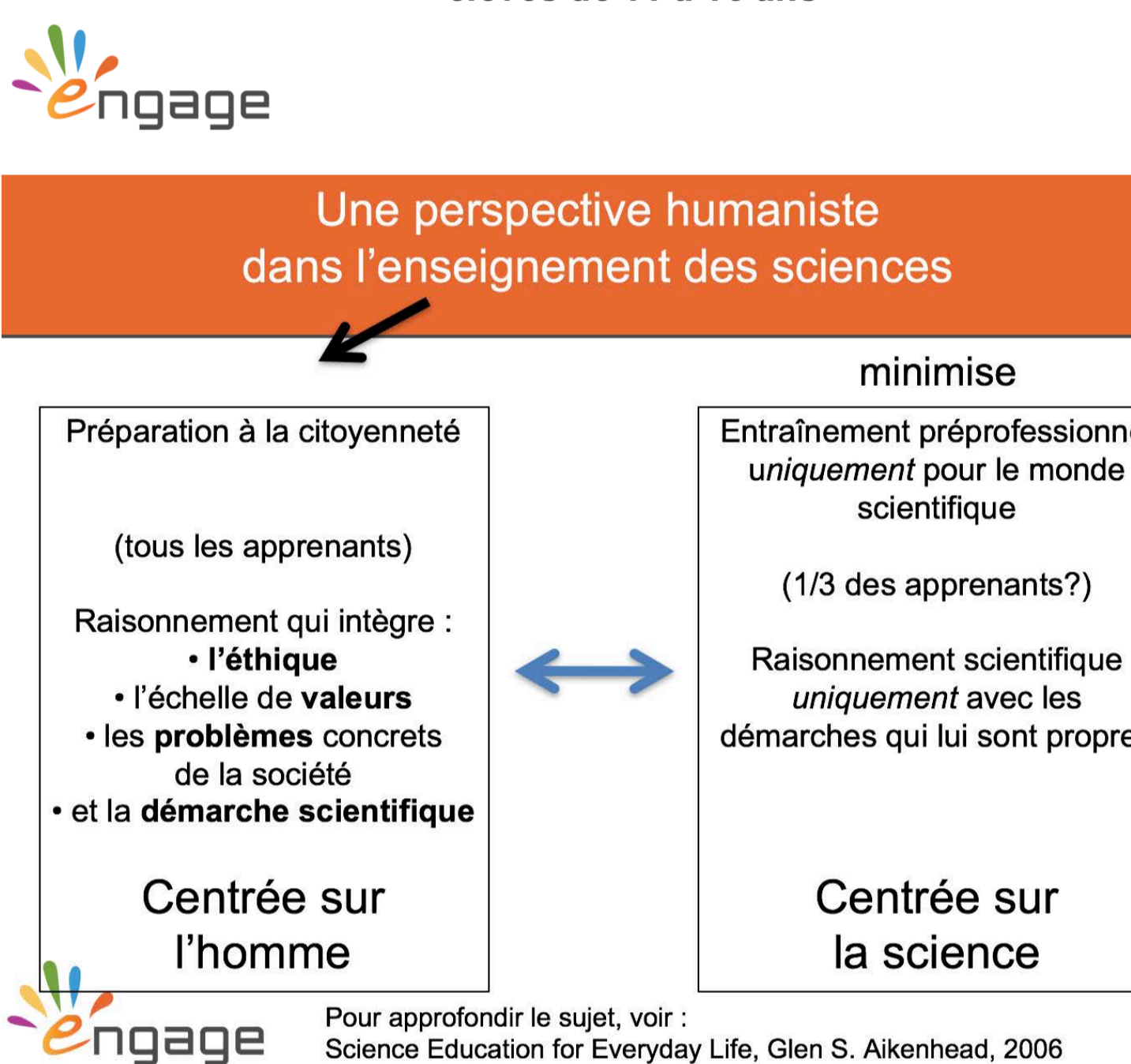
> élèves de 11 à 16 ans

Financement

Projet cadre 7 de l'UE (FP7)
Section "SCIENCE EN SOCIÉTÉ"
(2014 – mars 2017)

ENGAGE s'inscrit dans le programme de promotion de la **recherche et de l'innovation responsables*** de l'Union Européenne pour répondre aux nouveaux défis sociétaux.

*enjeux éthiques, déontologie



Quelques données : (au 4.11.16)

- Utilisateurs enregistrés en Suisse: 298
- Nombre de téléchargements: 1868
- Pour le secondaire I et II :
 - Participants à une formation continue
 - ateliers (4x) : 33
 - Cours en ligne (2x) : 8
 - Participants à une formation initiale (2x) : 39



Jeanine Reutemann, Institute Aesthetic Practice and Theory, University of Applied Sciences and Arts Northwestern Switzerland, FHNW

There is a historically long established relationship between science and filmmaking since the very beginning of moving images.¹ Thereby, moving images have been used in various ways including to document research processes, visualize phenomena's invisible to the eye, an instrument of research or for popular science dissemination.

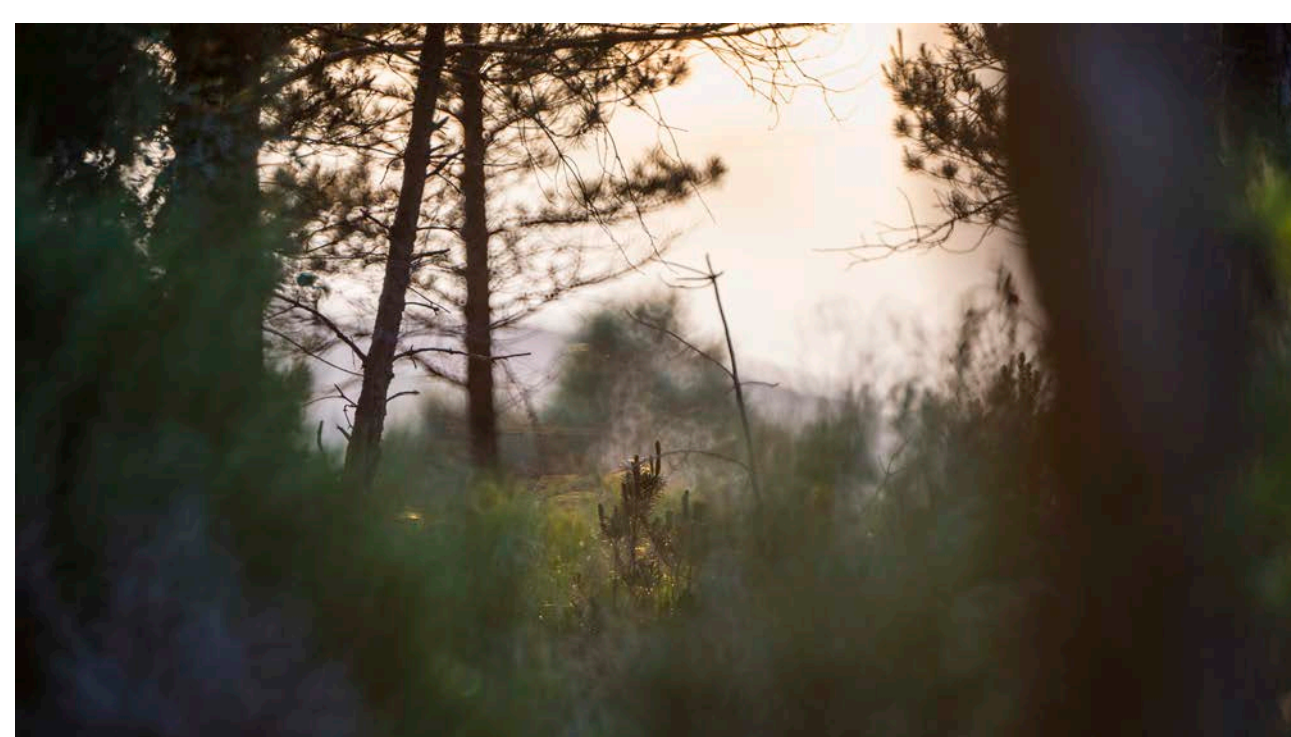
Through recent technological development of digital cameras, easy and cheap online publications options for video based material and a digitization trend towards video abstracts and video-based online teaching the production of videos for scientific content increases rapidly. These videos, produced by researchers themselves, university own IT-centres, or students vary widely in terms of their use of audiovisual narration, accuracy of image use, preciseness of words and reflection about the media-specific affordances. But throughout this development, a renewed interest in inter- and transdisciplinary collaborations between scientists and filmmakers emerged. Such collaborations investigate the role of moving images regarding their own medial characteristics about/for/in the research project as they can add (e.g imagery aspects) and transform the content of scientific knowledge.

Accordingly, I propose that if researchers are interested in using videos for a research project, it's crucial that experts from the field of filmmaking are already included in the framing and proposal writing phase of an inter- and transdisciplinary research project as such an early co-design process can realize the synergies between film and research significantly more effectively compared to the dominant approach of giving the film making only an add-on role in research.

The poster will give an example of such a co-design process in video productions of interview situations with stakeholders in the field and display an overview of chances, pitfalls and the potentials of a co-design knowledge generation process in a collaboration of researcher and filmmaker. The example is based on an inter- and transdisciplinary field project about the 'Conservation Management Field Course Beinn Eighe, Highlands of Scotland' of the Chair of Ecosystem Management of the ETH Zurich with the author.

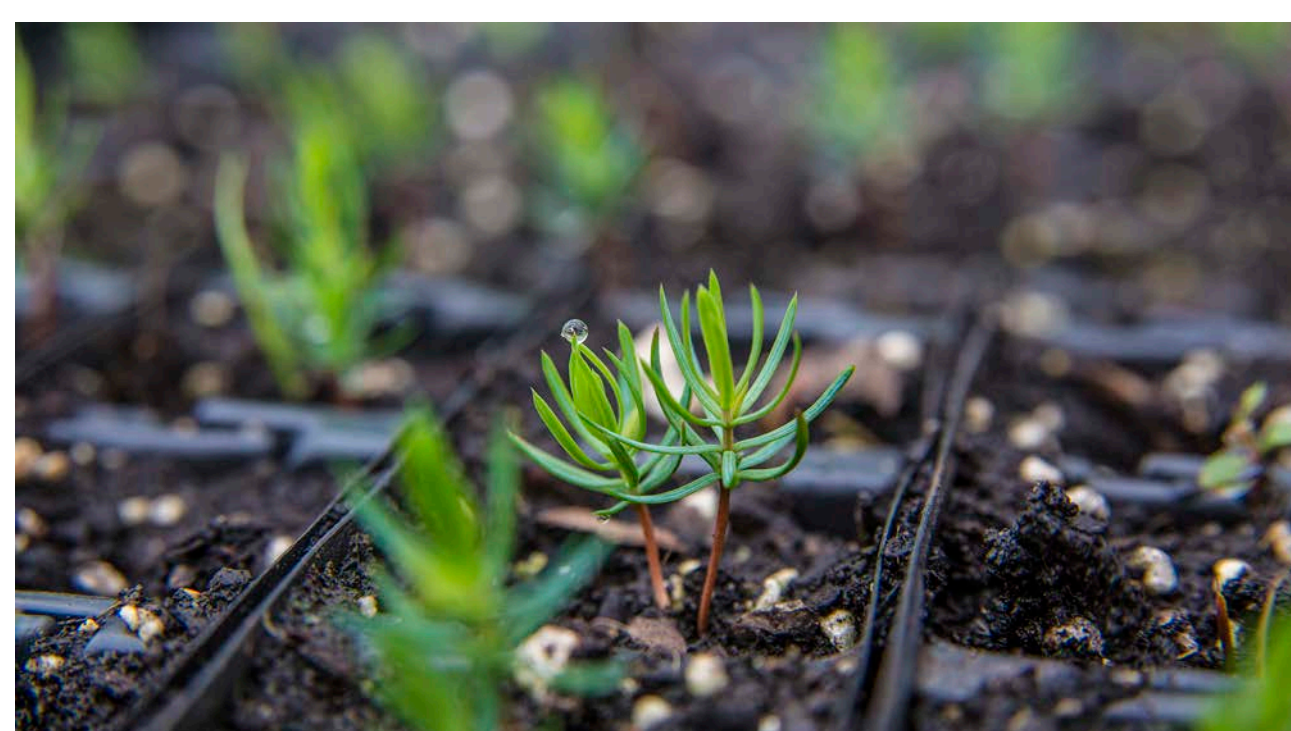
¹ Virgilio Tosi, Director of Scientific Films and Television Program from 1977: «The development of audio-visual techniques in all fields, the need to promote interdisciplinary co-operation demand the creation of a specialized training so as to permit close collaboration between scientists and audiovisual technologists in the field of scientific research.» In: Virgilio Tosi/International Scientific Film Association: Cinematography and Scientific Research, UNESCO, 1977, 1–57.

STAKEHOLDER VIDEO INTERVIEWS CO-DESIGN OF SCIENTIFIC-CINEMATIC DATA



HISTORIC USE OF FILM FOR SCIENCE

- document research
- visualize phenomena invisible to the eye
- an instrument of research
- for popular science dissemination
- long relationship in co-design of content between scientist & filmmaker

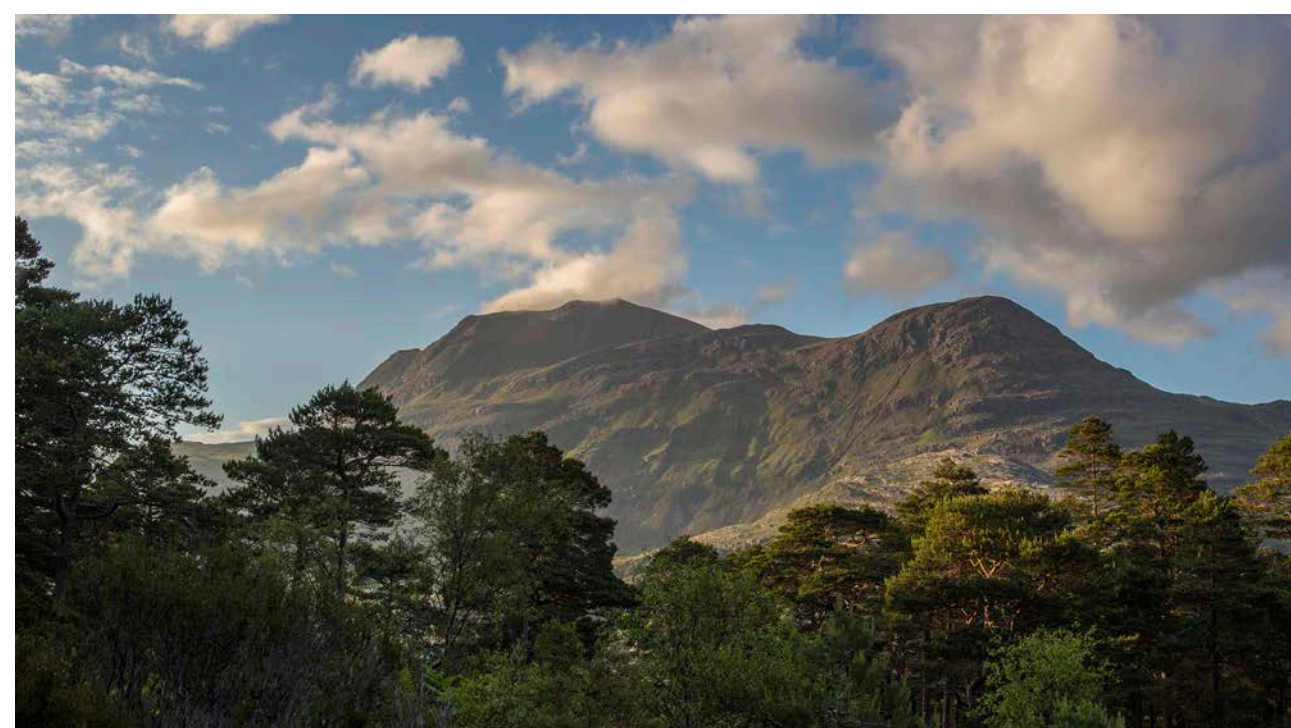


TODAY

- rapid increase
- video-abstract
- e-learning
- mostly "home cooked" low-budget by researchers / IT departments / students > missing skills
- wide variation in quality
- missing important media-specific characteristics



> Renewed interest in inter- and transdisciplinary collaborations between scientists and filmmakers



PROPOSITION

It is crucial that expert filmmakers are included already in the framing and proposal writing phase of an inter- and transdisciplinary research project. Only with such an early stage co-design process the full synergies between film and research can be materialize.

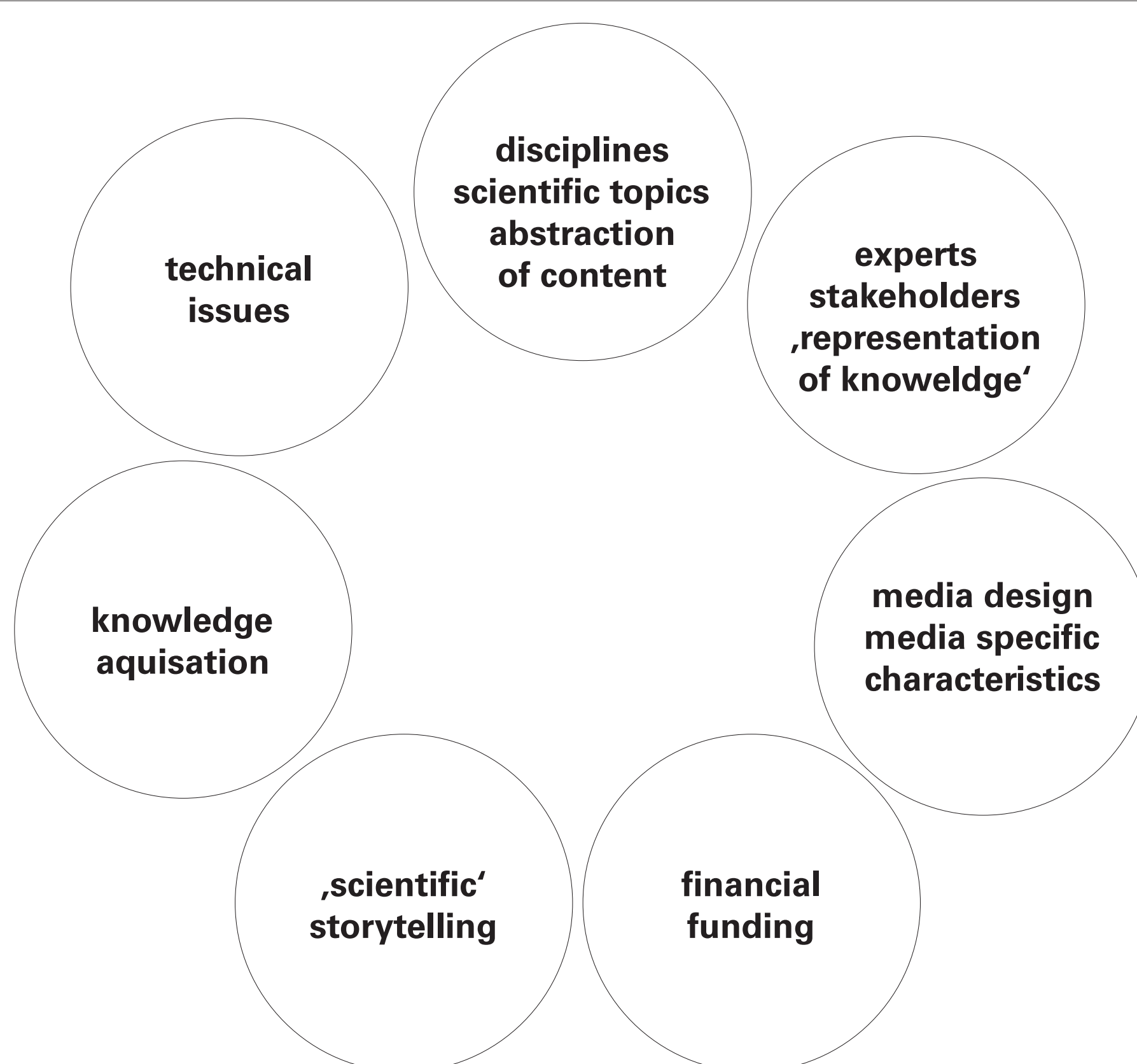


«The development of audio-visual techniques in all fields, the need to promote interdisciplinary co-operation demand the creation of a specialized training so as to permit close collaboration between scientists and audiovisual technologists in the field of scientific research.»

Virgilio Tosi/International Scientific Film Association: Cinematography and Scientific Research, UNESCO, 1977, p. 39.



BIGGER PICTURE OF UNIVERSITY BASED VIDEO PRODUCTIONS



CO-DESIGN OF STAKEHOLDER INTERVIEWS

(1) Method of interview format

- (semi-) structured interview set-ups + additional key messages
- stakeholder: reflection and reformulation of key points in whole sentences
- less interpretation possibilities, data reduction

(2) The imagery representation of stakeholders & surrounding spaces

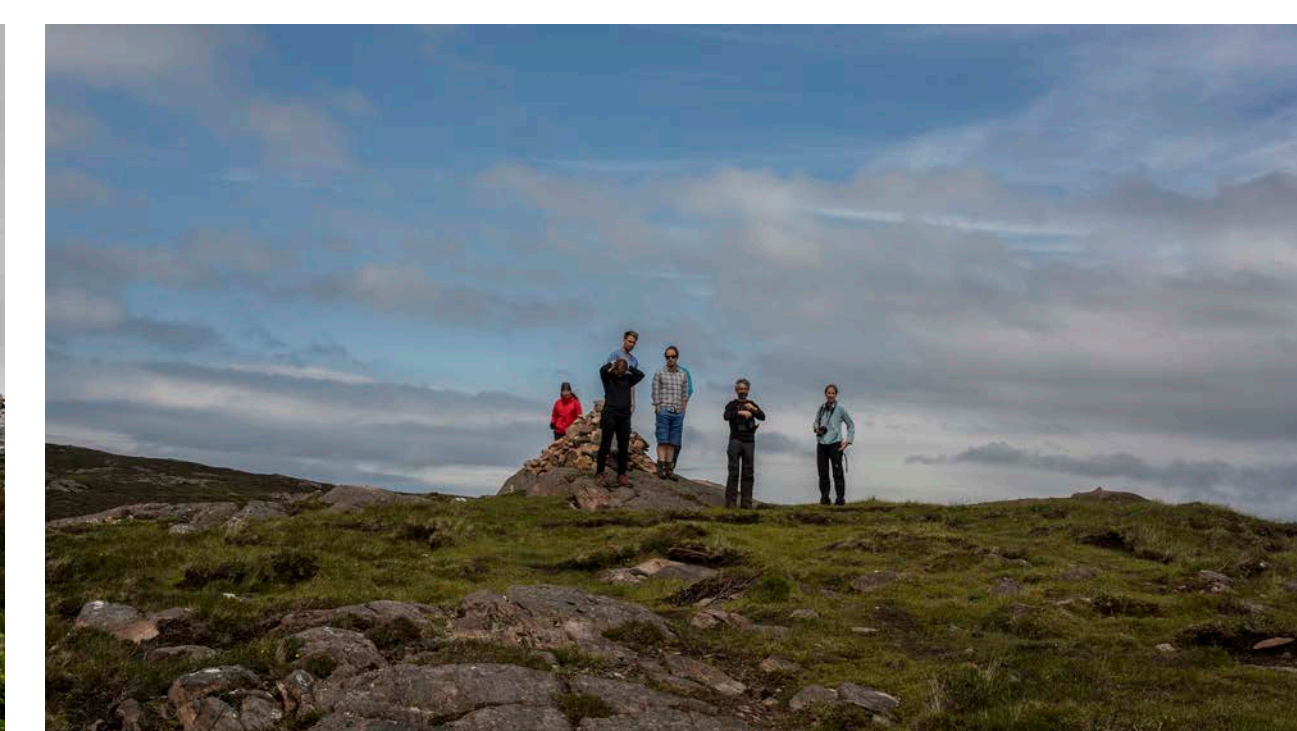
- in contrary to textual-oriented data, more information (visual)
- gestures and mimics are crucial in multimodal communication > high quality video shows a "window into the mind" (David McNeill) of the speaker
- there is no scenery with a raw and native imagery (not even when amateurs try to be unintentionally)
- each framing sends a message and is based on a decision making process (surrounding spaces, angle, size, closeness-distance, appearance of the stakeholder, clothes, hairs, accessories)
- needs: a reflected dialogue between scientist, filmmaker and stakeholder

(3) Hierarchy between scientists and filmmaker

- open, positive and honest communication between scientist and filmmaker
- if not, this can show up during the field work in front of stakeholders
- example: authorization of the filmmaker to interrupt the speech due some audio problems, re-asks for whole sentences or elaborate etc.

[...] The evolution of the relationship between film and science across the twentieth century, [is dominated] from a technique of visualisation controlled by scientists and subordinate to science, to being appropriated by non-scientists and becoming an equal partner in the production of knowledge. The reason why this evolution could happen in the first place is that there is more to knowledge production than scientists' work.

Jean-Baptiste Gouyon: «Science and film-making», in: Public Understanding of Science 25, 1, 2016, p. 10.



All the image still examples are based on the inter- and transdisciplinary field project about the 'Conservation Management Field Course Beinn Eighe, Highlands of Scotland' of the Chair of Ecosystem Management of the ETH Zurich, from Prof. Dr. Jaboury Ghazoul and Dr. Claude Garcia with the author.

Enhancing transformative research for sustainable development: mutual learning between research programmes

Flurina Schneider, Theresa Tribaldos, Centre for Development and Environment (CDE), University of Bern

Increasingly complex problems of global change challenge science to produce transdisciplinary knowledge that is relevant to advancing sustainable development. In this context, research programmes play a crucial role because they set the research conditions for their projects. However, there is still rather limited knowledge on how research programmes can best incorporate transdisciplinary approaches into designing and implementing tangible research agendas that ultimately support sustainability transformations.

To address this gap, the overall objective of our project is to facilitate reflection and learning within and between large research programmes in order to increase their accountability towards society and their contribution to sustainability transformations. The participation of societal actors combined with extensive empirical research will nurture learning processes. We will study 1) which context conditions are set by research programme schemes such as formal regulations which encourage or hinder transdisciplinary research; 2) how individual programmes incorporate these framework conditions into their own designs, internal procedures and activities; 3) how different researchers and societal actors respond to specific activities; 4) to what extent programmes contribute to real-world sustainability transformations; and 5) the formulation of best practices for sustainability transformations through research programmes. Programme schemes for investigation include the international Future Earth Programme, and the Swiss National Research Programmes NRP as well as the R4D Programme.

The expected results impact the designs of research programmes through discussions in programme reflection groups and recommendations for future programmes. Moreover, the project triggers the empowerment of societal actors in their recognition of responsibility and claims for more participation in research processes for sustainability transformations.

Enhancing transformative research for sustainable development: mutual learning between research programmes

Flurina Schneider and Theresa Tribaldos

Centre for Development and Environment (CDE), University of Bern



Source: sites.google.com, metteingvarsen.net, irevolutions.org, zess.uni-goettingen.de

Context of the project:

Complex problems of global change challenge science to produce transdisciplinary knowledge that is relevant to advancing sustainable development.



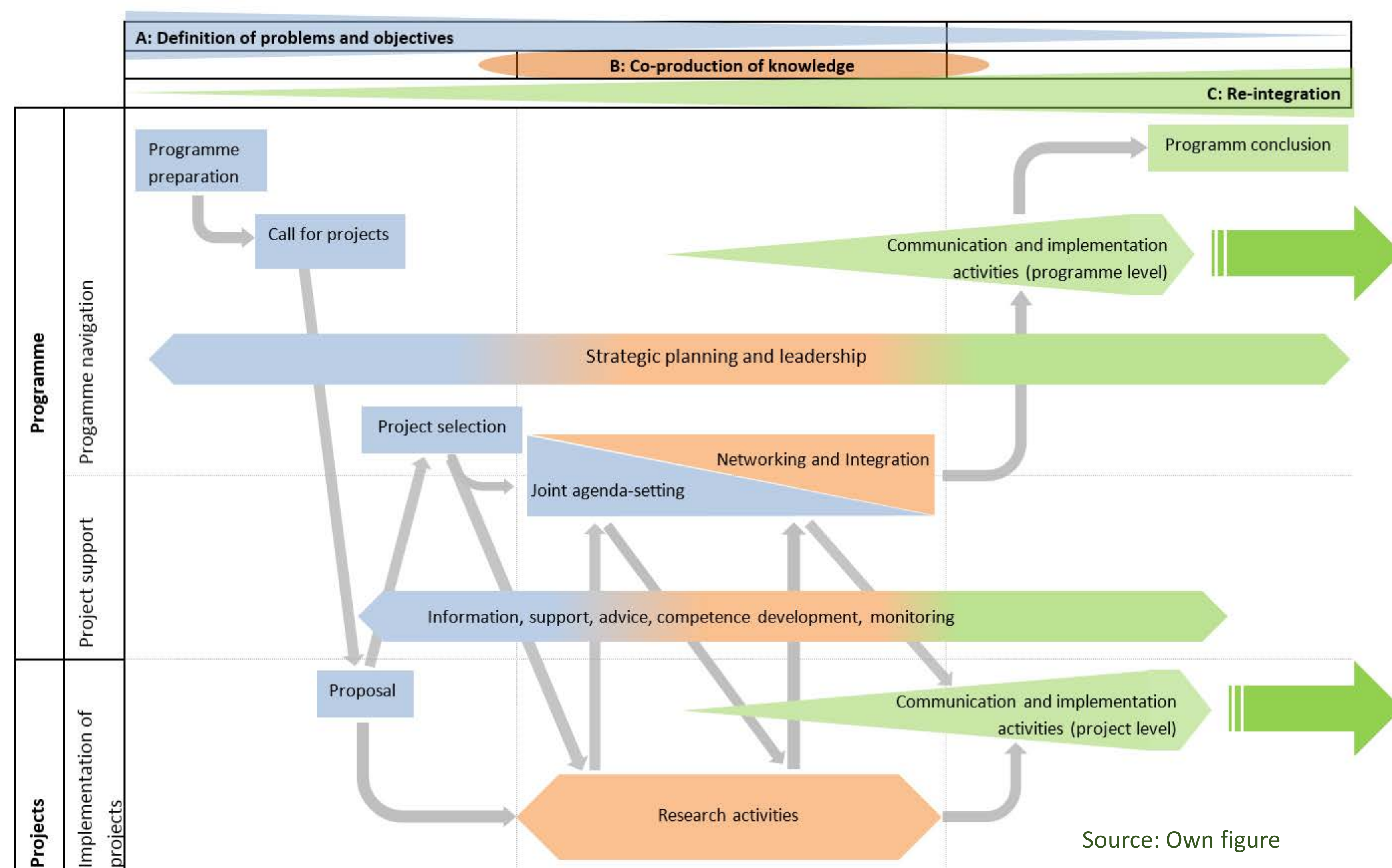
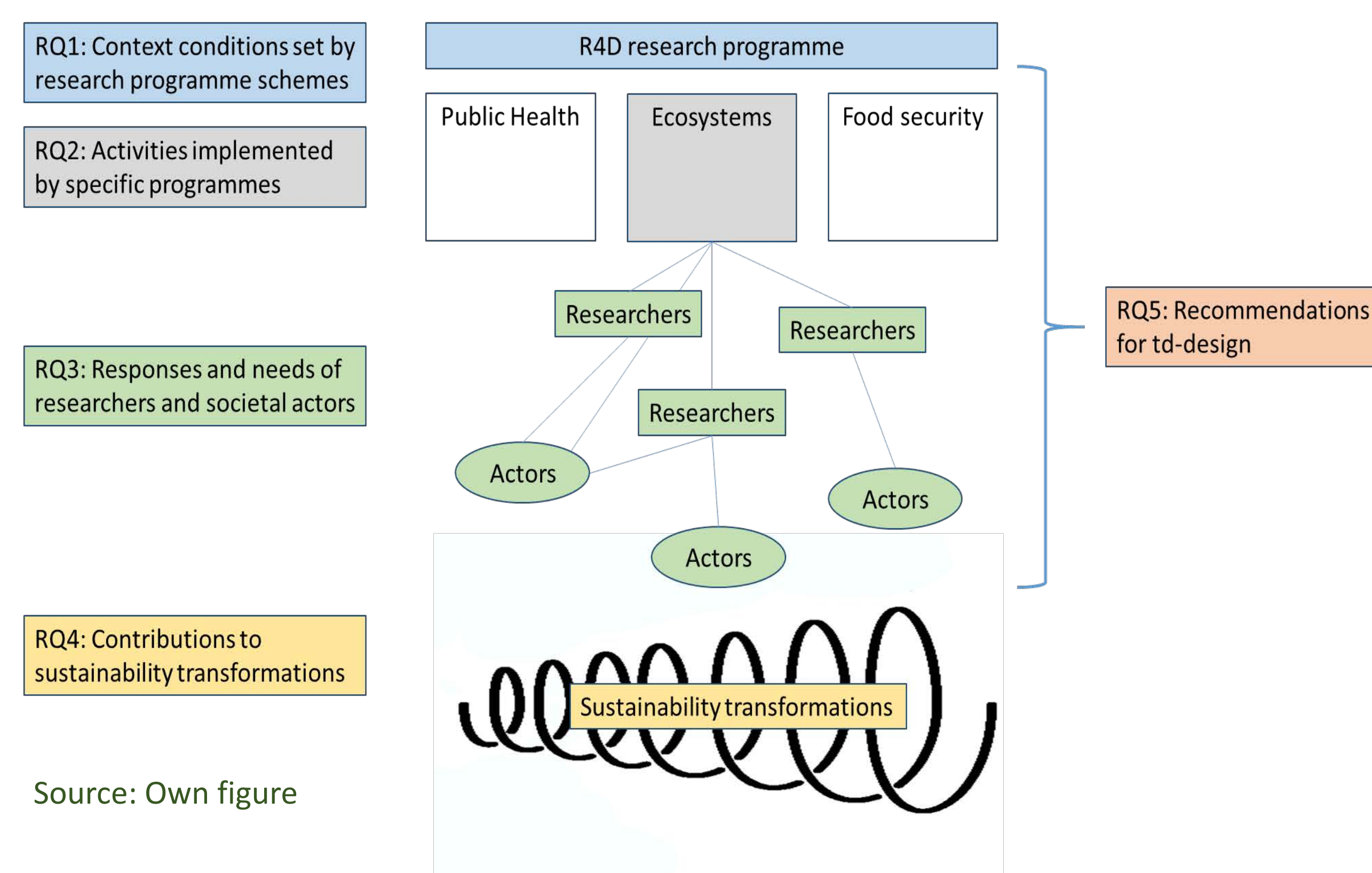
Source: Flurina Schneider

Overall objective:

Facilitate reflection and learning within and between large research programmes in order to increase their accountability towards society and their contribution to sustainability transformations. This process will be organised in joint reflexion groups with programme representatives, stakeholders and researchers.

Research questions:

- 1) Which context conditions set by research programme schemes encourage or hinder transdisciplinary research?
- 2) How do individual programmes incorporate these framework conditions into their own designs, internal procedures and activities?
- 3) How do different researchers and societal actors respond to specific activities?
- 4) To what extent do programmes contribute to real-world sustainability transformations?
- 5) Which best practices can we formulate for research programmes supporting sustainability transformations?



Participating programmes



Expected results:

- Recommendations for the design, internal procedures and activities of large research programmes.
- Empowerment of societal actors to exercise their responsibility and claims for sustainability transformations.
- Facilitate participation of societal actors in sustainability transformations.