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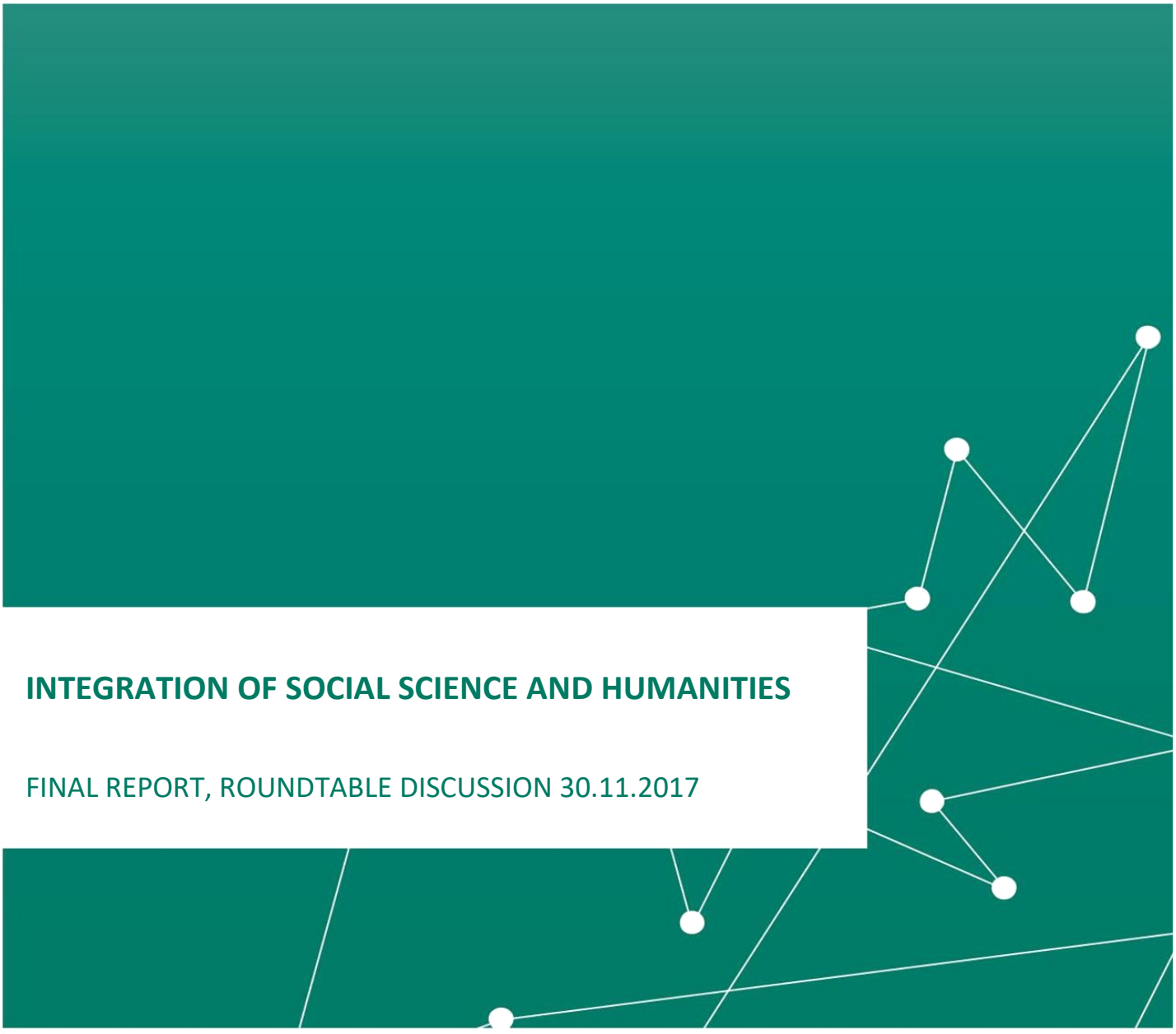

INTEGRATION OF SOCIAL SCIENCE AND HUMANITIES

FINAL REPORT, ROUNDTABLE DISCUSSION 30.11.2017

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ROUNDTABLE REPORT: INTEGRATION OF SOCIAL SCIENCE AND HUMANITIES

1. INTRODUCTION

On November 30, 2017 Copenhagen EU Office, University of Copenhagen and Copenhagen Business School organised a roundtable discussion on interdisciplinary research and integration of social sciences and humanities (SSH). The planning of the event had its outset in the experiences from the Excellence Programme for Interdisciplinary Research at the University of Copenhagen. The meeting was attended by representatives from the organising institutions, The Royal College of Surgeons, the Ludwig-Maximilians-Universität München and the European Commission.

The objectives were to:

- Share best practices of successful interdisciplinary research projects, in which the integration of SSH disciplines has a clear added value.
- Feed in to policies and funding mechanisms, which facilitate SSH integration in research and innovation projects.
- Take lessons from Horizon 2020 and further improve interdisciplinary research in future research and innovation programmes at EU-level.

The meeting comprised of presentations on 1) framework conditions for SSH integration and 2) examples of successful project examples with regard to SSH integration. The presentations were

followed by a discussion on three overarching topics; the main drivers of SSH integration, the role of funding programmes in promoting SSH integration and how to foster an interdisciplinary scientific culture.

2. RECOMMENDATIONS

The discussion can be summarised in the following recommendations:

- **New instruments should be introduced in future funding programmes** aimed at promoting interdisciplinary research to understand and address complex social and societal questions. The research community recommends the introduction of seed funding to establish networks and trust across the SSH and science, technology, engineering and math (STEM) communities within specific missions or challenges. New instruments may also encourage interdisciplinary education and student projects to foster experience among students, i.e. the next generations of young investigators.

- **The research community recommends a new approach to drafting calls for funding proposals** that opens up for more inclusion of disciplines relevant to the problem and the specific project. Experience shows that researchers have discipline-specific wording and that researchers from different disciplines interpret the content differently. This should be taken into account in relation to drafting calls.

- **The SSH community need to create new role models and showcase** interdisciplinary experiences to inspire the wider community. It implies showcasing the added value and type of impact that SSH can create towards funding agencies and towards the STEM disciplines. In terms of networking, regular interdisciplinary conferences, showcasing projects, discussing progress and experiences and facilitating networking are recommended. Furthermore, it is recommended to learn more from the less successful interdisciplinary projects to identify possibilities to improve the framework conditions as well as scientific cultural obstacles.

3. SUMMARY OF THE PRESENTATIONS

Tobias Strøm, Policy Officer, DG Research & Innovation, European Commission presented the EU policy and state of play in SSH integration. The Commission is using a flagging system to raise awareness of topics with a specific need for integrating SSH in projects. The number of SSH-flagged topics is increasing. The results of the SSH monitoring report published in February 2017 (reporting on the calls for 2015) was presented. The main challenges for the Commission is to improve the design of interdisciplinary topics, open up the topics to the most under-represented SSH-disciplines such as social anthropology and the humanities and improve information to and mobilization of the SSH communities. The interim evaluation of Horizon 2020 and the recommendations of the "High-Level Group on maximising impact of EU Research and Innovation Programmes" both emphasize the importance of cross-disciplinary collaboration in research and cross-sector involvement as essential to address challenges.

Nikolaj Burmeister, head of Secretariat, Dean's office at Copenhagen Business School (CBS) presented the key findings from the report "**The role of social sciences and humanities in addressing societal challenges**" published in October 2017 by CBS and the Danish think tank DEA. The report explores opportunities in overcoming the difficulties in SSH integration in strategic research funding. The difficulties are e.g. that researchers typically aim at producing excellent research and publish articles within their field, the perception that calls for strategic research projects seem to address the STEM communities more than SSH and the nature of SSH research that looks at complexities, not solutions. The report recommends 1) Establishing long-term strategic research programmes with broad political support. The programmes should focus on challenges, not pre-identified solutions, 2) interdisciplinary approach to the development of calls and the evaluation of proposals, 3) investments in building "fertile soil" for collaboration across scientific disciplines including common language and shared definitions and 4) fostering relations across disciplines at the institutional level and set up an organizational framework for interdisciplinary research. Within the research communities, well-established researchers should take responsibility in forming and maintaining interdisciplinary collaboration.

Professor David Dreyer Lassen, University of Copenhagen presented "Social Fabric" which is an interdisciplinary research project focusing on the formation and importance of social networks. The project contributes to further developing methodologies and ethical issues in relation to big data research. The project engages researchers both natural sciences, social sciences and the humanities. Most big data is about human, individual and collective behavior. Therefore, SSH theoretical frameworks are essential to understand and unfold the complexity of the big data field. Social scientists are excellent at understanding policy regulations thereby coupling the theoretical work to policy development and regulation. The project has led to excellent research papers including good monodisciplinary papers, adoption of the research results by individual researchers, joint cross-disciplinary teaching, external funding and possibilities for new projects that build on Social Fabric. The barriers include different traditions, e.g. with respect to publishing, the assessment of interdisciplinary work, the time horizon in working together and the access to funding.

Professor Kevin McGuigan, The Royal College of Surgeons in Ireland presented the "WATERSPOUTT" project. WATERSPOUTT is a Horizon 2020 project, which aims at providing safe drinking water to communities who rely on unsafe sources. The project runs a technological development programme to advance three applications based on Solar Disinfection (SODIS), which can make drinking water safe. In parallel, the projects implements a social science programme to facilitate the adoption of the technologies in the rural Africa communities. The SSH-based participatory methodology resulted in the choice of an alternative solution to the one suggested by the technical research and is essential to secure the actual uptake of the developed solutions. The main experienced barriers relate to different use of language and expressions across disciplines and research communities, and difficulties in recognizing how different disciplines can complement each other.

Professor Bente Stallknecht, University of Copenhagen presented "Governing Obesity" which seeks to provide novel effective interventions to govern obesity at the societal and individual level, from an early stage towards the morbidly obese individuals. The interdisciplinary approach allows the researchers to better address the complexities related to obesity. The project has pushed the methodological edge and developed new unique intervention trials combining biomedical, psychological and ethnographic data. E.g., it aims via transdisciplinary algorithms to predict which patients would benefit from gastric bypass surgery. The project builds on previous experiences aimed at establishing a truly integrated interdisciplinary obesity research community at University of Copenhagen. Some of the collaborative successes of the project includes the involvement of SSH research on equal terms with the biomedical researchers, and the research group experiences that the young generation of researchers has become attractive on the job market because they have worked interdisciplinary. The main barriers relate to different traditions across disciplines and it takes more time to create trust among the partners. The project work package on "interdisciplinary knowledge" (aimed at studying the collaboration) should have been larger because it brings in a lot of knowledge on how to improve interdisciplinary work. The funding opportunities are essential in pushing the boundaries of interdisciplinary collaboration.

Professor Christof Mauch, Ludwig-Maximilians-Universität München presented "Transformations in Environment and Society". The agenda is to examine the relationship between environmental and social change, and in particular the reasons, i.e. the social engines, political factors, cultural perceptions, and environmental conditions, behind these transformations. The project - even though it works with international fellows from all over the world - has transformed the university and contributed to communication across disciplines (social sciences, natural sciences and natural sciences). Communication between researchers has improved and the project has helped to create - basically en passant - a new multidisciplinary doctoral and certificate program with cross-disciplinary university boards. In addition, the project has opened the university through the invitation of experts from outside. Key to the success for the project was the existence of an outreach partner - in this case the Deutsches Museum. This project is being generously funded by the Federal Government of Germany (Ministry of Research and Education) through its "Free Space for the Humanities Program" (which got the highest evaluation of Ministry projects). EU funding for similar projects does not exist. The focus on

applied research and scientific terminology is perceived to make it close to impossible for top scholars in the humanities to receive EU funding. Horizon 2020 calls are perceived as inaccessible by a majority of the humanities community. This is in part because terminology and expressions vary across disciplines. More importantly, the calls sound like they were written by social and natural scientists or engineers. The advantages that the humanities bring with them, in terms of communication and outreach and a strongly reflective approach in conceptualization, are missing in EU calls.

4. ROUNDTABLE DISCUSSION

The discussion evolved around three issues 1) the main drivers of SSH integration, 2) The role of funding programmes in promoting SSH integration and 3) Fostering an interdisciplinary scientific culture.

Main drivers of SSH integration: The understanding of SSH integration was discussed among the participants. From a STEM point of view SSH is any discipline that studies humans, human and social interaction and social challenges. Interdisciplinary collaboration allows researchers to interpret a certain problem in a different way. The starting point is a certain question that we would like to answer which needs input from different disciplines. It was argued that "STEM integration" is equally important, as SSH integration, i.e. achieving successful interdisciplinary research requires mutual integration. It is clear that STEM disciplines face more opportunities in Horizon 2020, although the third pillar of Horizon 2020, which focuses on complex societal challenges explicitly and implicitly promotes SSH integration. Indeed, the development of effective solutions to complex challenges (e.g. environmental issues within a socio-economic context) requires an understanding of people, their motivation, their background, culture and inequalities. Participatory research, also promoted in parts of Horizon 2020, also drives SSH integration. Therefore, there is a clear need for SSH in addressing the challenges through Horizon 2020. The European Commission recognizes that in some areas time may be a barrier in addressing calls across borders and disciplines. The fact that many researchers stay within their disciplinary comfort zone is an additional problem in encouraging interdisciplinary projects and SSH integration.

The role of funding programmes in promoting SSH integration: It was argued that researchers from different disciplines interpret problems differently and therefore address them differently. Therefore, it is suggested that the funding agencies including the European Commission should be more experimental when drafting calls and include input from people with a variety of backgrounds in the drafting processes. SSH communities have a tradition of working in small groups. This is in contrast to the large partnerships required in interdisciplinary strategic projects. Furthermore, it takes time to build the necessary relations across disciplines. Therefore, it is suggested by the research community to invest small amounts of low-administrative cost seed funding in interdisciplinary networking activities to create the relationships and trust that are essential elements for successful projects and impact. In relation to Horizon 2020, many stakeholders argue in favor of more bottom-up calls in societal challenges as a means to encourage interdisciplinary projects when addressing complex challenges. The European Commission would be interested in hearing about best practice examples on a regional or national

level to further strengthen the practices of evaluating interdisciplinary proposals. The upcoming mission-oriented approach to research implies that future proposals should deliver measurable impact and make a difference for society. It was mentioned that some SSH communities have a more qualitative approach to impact.

Fostering an interdisciplinary scientific culture: It was argued that the incorporation of interdisciplinary approaches should be implemented through education and the young generation of researchers. In particular, summer schools are effective ways of bringing together students across disciplines while continuing the value of in-depth disciplinary education. In addition, more showcasing of the added value of successful interdisciplinary projects would raise awareness of the benefits for scientific results and careers. It was suggested to organize European conferences on a regular basis aimed at discussion, exchange of knowledge and networking across disciplines. In relation to the sustainability of interdisciplinary partnerships, it was argued that education is the most secure long-term funding source, i.e. setting up study programmes that encourages interdisciplinary collaboration and joint teaching.

ANNEX 1: WORKSHOP PROGRAMME

TIME	PROGRAMME
11:30-12.00	**Arrival and informal lunch**
12:00-12:10	**Welcome and introduction**
	SETTING THE SCENE – INTEGRATION OF SOCIAL SCIENCE AND HUMANITIES
12:10-12.25	**European Commission on priorities and state of play regarding SSH integration** Tobias Strøm, DG RTD, Policy Officer - Seconded National Expert
12:25-12:35	**Presentation of key findings from the workshop and report "The role of social sciences and humanities in addressing societal challenges"** Nikolaj Burmeister, Head of Secretariat, Dean's office, Copenhagen Business School
	PRESENTATION OF BEST PRACTICE CASES
12:35-12:45	**Presentation of "*Social Fabric*"** Professor David Dreyer Lassen, University of Copenhagen
12:45-12:55	**Presentation of "*WATERSPOUTT*"** Professor Kevin **McGuigan,**The Royal College of Surgeons in Ireland
12.55-13.05	**Presentation of "*Governing Obesity*"** Professor Bente Stallknecht, University of Copenhagen
13:05-13.15	**Presentation of "*Transformations in Environment and Society*"** Professor Christof Mauch, Ludwig-Maximilians-Universität München
13:15-14.40	**ROUNDTABLE DISCUSSION** • What are the main drivers for SSH integration? • How can funding programmes promote SSH integration? • How could interdisciplinary research paths be fostered from education and training of researchers?
14:40-15:00	**CONCLUSIONS**

ANNEX 2: SUCCESFUL INTERDISCIPLINARY PROJECTS

1. SOCIAL FABRIC

Principal Investigator: Professor David Dreyer Lassen

University: University of Copenhagen

Name of research project: "Social Fabric"

Project period: 2014 – 2018.

Research disciplines involved in project: Anthropology, economics, engineering/network science, philosophy, physics, psychology, public health, and sociology.

Introduction to the project
Social Fabric aims at mapping and improving the understanding of social networks and interactions based on big data. The project will push the boundaries of quantitatively and qualitatively based understanding of social networks by measuring and utilizing a new source of data, which consists of recordings of social interactions at a multitude of communication channels using digital tools in data collection.

Social Fabric specifically addresses:

- The spreading of information in social networks, across communication channels and the aggregation of information for predictive purposes,
- The formation of friendships and networks, how offline and online behaviours and personalities correspond and the role of digital media in mediating human interaction,
- The emerging ethical and methodological questions that are raised in relation to the big data research field.

The main (expected) societal impact of project:
Understanding dynamic networks, peer effects in education, human mobility.

Main gains of employing interdisciplinarity
A shared object of study (networks, group behaviour), but different traditions, allows the various disciplines to learn from each other in a shared environment and with shared focus. This strongly raises incentives for engaging with novel and alternative forms of analysis that may prove – and have proved – crucial value added both in terms of scientific success (publishing) and societal impact. Ethics and privacy study was not add-on, but integral part of overall project, with researchers themselves also as objects of inquiry.

Success criteria
Joint papers between, e.g., social science and science/engineering, and social science and public health, employing methods and theory building from both worlds. Social science understanding of behaviour crucial for model building and interpretation of science/engineering big data approaches, but approach crucially needs social scientists who are also willing to spend considerable time learning the language of other disciplines – and vice versa. Long-term

commitment necessary, developing shared language takes (much) time, good chemistry important too.

Barriers
Interdisciplinary efforts are for them who want to do -and see value in – new topics and novel approaches. If in the end one wants to do the same old, and excel only in mother discipline, interdisciplinarity is not the way to go about it. Everyone needs to be open to publishing outside of the "own" discipline. Needs methodologically inclusive leadership conscious of different fields' approaches and traditions and focused on enabling cooperation rather than strict publishing in early days of a project. Standard issues with project owners vs administration (e.g. head of departments) from different faculties.

2. WATERSPOUTT

Principal Investigator: Professor Kevin McGuigan

University: The Royal College of Surgeons in Ireland (RCSI

Name of research project: "WATERSPOUTT".

Project period: June2 016 to May 2020.

Research disciplines involved in project: Public Health, Medicine, Social Science, Sociology, Anthropology, Engineering, Microbiology, Chemistry, Physics, Product Design

Introduction to the project
WATERSPOUTT aims to provide safe drinking water to those rural communities who rely on unsafe sources. The consortium is conducting a technological development program to advance three technological applications based on the solar water disinfection (SODIS) point-of-use household water treatment and storage technique. In parallel, a social science program has been developed to ensure that the technologies are adopted by the target communities in rural Africa in a sustainable and economically viable manner.

The main (expected) societal impact of project
In consultation with the proposed end-user communities WATERSPOUTT will develop, test and trial three innovative affordable SODIS technologies which will provide safe drinking water at the point-of-use within vulnerable communities who otherwise would have to rely on unsafe water sources. Provision of safe drinking water in low to middle income environments will reduce infant mortality and morbidity, improve education (through higher attendance rates) and impact positively on family finances (increased availability of caregivers for income generating activities and reduced medication and transport costs associated with care of sick children)

Main gains of employing interdisciplinarity
STEM Science projects which hope to provide technological solutions to problems which effect communities are doomed to failure unless they engage meaningfully with the people that they hope to assist. There is no point developing a system for providing safe drinking water unless that

is seen as a priority problem by the potential users and the solution that you propose is viewed as workable and feasible by the people who might benefit from it. By involving the community in the design and trial of the technologies they develop a sense of ownership in emotional investment that will accelerate adoption of the end product in the post-project phase.

Success criteria

Since we are only 18 months into the 4 year project it is much too early to say whether the project has been successful yet. However, the early consultation sessions with community groups and users in Malawi, Ethiopia, Uganda and South Africa has certainly produced significant changes in the design of the prototypes and the manner in which we intend to implement the evaluation of the field studies. We would view a successful project outcome to be that the technologies have been evaluated, accepted and adopted by the end-user communities and these communities have then acted as promoters or ambassadors for these innovations on a regional/national level.

Barriers

STEM and SSH researchers are two communities separated by a common language. While we may use the same vocabulary specific words tend to have startlingly different meanings and usages within the specific disciplines. The two communities have radically different approaches to research. STEM scientists attempt wherever possible to reduce the number of uncontrollable variables so that they can simplify, as much as possible, the algorithms that they hope to use to model a system. SSH researchers on the other hand seem to actively seek out places of social conflict because therein are to be found the most interesting human interactions.

So far, I would suggest that the STEM scientists have probably exasperated the SSH researchers by their apparent reluctance to engage with the community representatives and listen to the feedback generated there. Conversely I think the STEM researchers are somewhat bewildered by the frequency with which the SSH experts wish to put minor modifications back in front of the community representatives for approval.

An example of the need for STEM/SSH interaction can be found in the preliminary discussions surrounding the proposed volume of one of the WATERSPOUTT innovations, the SODIS transparent Jerrycan (TJC). Initial field studies in Northern Ethiopia indicated that 20-25L jerrycans were routinely used for water collections by the local users. The STEM designers thus suggested that 20-25L was the optimum volume range for the prototype TJC. However community workshops run by SSH researchers in Uganda revealed that the female water collectors felt that 20L (which would weigh 20Kg) containers would be too heavy for them to carry. This would mean that job of collecting water would therefore have to fall to the male partners in the household and this would be unacceptable. Without regard for the SSH consequences of their decisions, STEM researchers would have unintentionally introduced domestic discord into these Ugandan rural households. Most STEM scientists would wonder why Ugandans water collectors would refuse to carry 20L containers while their Ethiopian counterparts raise no objections. SSH scientists would be amused to think that anyone might expect two geographically and culturally disparate communities to respond in a similar manner. The net outcome of this interaction is that the 20-L TJCs will be field evaluated in Ethiopia while smaller volume TJCs will be considered for Uganda if the Ethiopian study is successful.

3. GOVERNING OBESITY

Principal Investigator: Professor Bente Stallknecht

University: University of Copenhagen (UCPH)

Name of research project: "Governing Obesity" (GO), Grant: DKK 31.721.000 (4.2 million euro)

Project period: 2013 – 2017

Research disciplines involved: Biomedicine, sociology, anthropology, law, bioethics, health policies, philosophy, public health, history, genetics, nutrition, epidemiology, ethnology, exercise physiology, psychology, and science and technology studies.

Introduction to the project
A core assumption behind GO is that obesity is not "one" problem, but rather should be viewed as a complex challenge, which must be tackled differently depending on age, stage of obesity and severity of medical co-morbidities. This assumption is dealt with in five interconnected interdisciplinary work packages, which aims to:

- Address the issue of responsibility for obesity ranging from the political to the individual level and the related ethical and other dilemmas to which obesity interventions give rise.
- Address the scientific basis for early life interventions to reduce obesity later in life.
- Evaluate health effects of physical activity in various time domains of everyday life and address the potentials and barriers for physical activity becoming a daily routine.
- Address the multiple factors determining the large variation in weight loss after bariatric surgery in severely obese adults and identify patients not likely to benefit sufficiently from surgery.
- Explore and document GO as a novel interdisciplinary approach within obesity research and further analyse the practical dimensions of organising interdisciplinary research with the aim of showing 'best practices' in this area.

For further introduction to GO and a 2-minute presentation movie see http://go.ku.dk/about/.

The main (expected) societal impact of project
The result of GO shows how efforts for governing obesity can become more effective through new evidence-based approaches in diagnostics, prevention and treatment, how societal and individual interventions can be optimized, and how unintended and negative effects such as increased mortality, counterproductive actions and stigmatization can be avoided.

Main gains of employing interdisciplinarity

- The interdisciplinary approaches allow us to address the complex challenge and questions related to obesity, which could never be addressed by a single discipline. We have established unique intervention trials and publications combining biomedical, psychological and ethnographic data.

- Young scientists have gained experience from interdisciplinary collaborations and areattractive for national and international collaborative research as well as for the industry.

- Preparedness of the involved researchers to engage in Horizon2020 applications and influencing the national and international research agenda.

- Dialogue with stakeholders in the primary health care and health policy area is boosting the societal impact of the research.

- GO has worked closely with The Science Theater on the development and production of the play „Live life in style", which combines theatre, music, gamification and interdisciplinary research in communicating knowledge and dilemmas of health and lifestyle in upper secondary schools.

- CoNavigator – a gamified tool for creating coherence in interdisciplinary courses (Lindvig, K; Hillersdal, L ; Earle, D (2017). Interdisciplinary Tool Helps Fast-Track Interdisciplinary Learning and Collaboration. Integrative Pathways, vol. 39 (2))

Success criteria

- The Social Science and Humanities (SSH) researchers have been involved from the start on equal terms with the biomedical researchers and have been instrumental in formulating the research questions and projects.
- Building on the research and collaborations from the former large scale research initiative at the University of Copenhagen ('Food, Fitness & Pharma', 15,8 million Euro, 2009-14), GO is 'born' interdisciplinary and is designed to address research questions that call for an approach cutting across natural and social sciences.
- SSH researchers have seen this initiative as an opportunity to continue their engagement in the obesity field.

Barriers

- Cultural differences between research disciplines.
- Addressing research questions across biomedical and SSH disciplines is time consuming.
- Few high impact journals publish studies bridging across SSH and biomedicine.
- Shortage of national funding for interdisciplinary projects and for postdocs has limited the abilities to attract additional funding to make fully use of the unique data collected in GO.

The work package exploring and documenting the interdisciplinary approach was based on funding for one postdoctoral researcher, which has limited the number of research questions that could be addressed.

4. TRANSFORMATIONS IN ENVIRONMENT AND SOCIETY

Principal Investigator: Professor Christof Mauch

University: Ludvig Maximilian University Munich (LMU), the Rachel Carson Center.

Name of research project: "Transformations in Environment and Society".

Project period: 2009 – 2021.

Research disciplines involved in project: History, Anthropology, Geography, Philosophy, Ecocriticism, Sociology, Political Science, Ethics et al.

Introduction to the project
The project aimed at establishing a Center for Advanced that would bring together fellows from different disciplines and from all over the world. In phase I scholars worked on six different themes (e.g. Natural Catastrophes and Cultures of Risk, Environmental Knowledge, Resource Scarcity), in phase II (since 2015) we decided to advertise fellowships under a big umbrella topic "Transformations in Environment and Society". The focus of all research is on the relationship between environmental and social changes, i.e. the social engines, political factors, cultural perceptions, and environmental conditions—behind these transformations. Fellows have come to Munich to work on their own projects but they also had the opportunity to develop new projects with scholars from other disciplines - e.g. work on special issues of journals or workshops. In phase II we began to advertise interdisciplinary fellowships.

The main (expected) societal impact of project
Through Outreach projects (film, exhibitions, art projects, public discussions across disciplines) - we do not do applied research (like the sciences)

Main gains of employing interdisciplinarity
- Identifying new research topics (e.g. Neurohistory, Human Niche Construction)
- Identifying umbrella topics (such as Anthropocene and Transformation of Landscapes) that lend themselves to collaboration across disciplines.

Success criteria
Rising public, student and scholarly interest in environmental topics: e.g. through establishment of a now popular MA program environmental studies; popularity of exhibitions (Anthropocene exhibition: 300.000 visitors); popular web publications (Arcadia Project)

Barriers
Terminologies are very different across disciplines. Interdisciplinary research (unless narrowly understood) is negative for careers, does not have real advocates in the humanities (and for good reasons), and does not lead to success with national applications.

All together we have become increasingly sceptical about interdisciplinarity.