Overcoming Obstacles and Disincentives to Climate Change Mitigation

A cross-cutting approach by human and social sciences

Final Report

Enabling Societal Transformation in the Face of Climate Change (SOLSTICE)

1. Identification of the project

Project full title: **Overcoming Obstacles and Disincentives to Climate Change Mitigation: A cross-cutting approach by human and social sciences**

Project acronym: 2o2cm

Starting date: 01/12/2020

End date: 31/05/2024

Reporting period of this report: 01/12/2020 - 31/05/2024

Project website: https://change4climate.eu/

Lead Project Investigator (name, title and affiliation): prof. Andrea Catellani, UCLouvain, Belgium

Project partners: Dr. Louise-Amélie Cougnon (UCLouvain), Prof. Olivier de Schutter (UCLouvain), Prof. Serge Guimond (Université Clermont Auvergne), Dr. Armelle Nugier (Université Clermont Auvergne), Prof. Michel Streith (Université Clermont Auvergne), Prof. Øyvind Gjerstad (University of Bergen), Prof. Kjersti Fløttum (University of Bergen).

2. Objectives of the Project *(max. 1 page)*

Please summarize the key objectives of the project, indicating if they are still valid.

The **main objective** of our research project was to improve knowledge of the disincentives and obstacles to behavioural change and attitudes related to climate change mitigation from different perspectives of human and social sciences. The cooperation between specialists in linguistics, semiotics, anthropology, and psycho-social analysis was aimed at improving the state of the art, by combining expertise on texts and images as indications of sense building by individuals and cultures, and expertise on social and psychological factors that influence behaviours and attitudes. We define obstacles and disincentives as all types of factors, both unknown and consciously known by people, that can prevent or weaken pro-climate behaviours. We worked on these obstacles not as obstacles *per se*, but from the point of view of *their presence in the subjective experience of people* as it can be analysed by studying in particular their discourses and communication. This is our basic epistemological option, which makes the difference in relation to the analysis of obstacles from a political, juridical, logistical, economic, etc. point of view.

Based on the existing literature in these different research fields, as well as a richer understanding of the disincentives and obstacles to climate change mitigation, the **second objective** was to contribute to the improvement of effective communication methods to reduce disincentives and to better identify innovative ways to communicate on climate change mitigation attitudes and behaviours of citizens. We decided to focus on a crucial communication support of our times, (short) video, and we produced 3 video projects, to experiment different techniques (interaction, narrative form and participation-crowdsourcing) concerning communication about climate-friendly practices and themes.

3. Scientific activities and results

Please provide information on the most important scientific activities and technical results from the project, including any collaborations with other projects.

All reports, corpora, and publications linked to the project are available on the website of the project, in the "toolbox" section. We propose here a synthesis that reproduces a part of the main report of the project, available via Belspo.

We articulated the work in 3 parts: (1) to identify the construction of awareness and understanding of CC in **discourse** practices, both in surveys and on digital social platforms; (2) to define the production of **knowledge** related to CC in a specific physical location; (3) to evaluate the impact of **psychological variables** on the production of CC meaning and on action in favour of CC.

Concerning discourses, the answers to open-ended questions collected in the 3 countries pinpointed a specific challenge related to the identification of "who should initiate action" that would lead to systemic changes: this vagueness can be interpreted as a sign of a difficulty for individuals to make sense out of a messy and complex reality. The narrative universes that we identified in the surveys in the 3 countries are often unclear concerning the roles of *heroes*: who is in charge, and how do we concretely operate for change? A minority of climate sceptics, or negationists, were identified, and they form a "discursive bubble" difficult to path through, given their refusal of any scientific consensus. Differences in perception of obstacles exist across countries: oil in Norway and lobbies and businesses in France are identified as obstacles to pro-climate shift, while nuclear power has been cited by some Belgian respondents as a contribution to climate change mitigation.

On social media platforms, like Instagram, individuals often express difficulties and indicate obstacles concerning the organisation of pro-climate actions in their concrete life; most of the time, they indicate economic and social obstacles. Governments and businesses are often seen as *villains* in social media comments, where individuals often describe the system as difficult or impossible to change. Egoistic and hedonic values, linked to self-interest, are connected to actors that create obstacles to transition. Social media abound in recipes for change, but concrete information on means of action is still missing. Analysis on Twitter-X publications shows a distinction in the discursive universes of media and population on one side, and politicians on the other, perhaps creating a hiatus in communication between these segments. The study of tweets also shows that the expression of difficulty towards CC has increased through time, which might indicate that people experience more difficulties in taking action against CC, or that there is more awareness of these difficulties. The part of the 2O2CM project conducted in a natural park in France is in line with these results: this study reported a strong perception among the interviewees that the system is hard to change, and that there is resistance in

organising pro-climate actions in their real lives. The study also revealed that individuals from the park do experience CC realities in their everyday life, in relation to their concrete situation, needs and problems, and produce a variety of knowledge and beliefs in relation to it.

The social-psychological part of the study offered new and interesting paths related to attitudes and behaviours towards CC. The mismatch model affirms that the opposition between norms and attitudes can motivate people to act in favour of social change, and this offers an interesting perspective: minorities can act in favour of change if their willingness to change norms is important. Conformism is not a universal destiny, and the perception of being a minority is not (necessarily) a brake to action: more slow and private influence of minorities can operate. This can encourage actions and also communication interventions aimed at showing that minorities can have an effect. Communication can contribute to social change by offering useful clues to people and activating their willingness to change norms. Active minorities can in return produce forms of "constructive deviance" from dominating norms.

The overall study of communication practices among the population and their reaction to news content, and political coverage on Reddit, Instagram and Twitter-X has also led us with the idea that there is a strong need for targeted communication about climate change issues. We recommend to diversify modes of communication whether it be among younger or older people: social media are inevitable among the youth, but not sufficient enough, and traditional media are not the only media among senior consumers. The study of media reception has shown that guilt is not the most appropriate source of motivation in communication campaigns: the presentation of inspiring role models is more effective, whether they be CC opinion leaders or lay people faced with everyday challenges.

Communication by scientists and other actors should use concrete experience and striking images, narratives, and involve the public in research, focusing on people, with the choice of the right and adapted images, and a focus on the right moments to change habits. We suggest that framing personal experiences and solutions should be internally consistent, culturally relevant, and feasible or concrete in the perceptions of the audiences. In the transport and energy sectors, controversies appeared in our data concerning Instagram comments, regarding the use of electric vehicles, the transition to renewable energies, fossil fuel taxonomy, and nuclear energies. The communicators may focus on the controversies that appear in the comments and provide concrete information about existing and new technologies. To avoid further criticism of the posted content, this information should be supported by scientific sources. Since biospheric values are sometimes highlighted in the obstacles to the energy transition, these values should be better explained by communicators. Specifically, communication on social media can focus on the existing solutions used in the renewable energy industry to mitigate nature pollution and improve nature protection factors.

As replicable materia are concerned, we created several video formats that follow the recommendations detailed above. We developed in particular 3 main types of videos : an interactive video on object libraries, a narrative video on engagement for climate, and a participative, crowdsourced video on day-to-day practices and concrete impacts of CC. Participative videos were created in participation with a class of 80 Master students. Initial analysis of video reception shows that narrative and interactive video communication can help in attracting attention to proclimate behaviours and solutions like object libraries and public engagement, in a context in which the public

attention is a rare resource. 360 clip videos (stories) were collected and we will start to build up participative videos from this materia in the following weeks.

Our teams collaborated with different non-academic partners (see the main report). We collaborate also with researchers involved in two other scientific projects: the *Seniors4Climate* project, and the *Youth, Communication and Climate* project. Concerning the Norwegian team, our project has benefited from interaction with other LINGCLIM research projects, such as "Living with climate change".

4. Communication and dissemination activities *(max. 1 page)*

Please provide information on the most important communication and dissemination activities from the project. This may include (but is not limited to) engagement with the public (including media and communication), engagement with policy makers or decision makers (including the private sector), engagement with science communities, and elaboration of policy briefs.

Concerning communication tools, a website has been created, to host all data and outputs of the project, and we distributed 4 issues of a newsletter to 40 subscribers. The publication of scientific reports and corpora are always announced on digital social networks, such as LinkedIn, Researchgate, Facebook and Academia. The **Belgian team** also spread the video contents that were created to associations, either NGOs related to climate change (video about public engagement), or to a series of object libraries and “repair café” organisations (interactive video). The participative videos will be published on the 2O2CM website and on the UCLouvain-MiiL website, in addition to publications on the Instagram page dedicated to the participative experience. For this video, the engagement with the public was developed from the start, given the type of experience (participation of 80 students and their social networks).

The **French team** has worked in connection with the management of the Réserve Naturelle de Chastreix-Sancy and organised meetings and activities in collaboration with them. Rose Harrington (Phd student of the project) participated in the Fête de la Science organised by the University of Clermont Auvergne (October 7-17, 2022) to present the first results of her thesis and to raise awareness among the young public about climate change and the collective and individual levers to face it. She also participated in an event called “women in sciences” in June 2022 to present to high school students her PhD results. The **Norwegian team** has participated in events organised in collaboration with the public library in Bergen, Bergen Global, a forum for research and debate on global challenges, and the Vestland regional authorities.

The main element of our politics of valorisation and dissemination has been the hybrid (online and on site) **final conference**, organised in Louvain-la-Neuve and online on May 23 and 24, 2024. This event saw the presentation of 42 scientific papers, two keynote speeches (prof. Elodie Vargas from France, prof. Linda Steg from the Netherlands), 5 posters, and a roundtable with 4 experts from Belgian NGOs (Greenpeace, Ecoconso, Canopea which is the federation of 130 Belgian environmental associations, and Empreintes). Two other JPI Climate Solstice projects (Just Scapes and CLEAN Cultures) were presented during the conference.

We promoted this event in different ways, in particular via mailing lists and digital social media, in order to reach both the academic public and other people interested in the subject. The conference was supported also by the COST project SHIFT, which funded the participation of a young researcher from Portugal, and was labelled as Satellite Event of the European Climate Pact.

5. Comparison of the project progress with the original work plan *(max. 1 page)*

Please compare the implementation of the project with the original plans concerning the timing of work/work plan/milestones/personnel (researchers, postdoctoral researchers, PhD students, etc.). If applicable, describe difficulties encountered and solutions adopted.

The project started several months before the COVID-19 pandemia. This global disruption impacted in a limited way our research, but it contributed to create some delay in the global development of our project.

The main modification in the project has been the extension of the operational term from March, 1st 2024 to May, 31st 2024. This demand was made for several reasons. In Belgium, the postdoctoral researcher recruited at the beginning of the project ended her contract two months before the natural end of the contract. Despite the measures taken, this slowed down the work of the Belgian team. In addition, the maternity leave of Dr. Louise-Amélie Cougnon, promoter of the project and co-leader of the 3 WPs managed by Belgium, created a delay. Again, the research assistant recruited for the final part of the project (WP4), Olivia Molnar, started her contract only in January 2023, and finished in March 2024: additional time was useful to coordinate her results with those of the other researchers involved in the project. The French team suffered the resignation of the postdoctoral researcher recruited in 2022 after only two months of contract, out of the 10 planned: this required starting the recruitment process again, and the person recruited started her contract only in February 2023. In this context, the work of the team was delayed. Also, a researcher member of the Norwegian team left for the USA and created some delay also for the rest of the team.

The postponement of the final term allowed us to standardise the operational term between the different teams, and to better coordinate our efforts for the completion of the project and the production of quality final reports.

6. Social Sciences and Humanities *(max. 0.5 page)*

Please briefly describe how the inclusion of SSH is contributing to social change in the context of your project. How does this compare to what you expected prior to the project?

Linguistics and multimodal approaches were at the centre of the Belgian and the Norwegian team work. The objective was to understand how people express themselves concerning climate change mitigation and in particular obstacles to the adoption of climate-friendly behaviours in the fields of transport, food and the use of energy for heating. **Psychology and anthropology**, the disciplines of the French team, were crucial to develop a better understanding of mechanisms that influence climate-friendly behaviours and attitudes. An example is the theory of “mismatch” concerning the relation between personal attitude and perceived social norms, developed by the French team. These approaches are the basis for improving suggestions for better communication strategies, in particular concerning video production. Climate change and its consequences is particularly embedded in culture, making it difficult for individuals and societies to manage it cognitively (Fløttum, 2018: 21): "[it] moved from being a predominantly physical phenomenon to being simultaneously a political, social, and cultural phenomenon – and thus, a communication challenge". From this point of view, the multidisciplinary, interdisciplinary and transdisciplinary approaches in the human and social sciences sector are completely justified.

The project has been the occasion for testing that collaboration and interaction between disciplines is a real work that requires energy and engagement. Our project has been organised with the objective of creating interaction between scholars from different disciplines. This has been made concrete by

organising periodical internal seminars to present the respective progresses and ideas. During one exchange for example the idea of "mismatch" between attitudes and norms (see the main report), constructed in the field of environmental psychology, was discussed and compared to an opposite theory from the field of communication and media studies, the theory of the "spiral of silence" by Noelle Neumann. This theoretical discussion was useful for the colleagues working on the mismatch theory, and improved their research (see Harrington et al. 2022). Also, the crucial notion for the analysis of Instagram, the one of environmental values, comes from the field of environmental psychology, and has been at the core of our analysis of Instagram's posts and comments, conducted with a communication and multimodal discourse analysis approach. This allowed us to link the advances of environmental psychology to communication research in this study. These are concrete examples of the usefulness of discussions and exchanges between different disciplines. Our interaction rhythm was fully satisfying to complete the different WPs successfully, but the degree and intensity of interactions could be improved in future collaborations.

7. Pathways to impact *(max. 1 page)*

How would you assess the take up and use of your project´s outcomes? Did the outcomes contribute to expected impact pathways?

In section 4 we described various communication and dissemination activities of the 2O2CM project. These activities targeted different segments of population: researchers, students, associations, the media and the general population. We do not know the impact of all our scientific activities, but we will try, in this section, to objectify their outreach.

As far as publications are concerned, we can observe the impact of several ones through the website statistics of the Journals: for example, this paper from the French teams, has been viewed more than 2.200 times and downloaded more than 450 times during the last 2 years. This paper from the Belgian team has been seen more than 1900 times in less than a year. Lastly, this paper from the Norwegian team shows more than 180 reads, with a research interest score of 12.5, since 2021.

The videos produced by our team were evaluated, in order to make assumptions about their potential influence. The first video, interactive and dedicated to object libraries, has been evaluated by scientific colleagues and students through an open-ended questionnaire in France and Belgium. The answers were analysed qualitatively and were presented at a scientific seminar at Aarhus University (2-3 November 2023); a publication is scheduled on the results in 2025. The first analysis showed that video can be useful to inform, raise awareness and create engagement on object libraries. Different respondents shared the interpretation of the video, while differing in the evaluation of some aspects like speed and length. The interactive narrative structure appears effective to attire and keep the attention of the public.

A first analysis of answers (12) to a questionnaire concerning the second video, dedicated to public engagement for the climate, reveals that a part of people claims to have been emotionally affected; from a cognitive point of view, the message of the video seems to be globally understood. Like in the previous video, criticism concerns the length of the video. Another criticism concerns the lack of clear information on how to put it into practice, which is a sign of the importance of supporting the process of engagement. These results should be confirmed by a larger test with quantitative approaches.

For the future, the international team has various promising projects. First, the final conference organised on 23 and 24 may 2024 enabled us to present the project to more than 170 researchers

from more than 15 countries (400 had registered, which shows the interest the research community has in the subject). We will profit from this network for future communications. The publication that is scheduled after the conference will improve the outreach of the conference too. Following the conference, discussions are already underway with Greenpeace to involve Master students from UCLouvain in applying our method of social media analysis and audience segmentation to several Master's theses and internships.

The Belgian, French and Norwegian surveys generated results that may be valuable to various stakeholders. For instance, the analysis of freely formulated answers to open-ended questions identified different types of climate change scepticism constituting challenges to the development and implementation of measures to curb GHG emissions in the three countries. Similarly, the identification of resistance to certain types of non-fossil fuel energy sources, such as wind and nuclear energy, may constitute valuable information for decision makers. To mention a third example, the frequent mention among Norwegians of oil and gas extraction as an obstacle to effective action on climate change, could be of interest to political parties and public institutions, informing decisions regarding communication, as well as energy and industrial policies. This potential impact has already been partially realised through the collaboration with the Vestland regional authorities in Norway, through which municipal administrators have been informed of our project results (see also section 8).

Concerning the videos, we are still working to make them known for social actors, in particular concerning the first one on object libraries. Dissemination to journalists is also still to be developed, a network of journalist contacts is already constituted internationally. The participative video will be replicated at the UCLouvain level: actors of the university's administration that were present at the conference already proposed to replicate the model among all of the Kot-à-projets (students' project-based shared flat) of the University.

8. Collaboration with non-academic stakeholders *(max. 1 page)*

Did the involvement of non-academic stakeholders change or improve your plans to address the societal impact of climate change? If applicable, please note any obstacles or challenges you encountered in this regard.

The 2O2CM **Belgian team** has been working in collaboration with different partners. Our main non-academic partners have been: the cooperative Usitoo in Brussels, and in particular its director, Xavier Marichal; the NGO CNCD 11.11.11 and in particular Ms Rebecca Thyssen; and the organisation *Parlons Climat* France (meetings have been organised in 2022 and 2024). We also had a meeting on December 12, 2022, with an accompanying committee formed by Prof. Jean-Pascal van Ypersele (climatologist), M. Gilles Toussaint (journalist at La Libre Belgique), Rebecca Thyssen, Xavier Marichal, and different members of the Belgian Federal administration.

On their side, the **French team** has worked in connection with the management of the Réserve Naturelle de Chastreix-Sancy.

The **Norwegian team** has been working in connection with the public library in Bergen, and Bergen Global, a forum for research and debate on global challenges. In March 2024, the Norwegian team organised two seminars in collaboration with the Vestland regional authorities. The participants represented municipal administrations across the region.

All collaborations have helped in developing the initial plan of the project, and in anchoring it in reality. Collaboration was significant in the case of the Réserve Naturelle de Chastreix-Sancy, which allowed the French team to explore a specific case of interaction between humans and a changing natural environment, to understand how people adapt and create knowledge and meaning on climate change. Collaboration was also very useful in the case of the three videos produced by the Belgian team. The specifications for the first video on object libraries was profoundly influenced by the interaction with the director of the Usitoo cooperative, who has a great experience of trying to involve new customers in the use of object libraries. The idea of the second video, dedicated to proclimate engagement, received a clear inspiration from Rebecca Thyssen (previously member of CNCD 11.11.11). We can also cite the roundtable on "*Cultural change: what are the barriers to mitigating climate change? Good, and bad, transition practices*", which took place during the final conference on May 23 with representatives from 4 Belgian NGOs (Greenpeace, Ecoconso, Canopea, and Empreintes). The discussion was an interesting stimulus for all people in the room (and online) and future collaborations are already considered with Greenpeace. In conclusion, interactions with different external experts have been useful at important moments of our project and are promising for the future.

9. Availability of new results *(max. 1 page)*

Did any third-party results become available since the start of the project, which proved relevant for the implementation of the project?

It is clear that the evolution of research since 2020 has been important to nourish our research. For example, the article of Bouman et al. in 2021 (https://doi.org/10.1016/j.cobeha.2021.02.022) on environmental values has been crucial for orienting the elaboration of the research on Instagram posts and comments on values. Another inspiring document was the a synthesis in 10 points of the contributions of different scholars from human and social sciences concerning how to improve climate action, useful for communication in particular, published by the King Baudouin Foundation in 2021 (https://media.kbs-frb.be/en/media/9270/2022_PUB_3837_ClimateAction). Another source of inspiration has been the work of *Parlons Climat*, a French think tank which works to analyse the French public and define communication strategies to improve mobilisation concerning climate change. Examples could be multiplied.

10. Outlook *(max. 1 page)*

Please describe your outlook on the future development of the project's research topic. This can include links with other projects or programmes, but also the sustainability of the network built during the project (including any potential actions you may be considering to keep connections active). You may also include any suggestions for JPI Climate in this regard and in the valorisation of research results from the project.

A publication is scheduled after the final conference of the project (23-24 May, 2024), with the aim of collecting many different contributions from different human and social sciences concerning obstacles and solutions for pro-environmental and pro-climate behaviours. We will also make available visual and video materials of the event.

Concerning the video projects, we are in touch with object libraries and repair café organisations, in order to spread the word about the interactive video and make it known to organisations which could use it for their communication. The three videos were largely promoted during the final conference (23-24 May). The identity of these videos is hybrid: they are both experimental objects aimed at allowing us to observe their reception by different publics, and potential supports to be used by

organisations in their communication, and also a source of inspiration concerning specific communication techniques (interactivity, narrative, and crowdsourcing). We will try to identify other ways of dissemination and valorisation of these videos.

A series of scientific publications is scheduled after the end of the program, concerning 1) the analysis of open-ended answers to surveys in Belgium and Norway, 2) the analysis of the meaning of the expression "sustainable development" in the three countries, based on the Twitter (X) corpus, 3) the analysis of the interactive video project, with a transdisciplinary panel of experts and 4) the anthropological inquiry in France.

The participants to the 2o2cm project will carry on the collaboration to benefit from the "social capital" that was created during the project, and they will build up new occasions of collaboration.

11. General comments

Please add any additional comments you may have. This can also include any positives or challenges that your project faced during its lifetime, so that we can improve in future activities.

As already noted, all reports, corpora, videos, manuals, and publications linked to the project are available on the website of the project, in the "toolbox" section. The main report on the project is available via Belspo.