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## Conclusions of the Second European Conference on Risk Perception, Behaviour, Management and Response - ENCORE 2021

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CONCLUSIONS OF THE SECOND  
EUROPEAN CONFERENCE ON  
RISK PERCEPTION, BEHAVIOUR,  
MANAGEMENT AND RESPONSE  
ENCORE 2021

# Conclusions of the European Conference on Risk Perception, Behaviour, Management and Response

The Second ENCORE European conference in October 2021 in Paris, France, has gathered two communities, the Risk Perception and Behaviour Survey of Surveyors (Risk-SoS) and the H2020-DRS01 Cluster on risk perception and adaptive behaviour (a grouping of several Horizon Europe – Disaster Resilient Societies projects, most notably RESILOC, ENGAGE, Risk PACC). During the Covid-19 pandemic lockdowns in 2020 and 2021 the monthly Risk-SoS webinars have been keeping the risk perception and adaptive behaviour research community together with panels on the role of theories in research on hazards adaptation, resilience and vulnerability. Topics were on risk perception and behaviour across challenges and time, across disciplines and methods, as well as panel and longitudinal approaches, and workshops on theories and methods to advance the design of a collective surveying approach with potentially common questions and answers' scales to foster comparability. The Risk-SoS webinars have also been discussing the results of the Survey of Surveyors and sustaining the collective effort to build a harmonised approach for risk perception and adaptive behaviour assessment with up to 80 participants. In an hybrid format, the Second ENCORE conference has gathered 25 researchers, experts and practitioners from 10 countries (Austria, Belgium, France, Germany, the Netherlands, Poland, Spain, Sweden, Switzerland, and the United Kingdom) at the Ministry of Research in Paris, France.



The panels crossed disciplines (complexity science, economics, engineering, geography, political science, psychology, sociology, among others), including fields from all the Disaster Risk Reduction cycle phases (from early warning to insurance through perception, vulnerability, behaviour, management, resilience, etc.), and using diverse case studies to update the panoramic European view of the on-going research and practice from the previous conference in 2019. Between the 2019 and 2021 conferences, several studies on risk perception and adaptive behaviour were conducted by the growing group. Some of the participants and their studies had been informed and inspired by the Risk-SoS webinars and exchange of ideas on better unification of approaches. For example, one group had analysed a large sample of research articles (over 4,000) to map the theories in the fields and the studies actually relying on theories. Another study from the group was a survey on theories used, to complement the survey on common questions and variables to build a baseline for future questionnaires. Several disasters occurred in Europe in the past 2 years, which led to more studies on climate change to be presented at the 2021 conference, along with Covid-19 pandemic and 2021 flood events on-going projects.

The workshops deepened debates and brought out the remaining critical issues to reach a common list of minimal requirements to compare studies and surveys, and a harmonised catalogue of questions allowing for comparability and long-term monitoring. One workshop focused on sampling former survey questionnaires and digging into the Risk-SoS results to assess which questions on risk perception and adaptive behaviour are commonly used. The questions' framing, wording, selection and answers' scales were discussed theme by theme in subgroups to advance the construction of such a common questionnaire. The second workshop brought more context, with subgroups presented with a common task to design a study and questions that

could be deployed to the city of York to understand how residents of the city of York, understand, perceive, and act upon the threat of flooding.

We are envisioning a permanent catalogue to which future research can contribute and from which questions can be selected. The intrinsic benefit would be to monitor the most frequent questions used over time, to improve the use of previously collected research data for the analysis, and to foster cross-study comparability and long-term monitoring.

Collecting and sampling former questionnaires was found to be quite a challenge. The translation of long questionnaires hindered some participants, others had concerns in sharing all parts of a questionnaire. It was thus suggested to collect only the questions on a selection of the most frequently used themes in risk perception and adaptive behaviour.

Another finding was the need for an open repository to collect questionnaires and survey data and to think over harmonized metadata for a catalogue. The CMINE repository was considered as a tool to collect and share the questionnaires and survey data.

The lack of theorizing in the research field was also found to be a bottleneck and some participants suggested to move from the goal of designing questions that allow comparison to refining existing theories or even to consider how to construct a good umbrella theory.

The main conclusion was the need for regular webinars until a third conference can be held. They would help consolidate the group, improve practices, discuss theories and questionnaires alike, allow tackling themes one by one to decide which questions can be used for future studies, and build a list of around 20 consensual questions.



# Workshop on the Risk-SoS results

Discussing the most commonly used themes and questions on risk perception and adaptive behaviour

## AWARENESS

Question about awareness, imply risk and exposure thoughts, mitigation, impacts, danger - Preferred face-to-face setting, preferred list of examples instead of open questions - Discussions about scale answers (on a scale from 1 to 5/10, ...do you agree? ...do you expect?), one good answer for each questions ? - Other topics (exposure, risk, information, knowledge, etc) are drivers for this question.

*Some questions :*

Are you aware of risks? Follow-up, which ones?  
On a scale of ...do you expect a disaster to happen... in the next one to XX years?  
What are the first five words that come to you mind when speaking of...  
What are the most effective ways to mitigate such risks? Independently, what kind of risk can this hazard pose?

Large scale survey: closed list, such as news, neighbours, friends, social networks...or smaller scale survey: open-ended - Thematic blocks of questions, trade-off in usefulness - It is more important to know if people have actual empirical knowledge, rather than theoretical knowledge. Rather not asking about right or wrong.

*Some questions :*

Where did you get information on floods from?  
Did you think the information was useful? Was that information actionable?  
Would you share this information with someone? Was it good information?  
Did you know where to get help to actually get something?  
What helps you make better decisions ? What support would you need?  
What would you need to act?  
How did you act upon receiving the information/gaining the knowledge?  
Did you know what to do after you got the information?  
Did you actively look for information or was it provided to you?

## INFORMATION KNOWLEDGE

Interpretation of «affected» or «impact» terms - Personal experience - Experience as private person, household, company, farmer - Direct - indirect experience - Cumulative biography of flood experience - Emotional consequences - Physical/health relation consequences - Loss of replicable objects/loss of irreplaceable object - Experience and self-efficacy - Building up efficacy through experience.

*Some questions :*

Have you ever been personally affected by XXX event in the past?  
If yes, follow-up questions such as  
How many times ? How often (once, twice)? When/how frequent ?

## EVACUATION

Is it the same evacuation for all disasters? Importance of the context and timing issues : Before disaster ? On-going disaster ? After disaster ? - Question about definition and limit of «evacuation» and «behavior» terms - Difference between what people expected to do and what people actually do. - Retrospective question (why did/n't you?) decision, alert, tied to trust, can influence future decision to evacuate (was told to evacuate but nothing happened) place attachment, values, do you know where to go, wishful thinking.

*Some questions :*

When? Where? How?  
Did you evacuate? Would you evacuate?

How is perceived exposure different from awareness? Debate on words, meaning and concepts. Exposure mentioned by respondents as opposed to official exposure, or exposure mentioned as opposed to other people, other neighbourhood. Perceived risk and potential cost - Qualitative vs quantitative answers (qualitative easier for respondents ?) - Debate on scales, on what is considered to be high probability. Numbers or damages might be arbitrary, whereas «below average» would be an interpretable reference. Care must be taken to understand what respondents mean by their answers. - Some follow-up questions might be required as it is difficult to capture perceived risk when considering multiple (potentially correlated) hazards at once.

*Some questions :*

Perceived frequency in number of years... in 20 years...  
What area would be flooded, house, parcel, street, property? Also for next flood, would it be the next time I see water on my property or my street?  
Are you exposed or not? Do you feel exposed, or how high?  
What is a high or low flood? Type of damages suffered ?

## PREVIOUS HAZARD EXPERIENCE

## PERCEIVED EXPOSURE



# Workshop on a case study

## Building a common design, study and questions about the city of York

The purpose of this workshop was to look at the needs of a common survey/questionnaire from the perspective of designing the surveying approach with potentially common questions and how they could be focused upon in the questionnaire. This was a different focus, as the previous workshop session focused on discussing question items for specific topics that could be asked.

The group was presented with a common task to design a survey/study that could be deployed to the city of York: "This project seeks to understand how residents of the city of York, understand, perceive, and act upon, the threat of flooding that they face". The participants were told that they had a hypothetical budget of 10,000 EUR for the project.

The group was split into 3 sub-groups to discuss in more details of what they would do to design this survey and what were the common needs and concerns such a survey/questionnaire should address.

*This project seeks to understand how residents of the city of York, understand, perceive, and act upon, the threat of flooding that they face.*

*...asking for intentions is not enough to understand adaptive behaviour, we also need follow up surveys to capture how/if the respondents' intentions manifested.*

### Panel design

There was a consensus that a single cross-sectional survey was not enough. Rather panels need to be developed (possibly with dynamic structures) so that deeper insights and causal implications can be followed. This view was also repeated in the presentations of the following day in that just asking for intentions (for example) is not enough to understand adaptive behaviour, rather we also need follow up surveys to capture how/if the respondents' intentions manifested. There was an emphasis on creating a structure so that the survey would be repeated regularly, in a way that inspires trust/confidence in potential respondents (so they want to take part in a repeated survey).

One of the three groups, discussed a more fundamental question if a survey/questionnaire was the most effective way of gaining nuanced information, potentially preferring a workshop-based approach. However, they also emphasise the need for repeated measures during the preferred data collection process, which is also a longitudinal design.

The idea being that you can achieve much more relevant and impactful results if local community and/or government are integrated into the project so that hopefully more tangible outputs are produced. Concern, that a survey might be a bit extractive and unlikely to achieve improvements on the ground.

### Sample composition

A common need raised across all three groups was to make sure that when creating a sample, we should endeavour to make sure that we have a range of flood experiences in the survey (e.g., that not everyone in the survey should have been impacted by a specific event). This is to make sure we have flooded/non-flooded individuals in the sample, heavily impacted, less impacted, directly/indirectly etc. The impact of flooding is subjective, so we need a wide range of experiences, and this means we need a wide net of potential respondents. Preferably from otherwise comparable areas within the target area (e.g., two areas of similar socio-economic status but different expected flood impacts).

In the same spirit, it was mentioned we should include different types of people. This can raise the question of whose knowledge and experiences we will base our study on. For example, tourists, going to schools to include children into the investigation in addition to one of their parents.

Taken together, these two points indicate that we may need to think of new surveying techniques that can successfully reach and maintain contact with as wide a range of potential respondents as possible.

*...make sure we have flooded/non-flooded individuals in the sample, heavily impacted, less impacted, directly/indirectly etc.*

*A deeper focusing on understanding the subjective sense of danger/ threat that a flood poses*

### Common themes

Where/when do people get information from about flood risks? To what extent do they trust such information? How did people confirm their information & understanding of the information they received? Where/how did you learn about what to do before/during a flood. How did you use information/other ideas to construct your beliefs on the topic?

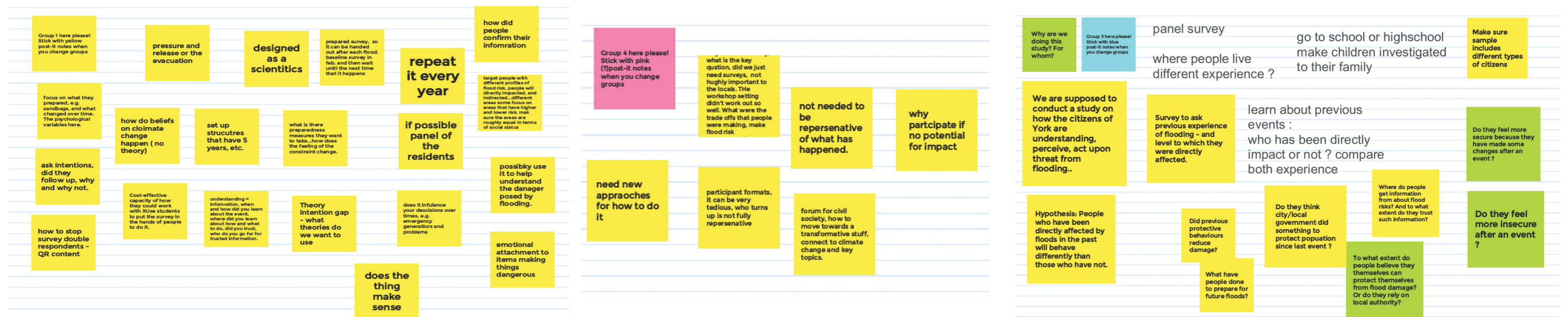
People who have been directly affected by floods in the past will behave differently than those who have not. Therefore, the survey must ask previous experience of flooding - and level to which they were (in)directly affected. This relates to the sample composition issue as well, should be able to compare across a range of impact levels.

Did previous protective behaviours reduce damage? What have people done to prepare for future floods, e.g., sandbags, and what changed over time.

An important consideration was the psychological aspect: ask intentions, did they follow up, why and why not. This is to explore the implementation-intention gap - looking to develop a more theoretically guided way of selecting variables and questions.

Do they think city/local government did something to protect population since the last event? To what extent do people believe they themselves can protect themselves from flood damage? Or do they rely on local authorities? Where and upon who does the responsibility for flooding fall upon, and how.

Do they feel more secure because they have made some changes after an event, in terms of their protective behaviour? Do they feel more insecure after an event? What are the preparedness measures they want to take, and how does the feeling of insecurity change overtime/different adaptive measures, and if this influences decisions over time? A deeper focusing on understanding the subjective sense of danger/ threat that a flood poses, as people can undertake "irrational" actions during a disaster situation because of the subjective understanding of the threat faced during, before, and after.



## Keynote presentations

Christian Kuhlicke, *The role of theory in natural hazards adaptation, vulnerability, and resilience research: a research agenda*, UFZ, Germany

Samuel Rufat, *Are we failing respondents failing to answer our risk perception and behaviour questions ?* CYU, France

Ludivine Gilli, *When changing methods changes the outcome of a survey: CAPI vs CAWI methods*, IRSN, France

Odile Plattard, *Evacuation of coastal population : from surveys to Agent-Based Modelling*, CYU, France

Peter Robinson, *Behavioural economics and insurance demand: Default options, social norms and risk communication*, VUA-IVM, Netherlands

Michalina Kułakowska, *Flood risk perception and serious games*, Centre for Systems Solutions – Games4Sustainability, Poland

Sebastian Seebauer, *The interplay between enterprise and entrepreneur in the flood risk management of small and medium enterprises*, Joanneum Research, Austria

Daniel Osberghaus, *An empirical analysis of the planning-action gap in private climate adaptation*, ZEW, Germany

Alexander Fekete, *Empirical survey of operational forces during the 2013 and 2021 floods*, THK, Germany



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Risk Perception & Behaviour Survey of Surveyors. Risk-SoS 2020 Preliminary results: <https://hal.archives-ouvertes.fr/hal-03228369/document>

Conclusions of the first European Conference on Risk Perception, Behaviour, Management and Response: <https://halshs.archives-ouvertes.fr/halshs-02486584/document>

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