**Public Risk Perception: Dealing with Public Polarization and Resistance in the Momentum of Global Crisis**

**MODULE DESCRIPTION AND GUIDELINES FOR THE INSTRUCTOR**

The module covers four main topics:

1. Living in the Contemporary Risk Society and Dealing with Global Risks;
2. The Positive and Negative Effects of Science, Research and Technologies: can we control them?;
3. Understanding and Managing Global Risks: Data-based Evaluations, Public Perception and the Role of Media;
4. Dealing with Public Polarization and Resistance in the Momentum of Global Crisis: Case of COVID19 Vaccine Hesitancy

Each topic is described and discussed by teacher using PPT slides (around 15 slides each) and pre-recorded video lectures (2 lectures, 1.5 hours each). Slides include text, videos, illustrations and schemas to support the oral presentation given by teacher. Also, supporting material (e.g., scientific articles or other readings, examples, videos, podcasts, etc.) is provided (up to 10 items in total). Both pre-recorded video lectures are finalized with a question for a discussion and a short assignment for the students. In addition, there should be one or two LIVE sessions organized (lasting up to 1 hour) to discuss the material and answer the questions.

The first part of the module is dedicated to discuss the new (post-normal) conditions of contemporary world, explain the concept of risk society; to get the general overview of global risks contemporary world is facing and most importantly to discuss the ways we understand, perceive and manage these risks. Topic 1 and topic 2 are presented during this part of the module.

***Topic 1 – Living in the Contemporary Risk Society and Dealing with Global Risks***

Topic 1 is dedicated to present and discuss the major theories of risk society. Works of Ulrich Beck and Anthony Giddens are presented and discussed. Terms and concepts related to risk, risk society are defined (including risk, global risk, risk society, etc.) and the characteristics of global risk society and global risks are listed (including delocalization, non-calculation and non-compensation) and explained through the examples. Besides, contemporary global risks are presented following the World Economic Forum, - in order to manage contemporary global risks, there first must be recognition what they are and where they are coming from.

The aim is to show, why contemporary society can be understood as risk society and to highlight the importance of public risk perception in the contemporary word. Discussing the following statements and examples:

* “The primary conflict during the early 20th century focused on the **distribution of wealth** among different social groups; After the Second World War, and particularly during the 1960s, the focus changed to the **distribution of power** in politics and economics. In more recent times, the major conflict has been about the **distribution and the tolerability of risks** for different social groups, regions and future generations.”(Renn, 2008)
* Examples:
* The systemic nature of global risks: the effects of COVID19 in different areas, e.g., Pandemials – Youth in the Age of Lost Opportunity;
* Non-calculation and non-compensation of global risks: COVID19 – experts who warned us?

***Topic 2 – Positive and negative effects of science, research and technologies: how do they affect the way we understand risks?***

This topic is about the effect of science and scientific information has on risk society and on the way people perceive risks. The new conditions for science are discussed, explaining the concept of post-normal science and identifying the major challenges scientific community are facing today (e.g., Growing scientific uncertainties in the era of post-normal science; Speed and quality in science during global pandemic; Commercialization and commodification of science; Politicization of scientific issues). The main discussion is focused on the following questions, - Science and technologies – do they help to solve the global risks or do they create them (?); how do we handle possible negative effects of contemporary science (?); how changing views to science effect the way public perceive global risks (?); etc. In turn, the idea od democratization of science is introduced as a possible solution to deal with the negative effects of science and to support the public risk perception in the positive ways.

Discussing the following statements and examples:

* “The idea of how far science, technology and psychology have come is unnerving to some. With how much we already know, it’s even scarier to wonder what else is left to develop. What’s stopping some mad scientist from secretly conducting crazy experiments on people or building a deadly weapon to destroy humanity? Well, a lot actually.”ETHICS IN MODERN SCIENCE by Erin Brache | published Sep. 9th, 2021. Read more [here](https://reporter.rit.edu/tech/ethics-modern-science)
* “…From primary school to university, we learn to **“know”.** But we also need to learn **to doubt.** We need to learn **to hesitate**. We need to learn **to reconsider**. If you are not in doubt, try thinking whether you should be. The point is not that you should always so no, or always be in doubt, but that, if you are, then it is entirely legitimate state to be in.”Svend Brinkmann, The National, 2017.
* Pre-requirements for the public to contribute for effective process of science democratization or different stages towards democratization of science:
* **Scientific literacy** is a concept defining level of public knowledge regarding scientific issues. Scientific literate public is a public which have least necessary knowledge to effectively act in a society.
* Term of **public understanding of science** is a narrower concept than scientific literacy and it implies required knowledge about scientific content (scientific concepts), scientific enquiry (scientific processes), and scientific impact on society (social factors) (for more see Burns, O’Connor & Stocklmayer, 2003; Millar, 1996).
* Meanwhile, concept of **public awareness of science** is a set of positive attitudes toward science (and technology) that are evidenced by a series of skills and behavioral intentions (Gilbert, Stocklmayer, and Garnett, 1999).
* **Public participation and engagement**: Public participation is a concept describing public’s actions related to assistance in decision making, support for policy implementation, etc. Ideas of public participation lies in the core of democratic ideals – public must have a right to express their beliefs and attitudes about public issues which concern them and their life (Stave, 2002; Cox, 2013).
* Examples:
* We (don’t) know what we don’t know: Artificial Inteligence tools in military – Military artificial intelligence can be easily and dangerously fooled;
* Politicization of science: ‘**Stick to the science’**: when science gets political: A three-part podcast series explores the intimate relationship between politics and science. Accessible [here](https://www.nature.com/articles/d41586-020-03067-w).

**LIVE discussion**

Preliminary and suggested questions for the discussion (one or all of them can be covered during the LIVE discussion):

* Please read the following article: Waltner-Toews, D., Biggeri, A., De Marchi, B., Funtowicz, S., Giampietro, M., O’Connor, M., Ravetz, J. R., Saltelli, A. and van der Sluijs, J. P. (2020). Post-normal Pandemics: Why COVID19 Requires a New Approach to Science? Shortly answer the following questions: (1) How can you explain, what is post-normal science and can you give the example of it? (2) Why COVID19 pandemic can be seen as post-normal? How it is related to the public risk perception of the risks related to COVID19?
* Imagine a scenario where you are dining at a restaurant, and you order a hamburger. When your meal arrives, you take the first bite of the hamburger and realize, that the hamburger meat is still raw in the middle. Please, (1) **indicate on a scale of 1–10 the degree of ‘danger’** you feel you are facing because of your exposure to raw meat; (2) **please explain, why do you feel that the risk is high or low**, and, more importantly, why you feel that way. Please, relate to any experience, knowledge, or feelings you have that gives causes you to feel one way or another. (Further teacher can discuss and make the conclusions from the answers, - listing and explaining different reasons, which makes people perceive same risks differently).

**Assignment: The side effects of science and technologies**

Suggested assignment: watch the movie and write a short paper (up to 500 words) covering listed questions:

“[THE CIRCLE](https://www.amazon.com/Circle-Emma-Watson/dp/B07495F265)" (2017) - it’s a movie that analyzes the issue of personal privacy. New technologies, the development and adaptation of which are thought to have a positive impact on society and man, often have side effects as well. Watch the movie and think about whether all innovations or scientific investigations (driven by technological breakthroughs, globalization processes, social, economic, ecological and other changes) always have only positive aspects? What are the possible side effects (or risks) to the organization, the person, the society? How these negative sides of science effect the way we perceive science and risks? Give some examples.

The second part of the module focuses more on the public risk perception. Knowing the global conditions, characteristics of contemporary society and other circumstances related to risks today, makes it possible to better understand the importance of the way people understand and perceive contemporary risks. This part is dedicated to explain to students, why people differ in regards to their perception of hazard risk. To provide an overview of risk perception science, and illustrate the manner in which people prioritize or rank their risks, how these rankings reflect true statistical risk, what is risk perception gap and how can we “bridge” it with communication tools. In addition, basic guidelines for risk communication and risk management will be provided with the examples and case studies.

***Topic 3 – Understanding and Managing Global Risks: Data-based Evaluations, Public Perception and the Role of Media***

Public risk perception is essential part of the risk management process. The different factors affecting the way people perceive and understand risks are introduced and discussed, most importantly focusing on the role of communication. The perception gap is explained and the role of mass media is discussed, highlighting the positive and negative aspects of media coverage of risks (e.g., misinformation, information overload, focus on negative news, risk amplification, issue of “balanced reporting”, etc.).

Discussing the following statements and examples:

* **Risk is socially constructed**: The characteristics of construct are determined by the psychological, social, institutional, and cultural environment in which the individual operates. Socially constructed risk is not an objective and constant. Hence, different people make different decisions in similar or identical risk situations. In most cases, the real risks calculated by scientists do not seem very significant to society. Conversely, fears prevailing in society are often not scientifically based (Frewer et al., 2003).
* People base their risk assessments primarily **on emotions and do so irrationally** - the human brain is designed in such a way that any potential danger is accompanied by a defensive reaction.
* People tend to make decisions without shortcuts, especially when it comes to threats. How we respond to risks is determined by other factors:
* A real threat based on a specific situation or scientific calculations;
* Personal beliefs and values;
* Belonging to a risk group;
* Political beliefs;
* New versus old risks (e.g. seasonal influenza and Coronavirus);
* Extent of the risk (what are the possible consequences?);
* Risk representation in public space.

***Topic 4 – Dealing with Public Polarization and Resistance in the Momentum of Global Crisis***

Drawing on the example of current COVID19 vaccine hesitancy, the issue of public risk perception is discussed, identifying the causes of such situation and possible solution (through the means and tools of communication). The recommendations for successful risk communication (to improve public risk perception) are suggested, especially highlighting the requirements of: (1) know your audience: know the communication preferences of your audience, know what is their knowledge, attitudes and perception of risk you are about to communicate; (2)build trust – find a trustful and reputable communicator; (3) finding people and communicating with them on their preferred channels; (4) do not repeat false claims; (5) tailor message to a specific audience or channel; (6)adapt messaging and conditions change; (7) transparency and timeliness: be reactive and give the feedback, answer the questions, be open; (8) Communicate positive stories; etc.

Discussing the following statements and examples:

* **Vaccine Hesitancy** - a Threat to Global Health: Have vaccines become victims of their own success?

**LIVE discussion**

Preliminary and suggested questions for the discussion (one or all of them can be covered during the LIVE discussion):

* Please read the ERUM guidelines for effective evidence-based communication “COMMUNICATING SCIENCE. Evidence-based Communication Guidelines for Early Stage Researchers and Journalists” (Accessible online [here](https://uni-foundation.eu/uploads/2021_ERUM%20-%20IO2-CommunicationGuidelines.pdf)) and answer the following questions: (1) if and how there guidelines can be used to effectively communicate global risks and increase public risk perception of contemporary risks (e.g., climate change, global pandemic, etc.); (2) what other recommendations could you include in the list for more effective risk communication?
* Please find an article in popular media covering contemporary risk issues and analyze it: (1) what do you think of it – is it good or bad example of risk communication? ; (2) what effect this article could have on public risk perception? Explain.
* Look for the media article presenting fake news, misinformation, etc., and try to think, how to handle this kind of information (what communication tools, ways should be applied) to limit the negative effect it might have on public perception of risk.
* Vaccination and political polarization: Read the article ([How Political Polarization Broke America’s vaccine campaign?](https://www.vox.com/2021/7/6/22554198/political-polarization-vaccine-covid-19-coronavirus)) and discuss, - what effect (and why) political polarization may have on public risk perception of vaccination. Discuss the example of the USA and other countries too. What can you say about the situation in your country? Is there a way risk management and communication can make the situation better? What would be your recommendations?
* Vaccine hesitancy and trust: Read the article ([Vaccine hesitancy is fueled by polarization and mistrust in science, experts say](https://news.northwestern.edu/stories/2020/12/vaccine-hesitancy-is-fueled-by-polarization-and-mistrust-in-science-experts-say/%26fj%3D1)) and discuss, how public trust in political and other institutions is related to the way people perceive risks. How do we build trust? Is there effective way to build trust through communication tools in the momentum of crisis? What would be your recommendations?
* Vaccine confidence: find some recommendations from responsible and trustful organization (local, national or global), providing recommendations for effective risk communication to support/built public vaccine confidence. What do you think of these recommendations? Are they really effective? What other tools and methods would your recommend?