SRA EUROPE

FROM THE EVERYDAY TO THE EXTRAORDINARY

SRA-EUROPE CONFERENCE
28 JUNE–1 JULY 2009
KARLSTAD, SWEDEN

The SRA-Europe 2009 Conference is supported and co-hosted by the Swedish Civil Contingencies Agency (MSB), Karlstad University (KaU) and the Swedish National Defence College (SNDC).

The following organizations have also contributed sponsorship to the conference:

- The Municipality of Karlstad
- The County Administrative Board of Värmland
- The Journal of Risk Research

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8.15-9.00	Bus transport from hotels to University of Karlstad. Conference registration at the university.
9.00-10.00	**PLENARY 3** Location: Aula Magna Keynote address – **Paul Slovic** *"The more who die, the less we care: confronting psychic numbing"*. Chair: **Katarina Rydberg** Swedish Civil Contingencies Agency, MSB
10.00-10.30	**SRA EUROPE BUSINESS MEETING** – all conference participants welcome.
10.30-11.00	Coffee and refreshments.
11.00-12.30	Parallel sessions D1–D6 (see below)
12.30-13.30	Lunch

11.00-12.30

SESSION D1	PARALLEL D2	PARALLEL D3	PARALLEL D4	PARALLEL D5	PARALLEL D6
RISK IDENTIFICATION AND ASSESSMENT, LOCAL LEVEL Chair: Ortwin Renn Location: Fryxellsalen	**RISK IDENTIFICATION, EMERGING RISKS** Chair: Olivier Salvi Location: Sjöströmsalen	**PUBLIC RISK PERCEPTION** Chair: Judith Petts Location: Frödingsalen	**FINANCIAL AND ECONOMIC CONSEQUENCES** Chair: Valery Lesnykh Location: Transformum	**ROUND TABLE** Location: Hus 1D 236	**SYMPOSIUM S3** Location: Lagerlöfsalen
Hassel Henrik *The Adoption of Systems Approaches in Swedish Municipal Risk and Vulnerability Analyses*	**Lundman Peter, Wilhelmsson Alexander** *Safety investments in infrastructure projects – comparison between Swedish railway tunnel projects*	**Van Poll Ric, Köhler Jutta, Devilee Jeroen** *Environmental – Health risk characterisation in six European countries*	**Jaldell Henrik, Carlsson Fredrik, Daruvala Dinky** *Preferences for lives, injuries and age*	*Siting sensitive projects: Social acceptance in sensitive industrial projects.* Participants: **Nadja Eleznik** **Evelyn Hooft** **Jean-Francois David**	*Results of the "International study of the effects of information about precautionary measures on risk perceptions of mobile telephony (ISEP)"* Presenters: **Peter Wiedemann** **Julie Barnett** **Martin Clauberg** **Flavia Natercia da Silva Medeiros** **Franziska Boerner**
Bjarke Martin, Bengtsson Göran, Holmqvist Johan *Identifying and ranking hazards in municipal risk- and vulnerability analysis*	**Lönnermark Anders, Ingason Haukur** *The Safety and Security of Underground Hubs as an Emerging Risks Representative*	**Öhman Susanna, Olofsson Anna, Rashid Saman** *National, international or global threats – who fears what? Societal risk perceptions in Sweden 2004 and 2008*	**Rosén Lars, Nimmermark Johan, Andreasson Mats** *Assessing risk-cost of flooding*		
Kelman Ilan, Rauken Trude *Climate change or not? Policy lessons for flooding in Norwegian municipalities*	**Carlsen Henrik, Johansson Linda, Wikman-Svahn Per** *Planning and preparing for technological change and future risks to the critical functions of society using co-evolutionary scenarios and participatory methodology*	**Börjesson Marcus, Enander Ann** *Perceptions of risk and safety among the Swedish population*	**Ippisch Tobias** *Towards an impact assessment of telematics-based vehicle insurances*		
Van der Vlies Vincent *Institutionalised risks: An analysis of rail transport of hazardous materials and urban planning*	**Busby Jerry, Kinder Katharina, Ball Linden** *Risk and ubiquitous computing in the workplace*	**Rego Isabel, Palos Ana, Arroz Ana** *How to prepare for, respond to and recover from an earthquake? Seismic risk perception in the Azores*			

influence the risk perception of the public are studied: the way of coping with environmental and health risks, the behaviour of the respondents and their attitude towards risk policy and policymakers. From each of six countries (England, Slovakia, Finland, Spain, Netherlands, and Flanders (B)) we invited 1000 respondents to participate. Residents' risk perceptions on nine different risks were assessed: air pollution, sea level rise, corrosive cleaning agents, tanning, dampness, polluted tap water, nuclear waste, alcohol consumption, pesticides in food. By means of an internet questionnaire residents answered several questions for these risks: extend of concern, policy priority, specific risk aspects (e.g.: involuntariness, equity, dread, trust), relevant behaviour (e.g.: car use washing vegetables before use, only drinking bottled water) and coping options. Preliminary analysis showed that respondents are most concerned about air pollution, 'number of people' and 'extend of effects' are relevant risk characters to residents too and for different risks different risk profiles, in terms of risk characteristics, are applicable.

National, international or global threats – who fears what? Societal risk perceptions in Sweden 2004 and 2008

Susanna Öhman, Anna Olofsson, Saman Rashid (Mid Sweden University)

■ The aim of this paper is to investigate if there are differences between population groups in their perceptions of three dimensions of societal risks: National, international and global (cf. Beck 1992). Hence, this study focuses on the heterogeneity factors gender, ethnicity and sexual orientation in relation to societal risk perception, rather than personal risk perception, which is a development of earlier risk perception studies (Slovic 2000). However, this paper does not only identify if, and which, these kinds of risk perceptions differ, but also analyses the underlying causal factors and their role in understanding sociocultural heterogeneity and risk.

The analyses were made with data from two Swedish national surveys conducted as a postal questionnaire during autumn 2004 and 2008. Each dataset used in the analyses is composed of two representative samples of the Swedish population: One national random sample, and a random sample of people living in three residential areas with a relatively large population of people with foreign background.

The findings confirm earlier research in so far that there are differences in societal risk perceptions between the different groups. However, the differences are not general, that is, even though there are differences between e.g. native people and people with foreign backgrounds, there are examples of risk perception categories and behaviours that do not differ as well. The main conclusions are that heterogeneity factors such as gender, ethnicity and sexual orientation are important to understand people's reactions to risks but underlying factors are more important to explain these perceptions.

Perceptions of risk and safety among the Swedish population

Marcus Börjesson, Ann Enander (Swedish National Defence College)

■ Measures to promote safety among the public can be evaluated from two different perspectives. One concerns willingness to act safely and take safety measures, and the degree to which these increase people´s actual safety. Another concerns the degree to which such measures affect people´s perceptions of personal safety and protection. While perceptions of risk and factors affecting these have been the subject of considerable research, the factors affecting perceptions of personal safety and security have been less studied. Furthermore, some research findings indicate that acting safely does not necessarily lead to increased sense of security. The purpose of this paper is to examine more closely relationships between perceived risk, actual safety measures and sense of safety and protection. Data from a previous questionnaire study (2008) were used. The sample consisted of 7198 people among the Swedish population. Measures included different aspects of security such as worries about accidents, insecurity during home and leisure time, perceived safety protection as well as measures of perceived risk and actual safety measures. Preliminary results indicate for example that a high degree of safety measures does not necessarily lead to higher perceived security and protection. Three different safety profiles have been identified within the sample. This paper further examines how these profiles are related to different patterns of relations regarding security, perceived protection and safety measures. These results should have implications for information interventions directed to different groups of people.

How to prepare for, respond to and recover from an earthquake? Seismic risk perception in the Azores

Isabel Rego, Ana Palos, Ana Arroz (University of the Azores)

■ Throughout the Azores' history damaging earthquakes have caused considerable physical and human losses in the archipelago. Knowing the important role that seismic risk perception can play on decisions made on earthquake risk mitigation a study (TOPOI METUS. Social cosmographies of danger. Risk perception of natural hazards) was carried out to address the Azoreans understanding of seismic risk profile, patrimonial and economic vulnerability to that risk, and risk management. Such knowledge can contribute to improve the communication of risk messages and, at a more global level, inform civil defence policies and their implementation. Based on data produced along thirty in-depth extensive interviews conducted in five of the nine islands of the archipelago, this presentation focuses on findings of perceptions regarding dimensions of risk management (i.e. information and actions taken before a crisis, and during the response and recovery phases of a disaster situation). Particular attention is given to communication aspects such as "Who do people trust?" and "What forms, strategies, and means of communication do people value most?" Preliminary results seem to point out to a generalized sense of not needing more information in order to be better prepared to face crises and to the inexistence of a culture of precaution towards major disasters. The rationales underlying those perspectives are discussed.

D4 Financial and economic consequences

Preferences for lives, injuries and age

Henrik Jaldell (Karlstad University), Fredrik Carlsson (Göteborg University), Dinky Daruvala (Karlstad University)

■ From a public decision making perspective one of the more difficult questions is whether the estimation of benefits from risk reducing projects should be influenced by factors such as age groups and risk domains. For example, should a project that saves the lives of elderly people be assigned the same benefit value in cost-benefit analyses as one that saves the same number of children's lives, or should the values be differentiated? We design a choice experiment in which subjects are required to make six pair-wise choices where the characteristics of each choice are accident type (fire and traffic), number of people saved from fatality (four levels), number of people saved from severe injury (three levels) and age of the people saved (10-, 40- and 70-year old). The stated social marginal rate of substitution (SMRS) is estimated between for example saving the life of children compared to elderly. We find that saving the life of one 40-year old is equivalent to saving 1.43 10-year olds from dying in traffic or fire accidents. Likewise, saving the life of one 70-year old is equivalent to saving 3.31 10-year olds from dying. The SMRS between saving a life and avoiding a serious injury is between 3.2 and 3.8 for the different age groups, thus one saved life is equivalent to avoiding around 3.5 seriously injured, which is significantly lower than the officially used value of 6 by the Swedish Road Administration.

Assessing risk-cost of Flooding

Lars Rosén, Johan Nimmermark, Mats Andreasson (Sweco Environment AB and Chalmers, Civil and Environmental Engineering)

■ In Sweden, during the last decades, there has been an increase in establishment of housing close to water. Combined with the increase in heavy rainfall and more fluctuating water levels a rise in the amount of flooding with harmful effects has been noted. The cost for a flooding in an urbanized area can be substantial. To deal with this issue preventive measures are needed. Since the available economic resources are limited a Cost-Benefit analysis (CBA) of possible alternatives is an important tool for facilitating a sound prioritization of resources.

In this paper, we present a new method for calculating and comparing the costs and benefits of different prevention alternatives, thus giving decision makers a powerful tool to help select the most cost-effective solution. An example of application of the model is shown for the river Mölndalsån, located in the communities of Härryda, Mölndal and Gothenburg. Uncertainties on cost-estimates are often substantial. The model therefore includes an uncertainty analysis, where cost-estimations are represented by statistical distributions. Monte-Carlo analysis is used for calculating resulting uncertainty distributions of each alternative.

The outcome of the CBA is, of course, dependant on the quality of the data. Sensitivity analysis is performed to identify factors that provide most uncertainties to the CBA outcome. Finally, the different alternatives can be compared and the economically soundest alternative can be selected. This paper shows how the presented method can be used for providing decision support for achieving the highest risk reduction from available economic resources.

Towards an Impact Assessment of Telematics-based Vehicle Insurances

Tobias Ippisch (University of St. Gallen - Institute of Technology Management)

■ Today's motor insurance business is characterized by harsh competition in many European countries. Premium erosions, increasingly disloyal customers, and persistently high claims costs in third part liability render this business less and less attractive to insurers. New business models allowing for differentiation and eluding price competition therefore receive a warm welcome.

One approach having emerged in recent years is telematics-based insurance (also known as "Pay-as-you-Drive"), which employs GPS and GSM technology for distance-based pricing and innovative add-on services. Although corresponding policies were designed to attract