



Severe weather and psychology – Analysis of international survey data

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WMO as well as ESSL underline the importance of severe weather knowledge and preparedness of the general public. Psychological factors around meteorology risks form a complex network of sociodemography (age, gender, education), media information, elementary meteorological knowledge and preparedness, (ir)rational risk assessment, and personal exposition/damage. Contacts at ECSS2011, ECSS2013, and ICLP2012 led to a joint survey of severe weather social data in Germany, Poland, USA, Australia, Brazil, India, and Malaysia. 717 laypersons (mean age 36.2, 18-90 years, N=80-129/country) were field-interviewed about their meteorological interest, media information, exposition, risk assessment, severe weather knowledge, and preparedness. The survey used identical questionnaires in five languages.

After a presentation of first results from three countries at ECSS2013, the full dataset was analyzed in 2015: 85% of the respondents had access to fast media weather information both in normal and severe conditions. 29% reported high severe weather anxiety, and 30% felt well-prepared. Top subjective risks were floods, tornadoes, and hurricanes/cyclones. Local risk assessments were rational compared with the EMDAT natural disasters statistics, with the exception of dread risks (e.g. tornadoes in Germany). The key findings were:

1. Weather (report) interest strongly interrelates with weather information (via fast media), subjective exposition, meteorological knowledge, and preparedness.
2. Severe weather fear, reported more often by females, interrelates with higher assessed risks, less meteorological knowledge, and less education. There is no gender effect for meteorological knowledge.
3. Better meteorological knowledge correlates with media information, interest, lower fear, higher preparedness, higher education and more children in the household.
4. Seniors show more weather (report) interest. Individual house residents experience more flood/storm exposition, report higher preparedness and less fear.
5. Although the correlations do not hold for all country samples, multination clusters show up for weather interest and media information, interest and exposition, fear and risk assessment, meteorological knowledge and education, interest and age.
6. The US sample was taken in Norman, Oklahoma, 2013 after the 10 miles distant EF5 Moore tornado. 22% reported their families as affected. The affected group showed higher property damage than the unaffected with identical social weather parameters.

Although the low-budget project obtained no representative random, but rather urban street samples, it offers benchmarks for the planning of future educational efforts. The authors suggest to keep up international research to complete the picture and to repeat surveys, also for high-risk groups, to monitor social change against the background of risk development, media innovations, and public education.