



## **Standing in the Shoes of Hazard Managers: How does the Public perceive Avalanche Risks to Roads?**

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In a frequently cited article from 1984, Paul Slovic and colleagues asked the question: “How should a single accident that takes  $N$  lives be weighted relative to  $N$  accidents, each of which takes a single life?” More than 30 years later, the question of how such fatal accidents can be integrated into hazard management is still a looming one. In Switzerland, the well-known  $\alpha$ -model, which weights the number of expected fatalities by the function  $N^\alpha$  (with  $\alpha > 1$ ), is used across governmental agencies to give additional weight to expected fatalities in risk estimations. The use of this function has been promoted in several federal publications such as the recent Swiss strategy for the protection against natural hazards (PLANAT, 2005).

But do laypeople want public authorities to overweight rare accidents causing multiple fatalities against frequent ones causing only one or two fatalities each? Here, we report on a recent experiment that asked 450 laypersons about their perception of avalanche risk to roads. Respondents were required to decide on three risky situations. In each situation they were asked, which of two roads they would protect from avalanche risk, given that they were the responsible hazard manager and limited resources allowed only to protect one of the two roads. The risk on these roads differed with regard to the expected number of fatalities and the frequency of avalanche accidents.

The results show that laypeople behave on average risk prone ( $\alpha < 1$ ) rather than risk averse ( $\alpha > 1$ ), when they make decisions on avalanche risks involving fatalities.

These findings support research by Abrahamsson & Johansson (2006), who asked Swedish hazard managers to decide on multi-fatality risks, finding experts to behave risk prone as well. In summary, people tend to give more weight to the probability of any fatality than to the exact number of victims.