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Communicating risk to parents and those living in areas with a disaster history

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ABSTRACT

This study explored how publics respond to risk communication in high probability but time-indeterminate natural disaster situations when parts of the area have been involved in a similar disaster before. An impending rockslide is expected to produce a tsunami in the fjord around Åknes in Norway. Waves may run up above sea level as high as 82 m or 269 ft. All residents (18 and older) of the four most threatened communities received a questionnaire to determine what they perceived to be useful risk information. Three hundred and eighty-two (43.6% of 875) responded. Results indicated that parents of children living within the tsunami risk zones perceived the risk information to be the most useful. Those who lived in communities that experienced a similar disaster in 1934 reported public meetings less useful than written or mediated information. Publics who lived in communities with such disaster history and those who were not parents posed special challenges in risk communication because they perceived information from the government agencies as lacking in usefulness. Therefore, committing the resources necessary to foster dialogues with a diversity of publics exposed to risk would be well served to fully understand the nature of risk communication responses, and to be able to save human lives.

1. Introduction

Approximately 3,000 people are living in a tsunami danger zone on the west coast of Norway around Åknes; this is one of the rockslide sites with the highest severity potential in Western Europe. Lasers, radar, remote video and human staff keep 24 h continuous watch over the site where 18–54 million cubic m (635 million–1.9 billion cubic ft) of rock is likely to fall into the fjord. In the worst-case scenario, the resulting tsunami may run as high as 82 m (269 ft) above the shoreline in the town Hellesylt 5 min after the rockslide. Most of the town, a local school and an institution for the elderly will be inundated. About 10 min later the tsunami would strike Geiranger with a wave run-up of about 63 m (206 ft), and destroy homes, at least one school, day care centers, hotels, kiosks, restaurants, and shops. The number of people at risk is greatest during the summer when this UNESCO-designated tourist community has many visitors. The wave run-up height estimated to reach two other towns is 13 m (42 ft) for Tafjord and 4 m (13 ft) for Fjørå. The distance from where the rockslide is likely to hit the water, measured along the fjord, is approximately 13 km (8 miles) to Hellesylt; 21 km (13 miles) to Geiranger; 28 km (17 miles) to Fjørå; 35 km (22 miles) to Tafjord.

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1.1. Disaster history background

The Åknes site serves as a constant reminder of 1934, when a similar calamity struck the communities of Tafjord and Fjørå: 40 people died. Back then, survivors thought the best cure was to let time heal the wounds by not sharing their traumatic stories. Not until 1985 was the incident widely discussed, when a local researcher published a first book about the event (Furseth, 1985). Nevertheless, awareness of what has come to be called the Tafjord disaster must have been prevalent.

In the parts of Norway studied here people still tend to stay for generations in the same area where they were born. Therefore it is relevant to explore whether residents of the two communities that were involved in the disaster of 1934 perceive risk information differently from those of similar communities that do not share their history. This knowledge will allow more informed campaign planning by risk communication specialists with respect to whether the same campaign can be used for all communities or if different disaster histories make different campaigns necessary.

1.2. Parenting

Half of the respondents in this study (180) are parents of children living in the tsunami risk zone. Thus, it is important to know if parents of children understand and respond to risk communication campaigns the same way as others in order, again, to decide if a single campaign is sufficient or if two separate campaigns are needed—one for parents and one for non-parents.

Effects of personal or familial experience of hazards have been explored over the past three decades (Grothmann & Reusswig, 2006; Van den Berg et al., 2009; Weinstein, 1989; Zaalberg, Midden, Meijnders, & McCalley, 2009). However, little or no research explores whether publics living in communities with a disaster history and parents of children regularly exposed to natural disaster risk tend to perceive risk communication differently than those without such a common background or who are not parents. The overall aim of this paper was to fill this gap.

1.3. Social influences and affect

Parts of our social identity come from groups we feel most associated with (Dawnay & Shah, 2005). The social amplification of risk framework (SARF) is founded on the individual's social, psychological, and cultural network. Masuda and Garvin (2006) have identified that risk perceptions are shaped by "place" attachments and that place is an important component in the social amplification or attenuation of risks.

According to Slovic, Finucane, Peters, and MacGregor (2004), there are two fundamental systems by which humans understand risk. The *analytic* system uses probability calculus, formal logic, and risk assessment. While the *experiential* system is based on intuition and is fast, mostly automatic, and to a limited degree is characterized by conscious awareness. "The *experiential* system encodes reality in images, metaphors, and narratives to which affective feelings have become attached" (P. Slovic et al., p. 316). The issues explored in this study involve the two systems. Face-to-face communication at public meetings may activate experiential processing, evoking images connected with affect (Marx et al., 2007). Written and mediated information may appeal more to the analytic processing since it lacks the spontaneity and the face-to-face confrontations.

1.4. Risk communication

The principal rationale for risk communication is to protect the publics from dangers and loss. Palenchar (2005) states that a "transactional communication process among individuals and organizations" is a key constituent in risk communication (p. 752).

In the Åknes case, there are two means for providing risk information: public meetings with some dialogic component, and mediated or written communication that is more impersonal and one-way. Public meetings are one of the most common and traditional ways of disseminating information about controversial issues. Officials from the local government usually chair the meetings with the support of experts. Written documentation including reading, seeing or hearing the information in print, audio-visually or digitally, is also common. The two approaches (Grunig & Grunig, 1992) may be assessed separately or together with regard to their "information usefulness," a key concept in this paper.

Endangered publics make their individual choices on how to prepare for natural disasters. According to the uses and gratifications theory (Blumler & Katz, 1974), individuals seek out information they find useful. Therefore, it is important to study first which publics see current available information as useful, and how useful it is to them. When knowing whether parents of children regularly exposed to risk and individuals living in communities with a disaster history find public meetings more useful than printed or electronic information, risk communicators can more effectively determine to continue current presentation formats, or change them.

1.5. Research questions

Based on the reviewed research, the following two questions guided this study: