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Fireside Tales: the power of sharing stories for volcanic risk mitigation

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SUMMARY

“Fireside Tales” was an independent research project I conducted in 2018 – 2019 as part of my PhD at the University of Bristol. I collected lived experiences of volcanic activity of Fuego volcano, Guatemala, from local residents, scientists, and risk managers, in order to inform volcanic risk mitigation policy. My project involved open practices, including incorporating open research methods when designing and conducting the study, using participatory approaches during the study, and publishing under an open licence to disseminate the research findings and methods.

What did you do?

I spent 10 weeks in Guatemala investigating local peoples’ experiences of, and responses to, the eruptive activity of Fuego volcano. I collected these experiences through semi-structured interviews augmented with field notes and participant observation. In exchange, I organized outreach events in local communities and provided participants with contact details to access the study results. This project produced a research article published in a Diamond open-access journal (free to read, access, and publish), a thesis chapter, various research outputs, an open research methodology (e.g., questionnaires available in both English and the language of study (Spanish)), and several ongoing collaborations.

Why did you do it?

My main motivation was to present stories of people living around Fuego in their own words. The most recent research on volcanic risk at Fuego was in 2007. In the >10 years since, both eruptive and human activity have changed greatly. I believed that gathering residents’ stories could partly fill the gap in knowledge of volcanic risk at Fuego, particularly because storytelling is a powerful tool for communicating risk. I also hoped for practical impact: in my previous visits to Fuego, I observed that official policy for responding to volcanic eruptions differed from real behaviour. Conducting my research might yield some insight into why policy differed from reality. Finally, I intended that this research be fully open-access, including making both the design and results fully accessible. This was motivated by my previous experience with a commercial publisher; the experience frustrated me because both my Guatemalan colleagues and I had difficulty in accessing and disseminating the results.

How did you do it?

I drew on my existing network, involving colleagues in the Guatemalan scientific monitoring agency (INSIVUMEH) and disaster risk reduction agency (CONRED), to facilitate visits to communities around Fuego. In 2019 I lived for two months between a research observatory on Fuego’s western slopes and a tourist town. I hired a truck to make regular visits to communities where I met people to ask stories about living with the volcano. I supported myself on my PhD research budget and stipend. I immersed myself in the local culture: communicating in Spanish, helping people with errands, giving talks in exchange for interviews, and participating in events such as a local dance. I kept in contact with

the University of Bristol throughout the project. I also contacted a journal editor during the project to determine their interest in publishing any results.

What barriers / challenges did you have to overcome?

Some residents were reticent to talk about their experiences with an unfamiliar volcanologist. I overcame this by stating that my knowledge of volcanoes was through reading books, and I wished to hear stories from those who had experienced it “with eyes and ears”. Another challenge was finding enough study participants. I overcame this by asking initial participants to invite friends and family to share their stories with me (a method known as “snowball sampling”).

What does it mean for you and your research?

This project has developed my skills in social science research. I have built new working relationships with researchers outside my discipline, including those who use storytelling to conduct and communicate their research, and those working in non-volcanic natural hazards, for example mountain hazards in Nepal. These contacts have made me a more versatile academic.

How might your findings / approach help other researchers?

My approach confirms the power of storytelling in communicating risk from natural hazards. It shows how eruptions have “long shadows” in memory that affect peoples’ responses long after the eruption ends (see figure). It shares a reproducible method for collecting stories of eruptions.

Additional Information

Link to the “Fireside Tales” open-access publication [here](#).

Link to my personal blog explaining the research results [here](#).

Link to science communication event (available on YouTube) [here](#).

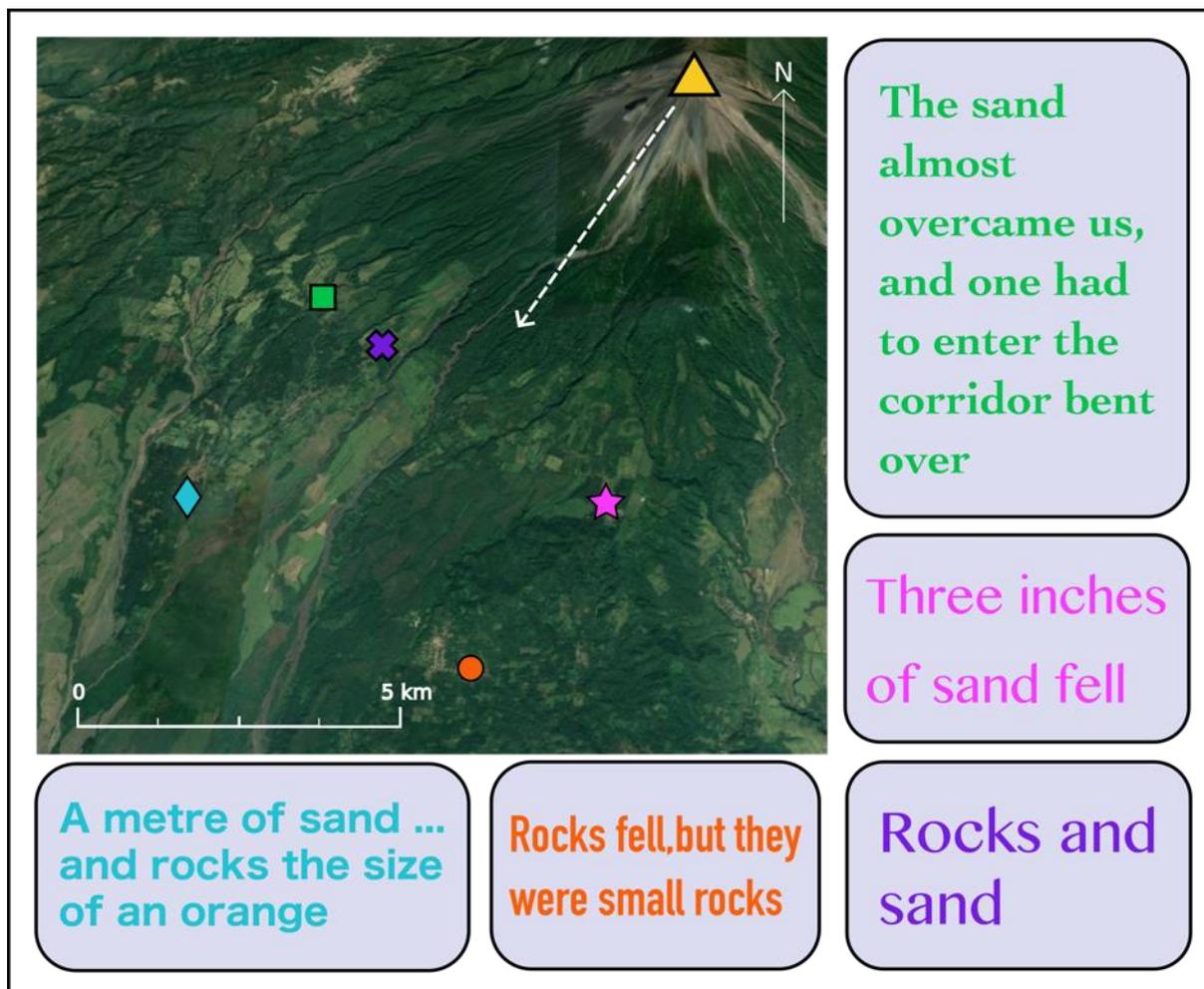


Figure shows local residents' experiences of Fuego's 1974 eruption. Quotation colours correspond to communities (e.g., quotation in green text is from resident of community located at green square). These experiences, told in locals' own words, reveal how a single eruption can have substantially different impacts for people living in neighbouring communities (e.g., green and pink communities are <5 km apart). This has important implications for volcanic risk policy at Fuego and at other active volcanoes: policy is often uniform around a volcano despite disparate experiences of volcanic hazards that influence peoples' responses.