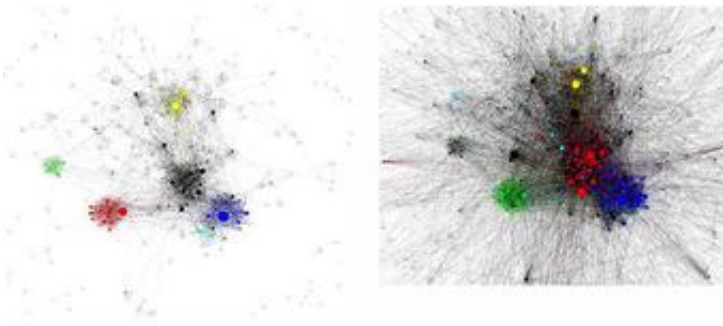


How people respond to a catastrophe on social media

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When an earthquake hits, it makes more than just seismic waves. Extreme events such as earthquakes, tsunamis, and terrorist attacks also produce waves of immediate online social interactions, in the form of Tweets, that offer insights into the event itself and to broader questions of how communities of people respond to disaster.

In an article for *Scientific Reports*, SFI Postdoctoral Fellow Christa Brelsford and co-author Xin Lu analyze interactions by communities of Twitter users preceding and following the 2011 earthquake and tsunami in Japan.

The authors find that among Japanese-speaking Twitter users, the disaster created more new connections and more changes in online

communities than it did globally and (not surprisingly) it produced world-wide increases in earthquake-related tweets.

In addition to their findings, the authors describe a novel framework for investigating the dynamics of communities in social networks that can be used to study any kind of social change.

"Although we would never wish living through a natural disaster on anyone, when disasters do occur, we can learn a lot about how social systems adapt and change during stressful periods by looking at how people's interaction patterns change," Brelsford says. "Communication on Twitter can be accessed from both before and after an unexpected event, providing an accurate and detailed record of how interaction patterns change and how that influences whole communities."

Brelsford has firsthand experience with the aftermath of an earthquake. She was in Haiti in January 2010 helping her brother with a literacy project, working in a building just three kilometers from the epicenter of the earthquake, near Léogâne. The roof collapsed and a falling stairwell crushed her right leg.

"My experiences in the earthquake really were the driving thought behind this research project," Brelsford says. "When in Haiti, I had what might have been the best possible purely observational position you could have after the [earthquake](#): I was awake, conscious, and really in the thick of things, but couldn't actually do anything, and that was totally obvious to everyone who saw me. So, I saw a lot about how people were acting, cooperating, and treating each other that I probably wouldn't have seen as an outsider in less dire circumstances. What I saw was really impressive coordination of people and resources to get things done—quickly. So, I thought it would be interesting to think about how coordination and cooperation changed in [communities](#) in the aftermath of an extreme event."

More information: "Network Structure and Community Evolution on Twitter: Human Behavior Change in Response to the 2011 Japanese Earthquake and Tsunami." *Scientific Reports* 4, Article number: 6773
[DOI: 10.1038/srep06773](https://doi.org/10.1038/srep06773)

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