Speech in an Emergency

The proper devices can help people communicate in times of need

Speech technology already plays an important role in major emergencies. Interactive community notification systems like Reverse 911 warned residents to evacuate during the San Diego wildfires. Equally important, though, first responders need to communicate with victims at an emergency site. Considering that the people who are most likely to survive an emergency are those who can communicate with first responders, how can speech technology improve this communication?

Individuals whose speech is affected by a disability commonly use speech-generating devices (SGDs) that range in price from a few hundred to several thousand dollars and come in all shapes and sizes. While they are crucial for people with disabilities, SGDs can be invaluable when a first responder is trying to assist a victim who speaks a different language or is under stress.

Medical personnel need to know about the devices people will bring with them when they are evacuated in an emergency, but "very little thought has gone into how to systematically provide speech access even to those who can speak," says Sarah Blackstone, co-chair of the U.S. Society for Augmentative and Alternative Communication's Gulf Relief Committee.

Speech recognition has the potential to shorten the amount of time a victim must wait to receive assistance in an emergency.

In a natural disaster—at least in places where an effort to mobilize has been made—some residents with complex communication needs will have been identified in advance through emergency registries so first responders will be aware of the need for augmentative and alternative communications (AAC).

Communication Breakdown

The implications for SGDs go far beyond helping the few who may present to a medical facility with complex communication needs. The devices serve a much broader purpose by addressing the many communication breakdowns that can occur. These include people who cannot speak because of trauma, deaf patients who need sign language interpreters, and patients who do not speak English. If the SGD is used with a non-native speaker, the medical provider will need an SGD with one set of phrases and the patient will require an SGD with its own set of phrases.

Pamela Kennedy, who relies on AAC, experienced firsthand some of the problems associated with insufficient methods of assisting those with complex communication needs. In April 1997, when North Dakota's Red River flooded, she was stuck in her home for more than eight hours before she was finally rescued. Kennedy and her service dog were taken to an evacuation center. However, because of her special needs, she could not be housed at the same shelter as her friends and family. And because electricity was in limited supply, she could not use her SGD. Instead, she had to create makeshift communication boards on a pad of paper to communicate with others. After Hurricane Katrina, Kennedy used her experience to help those affected by the storm and its aftermath.

"There is no one product that has been designed to provide speech output in emergency situations," Blackstone says. If one existed, it could simplify and improve the delivery services of those in need. In designing an SGD that can be used in many types of emergencies, designers should consider scenarios in which the device will be used. What does someone want to say during a flood? An earthquake? In the emergency room of a hospital? When an ambulance arrives at one's home?

The devices should be sturdy, easy to use, easy to modify, multilingual, and capable of a loud volume. The power source must also be considered—namely, how will the battery be recharged if electricity is not available? Should the device include translation software, or is that risky when dealing with medical emergencies because of the many nuances of languages?

First responders have to act quickly, and it may be difficult to pay attention while someone is spelling using a communication board. Similarly, implementing SGDs into the emergency response enables medical personnel to respond to the victim even if an interpreter is not available to translate into sign language or a foreign language.

"The best scenario is for a variety of tools to be available because people communicate in so many different ways," says Harvey Pressman, president of the Central Coast Children's Foundation.

Speech recognition has the potential to shorten the amount of time a victim must wait to receive assistance in an emergency. Finding creative ways to incorporate SGDs into emergency response can save time and, ultimately, lives.

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