MEGAN MOLTENI | 02.13.18  08:00 AM (Wired Magazine)

**SCIENTISTS KNOW HOW YOU’LL RESPOND TO NUCLEAR WAR—AND THEY HAVE A PLAN**

Using an unprecedented level of data from more than 40 different sources, researchers can now make synthetic populations of entire cities

IT WILL START with a flash of light brighter than any words of any human language can describe. ...

That’s what scientists know for sure about what would happen if Washington, DC, were hit by a nuke. But few know what the people—those who don’t die in the blast or the immediate fallout—will do. Will they riot? Flee? Panic? Chris Barrett, though, he knows.

When the computer scientist began his career at Los Alamos National Laboratory, the birthplace of the atomic bomb, the Cold War was trudging into its fifth decade. It was 1987, still four years before the collapse of the Soviet Union. Researchers had made projections of the blast radius and fallout blooms that would result from a 10-kiloton bomb landing in the nation’s capital, but they mostly calculated the immediate death toll. They weren’t used for much in the way of planning for rescue and recovery, because back then, the most likely scenario was mutually assured destruction.

But in the decades since, the world has changed. ... The science of prediction has changed a lot, too. Now, researchers like Barrett, who directs the Biocomplexity Institute of Virginia Tech, have access to an unprecedented level of data from more than 40 different sources, including smartphones, satellites, remote sensors, and census surveys. They can use it to model synthetic populations of the whole city of DC—and make these unfortunate, imaginary people experience a hypothetical blast over and over again.

That knowledge isn’t simply theoretical: The Department of Defense is using Barrett’s simulations—projecting the behavior of survivors in the 36 hours post-disaster—to form emergency response strategies they hope will make the best of the worst possible situation.

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