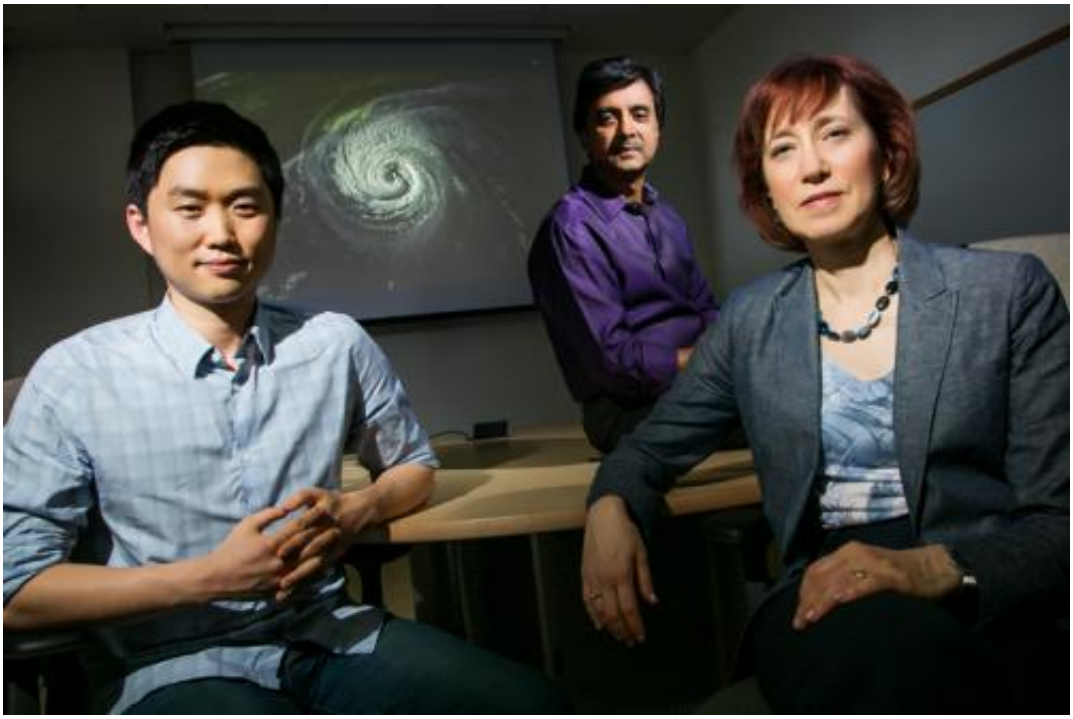
Hurricanes with female names more deadly than male-named storms, study finds

June 2 2014



An analysis of more than six decades of death rates from US hurricanes by a team of University of Illinois researchers shows that severe hurricanes with a more feminine name result in a greater death toll. From left, Kiju Jung, a doctoral student in marketing in the U. of I.'s College of Business and the lead author on the study; Madhu Viswanathan, a professor of marketing; and Sharon Shavitt, a professor of marketing at Illinois. Credit: L. Brian Stauffer

In the coming Atlantic hurricane season, watch out for hurricanes with benign-sounding names like Dolly, Fay or Hanna. According to a new

article from a team of researchers at the University of Illinois, hurricanes with feminine names are likely to cause significantly more deaths than hurricanes with masculine names, apparently because storms with feminine names are perceived as less threatening.

An analysis of more than six decades of death rates from U.S. hurricanes shows that severe hurricanes with a more feminine name result in a greater death toll, simply because a storm with a feminine name is seen as less foreboding than one with a more masculine name. As a result, people in the path of these severe storms may take fewer protective measures, leaving them more vulnerable to harm.

The finding indicates an unfortunate and unintended consequence of the gendered naming of hurricanes, which has important implications for policymakers, meteorologists, the news media and the public regarding hurricane communication and preparedness, the researchers say.

"The problem is that a hurricane's name has nothing to do with its severity," said Kiju Jung, a doctoral student in marketing in the U. of I.'s College of Business and the lead author on the study.

"Names are assigned arbitrarily, based on a predetermined list of alternating male and female names," he said. "If people in the path of a severe storm are judging the risk based on the storm's name, then this is potentially very dangerous." The research, published in the *Proceedings of the National Academy of Sciences*, examined actual hurricane fatalities for all storms that made landfall in the U.S. from 1950-2012, excluding Hurricane Katrina (2005) and Hurricane Audrey (1957) because they were much deadlier than the typical storm.

The authors found that for highly damaging storms, the more feminine the storm's name, the more people it killed. The team's analysis suggests that changing a severe hurricane's name from the masculine "Charley" to

the feminine "Eloise" could nearly triple its death toll.

"In judging the intensity of a storm, people appear to be applying their beliefs about how men and women behave," said Sharon Shavitt, a professor of marketing at Illinois and a co-author of the report. "This makes a female-named hurricane, especially one with a very feminine name such as Belle or Cindy, seem gentler and less violent."

In a follow-up set of experiments, Jung and his colleagues examined how the gender of names directly affected people's judgments about storms. They found that people who were asked to imagine being in the path of "Hurricane Alexandra" (or "Christina" or "Victoria") rated the storm as less risky and intense compared to those asked to imagine being in the path of "Hurricane Alexander" (or "Christopher" or "Victor").

"This is a tremendously important finding. Proof positive that our culturally grounded associations steer our steps," said Hazel Rose Markus, a professor in behavioral sciences at Stanford University, who was not involved in the research. Hurricanes in the U.S. formerly were given only female names, a practice that meteorologists of a different era considered appropriate given the unpredictable nature of the storms. According to the paper, an alternating male-female naming system was adopted in the late 1970s because of increased societal awareness of sexism.

(The names of this year's storms, alternating between male and female names, will start with Arthur, Bertha, Cristobal and Dolly.) Even though the "gender" of hurricanes is pre-assigned and arbitrary, the question remains: Do people judge hurricane risks in the context of gender-based expectations?

"People imagining a 'female' hurricane were not as willing to seek shelter," Shavitt said. "The stereotypes that underlie these judgments are

subtle and not necessarily hostile toward women – they may involve viewing women as warmer and less aggressive than men."

"Such gender biases are pervasive and implicit," said Madhu Viswanathan, a professor of marketing at Illinois and a co-author of the study. "We found that people were affected by the gender of hurricane names regardless of whether they explicitly endorsed the idea that women and men have different traits. This appears to be a widespread phenomenon."

Hurricanes kill more than 200 people in the U.S. each year, and severe hurricanes are capable of producing casualties in the thousands, according to the paper. Even with climate change increasing the frequency and severity of storms, hurricane preparedness remains a challenge for officials.

Although the negative effect of gender stereotypes is well-known in hiring decisions and other evaluations of women and men, this research is the first to demonstrate that gender stereotypes can have deadly consequences.

More information: "Female hurricanes are deadlier than male hurricanes," by Kiju Jung, Sharon Shavitt, Madhu Viswanathan, and Joseph Hilbe. *PNAS*, www.pnas.org/cgi/doi/10.1073/pnas.1402786111

Provided by University of Illinois at Urbana-Champaign