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MASS DISTRACTION

China's Social-Media Smoke Screen

IT HAS LONG BEEN suspected that the Chinese government, as part of its effort to control the Internet within its borders, surreptitiously floods social media with fake posts written by a vast army of hired promoters posing as ordinary people. The "50-cent party," it's called, because each fake post supposedly earns its author 50 cents.

The phenomenon has been talked and written about widely by journalists, academics, activists, other social-media users, but evidence for these claims has been hard to find—until recently. In a study (to be published this year in the *American Political Science Review*) that has already prompted a startled response from Beijing, Weatherhead University Professor Gary King, the director of Harvard's Institute for Quantitative Social Science, confirmed the suspicion: the 50-cent party, he says, is real, although much of the rest of what everyone believed about it is wrong. For one thing, the fake posters likely aren't paid 50 cents. Most aren't independent contractors: they're government employees writing online comments on their off time, and there's no evidence they earn extra money for it.

More surprising, the purpose of these fabricated posts is not to argue with other social-media users, but to distract them. To perform the study, King and his two coauthors—Jennifer Pan, Ph.D. '15, and Margaret Roberts, Ph.D. '14—analyzed a trove of leaked emails sent between local government offices and the propaganda department in one county in southeastern China. "A big giant mess of a dataset," King recalls, from which the researchers harvested nearly 44,000 fabricated social-media posts from 2013 and 2014. Across all of China, they calculated, that suggests about 450 million posts per year.

In those King and his team read, 50-cent party members "are not arguing with anybody at all," he says. They don't jump into fights when other users complain about the regime's repressions or corruption among local officials.

Instead, they change the subject. "They'll say, 'I woke up this morn-

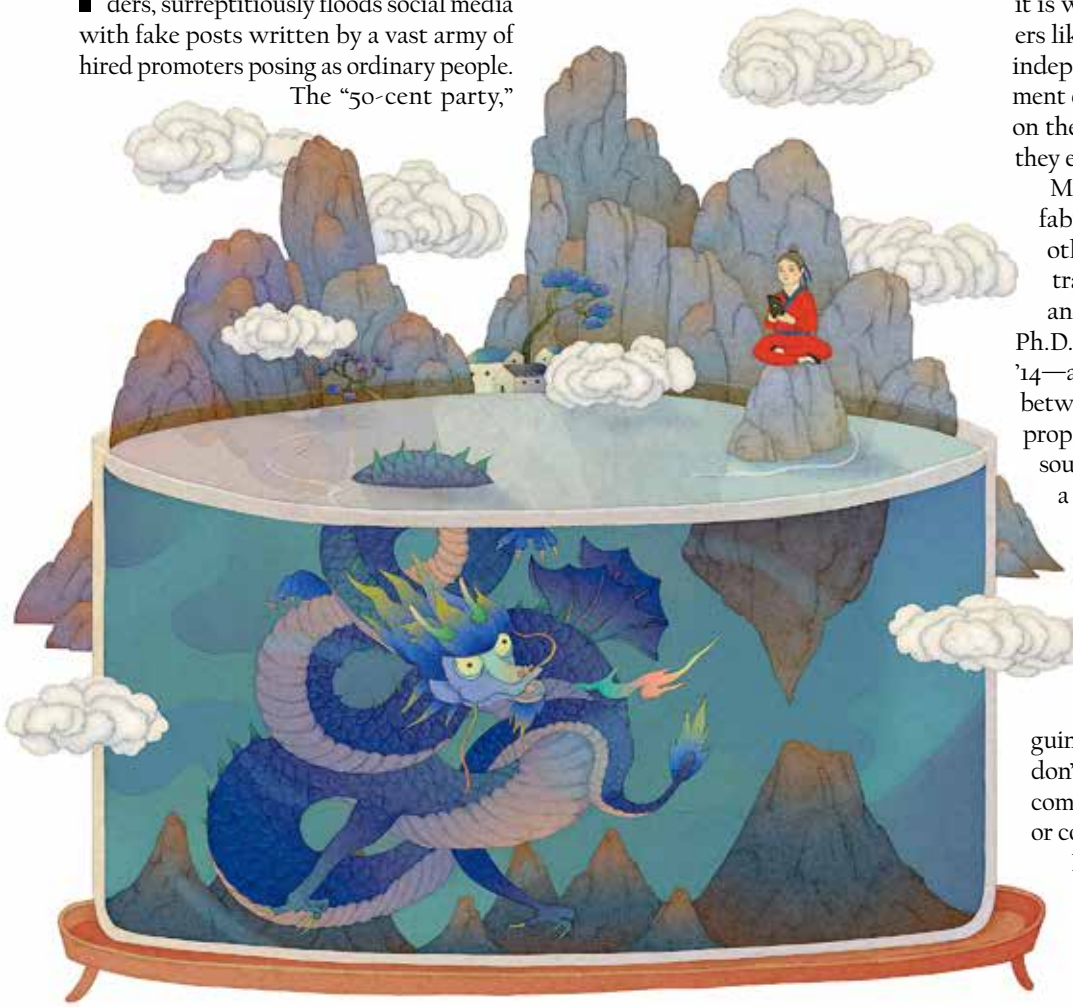

Illustration by Whooli Chen

ing and thought about how important our martyrs were to the history of China,'" King says. "Or, 'What a beautiful day it is today.' Lots and lots of these—and not just randomly. They'll post them in big bursts when they need them." King's team found large batches of fake posts turning up around the same time as crises, holidays, and other events that might stir up public action: the Shanshan riots in June 2013, the Urumqi Railway explosion in April 2014, Martyr's Day, Tomb Sweeping Day, Communist Party meetings to discuss national policies. "It's almost like when you're having an all-out fight about something with your spouse or your kids," King points out, "and you want to end the argument, and so you say, 'Hey, why don't we go get ice cream?'"

This finding—that 50-cent party members are less interested in controversy than in cheerleading—fits with King's previous research on China's social-media control (see harvardmag.com/china-censors-13), in which he found that the government would ignore comments disparaging the regime or local leaders, while posts about organizing protests, or even pro-government rallies, were invariably censored. "They don't care what you say or what you think," King says. "They only care what you can do. They don't want people in the streets."

Last spring came an unexpected twist, when a Western reporter got hold of an unfinished draft of the 50-cent party research paper and called King with some questions for an article. King answered them and then, realizing that his research would be going public ahead of schedule, posted the paper on his website. The reporter published his article, and about an hour and a half later, another publication picked up the story; 72 hours after that, some 5,000 articles had appeared worldwide.

That's when the Chinese government responded. In an editorial in the pro-government *Global Times*, the regime "for the first time admitted the existence of the 50-cent party," King says, and attempted to explain to its citizens the reason for this "'public opinion guidance,' which is their term of art for information control." Basically, the government argued that without such control, the country would fall into strife and chaos. "And," King adds, "they said that the Chinese people are in agreement about the necessity of this public opinion guidance."

As it happens, that was an assertion King could check. After the international blizzard of attention, there was enormous discussion on Chinese social media about the paper and the government's answer to it. "So we downloaded all the posts commenting on it," King says. The finding? He smiles. "Well, it turns out that the Chinese government's claim in their editorial is incorrect. Eighty percent of the people, at least on social media, think it's not a good idea to be censoring and fabricating posts."

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ON AGAIN, OFF AGAIN

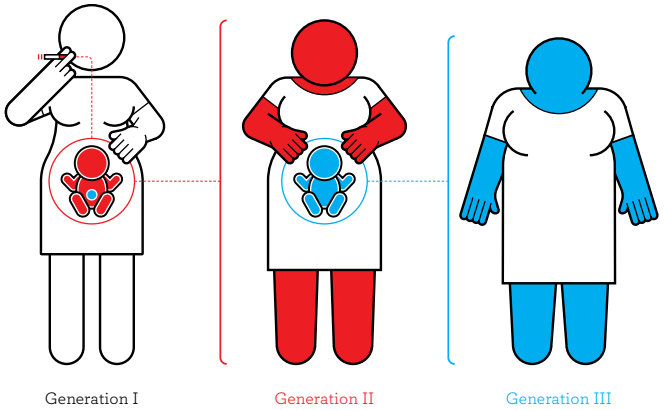
Is Epigenetics Inherited?

EPIGENETICS, which governs whether specific genes in the body are turned on or not, has broad effects on health and development, ranging from the propensity to develop cancer to a disposition to become fat or thin. That has made epigenetic inheritance—the idea that these patterns of gene expression can be passed from parents to children, grandchildren, and beyond, the subject of profuse research. Some investigators have begun to treat it as settled science. But Karin Michels, Sc.D. '95, brought bracing skepticism to the question of whether epigenetic information in mammals can be transferred across generations during a talk earlier this year at the Radcliffe Institute, where she has been a fellow.

Every cell in a human body has the same DNA, or underlying genetic code, explained Michels, who chairs the department of epidemiology at UCLA's Fielding School of Public Health. Epigenetics governs how those genes are expressed at every stage of life. During development, for example, epigenetic markers govern the differentiation that makes a muscle cell different from a kidney cell purely through the genes that are activated—and then maintains that program from one generation of cell to the next, so muscle remains muscle, and kidney remains kidney.

In a monarch butterfly, the caterpillar, cocoon, and winged stages of its lifecycle—all different expressions, or phenotypes, of the same underlying DNA—are also under epigenetic control. But what is distinctive about epigenetic switches is that they can *change*. Diet, psychological state, exposure to cigarette smoke, exercise, financial status: a whole range of environmental or lifestyle factors can modulate gene expression, turning genes on or off.

Research published recently in scientific journals such as *Cell*, *Nature*, and *Nature Genetics* has suggested that epigenetic information *can* be passed from one generation to the next.



A woman who smokes while pregnant induces epigenetic changes in three generations at once: in herself, her unborn daughter, and her daughter's reproductive cells.

But that may be incorrect. A grandmother who smokes, thus altering her own epigenome, could in theory pass on the harmful epigenetic configuration caused by her habit. Research has shown that smoking can cause abnormal increases in hormones that signal hunger, and if this is heritable, that could lead

Illustrations by Jude Buffum