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When Seeing and Hearing Isn't Believing

By *William M. Arkin*

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"Gentlemen! We have called you together to inform you that we are going to overthrow the United States government." So begins a statement being delivered by Gen. Carl W. Steiner, former Commander-in-chief, U.S. Special Operations Command.

At least the voice sounds amazingly like him.

But it is not Steiner. It is the result of voice "morphing" technology developed at the Los Alamos National Laboratory in New Mexico.

By taking just a 10-minute digital recording of Steiner's voice, scientist George Papcun is able, in near real time, to clone speech patterns and develop an accurate facsimile. Steiner was so impressed, he asked for a copy of the tape.

Steiner was hardly the first or last victim to be spoofed by Papcun's team members. To refine their method, they took various high quality recordings of generals and experimented with creating fake statements. One of the most memorable is Colin Powell stating "I am being treated well by my captors."

"They chose to have him say something he would never otherwise have said," chuckled one of Papcun's colleagues.

A Box of Chocolates is Like War

Most Americans were introduced to the tricks of the digital age in the movie *Forrest Gump*, when the character played by Tom Hanks appeared to shake hands with President Kennedy.

For Hollywood, it is special effects. For covert operators in the U.S. military and intelligence agencies, it is a weapon of the future.

"Once you can take any kind of information and reduce it into ones and zeros, you can do some pretty interesting things," says Daniel T. Kuehl, chairman of the Information Operations department of the

National Defense University in Washington, the military's school for information warfare.

PSYOPS seeks to exploit human vulnerabilities in enemy governments, militaries and populations. Digital morphing — voice, video, and photo — has come of age, available for use in psychological operations. PSYOPS, as the military calls it, seek to exploit human vulnerabilities in enemy governments, militaries and populations to pursue national and battlefield objectives.

To some, PSYOPS is a backwater military discipline of leaflet dropping and radio propaganda. To a growing group of information war technologists, it is the nexus of fantasy and reality. Being able to manufacture convincing audio or video, they say, might be the difference in a successful military operation or coup.

Allah on the Holodeck

Pentagon planners started to discuss digital morphing after Iraq's invasion of Kuwait in 1990. Covert operators kicked around the idea of creating a computer-faked videotape of Saddam Hussein crying or showing other such manly weaknesses, or in some sexually compromising situation. The nascent plan was for the tapes to be flooded into Iraq and the Arab world.

The tape war never proceeded, killed, participants say, by bureaucratic fights over jurisdiction, skepticism over the technology, and concerns raised by Arab coalition partners.

But the "strategic" PSYOPS scheming didn't die. What if the U.S. projected a holographic image of Allah floating over Baghdad urging the Iraqi people and Army to rise up against Saddam, a senior Air Force officer asked in 1990?

What if the U.S. projected a holographic image of Allah floating over Baghdad?

According to a military physicist given the task of looking into the hologram idea, the feasibility had been established of projecting large, three-dimensional objects that appeared to float in the air.

But doing so over the skies of Iraq? To project such a hologram over Baghdad on the order of several hundred feet, they calculated, would take a mirror more than a mile square in space, as well as huge projectors and power sources.

And besides, investigators came back, what does Allah look like?

The Gulf War hologram story might be dismissed were it not the case that washingtonpost.com has learned that a super secret program was established in 1994 to pursue the very technology for PSYOPS application. The "Holographic Projector" is described in a classified Air Force document as a system to "project information power from space ... for special operations deception missions."

War is Like a Box of Chocolates

Voice-morphing? Fake video? Holographic projection? They sound more like Mission Impossible and Star Trek gimmicks than weapons. Yet for each, there are corresponding and growing research efforts as the technologies improve and offensive information warfare expands.

Whereas early voice morphing required cutting and pasting speech to put letters or words together to make a composite, Papcun's software developed at Los Alamos can far more accurately replicate the way one actually speaks. Eliminated are the robotic intonations.

The irony is that after Papcun finished his speech cloning research, there were no takers in the military. Luckily for him, Hollywood is interested: The promise of creating a virtual Clark Gable is mightier than the sword.

Video and photo manipulation has already raised profound questions of authenticity for the journalistic world. With audio joining the mix, it is not only journalists but also privacy advocates and the conspiracy-minded who will no doubt ponder the worrisome mischief that lurks in the not too distant future.

"We already know that seeing isn't necessarily believing," says Dan Kuehl, "now I guess hearing isn't either."

William M. Arkin, author of "The U.S. Military Online," is a leading expert on national security and the Internet. He lectures and writes on nuclear weapons, military matters and information warfare. An Army intelligence analyst from 1974-1978, Arkin currently consults for Washingtonpost.Newsweek Interactive, MSNBC and the Natural Resources Defense Council.

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