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POLICY UPDATE

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*“Papers, please’ was the symbol of living under tyranny in the past.
Now, [Chinese] government officials don’t need to ask.”¹*

With the advent of advanced facial recognition technology (FRT), the People’s Republic of China, a party state from its inception in 1949 and a police state for just about as long, is now quickly becoming a surveillance state as well. FRT development is a major part of “Xue Liang,” a massive campaign to improve China’s domestic surveillance capabilities. (Xue Liang is an obvious allusive reference to the popular Chinese idiom, often attributed to Mao Zedong, but more likely just a common saying, about the eyes of the masses being “as bright as snow,” or in other words sharp and all-seeing.²)

FRT is currently big business in China, with the country bidding fair by the end of 2018 to constitute 46 per cent of the US\$17.3 billion global video surveillance market.³ Surveillance sales to Chinese police by SenseTime (Shang Tang⁴), currently China’s largest FRT firm, account for a third of its overall business. Megvii (Kuangshi⁵), China’s second largest FRT firm, achieves rapid technological development because of enormous governmental demand for constantly improving FRT.⁶ In China, uses for FRT are mainly, but not entirely, for state surveillance. It is also increasingly used in cab-hailing, security lock systems for doors, and even in commercial venues, where it supposedly gleans data from faces to extrapolate on what items consumers may be apt to purchase.

Xinjiang, China’s restive far northwestern region with a population that is 50 per cent Uighurs (Turkic-speaking Muslims), is the proving ground for China’s expanding surveillance system. Surveillance equipment, checkpoints and human informants are ubiquitous and inevitable parts of quotidian life there, especially if you’re a Uighur or a Kazakh. Xinjiang is becoming “a real-life laboratory for surveillance” involving FRT, smartphone scanners, voice analysis and compulsory GPS tracking devices for all vehicles. Surveillance capabilities perfected here are then implemented in other parts of China.⁷

Some of the advances in FRT in China are nothing short of breathtaking. On April 7, 2018, Chinese police in Nanchang, Jiangxi province, successfully used FRT to pinpoint and nab a criminal suspect out of a crowd of 60,000 people attending a Cantopop concert. FRT had identified the man as he filed through a stadium entrance. Needless to say, the suspect was very surprised that

¹ Jim Harper, counter-terrorist and former U.S. Homeland Security official. <https://www.theguardian.com/world/2018/jan/18/china-testing-facial-recognition-surveillance-system-in-xinjiang-report> (Accessed May 29, 2018.)

² The idiom “*Renmin qunzhong de yanjing shi xueliang de*” (“The eyes of the people and the masses are as bright as snow” is often coupled with the idiom “The people are actually the only real heroes,” the latter of which Mao did say.

³ <http://www.scmp.com/news/china/society/article/2129473/china-testing-facial-recognition-system-monitor-muslim-dominated> (Accessed May 29, 2018.)

⁴ Shang Tang 商湯 (1646 - ? BC) was the legendary founder of the Shang Dynasty (ca. 1600-1046 BC).

⁵ *Kuangshi* 曠視 means “vast view” in Chinese.

⁶ <https://www.npr.org/sections/parallels/2018/04/03/598012923/facial-recognition-in-china-is-big-business-as-local-governments-boost-surveillance> (Accessed May 29, 2018.)

⁷ <https://www.theguardian.com/world/2018/jan/18/china-testing-facial-recognition-surveillance-system-in-xinjiang-report>; <https://thediplomat.com/2018/04/chinas-ever-expanding-surveillance-state/>; <https://www.nytimes.com/2018/02/03/opinion/sunday/china-surveillance-state-ughurs.html> (All accessed May 29, 2018.)



he could be picked out of a crowd of 60,000 faces. He thought he would be safe in the faceless crowd, but he was not safe and the crowd was not faceless.⁸

In the southern Chinese megalopolis of Shenzhen, “...with the help of artificial intelligence and recognition technology, jaywalkers will not only be publicly named and shamed, they will be notified of their wrongdoing via instant messaging – along with the fine.”⁹



Figure 1: A policewoman uses facial-recognition sunglasses while patrolling a train station in Zhengzhou, the capital of central China's Henan province. The author notes that cameras such as this are becoming more and more prevalent throughout China. (Source: China News Service)

On April 13, 2018, a chilling BBC video story entitled “In Your Face: China’s All-Seeing State” featured an agreed-upon experiment to see how long it would take the Chinese state to determine the precise whereabouts of BBC reporter John Sudworth in Guiyang, a city in Guizhou, one of China’s poorest and least developed provinces. After Sudworth set out on foot from the city centre and walked toward the bus station, the Guiyang police, who used a central database of images of every one of Guiyang’s 4.5 million residents (including a brand new one of Sudworth), were able

⁸ https://www.washingtonpost.com/news/worldviews/wp/2018/04/13/china-crime-facial-recognition-cameras-catch-suspect-at-concert-with-60000-people/?noredirect=on&utm_term=.ea40d262c207 (Accessed May 29, 2018.)

⁹ <http://www.scmp.com/tech/china-tech/article/2138960/jaywalkers-under-surveillance-shenzhen-soon-be-punished-text> (Accessed May 29, 2018.)



to locate and detain him in seven minutes. They used only facial recognition cameras and not cellphone location technology.¹⁰

A high school in the coastal city of Hangzhou uses FRT to scan students’ faces every 30 seconds, monitoring and analyzing their emotions and classifying them as happy, angry, fearful, confused or even dozing off at their desks.¹¹ A Chinese FRT system named Sky Net (*Tianwang*¹²) “can theoretically scan the entire Chinese population of 1.3 billion people within one second,” even under poor visibility conditions and with the people under surveillance in motion, as in cars or escalators. Its developer claims it has an accuracy rate of up to 99.8 per cent.¹³ There are even prospects of developing direct surveillance of the human brain in China, of “mining data directly from people’s brains on an industrial scale” – surveillance that entails monitoring changes in emotional states in employees working on production lines, serving in the military and driving trains. This is accomplished by requiring workers to wear caps that monitor their brainwaves.¹⁴

China is of course not the only country interested in advanced facial recognition technology. In the United States, for instance, the FBI is developing a database of Americans’ photographs, but China is still very much in the vanguard.¹⁵ But in the U.S., governments are called to account for their use of the technology much more frequently than they are in China. On May 22, 2018, the American Civil Liberties Union censured Amazon for developing a powerful facial recognition system called Rekognition, one that can “identify, track, and analyze people in real time and recognize up to a hundred people in a single image.” Amazon, which is supposedly against secret government surveillance and opposed President Donald Trump’s Muslim ban, markets Rekognition as a law enforcement service and has already deployed the technology (which includes a mobile app that police can use to scan surveilled people for matches against Rekognition’s database of at least 300,000 mugshots) with at least two American jurisdictions: Orlando, Florida and the Washington County Sheriff’s office in Oregon. Washington County signed a non-disclosure agreement with Amazon and even used it to thwart the ACLU’s public records request. While the Orlando police chief praises his department’s use of Rekognition as the “first-of-its-kind public-private partnership,” the ACLU regards it as “the government getting in bed with big data” and opposes it because “once powerful surveillance systems like these are built and deployed, the harm will be extremely difficult to undo.”¹⁶

¹⁰ <http://www.bbc.com/news/world-asia-china-43751276> (Accessed May 29, 2018.) The BBC’s Chinese-language version of the story is available at <https://www.youtube.com/watch?v=XHNQ6fwMf3Y&app=desktop>. (Accessed May 29, 2018.) A shorter (1:08) non-BBC Chinese-language report (one presumably not blocked in China) on the story noted pointedly that the facial recognition technology used in the story was developed in China (*Tianwang Gongcheng*) and quoted with approval Sudworth’s statement that “If you have nothing to hide, you have nothing to fear.” (https://www.youtube.com/watch?v=5OAs_zME9hE&app=desktop; accessed May 29, 2018.) But the subtle ironies and measured nuances of Sudworth’s English were lost on the Chinese composers of this story. In saying this, Sudworth was ironically and subtly summing up in a very disapproving way what the Guiyang police were telling him about how good people need not fear how the technology would be used.

¹¹ <http://www.businessinsider.com/china-school-facial-recognition-technology-2018-5> (Accessed May 29, 2018.)

¹² The name of the FRT system is highly significant. Every educated Chinese will immediately recognize the name *Tianwang* as being part of the Chinese proverb “The net of Heaven has large meshes, but it lets nothing through” (*Tianwang huihui, shu er bulou*) – in other words, you can’t hide from the long arm of the law.

¹³ <http://www.atimes.com/article/surveillance-system-can-scan-chinese-population-in-1-second/> (Accessed May 29, 2018.)

¹⁴ <http://www.scmp.com/news/china/society/article/2143899/forget-facebook-leak-china-mining-data-directly-workers-brains> (Accessed May 29, 2018.)

¹⁵ <http://www.scmp.com/news/china/society/article/2129473/china-testing-facial-recognition-system-monitor-muslim-dominated> (Accessed May 29, 2018.)

¹⁶ <https://www.aclunc.org/blog/amazon-teams-law-enforcement-deploy-dangerous-new-face-recognition-technology> (Accessed May 23, 2018.)



Reports on FRT elsewhere in the world, where it is not as widely and assiduously deployed as it is in China, are not uniformly affirmative of its accuracy and viability. As used by Welsh police, FRT has indicated a 90 per cent false positive rate,¹⁷ and in the United States it has been found to be most accurate for white men (accurate 99 per cent of the time) and much less accurate for darker-skinned women.¹⁸ And even in China, where the technology is developing much more quickly, “The algorithm capacity of the fastest servers isn’t enough to support the data of thousands of cameras capturing hundreds of millions of people at any given time,” according to a spokesman for Megvii.¹⁹



Figure 2: The use of security cameras such as these, looking out over Tiananmen Square in Beijing, is on the rise in China. The author notes that it took facial recognition cameras similar to these 7 minutes to locate a BBC reporter in Guiyang, China, a city with 4.5 million residents. (Source: Ed Jones/AFP/Getty Images)

China’s burgeoning surveillance apparatus and its near-total censorial control over the flow of information and news in the country (on the internet as well as in traditional media) ensure that potentially destabilizing news items about searing economic inequalities and local and regional tyrannies do not get national billing and all of the potential turmoil and unrest it could entail. Free and open social media are especially terrifying to Beijing, and this is why it blocks Twitter, Facebook, Google and YouTube in China and maintains its own state-controlled and state-censored versions of all of these. Instead of restricting people’s mobility à la North Korea, the CCP restricts their access to information and outdoes itself to keep tabs at all times on their

¹⁷ https://gizmodo.com/facial-recognition-used-by-wales-police-has-90-percent-1825809635?rev=1525624807232&utm_campaign=socialflow_gizmodo_facebook&utm_medium=socialflow&utm_source=gizmodo_facebook (Accessed May 29, 2018.)

¹⁸ <https://www.nytimes.com/2018/02/09/technology/facial-recognition-race-artificial-intelligence.html> (Accessed May 29, 2018.)

¹⁹ <https://www.npr.org/sections/parallels/2018/04/03/598012923/facial-recognition-in-china-is-big-business-as-local-governments-boost-surveillance> (Accessed May 29, 2018.)



whereabouts. This was even being done in free and democratic Taiwan in 2014. During the Sunflower Movement in March and April 2014,²⁰ mainland Chinese students studying in Taiwan who got anywhere near the Legislative Yuan, where student protesters and activists had occupied the island’s legislature, were warned via text messages to their cellphones to stay away from it. (The CCP was obviously concerned that their young and impressionable minds might be infected with noxious and decadent Western notions such as democracy, human rights, freedom of expression, the rule of law, civil society and civil disobedience.)

Things have not always been this Orwellian in China. During the 10 years (2002-2012) of Hu Jintao’s paramount leadership, there was a brief moment of relaxation and liberalization. One university in particular, Shantou University in Guangdong province, was famous for its openness and liberalization. In May of 2010 a Western professor taught a course to Chinese students there and even required his students to memorize the United Nations’ Universal Declaration of Human Rights. The climate on campus was very open, and it seemed that no topic, not even the Tiananmen Square massacre of June 4, 1989, was off limits. (In fact, one Chinese professor there made a public show of sending a fax off to Beijing on June 4, 2010, requesting that the historical verdict on Tiananmen Square be reversed.) Western law professors were teaching about the rule of law and rejoiced when something like the exclusionary rule, which forbids illegally obtained evidence from being used in court, seemed poised to become effective in China. Western media experts, including former CNN superstar reporter Peter Arnett and Peter Herford, a former producer of CBS’s program *Sixty Minutes*, taught Chinese students about Western news media and freedom of speech. Near Shantou there was a massive outdoor museum or memorial park on the Cultural Revolution, one that frankly and openly acknowledged and deplored its murderous brutality.

But Xi Jinping, China’s current strongman and the most powerful Chinese leader since Mao Zedong (1893-1976), has put the kibosh on all of this, cracking down hard on liberalization and re-asserting hoary Marxist-Leninist-Maoist dogma. Shantou University now toes and parrots the CCP line,²¹ and the outdoor Cultural Revolution museum-park has been closed down. It is scheduled to be transformed into an insipid and nebbish “socialist values” theme park that nobody would ever want to visit.²² Xi’s predecessors, Jiang Zemin and Hu Jintao, were limited to 10-year terms in power, but in March of this year the National People’s Congress, China’s purely ceremonial national parliament, rubberstamped the CCP’s decision to cancel Xi’s 10-year term limit, thus more or less paving the way for him to be China’s paramount leader for as long as he pleases.

What does all this mean? Advances in China’s facial recognition technology and its increasingly pervasive and intrusive surveillance are part of the CCP’s (Chinese Communist Party’s) growing

²⁰ My extensive eyewitness account of the movement can be found at <http://jmss.org/jmss/index.php/jmss/article/view/574> (Accessed May 23, 2018.)

²¹ On the crackdown at Shantou University, see the March 28, 2017 report in the *South China Morning Post*: <http://www.scmp.com/news/china/policies-politics/article/2082818/chinese-communist-party-targets-university-known-global> (Accessed May 30, 2018.)

²² On the shuttering of the museum, see the Oct. 2, 2016 *New York Times* report: <https://www.nytimes.com/2016/10/03/world/asia/china-cultural-revolution-shantou-museum.html> (Accessed May 30, 2018.)



paranoia that it could potentially lose, or might even already be losing, its iron grip on power over the people of China. In her important book *China: Fragile Superpower* (Oxford, 2007), Susan Shirk points out that the CCP and the government it controls fear the Chinese people much more than they fear any foreign country. That is, the CCP sees domestic discontent and unrest as much greater existential threats to its regime than potentially hostile countries such as Japan or even the United States. China today places extraordinary emphasis on harmony and “harmonious society” domestically precisely because its society is not harmonious and because its people (especially those in poorer inland provinces) are not content.

The Hu moment is now over. To paraphrase Rudyard Kipling:

That’s all shove behind China -- long ago and far away,
and there ain’t no trends a runnin’ from Beijing to Human Rights Day.
And they’re learnin’ there in China what the 10-year riddance tells:
If Xi can rule forever, he won’t tolerate nought else.²³

And for good reason: he and the CCP are now running scared, scared of their own people. Their growing despotism and their burgeoning transformation of China into a high-tech surveillance state are not signs of strength but of weakness and fear. The gentle whirring of surveillance cameras peering to and fro may turn out to be one refrain of the CCP’s swansong.

²³ The original lines from Kipling are:
But that’s all shove be’ind me -- long ago an’ fur away,
An’ there ain’t no ’busses runnin’ from the Bank to Mandalay;
An’ I’m learnin’ ’ere in London what the ten-year soldier tells:
“If you’ve ’eard the East a-callin’, you won’t never ’eed naught else.”
No! you won’t ’eed nothin’ else
But them spicy garlic smells,
An’ the sunshine an’ the palm-trees an’ the tinkly temple-bells;
On the road to Mandalay . . .

► About the Author

David Curtis Wright (*Department of History, University of Calgary*) earned his PhD from Princeton University in East Asian Studies. His research and writing interests include imperial Chinese history, the Mongol conquest of China, Taiwan under Qing and Nationalist Chinese rule, and China's interests in the Arctic. He is co-founder and co-editor of the *Journal of Chinese Military History*, now in its seventh year.

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