DAVID BRIN 12.01.96 12:00 PM

THE TRANSPARENT SOCIETY

The cameras are coming. They're getting smaller and nothing will stop them. The only question is: who watches whom?

This is a tale of two cities. Cities of the near future, say, 20 years from now.

Barring something unforeseen, you are apt to live in one of these two places. Your only choice may be *which*.

At first sight, this pair of near-future municipalities look pretty much alike. Both contain dazzling technological marvels, especially in the realm of electronic media. Both suffer familiar urban quandaries of frustration and decay. If some progress is being made at solving human problems, it is happening gradually. Perhaps some kids seem better educated. The air may be marginally cleaner. People still worry about overpopulation, the environment, and the next international crisis.

None of these features is of interest to us right now, for we have noticed something about both 21st-century cities that *is *radically different. A trait that marks them distinctly apart from any metropolis of the late 1990s.

Street crime has nearly vanished from both towns. But that is only a symptom, a result.

The real change peers down from every lamppost, rooftop, and street sign.

Tiny *cameras*, panning left and right, surveying traffic and pedestrians, observing everything in open view.

Have we entered an Orwellian nightmare? Have the burghers of both towns banished muggings at the cost of creating a Stalinist dystopia?

Consider City Number One. In this place, the myriad cameras report their urban scenes straight to Police Central, where security officers use sophisticated image processors to scan for infractions against the public order - or perhaps

word or deed may be noted by agents of some mysterious bureau.

Now let's skip across space and time.

At first sight, things seem quite similar in City Number Two. Again, there are ubiquitous cameras, perched on every vantage point. Only here we soon find a crucial difference. The devices do *not *report to the secret police. Rather, each and every citizen of this metropolis can lift his or her wristwatch/TV and call up images from any camera in town.

Here, a late-evening stroller checks to make sure no one lurks beyond the corner she is about to turn.

Over there, a tardy young man dials to see if his dinner date still waits for him by the city hall fountain.

A block away, an anxious parent scans the area and finds which way her child has wandered off.

Over by the mall, a teenage shoplifter is taken into custody gingerly, with minute attention to ritual and rights, because the arresting officer knows the entire process is being scrutinized by untold numbers who watch intently, lest his neutral professionalism lapse.

In City Two, such microcameras are banned from many indoor places ... except Police Headquarters! There, any citizen may tune in on bookings, arraignments, and especially the camera control room itself, making sure that the agents on duty look out for violent crime - and only crime.

espite their similarities, these are very different cities. Disparate ways of life representing completely opposite relationships between citizens and their civic guardians. The reader may find both situations somewhat chilling. Both futures may seem undesirable. But can there be any doubt which city we'd rather live in, if these two make up our only choice?

Alas, they may be our only options. For the cameras *are *on their way, along with data networks that will send myriad images flashing back and forth, faster than thought.

towns have already followed the example first set by King's Lynn, near Norwich, where 60 remote-controlled videocameras were installed to scan known "trouble spots," reporting directly to police headquarters. The resulting reduction in street crime exceeded all predictions, dropping to one-seventieth of the former amount in or near zones covered by surveillance. The savings in patrol costs alone paid for the equipment within a few months. Today, more than 250,000 cameras are in place throughout the United Kingdom, transmitting round-the-clock images to 100 constabularies, all of them reporting decreases in public misconduct. Polls report that the cameras are extremely popular with citizens, though British civil libertarian John Wadham and others bemoan this proliferation of snoop technology. "It could be used for any other purpose," he says. "And of course it could be abused."

The trend has been slower coming to North America, but it appears about to take off. After initial experiments garnered widespread public approval, the city of Baltimore plans to have police cameras scanning 106 downtown intersections by the end of 1996.

No one denies the obvious and dramatic short-term benefits of this early surveillance technology. But that is not the real issue. Over the long run, the sovereign folk of Baltimore and countless other communities will have to make the same choices as the inhabitants of mythical cities One and Two. *Who will ultimately control the cameras? *

Consider a few more examples:

Already, engineers can squeeze the electronics for a video pickup into a package smaller than a sugar cube. Inexpensive units half the size of a pack of cigarettes are offered for sale by the Spy Shop, a little store two blocks from the United Nations. Soon, cheap pickups will be so small that passersby won't be able to spot them.

Cameras aren't the only surveillance devices proliferating in our cities. Starting with Redwood City, California, south of San Francisco, several police departments have begun lacing neighborhoods with sound pickups that transmit directly back to headquarters. Using triangulation techniques, officials

without having to wait for vague phone reports from neighbors. In 1995, the Defense Department awarded a US$1.7 million contract for Secures, a prototype system created by Alliant Techsystems, to test more advanced pickup networks in Washington, DC, and other cities. The department hopes to distinguish not only types of gunfire, but human voices crying for help. From there, further refinements are only logical.

Or take another piece of James Bond apparatus now available to anyone with ready cash. Today you can order from a catalog night-vision goggles that use state-of-the-art infrared optics equal to those used by the military. They cost about the same as a videocamera. Military and civilian enhanced-vision technologies now move in lockstep, as they have in the computer field for years.

What difference will this make in our lives?

It means that *darkness *no longer offers even a promise of privacy.

Nor does your garden wall. In late 1995, Admiral William A. Owens, vice chair of the Joint Chiefs of Staff, described a sensor system that he expected to be operational within about a year. It uses a pilotless drone, equipped with a TV camera and two-way video links, to provide airborne surveillance for soldiers in the field. Of course, camera drones in the $1 million range have been flying in the military for many years, allowing aerial reconnaissance without risk to human pilots. The difference this time is the new system's low cost and simplicity. Instead of requiring a crew of dozens, it is controlled by one semiskilled soldier. The price per drone will be minimal, since each unit fits in the palm of the hand. Minuscule and nearly silent, such remote-piloted vehicles, or RPVs, can flit between trees and over fences to survey the zone near a rifle platoon, seeking potential threats. Owens expects them to be mass-produced in huge quantities, driving down unit prices.

Can civilian models be far behind? So much for the supposed privacy enjoyed by sunbathers in their own backyards.

Might we prevent this outcome by restricting such cameras to the military?

for legislation. Official regulations may multiply, in response to public outrage. (Should we pass laws banning the private ownership of model airplanes?)

But no matter how many bills are passed, the arrival of such implements in our towns and cities will not be much delayed. The rich, the powerful, and figures of authority will have them, whether legally or surreptitiously. The contraptions are going to spread. And they will get smaller, faster, cheaper, and smarter with each passing year.

Moreover, surveillance cameras are the tip of the proverbial iceberg. Just another entrancing and invasive innovation of the information age. Other examples abound.

Will a paper envelope protect your correspondence, sent by old-fashioned surface mail, when new-style scanners can trace the patterns of ink inside without ever breaking the seal?

OK, let's say you correspond by email and use a computerized encryption program to ensure that your messages are read only by the intended recipient. What good will all the ciphers and codes do if some adversary can fly a gnat-sized camera into your room, station it above your desk, and watch every keystroke that you type?

The same issues arise when we contemplate the proliferation of vast databases containing information about our lives, habits, tastes, and personal histories. From the cash-register scanners in a million supermarkets, videostores, and pharmacies, there already pours a steady flow of statistical data about customers and their purchases, ready to be correlated, helping companies serve us more efficiently - or else giving them an unfair advantage, knowing vastly more about us than we do about them. Soon, computers will hold financial and educational records, legal documents, and medical analyses that parse you all the way down to your genes. Any of this might be accessed by strangers without your knowledge or even against your stated will.

As with our allegorical streetlamp cameras, the choices we make regarding the future information networks - how they will be controlled and who can access the data - will affect our lives, those of our children, and their descendants.

The djinn cannot be crammed back into the bottle. No matter how many laws are passed, it will prove quite impossible to legislate away the new tools and techniques. They are here to stay. Light is going to shine into every aspect of our lives.

The real issue facing citizens of a new century will be how mature adults choose to live - how they might compete, cooperate, and thrive - in such a world. A transparent society.

Regarding those cameras for instance - the ones topping every lamppost in both City One and City Two - we can see that very different styles of urban life resulted from just one decision. From how people in each town answered the following questions: *Will average citizens share, along with the mighty, the right to these universal monitors? Will common folk have, and exercise, a sovereign power to watch the watchers?*

Back in City Number One, Jane and Joe Doe may walk through an average day never thinking about the microcameras overhead. They might even believe statements made by officials claiming that all the spy eyes were banished and dismantled a year or two ago. (When in fact they were only made smaller, harder to detect.) Jane and Joe stroll secure that their neighbors cannot spy on them. (Except, of course, for those casually peering down from windows on all sides - a burden people have lived with for centuries without much apparent harm.) In other words, Jane and Joe blissfully believe they have *privacy*.

The inhabitants of City Number Two know better. They realize that - out of doors at least - privacy has always been an illusion. They know that anyone in town can tune into that camera on the lamppost over there ... and *they don't much care*. They perceive what really matters ... that they live in a town where the police are efficient, respectful, and above all accountable. A place where homes are sacrosanct, but out on the street any citizen, from the richest to the poorest, can walk both safely and with the godlike power to zoom at will from vantage point to vantage point, viewing all the lively wonders of the vast but easily spanned village the metropolis has become - as if by some magic power it had turned into a city not of men and women but of birds.

the old days, before there were so many cameras ... or before TV invaded the home ... or before the telephone and automobile. But for the most part, City Two's denizens know those times are gone, never to return. Above all, one thing makes life bearable - the surety that each person knows what is going on and has a say in what will happen next. A say equal to any billionaire or chief of police.

Of course, this little allegory - like all allegories - is a gross oversimplification. For instance, in our projected city of "open access," citizens will have 10,000 decisions to make.

Can a person order a routine search to pick another person's face out of a crowd?

Since one might conceivably use these devices to follow someone home, should convicted felons be forbidden access to the camera network? Or will that problem be solved by having the system tell you the identity of anyone who is watching you? (The mutual-transparency solution.)

When should merchants be allowed to bring these cameras indoors? True, it might hinder shoplifting, but whose business is it what aisle of the bookstore I go browsing in?

If cameras keep getting smaller and mobile (e.g., mosquito-scale drones), what kind of defenses might protect us against Peeping Toms, or police spies, flying such devices through the open windows of our homes?

The list of possible quandaries goes on and on. Such an endless complexity of choices may cause some citizens of City Two to envy the simplicity of life in City One, where only big business, the State, and certain well-heeled criminals possess these powers.

That élite will, in turn, try to foster a widespread illusion among the populace that the cameras don't exist, that no one is actually watching. Some folk will prefer a fantasy of privacy over the ambiguity and arduous decisions faced by citizens of City Two.

quandaries, the outcomes of which changed history. When Thomas Jefferson prescribed a revolution every few decades, he spoke not only politically but about the constant need to remain *flexible*, ready to adapt to changing circumstances - to innovate at need, while at the same time staying true to those values we hold unchanging and precious.

Our civilization is already a noisy one for precisely that reason - because we have chosen freedom and mass sovereignty, which means that the citizenry itself must constantly argue out all the details, instead of leaving them to some committee of sages.

hat differs today is not only the pace of events, but also our toolkit for facing the future.

Above all, what marks our civilization as different has been its knack for applying one extremely hard-won lesson from the past:

In all of history, there has been only one cure for error discovered, one partial antidote against making grand, foolish mistakes. One remedy against self-deception.

That antidote is criticism.

Alas, criticism has always been what human beings - especially leaders - hate most to hear.

I call this contradiction the "Paradox of the Peacock." Its effects have been profound and tragic for centuries. Accounts from the past are filled with woeful events in which societies and peoples suffered largely because openness and free speech were suppressed, leaving the powerful at liberty to make devastating blunders without comment or dissent from below.

If Western Civilization has one new trick in its repertoire, a technique more responsible than any other for its success, that trick is *accountability*. Especially the knack - which no other culture ever mastered - of making accountability apply to the mighty. True, we still don't manage it perfectly. Gaffes, bungles, and inanities still get covered up.

corps at work, supplemented by hordes of righteously indignant individuals (and their lawyers), all baying for waste or corruption to be exposed, secrets to be unveiled, and nefarious schemes to be nipped in the bud. *Disclosure *is a watchword of the age, and politicians grudgingly have responded by passing the Freedom of Information Act, a truth-in-lending law, open-meeting rules, then codes to enforce candor in housing, in dietary content of foodstuffs, in the expense accounts of lobbyists, and so on.

This morality pervades our popular culture, in which nearly every modern film or novel seems to preach the same message - suspicion of authority.

Nor is this phenomenon new to our generation. Schoolbooks teach that freedom is guarded by constitutional "checks and balances."

But those same provisions were copied, early in the 19th century, by nearly every new nation of Latin America, and *not one* of them remained consistently free. In North America, constitutional balances worked only because they were supplemented by a powerful mythic tradition, expounded in story, song - and now every Hollywood film: that any undue accumulation of power should be looked on with concern.

Above all, we are encouraged to distrust government.

In *The Open Society and Its Enemies*, philosopher Karl Popper pointed out the importance of this mythology during the dark days before and after the Second World War. Only by insisting on accountability can we constantly remind our public servants that they are servants. It is also how we maintain some confidence that merchants aren't cheating us, or that factories aren't poisoning the water. As inefficient and irascibly noisy as it seems at times, this habit of questioning authority ensures freedom far better than any of the older social systems that were based on reverence or trust.

And yet, another paradox rears up every time one interest group tries to hold another accountable in today's society:

Whenever a conflict appears between privacy and accountability, people demand the former for themselves and the latter for everybody else.

(not in my backyard) syndrome to demands that criminal records of sex offenders be made public, and in the battles over things like credit reporting and Caller ID. The penchant is especially profound in recent debates over how to organize new institutions of the information age - from the Internet to new cable and broadcast media.

Above all, floods of books, articles, and public pronouncements have appeared, proclaiming dire threats to our precious right of *privacy*.

In just the last year or so, there have erupted widespread calls to "empower" citizens and corporations with tools of encryption - the creation of ciphers and secret codes - so that the once open corridors of the Internet, and even our telephone lines, may soon fill with a blinding fog of static and concealed messages, of habitual masks and routine anonymity.

Some of society's best and brightest minds have taken recently to extolling a coming "golden age of privacy," when no one need fear snooping by the big, bad government anymore.

It is a risky thing to stand against such a near-universal outpouring of moral umbrage. John Perry Barlow, Mike Godwin, John Gilmore, and other members of the Electronic Frontier Foundation have been especially indignant, demanding that citizens be armed with unlimited power to conceal their words, actions, and identities. If not, claim the paladins of privacy, freedom itself will surely be forfeit.

In opposing this modern mania for personal secrecy, let me first emphasize that I happen to *like *privacy. Moreover, as a novelist and public figure, I need it, probably as much or more than the next guy. All my instincts run toward reticence, to protecting my family from invasions of our private space. Going back to the earlier example, I would find it hard to get used to living in *either *of the cities described in those early paragraphs.

I don't care to be peered at by hovering cameras.

But a few voices out there - Stewart Brand, Nick Arnett, and Bruce Sterling, for instance - have begun pointing out the obvious: that those cameras on every

them.

Oh, we can try. We might agitate, demonstrate, legislate. But in rushing to pass so-called privacy laws, we will not succeed in preventing hidden eyes from peering into our lives. The devices will get tinier, more mobile, and more clever. In software form, they will cruise the data highways. The rich, the powerful, police agencies, and a technologically skilled élite will always be able to find out whatever they want to know about you and me.

In the end, as author Robert Heinlein prophesied years ago, the chief effect that "privacy" laws have is to "make the bugs smaller."

And, I might add, to prevent you and me from learning anything about the rich and powerful.

iven a choice between privacy and accountability, I must sadly conclude that there is no choice at all.

Privacy is a highly desirable *product *of liberty. If we remain free and sovereign, then we'll have a little privacy - in our bedrooms and sanctuaries. As citizens, we'll be able to demand some.

But *accountability *is no side benefit. It is the one fundamental ingredient on which liberty thrives. Without the accountability that derives from openness - enforceable upon even the mightiest individuals and institutions - freedom must surely die.

As this was true in the past, so it will be a thousandfold in the information age to come, when cameras and databases will sprout like crocuses - or weeds - whether we like it or not.

One of the basic decisions we all face in times ahead will be this:

*Can we stand living our lives exposed to scrutiny ... our secrets laid out in the open ... if in return we get flashlights of our own, that we can shine on the arrogant and strong? *

Or is privacy's illusion so precious that it is worth any price, including surrendering our own right to pierce the schemes of the powerful?

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