



Office of the
Privacy Commissioner
of Canada

Surveillance Technologies and Children

*Report prepared by the Research Group
of the Office of the Privacy Commissioner
of Canada*

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Introduction

The purpose of this paper is to summarize existing research on the effects of technical surveillance on children, taking into account video and other means of surveillance, and to develop a better understanding of what impact surveillance has on children's experiences of, and attitudes toward, privacy. The aim is to inform thinking on the overarching privacy challenge posed by child and youth surveillance. Only surveillance taking place in Western countries like Canada is discussed; a broader study of possible impacts across different cultures and religions is excluded from the scope.

In the words of David Lyon, surveillance is “a key feature of contemporary life which is both so routine and taken-for-granted that it seems unremarkable and yet simultaneously has such far reaching consequences that it demands social scientific scrutiny.”¹ Surveillance is defined as “focussed, systematic and routine attention to personal details for the purpose of influence, management, protection or direction.”²

We live in an information society where vast quantities of data about us are gathered and analysed through automated processes. Companies keep track of our purchases, our web surfing habits, and our online social interactions in order to market to us more effectively. Governments monitor our financial transactions, cross-border travel and cyber activities in the name of preventing crime and mitigating terrorism risks. We are no longer surprised when our activities and movements are monitored and recorded - by security cameras, by loyalty programs, by online social networks and merchants, by border security agents, and a multitude of other features of everyday life. Increasingly, we are no longer passive subjects of surveillance but rather active participants, by volunteering information about ourselves for financial rewards when we publicize our location to obtain coupons from nearby merchants, or to enhance our social standing by maintaining an active social networking presence. It is also becoming commonplace for individuals to monitor the actions of others, for example, publicly posting videos of rude bus drivers,³ couples fighting,⁴ or rioters⁵ vandalizing and looting.

Arguably, no one is monitored more closely in our society than children and young people. From their earliest days, children have cameras trained on them – video baby monitors in cribs, nanny cams, Internet-enabled surveillance in daycares. As children get older and more autonomous, the

¹ Lyon, David. “Surveillance, Power and Everyday Life.” Oxford Handbook of Information and Communication Technologies. Oxford University Press, 2007.

http://220.227.128.112/downloads/CriticalPerspectives/Reading%20Material%20CPT-S7/oxford_handbook.pdf
Accessed Dec. 13, 2011.

² Lyon, David. “Surveillance Studies: An Overview. Cambridge: Polity. 2007.

³ “Ottawa bus driver berates, swears at ‘mildly autistic’ passenger” The Huffington Post, November 7, 2011. Retrieved on Dec. 10, 2012 from http://www.huffingtonpost.ca/2011/11/07/ottawa-bus-driver-swears-passenger-mental-ill-disabled_n_1079280.html

⁴ “It’s not safe to break up in a Burger King anymore” Gawker, Nov. 8, 2011. Retrieved on Dec. 13, 2011 from <http://gawker.com/5857507/it-is-not-safe-to-break-up-in-a-burger-king-any-more>

⁵ “Vancouver fans riot as Canucks lose Stanley Cup” Mashable, June 15, 2011. Retrieved on Dec. 13, 2011 from <http://mashable.com/2011/06/15/vancouver-hockey-riot/> and

“Public Safety, Private Security, and Temporary Re-deployable Video Surveillance Cameras at Outdoors Public Events” University of Victoria. Forthcoming research under the OPC’s Contributions Program.

monitoring continues. In the U.S. and Canada, a multimillion dollar industry markets software that allows parents to monitor their children's online and cell phone communications and activities. GPS devices like the AmberAlert GPS⁶ (tag line: Mommy in the Sky) are sold to parents who want to track their children's whereabouts. Security cameras in schools and on school buses are commonplace.

Schools in the U.K. have been testing RFID tracking of students,⁷ whereby an RFID tag is embedded in clothing or a badge and a central system keeps track of students' movements. Palm scanners installed in school cafeterias in the U.S allow parents to monitor their children's food choices.⁸ Some U.K. schools have been replacing library cards with fingerprint scanners, in school libraries.⁹ Waterparks in the U.S. have introduced RFID bracelets to replace room keys, and charge cards, and to facilitate uploading of holiday pictures to Facebook.¹⁰ One of Canada's largest waterparks¹¹ allows patrons to link their fingerprints to an account that allows them to pay for snacks and souvenirs by having their fingerprints scanned.

Corporations monitor and track children online so they can compile profiles based on their online activities. These profiles are often used to deliver targeted ads. Finally, ever-present security cameras record individuals' movements generally for purposes of law enforcement and crime prevention.

In short, our society has embraced surveillance tools. However, there has been relatively little research and public debate about the effects of surveillance on children. This paper aims to summarize existing research in this area, and propose options to help guide future policy and investigations by the OPC.

Why surveillance?

Affordable, available, and easy to use

Rapid advances in technology, particularly in the last decade, have allowed individuals ready access to surveillance tools that were once only available to governments and law enforcement. Surveillance equipment is cheaper, smaller, and more sophisticated than ever before. Also important is that surveillance is a feature of everyday life, and thus has become normalized. Video cameras and GPS are standard features on smart phones. Personal computers together with wi-fi and the Internet allow individuals to watch over their property and loved ones remotely. Stores sell all manner of easily

⁶ <http://www.amberalertgps.ca/> Accessed on Dec. 13, 2011

⁷ "In the debate over RFID tracking, children are the testing ground" Singularity Hub, Sept. 15, 2010. Retrieved on Dec. 13, 2011 from <http://singularityhub.com/2010/09/15/in-the-debate-over-rfid-tracking-children-are-the-testing-ground/>

⁸ "Pinellas students to use palm scanners in lunch line" WTSP.com, Aug 1, 2011. Retrieved on Dec 15, 2011 from <http://www.wtsp.com/news/local/article/203934/8/Pinellas-students-to-use-palm-scanners-in-lunch-line>

⁹ "Another UK school replaces library card with fingerprinting software" School Library Journal, June 14, 2010. Retrieved on Dec 13, 2011 from http://www.libraryjournal.com/slj/home/885330-312/another_uk_school_replaces_library.html.csp

¹⁰ "Water parks and resorts using RFID to capture precious memories" RFID News, June 28, 2011. Retrieved on Dec 15, 2011 from <http://www.rfidnews.org/2011/06/28/water-parks-and-resorts-using-rfid-to-capture-precious-memories>

¹¹ "Water park pioneers use payment by fingerprint" Winnipeg Free Press, June 15, 2010. Retrieved on Dec. 15, 2011 from <http://www.winnipegfreepress.com/business/water-park-pioneers-use-payment-by-fingerprint-96359404.html>

concealable tracking devices and cameras. In short, surveillance tools are no longer the stuff of spy novels but instead have become just another consumer product we can buy at the local mall.

Technology as a parental aid

Societal changes also play a significant role in the adoption of surveillance technologies into family life. It goes without saying that children have always been watched over to ensure that they are safe from harm. In the past, when people tended to live in close-knit communities, this was done by relatives, neighbours and friends. Today, people tend to live in anonymous neighbourhoods where they may not be able to rely on others to look out for their children. This anonymity can lead to an increased sense of danger. It is common for parents to feel that if their children are not under their watchful eye, they could encounter a stranger who will hurt them. Technology can provide parents with a seemingly convenient way of quelling those safety fears.

Online, the fear of strangers translates into a fear of pedophiles and cyberstalkers, feeding the vast market for surveillance equipment. According to a 2011 PEW Research Center survey, 54% of U.S. parents said they use parental controls or other means of filtering or monitoring their child's computer-based online activities¹². Canadians hold similar views. In summarizing the findings of the 2012 Young Canadians in a Wired World study, Jane Tallim of MediaSmarts stated, "When we first began collecting data in 2000, adults described the Internet as a useful source of information. Today, the majority see the Internet as a source of fear and home to unknowable threats to their children. Parental fear has led to heavy surveillance and the belief that online spying is an imperative to good parenting."¹³

Companies have recognized a marketing opportunity based on taking advantage of people's fears about their children's safety, such as the following warning to parents from KidsWatch, which sells computer monitoring software:

Our chat monitoring feature may not be the sole reason to bring KidsWatch into your home but it is a great safety feature to have. Consider this statistic from the Crimes Against Children Research Center: **"Almost one in five young Internet users receive unwanted sexual solicitations."** To us, that seems like a staggering number and you don't have to look further than reading your local newspaper to be aware just how frequently these situations can occur.¹⁴

Safety, together with convenience, appear to be the major selling points for monitoring technologies. In addition to addressing safety fears and convenience factors, surveillance technologies can also serve to fulfill parents' more general emotional needs, particularly where young children are concerned. In a paper¹⁵ about Danish parents who enrolled their children in a nursery that allowed

¹² "Teens, Kindness and Cruelty on Social Network Sites." PEW Internet and American Life Project, Nov. 9, 2011. Retrieved on Dec 13, 2011 from

<http://www.pewinternet.org/Reports/2011/Teens-and-social-media/Part-4/Parental-controls.aspx>

¹³ "New findings from Young Canadians in a Wired World study" May 29, 2012. Retrieved on Sept. 5, 2012 from <http://mediasmarts.ca/press-centre/new-findings-young-canadians-wired-world-study>

¹⁴ <http://www.kidswatch.com/Monitor-Chat-Sessions.php> Accessed on Aug. 29, 2012

¹⁵ Jorgensen, Vibeke. (2010) The apple of the eye: parents' use of webcams in a Danish day nursery. *Surveillance & Society* 2(2/3):446-463. Available at: [http://www.surveillance-and-society.org/articles2\(2\)/apple.pdf](http://www.surveillance-and-society.org/articles2(2)/apple.pdf)

webcam access over the Internet, many parents reported feelings of being together with their children, as well as of protecting them.

State control

Outside the home, children are subjected to surveillance by the state. Typically, this is carried out for purposes of control, such as detecting and discouraging anti-social and outside-the-norm behaviour. For example, schools use monitoring tools to prevent absenteeism and cheating on exams. Municipal governments install security cameras to deter vandalism and other forms of crime.

Commercial profit

Online, children are monitored by companies who want to market to them in a way that maximizes profit. In 2010, the Wall Street Journal reported that popular children's websites installed more tracking software than comparable sites aimed at adults.¹⁶ These tracking tools follow children as they surf the Internet and collect data about their behaviour and personal interests which are then used for marketing purposes.

Effects of surveillance on children

Surveillance using technology is a relatively recent phenomenon and there exists only a limited amount of research on its long-term effects on children. The research that is available tends to focus on online monitoring and links the use of surveillance technologies to a parenting style that is based on restricting and controlling the child's environment. At the opposite end of the parenting spectrum are parents who stress independence and freedom to make decisions.

Most parents fall somewhere between the extremes of helicopter parenting¹⁷ and free range parenting.¹⁸ The decision whether to monitor children and to what extent is a common parental dilemma. A 2012 Globe and Mail article¹⁹ set out both supporting and opposing arguments about webcams in daycares. A mother who is in favour of such monitoring stated:

"I was warming up to the idea because of one simple reason: I miss my kid....I know... part of being a good parent is learning to back off, and let your child develop his or her own relationship with the world...If webcams are installed...I can uphold the morals that are important to me – trust, autonomy, independence – and still have the benefit of being more a

¹⁶ "On the web, children face intensive tracking." Wall Street Journal, Sept 17, 2010. Retrieved on Dec 15, 2011 from <http://online.wsj.com/article/SB10001424052748703904304575497903523187146.html>

¹⁷ Cline, Foster W.; Fay, Jim (1990). *Parenting with Love and Logic: Teaching Children Responsibility*. Colorado Springs: Pinon Press. pp. 23–25. ISBN 0-89109-311-7

¹⁸ "Free-range parenting: It's a new hands-off approach to raising kids. Should you give it a try?" WebMd. Retrieved on Sept. 25, 2012, at <http://www.webmd.com/parenting/features/free-range-parenting>

¹⁹ "Who's watching the kids? All of us" The Globe and Mail. July 20, 2012. P. L13. Retrieved on Sept. 25, 2012 <http://www.theglobeandmail.com/life/parenting/whos-watching-the-kids-all-of-us-thanks-to-daycare-webcams/article4428566/> and <http://www.theglobeandmail.com/life/parenting/why-im-not-okay-with-webcams-in-daycares/article4428576/>

part of my 22-month-old's life than having a full-time job allows. If that makes me feel more comfortable, and more confident in my abilities as a parent, how can that be bad?"

The mother opposed to videocams in daycares worried about the negative effects of monitoring for both children and parents. She said:

"We may tell ourselves we're just curious about what our adored children are doing when we're not around. When given the opportunity to electronically hover...we dial right in. Like the helicopter parents we swear we don't want to be. It's a slippery slope and we may not have the right footwear...As for the kids, we'll have to wait and see what effects constant digital surveillance has on a child."

Most of the research relevant to the topic of surveillance addresses the degree of independence children are given by their parents and how that affects their development. The research also speaks to the way in which surveillance *over time*, rather than a particular instance, helps form children's view of, and relationship with, the world.

Finally, there appears to be a general lack of research about how the effects of surveillance might vary depending on the age of the child, and how children's attitudes toward surveillance might change with age.

Trust and secrecy

Trust is fundamental to promoting self-control and healthy development in children, and trust issues are commonly identified by research examining the effects of surveillance on children.

Although no supporting research was found, one would imagine that the risk of trust being undermined by intensive surveillance is less of an issue in the case of babies, toddlers and pre-schoolers, who require intensive parental involvement because they are not developmentally capable of making many decisions for themselves.

As children get older, trust can become an issue if parents rely on technology to obtain information about their child rather than speaking with the child directly. The findings of the 2012 Media Smarts study "Young Canadians in a Wired World, Phase III: Talking to Youth and Parents about Life Online"²⁰ suggest that there is a correlation between the amount of parental surveillance and feelings of trust in children and youth. Study participants aged 11 and 12 accepted parental monitoring of their online activities as a necessary precaution because, in their view, the Internet is a dangerous place and any strangers they might encounter are not trustworthy. Teenage participants, on the other hand, resented parental monitoring and most used privacy settings and other methods to block nosy relatives. The study found that:

"The teenagers who did share the details of their lives with their parents were the ones who were not routinely monitored. Trust in this case was mutual; the parents trusted their children to behave appropriately and the children responded by providing them with access to their Facebook page."²¹

²⁰ Steeves, V. Young Canadians in a Wired World, Phase III: Talking to Youth and Parents about Life Online" *MediaSmarts*. May 29, 2012. Available online at <http://mediasmarts.ca/research-policy>

²¹ *Ibid.*

In another recent study²² of nearly 500 adolescents and their parents, youth who perceived their privacy as being invaded became even more secretive with their parents. As a result, these parents ended up knowing less about the teens' lives a year later.

When surveillance is interpreted to mean lack of trust, this can result in secrecy and subversion on the part of children and youth, as well as a reluctance to share information with parents. danah boyd and Alice Marwick have described²³ techniques teens use online to keep private information that they know their parents can see. For example, one teen used song lyrics to convey a message to her friends, knowing that her mother would interpret the message in a completely different way.

Autonomy, risk assessment, and social development

Dr. Tonya Rooney²⁴ suggests that surveillance technologies as a substitute for more nuanced discussion and education can have a negative impact on children because the ultimate aim of such technologies is to create a risk free environment. This does not reflect the real world, where we are constantly faced with risks and we must learn how to evaluate and manage risk ourselves in order to function effectively. According to Dr. Rooney, if parents consistently overestimate and overreact to risk, it is difficult for children to learn how to negotiate an appropriate balance between trust and risk. She says, "We need to question whether the technologies may be depriving children of the opportunity to develop confidence and competence in skills that would in turn leave them in a stronger position to assess and manage risks across a broad range of life experiences."

There is agreement among researchers that surveillance decreases opportunities for children to exercise autonomy and independence. Autonomy, defined as "the ability to think for oneself independent of reward and punishment, and to decide between right and wrong, and between truth and untruth"²⁵ is associated with healthy social development. According to Erik Erikson's stages of psychosocial development, children as young as 18 months need to experience autonomy in order to develop self-assurance through exploring the world around them.²⁶ The caveat here again is that young children require near constant supervision because developmentally they are unable to safely navigate their environment and look after themselves.

²² Hawk, S. T., Keijsers, L., Frijns, T., Hale, W. W., III, Branje, S., & Meeus, W. (2012, August 13). "I Still Haven't Found What I'm Looking For": Parental Privacy Invasion Predicts Reduced Parental Knowledge. *Developmental Psychology*. Advance online publication. doi: 10.1037/a0029484 Retrieved on Sept. 25, 2012, from <http://www.ncbi.nlm.nih.gov/pubmed/22889388>

²³ boyd, d. and Marwick, A. "Social Privacy in Networked Publics: Teens' Attitudes, Practices and Strategies." Retrieved on Aug. 29, 2012 from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1925128

²⁴ Rooney, Tonya. 2010. "Trusting children: How do surveillance technologies alter a child's experience of trust, risk and responsibility?" *Surveillance and Society* 7(3/4):344-355. Retrieved on Dec. 15, 2011 from <http://www.surveillance-and-society.org/ojs/index.php/journal/article/view/trust/trust>

²⁵ Kamii, C (1991) Toward Autonomy: The Importance of Critical Thinking and Choice Making. *School Psychology Review*, 20(3), 382-88.

²⁶ "Stages of emotional development." Child Development Institute. Retrieved on Dec 15, 2011 from <http://childdevelopmentinfo.com/child-development/erickson.shtml>

A recent paper from Ryerson University's EDGE Lab²⁷ examines research about the social implications of the use of surveillance technologies to restrict and control children's online activities. The paper concludes that surveillance through technological means can have a detrimental effect on children's development.

According to the paper, surveillance is often experienced by children as a form of control that limits their choices and inhibits their ability to act autonomously. It also serves to direct behaviour through punishment and reward, which means that children will make decisions based on the risk of punishment rather than as a reflection of their values and ethics. When children are directed in their actions, they are denied opportunities to experiment with making critical and ethical choices, leading to lower ability to self-regulate and self-direct their behaviour.

Both Dr. Rooney and the EDGE Lab study comment on scenarios of near constant surveillance. It is perhaps worth exploring whether surveillance technologies can be used in a limited and age-appropriate manner to promote safety and security without the negative impacts on children and youth.

Digital literacy

Digital literacy is defined as the ability to navigate the online world in an effective and safe way. Proponents of digital literacy such as Howard Rheingold²⁸ argue that developing digital literacy skills requires that children have the freedom to learn what information is worthy of their attention. Organizations like MediaSmarts and the Family Online Safety Institute offer resources aimed at educating and empowering children and youth to make the right choices online. Pervasive online surveillance without regard to children's age or capacity appears to run counter to this philosophy as it restricts children's and youths' opportunities to use critical thinking skills.

Understanding privacy

Surveillance in childhood can have a profound effect on understanding privacy later in life. Children learn through experience, and if they do not grow up in an environment where privacy is practiced, they may not learn how privacy works. In the words of the EDGE Lab paper authors, "An authentic experience of privacy is integral to a child's future success in mature decision making and knowing how to appropriately and safely navigate social boundaries, or know when to not disclose personal information.... If children are not afforded privacy in their home life or their daily lives, they will not know how to appropriately establish and advocate for their own boundaries and privacy or recognize those of others as they become adults."

²⁷ Nolan, J., Raynes-Goldie, K. McBride, M. "The Stranger Danger: Exploring Surveillance, Autonomy, and Privacy in Children's use of Social Media." *Canadian Children Journal* (36)2, 24-32. Retrieved on Aug. 29, 2012 from http://ryerson.academia.edu/JasonNolan/Papers/1242473/The_Stranger_Danger_Exploring_Surveillance_Autonomy_and_Privacy_in_Childrens_Use_of_Social_Media

²⁸ Available online at <http://rheingold.com/>

Cory Doctorow, who has long campaigned against the ubiquity of surveillance in the U.K., is also a proponent of teaching privacy by example. In a 2008 Guardian article entitled “Bebo kids will value privacy when they see adults do too,”²⁹ Doctorow argues that society’s reliance on, and acceptance of, surveillance tools influence children’s feelings about privacy. Doctorow has also said that “censorware teaches kids that the normal course of online life involves being spied upon for every click, tweet, email, and IM.”³⁰ He asks what the effects of this perspective will be when today’s children become tomorrow’s web developers and policy makers.

Children/youth Surveillance and PIPEDA – experience thus far

To date, the OPC has investigated one complaint involving video surveillance of children or youth. The complaint involved a daycare that had installed webcams in classrooms and made the feed available to parents over the Internet.³¹ According to the daycare, it had introduced the webcam service so it could monitor classrooms for security purposes and provide parents with assurances about the classroom environment. The case largely turned on the issue of safeguards. Given the lack of information about any long term effects of the trend of heightened surveillance of children, we could not conclude at that time on the appropriateness of the daycare’s purposes for operating the webcam service. The OPC undertook to continue to monitor the issue and conduct further research, which was the impetus for this paper

Surveillance of children and youth has also been addressed in the context of web tracking and profiling. In 2011, the OPC published a policy position on online behavioural advertising³² that set out restrictions on the tracking of children. Recognizing that obtaining meaningful consent to tracking from children, especially at a young age, is a great challenge, the OPC advises organizations to avoid knowingly tracking children and tracking on websites aimed at children. We also acknowledge that the age of the child plays a significant role in the child’s appreciation of the implications of being tracked: “What is meaningful for a 17 year-old may not be the same as what is meaningful for a nine-year-old. Practices need to correspond to cognitive and emotional development. What is appropriate will also depend on the specific context.” This issue came up in the OPC’s investigation of Nexopia,³³ a youth-oriented social networking site. In that case, Nexopia undertook to explain to its members, in age-appropriate language, what behaviourally targeted advertising was, how such advertising works, and how to remove tracking cookies.

²⁹ Doctorow, C. “Bebo kids will value privacy when you do.” The Guardian, Oct 31, 2008. Retrieved on Dec. 15, 2011 from <http://www.guardian.co.uk/commentisfree/2008/oct/31/civil-liberty-information-database-jacqui>

³⁰ Doctorow, C. “Beyond Censorware: Teaching Web Literacy.” Internet Evolution, July 23, 2009. Retrieved on Aug 29, 2012 from http://www.internetevolution.com/document.asp?doc_id=179505&print=yes

³¹ Office of the Privacy Commissioner of Canada. “Report of Findings: Daycare Centre Modified Webcam Monitoring to increase Privacy Protection.” 2011. Retrieved on Oct 11, 2012, from http://www.priv.gc.ca/cf-dc/2011/2011_008_0805_e.asp

³² Office of the Privacy Commissioner of Canada. “Policy Position on Online Behavioural Advertising.” December 2011. Retrieved on Oct. 11, 2012 from http://www.priv.gc.ca/information/guide/2012/bg_ba_1206_e.asp

³³ Office of the Privacy Commissioner of Canada. “Reprot of Findings: Social Networking Site for Youth, Nexopia, breached Canadian Privacy Law.” Retrieved on Oct. 11, 2012 from http://www.priv.gc.ca/cf-dc/2012/2012_001_0229_e.asp

Conclusion

The coming together of societal, technological and commercial factors have caused technological surveillance of children to be commonplace in our society. Since this is a relatively recent phenomenon, the effects of this pervasive surveillance on children are only beginning to be studied. Available research has raised legitimate questions about the potentially detrimental effects surveillance may have on children's social development in the long term. Some have posited that growing up with surveillance as a daily presence may even normalize the practice over time and influence a shift in social norms away from privacy.

We hope that more research will be undertaken into the effects of pervasive surveillance on children and their sense of privacy, as well as impacts on attitudes, such as moral development, later in life. It would be useful if research took into account children's developmental stages to provide some insight into how age plays a role in attitudes and behaviours. Such information would go a long way to helping parents reach a better balance between peace of mind and their children's developmental needs, and adopt a more nuanced approach in assessing the effectiveness and appropriateness of surveillance services.