Helping Parents Manage Their Children's Digital Footprints

Priya Kumar
School of Information
University of Michigan
priyaku@umich.edu

Sarita Schoenebeck
School of Information
University of Michigan
yardi@umich.edu

Abstract
When parents share information about their children online, they create a digital footprint their children will inherit. We explore parents' responsibilities to steward their children's privacy and manage their children's digital footprints. This complex task requires parents to consider what information about their children they want to share online, what role other family and friends will play in sharing information about children online, how to adjust their sharing techniques as their children grow older, and how to teach their children to navigate networked privacy. We argue that approaching privacy stewardship from the perspective of minimizing privacy breakdowns can help parents navigate these nuanced and difficult tasks.

Author Keywords
Parenting; Internet; social media; privacy

ACM Classification Keywords
H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

Introduction
The arrival of a child is a life-changing experience for a parent. Increasingly, parents commemorate this milestone by posting a picture or a message about the baby online, sharing the news with a broad audience and creating a digital footprint for their new child. Sharing such information can help parents build the social capital necessary to cope with the demands of parenthood, but it also surfaces fascinating questions about what relationship this generation, which will know nothing of pre-digital life, will have with privacy.

Parents crave guidance on how to shape their children's technology behavior, particularly because they feel the permanency of online information holds greater repercussions for people with larger digital footprints [16]. We call this privacy stewardship, or "the responsibility parents take on when deciding what is appropriate to share about their children online *and* ensuring that family and friends respect and maintain the integrity of those rules" [8] We derived this concept

from an interview study we conducted with 22 mothers about their decision-making process to post baby pictures online [8].

In this paper, we theorize about how parents should manage their children's digital footprints and how they should teach their children to manage their own digital footprints in an age of networked privacy. We draw on our experience studying social media use among parents of babies, young children, and teenagers. We propose that privacy stewardship does not mean avoiding the creation of children's digital footprints (which may be impossible), but rather, proactively considering how information shared about children could cause privacy breakdowns and minimizing the occurrence of such breakdowns. We offer the following research questions:

- How can parents balance their own preferences for sharing information online about their children with the behaviors of other family and friends, and eventually with the opinions of their children?
- How can parents minimize privacy breakdowns that stem from information shared about their children online?

Types of Information Shared About Children

Sharing family photographs helps people foster connections and maintain relationships with others. Family members especially enjoy seeing photos of young children, although parents may feel pressure from relatives to keep sharing photos of children [15].

Family photos of young children highlight milestones and "firsts," (e.g., meeting family members, eating food, crawling), and they typically do not show distress or exposure (e.g., crying, health problems, breastfeeding) [6]. In our study, we found similar patterns in the baby photos that mothers share online. They tend to share photos that are cute, funny, with family or friends, or depict milestones, and they tend not to share photos that are low quality, portray negativity, or that expose the child or mother [8].

Decisions of what is appropriate to share about children vary based on cultural and social norms as well as the age of the child. American culture does not typically consider the privacy needs of infants and babies, since they are not cognitively aware of such needs [12]. Family photo collections typically contain at least a few pictures of babies who are nude or in the bath, which would be considered privacy violations if they depicted older children or adults [6].

When children are in the early stages of cognitive development, parents alone decide what information to share about their children. As children mature, they develop autonomy and a sense of identity. Parents take on a new responsibility to balance their own desires to share information about their children with their children's opinions about what should be shared about them. This tension predates the Internet but may be magnified in new ways online where personal information is often broadcast to large audiences.

Control Over Information About Children

People use privacy rules to help them control the flow of private information offline and online [12]. For example, parents can decide not to display a nude baby picture in a frame or an album in their home or workplace. Parents also make these decisions online, using a variety of nuanced strategies to obscure

personal information. These include disguising their identity, avoiding discussion of certain topics, or using anonymous platforms such as YouBeMom [10,13]. Some mothers in our study explicitly communicated guidelines to others, such as requesting that family and friends refrain from mentioning a child's first name online or posting pictures of a child online [8].

Parents' use of email, blogs, and various social network sites (SNSs) to share information and multimedia content about their children moves information about children into the ecosystem of networked publics [3]. Networked publics challenge notions of privacy as something within individual control. Children are a popular topic of conversation, and the ubiquity of mobile devices with cameras and Internet access make it possible to share information instantly. One mother in our study, who defined privacy as "having control over who has information relevant to me and my life," intended to keep her daughter's image completely off social media. However, the mother found out that her sister-in-law had posted a picture of her daughter online, forcing the mother to reconsider her plan [7].

A framework of privacy centered on the control of information "will fail" when applied to networked publics, in part because control has to be absolute [4]. The increasingly interconnected nature of Web applications and their ever-evolving terms of service and privacy policies make it nearly impossible even for experts to maintain absolute control over their information. Amy Webb, a digital media consultant, famously wrote about how she posted nothing about her daughter online [2]. Within days, readers found images of Webb's daughter online. It turned out that when Webb transitioned some of her social media

accounts from private to public, she inadvertently leaked a few photos of her daughter onto the Web [1]. Webb wanted her daughter to be able to develop her own digital footprint, but Webb's efforts to preserve her daughter's anonymity were dashed by her own actions.

Because so many parents do share information about their children online, many children will not receive the digital carte blanche their parents did. Instead, they will inherit their digital footprints. If it is impossible for parents to keep their children's information out of networked publics, how can they manage those footprints in a responsible way? Furthermore, when two (or more) parents or guardians are raising a child, privacy stewardship becomes a shared responsibility. Tension can arise if parents disagree on what information about children to share online and how.

Minimizing Privacy Breakdowns

According to Communication Privacy Management theory, two types of privacy boundaries exist in families. A whole-family boundary encompasses information that all family members own and regulate. Children learn from their parents the basic rules that govern the whole-family boundary, though more research is needed to understand how this occurs. The second type of privacy boundary ties individual family members together. Family privacy boundaries are fluid, and such shifts are natural as children grow and mature. Dramatic changes in family dynamics, such as sexual abuse, divorce, or a medical diagnosis, also alter family privacy boundaries. Boundary tension typically arises during adolescence, as teenagers seek to assert themselves as individuals [11].

Information disclosure in networked publics is one of many actions that can cause privacy breakdowns within families. Teenagers have developed sophisticated techniques to maintain privacy while using social network sites [3,9]. Parents who negotiate privacy boundaries with their teenagers rather than imposing or invading boundaries may enjoy better relationships with their children [11]. Parenting style can affect how teenagers disclose information online, with children of authoritative parents engaging in less counterproductive behavior online [14]. As use of digital tools becomes ubiquitous in family life, parents will have to navigate questions of technology use far earlier than adolescence. Parents already ask when children should begin using social network sites, even though many sites prohibit users under age 13 [5].

How can parents minimize privacy breakdowns that stem from information shared about their children online? In our study, about half of participants said they talked with their husbands about sharing preferences. Two participants communicated their preferences in emails to friends and family, and they did not report any significant privacy breakdowns. Two other participants expressed preferences for sharing baby pictures but did not directly communicate them to family and friends, and they described frustrating instances of privacy breakdowns [7]. This suggests that expectant parents can minimize privacy breakdowns by discussing their thoughts and feelings about sharing information online and subsequently communicating their choices to family and friends before their child is born. Parents may change their mind about sharing after the birth of a child, so continued conversation with family and friends may clarify privacy rules.

Carrying out privacy stewardship involves more than discussions about sharing preferences. Maintaining privacy on these platforms requires people to understand the context in which information is shared, the way different people interpret information, and the way information flows within a platform [9]. In addition to this complex responsibility, parents will need to pass these skills on to their children and teach them how to minimize privacy breakdowns as they become technology users.

Conclusion

The use of digital technology can help people adjust to parenthood. However, the affordances of these platforms limit the degree to which parents can control what happens to information that is shared. When parents share information about their children online, they create a digital footprint their child will one day inherit. As children grow, parents will have to introduce these platforms to their children and also adjust their own sharing techniques to consider their children's emerging autonomy and identity. We identify privacy stewardship as the responsibility of parents to manage this footprint and ensure that family and friends also respect parents' guidelines. Communication Privacy Management theory, which emphasizes boundaries around shared information rather than simply who controls information, offers a framework through which parents can minimize privacy breakdowns. Additional research on the interplay between networked privacy and family relationships is needed to understand how parents can best carry out privacy stewardship.

References

[1] Amy Webb. Congratulations, You Found a Photo of My Daughter Online. *Slate*, 2013.

[2] Amy Webb. We Post Nothing About Our Daughter Online. *Slate*, 2013.

[3] boyd, d. *It's Complicated: The Social Lives of Networked Teens*. Yale University Press, 2014.

[4] boyd, d. Networked Privacy. *Surveillance and Society 10*, 3/4 (2012), 348-350.

[5] boyd, d. Hargittai, E., Schultz, J., and Palfrey, J. Why parents help their children lie to Facebook about age: Unintended consequences of the "Children's Online Privacy Protection Act." *First Monday 16*, 11.

[6] Chalfen, Richard. *Snapshot Versions of Life*. The Popular Press, Bowling Green, OH, 1987.

[7] Kumar, P. *A Digital Footprint From Birth: New Mothers' Decisions to Share Baby Pictures Online.* Master's Thesis, University of Michigan School of Information, Ann Arbor, MI.

[8] Kumar, P. and Schoenebeck, S.Y. The Modern Day Baby Book: Enacting Good Mothering and Stewarding Privacy on Facebook. In *Proc. CSCW, ACM* (2015).

[9] Marwick, A., and boyd, d. Networked privacy: How teenagers negotiate context in social media. New Media & Society (in press).

[10] Morrison, A. "Suffused by Feeling and Affect": The Intimate Public of Personal Mommy Blogging. *Biography 34*, 1 (2011), 37–55.

[11] Petronio, S. Communication Privacy Management Theory: What Do We Know About Family Privacy Regulation? *Journal of Family Theory & Review 2*, 3 (2010), 175-196.

[12] Petronio, S. *Boundaries of Privacy: Dialectics of Disclosure*. SUNY Press, 2002.

[13] Schoenebeck, S.Y. The Secret Life of Online Moms: Anonymity and Disinhibition on YouBeMom.com. In *Proc. ICWSM*, AAAI Press, (2013).

[14] Rosen, L.D., Cheever, N.A., and Carrier, L.M. The association of parenting style and child age with parental limit setting and adolescent MySpace behavior. *Journal of Applied Developmental Psychology 29,* 6 (2008), 459-471.

[15] Tee, K., Brush, A.J.B., and Inkpen, K.M. Exploring communication and sharing between extended families. *Int. J. Hum.-Comput. Stud. 67*, 2 (2009), 128–138.

[16] Yardi, S. and Bruckman, A. Social and Technical Challenges in Parenting Teens' Social Media Use. In *Proc. CHI, ACM* (2011), 3237-3246.