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Children's data and privacy in the digital age

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Andra Siibak and Giovanna Mascheroni

Contents

Key Insights

- The datafication of childhood has profound implications for the current generation of children as data and AI impact not only children's preferences, social relations, life opportunities, but also their rights.
- Contemporary practices and imaginaries of "good parenting" have become increasingly mediatized, and therefore subjected to a data-driven business logic called surveillance capitalism, leading to potential breaches both of their interpersonal as well as commercial privacy.
- Different educational institutions have become accustomed to making use of data-driven educational technologies for personalising education, providing insights into the processes of learning, as well as predicting outcomes and preventing risks. Considering that the young are unable to opt out of such increasing dataveillance within the education sector, or even to exercise their agency by acting as partners in discussions about what data is collected, for whom, and for what purposes, threats to institutional privacy are likely to arise.
- The policy context regarding children's privacy online has been oftentimes outpaced by the rapid diffusion of technological innovations. However, adopting General Comment 25 by the UN Committee on the Rights of the Child marks an important step forward in the recognition of children's rights online.
- It is crucial to adopt a child-centred approach to explore not only how datafication operates but also its social consequences and power dynamics.
- Although the young, parents and teachers need to be provided with adequate knowledge and skills to enhance their data, code, and algorithmic literacies, the burden of privacy protection cannot be placed upon them; rather, alternative business models that desist from data collection from and about children altogether should be pursued by platforms and other internet companies.

Introduction

Children today are conceived and raised in a digital world where almost all aspects of our lives, on- and offline, are increasingly monitored, analysed, and transformed into quantifiable data. In fact, as today's children are datafied before they are born (Barassi, 2020; Leaver, 2015, 2017), and dataveillance (i.e., surveillance by means of digital data and datafication) is happening at home, in schools, and peer networks, childhood has become "a critical site of datafication and dataveillance" (Mascheroni, 2018: 1). However, by rendering children's bodies, qualities and behaviours as digital data, the young are turned into data subjects with little or no control. Indeed, data subjects are not only positioned within partial and reductionist data templates, with the possibility that their complexities, potentialities and opportunities may be circumscribed, but also represented and spoken for in ways the children, or their parents, cannot understand or control. Therefore, such data practices and imaginaries are resulting in profound implications for the current generation as they impact not only children's preferences, social relations, and life opportunities, but also their rights. Furthermore, as we have argued in "Datafied Childhoods: Data Practices and Imaginaries in Children's Lives", there is much more at stake here than young people's privacy: "what is at stake is the future of human agency – and ultimately, of society and culture – in the context of the material practices and infrastructures of automation and algorithmic governance" (Mascheroni & Siibak, 2021: 169).

The aim of this short report is to introduce some of the ongoing discussion threads relating to the datafication of childhood in scholarly communities. When structuring the report, we have followed the conceptual framework of children's privacy in the digital age proposed by Stoilova, Nandagiri and Livingstone (2019), which distinguishes between different privacy contexts – interpersonal, institutional, and commercial – and data types – given, traces and inferred. Due to the distinct relationships and roles that parents have in children's lives and recent scholarly interest in datafied parenting (cf. Mascheroni & Siibak, 2021; Barassi, 2020; Lim, 2020; Livingstone & Blum-Ross, 2020, etc.), the first section of the report will focus on potential breaches of children's

interpersonal privacy that might result from the data practices of their parents. The second part of the report will provide an overview of the practices of the young that have become increasingly commercialised and commodified, leading to potential breaches in **commercial privacy**. In the context of **institutional privacy**, our focus is on schools and other educational institutions which have been referred to as "one of the most noticeable domains affected by datafication" (Jarke & Breiter, 2019: 1). We end the report by highlighting the main gaps in knowledge and providing recommendations to the stakeholders.

Interpersonal privacy breaches: datafied parenting

The use of digital media by parents and the data generated by their parenting practices have increasingly raised interest among scholars in recent years. As noted by many (e.g. Blum-Ross & Livingstone, 2017; Clark et al., 2015; Lipu & Siibak, 2019), such mediatised performance of parenthood – including practices like sharing one's parental joys and challenges, and documenting children's lives through sharenting[1] – has become a social norm in the social media era (Clark et al., 2015). On the one hand, the role of parental discussion forums, social media, and "mommy blogs" in parents' everyday routines has become so ubiquitous that the platforms have become "the digital mundane" (Wilson & Chivers Yochim, 2017: 16), where parents find support in the complex and demanding tasks of being a parent. However, through such practices parents also contribute to creating the human data assemblages (Mascheroni et al., 2021) governing their children growing up as members of "the generation tagged" (Oswald, James & Nottingham, 2016). In fact, either in their performance of "intensive pregnancy" – sharing on Instagram authoritative knowledge about how a "normal" pregnancy or "normal" pregnant women should be (Tiidenberg & Baym, 2017), when sharing the first ultrasound image of the foetus on social media (Leaver & Highfield, 2018), or posting photos of successes with potty-training, parents can benignly or maliciously create "digital shadows" (Leaver, 2015: 150) for their (unborn) children – they create a web-presence of the child that the child him or herself cannot control.

Empirical studies carried out among pre-teens (Lipu & Siibak, 2019; Mascheroni et al., 2021) and adolescents (Ouvrein & Verswijvel, 2019; Verswijvel et al., 2019) suggest that the young often disapprove of the practice and feel both annoyed and embarrassed by their parents' sharenting choices. Furthermore, both quantitative (Hiniker, Schoenebeck & Kientz, 2016; Moser, Chen & Schoenebeck, 2017; Sarkadi et al., 2020) and qualitative (Lipu & Siibak, 2019) studies alike indicate that children in different age groups would like their parents to involve them more in the decisions as to what content can be shared. The latter, however, would be crucial as parents do not necessarily associate sharenting with jeopardising their children's sense of interpersonal privacy (Barnes & Potter, 2021; Kopecky et al., 2020; Lipu & Siibak, 2019).

Parent-child relations and children's interpersonal privacy may also be at risk as parents are constantly pressured to take part in the intimate dataveillance[2] of children (Lupton, Pedersen & Thomas, 2016). Such mediatized parenting practices have also been called "caring dataveillance" (Lupton, 2020b) to emphasize the entanglement of caring and dataveillance in the contemporary practices and imaginaries of "good parenting". Future mothers-to-be make use of pregnancy apps to monitor the fetus' development (Barassi, 2017, 2020); parents of new-borns are increasingly dependent upon various babytech gadgets to make their parenting practices easier and to keep their babies healthy (cf. Holloway, Mascheroni & Inglis, 2020; Johnson, 2014; Nelson, 2008); while parents of pre-teens and teens rely upon different parental controls to keep their children safe online (Ali et al., 2020; Anderson, 2019; Cino, Mascheroni & Wartella, 2020; Feal et al., 2020; Smahel et al. 2020) and different other-tracking technologies to keep an eye on them while being physically distant from each other (e.g. Ervasti, Laitakari & Hillukkala, 2016; Hasinoff, 2017; Lim, 2020; Sukk & Siibak, 2021). The above suggests that in today's

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[1] Sharenting is the ovesharing of images and videos of children on social media.

[2] The combination of data and surveillance, to indicate surveillance through digital data.

contemporary technology-saturated society, where various digital technologies lure parents in with the promise of constant connection, has not only helped pave the way to intensive mediatised parenting (Clark, 2013; Nelson, 2010) but has led to "transcendent parenting"; in other words, "the apparent ceaselessness of parenting duties" (Lim, 2020: 5). However, as soon as parenting practices become mediatised and increasingly reliant on digital technologies, they are simultaneously subjected to a data-driven business logic called surveillance capitalism (Zuboff, 2019).

Commercial privacy breaches: datafied selves

As much as parents today rely upon the afore-mentioned mediatised parenting tools, young people use online platforms for sociability, self-expression, youthful experimentation, play and learning. More and more areas of the lives of children and young people, then, are dependent upon the commercially-driven business logic of data capitalism (Couldry & Mejias, 2019; Mascheroni & Siibak, 2021): the same technologies that enable the extraction of data from the flow of everyday life practices and identities, and their conversion into profitable resources for data capitalism. For example, during lockdowns and other social distancing measures, remote learning was made possible by commercial educational platforms that nonetheless exploit children's data (Teräs et al., 2020; Williamson, Eynon & Potter, 2020; Williamson & Hogan, 2020). Furthermore, these very platforms turned once free services, that teachers had embedded in their teaching practice, into subscription services. Moreover, while providing material support for relational maintenance and identity creation, commercial platforms extend the logic of datafication into the "once-private processes of identity, personal relationships" and peer cultures (Livingstone & Sefton-Green, 2016: 7). In fact, informal interactions, such peer group exchanges, are coded, standardised and manipulated by algorithms (van Dijck & Poell, 2013). That is, keeping in touch with friends has been turned into a profitable resource for platforms. The presumption that the greater proportion of children and young people "have an extensive and nuanced comprehension" of issues such as the third-party sale of data,

analytics, and applications, let alone the legalese used in the terms of services, is "overly optimistic", as voiced by Berman and Albright (2017), representatives of the UNICEF Office.

Many scholars (Lupton & Williamson, 2017; Mascheroni, 2020, 2018; Mascheroni & Siibak, 2021; Willson, 2018) have also voiced their concerns about the corporate dataveillance of children during which children's bodies, behaviour and practices are tracked through various apps and monitoring devices. On the one hand, children and young people are themselves increasingly interested in self-tracking to gain personalised insights about one's physical or mental health, which would have otherwise remained hidden and imperceptible, and thereby consciously and voluntarily make use of digital tools and devices that enable the human data assemblages to occur (Lupton, 2020c). On the other hand, as many of such technologies and apps are either free or low cost, the predominant business model for such services is "barter" (van Dijck, 2014: 200); that is, customers agree to disclose their personal data in return for the service. Through the generation of data, however, the quantified self becomes not just the "prosuming self", that is, both a producer and consumer of one's own data, but also a "prosumed self", that is, "an active entrepreneurial subject that produces the 'right' kinds of data which satisfy market expectations and requirements" (Charitsis, 2016: 38). For example, in the case of health wearables and mHealth apps, which mainly valorise the biometric and behavioural information that the devices collect and harvest about the user base, the greatest value for the companies comes not from a person's explicit personal information and health data, but from the "behavioural surplus data" (Zuboff, 2019) going beyond the service and product use, and thereby commercial privacy breaches are very likely to occur (cf. Huckvale, Torous & Larsen, 2019; Hutton et al., 2018).

At the same time, empirical studies indicate that most young self-trackers (Lupton, 2020b, c) or social media users (Lapenta & Jørgensen, 2015) do not tend to worry about the potential that the data could be exploited by third parties. Rather, the young tend to believe that their personal data has little value to anyone else but themselves (Lupton, 2020c), or simply do not view the third-party use of their personal data as

such a big problem (Pybus, Cotè & Blanke, 2015; Selwyn & Pangrazio, 2018). In fact, in comparison to the parents who tend to be quite concerned about the commercial privacy breaches of their children's data (Bietz et al. 2019), the young show more concern about interpersonal and social privacy violations rather than risks posed by third parties (Teen privacy and safety online…, 2016; see Livingstone, Stoilova & Nandagiri, 2019 for an overview). Such a relative lack of concern could be related to the fact that the young oftentimes do not simply understand how their data is being collected and used (Acker & Bowler, 2018), or what kinds of consequences it could lead to in the future (Pangrazio & Selwyn, 2018), which indicates poor data awareness and literacy skills. Hence, as we are witnessing a growing imbalance between the individuals who produce the data and those who monetise these data, various scholars (cf. Kennedy, Poell & van Dijk, 2015; Pybus et al., 2015) have emphasized the need to focus on providing young people with adequate knowledge and skills to enhance their data, code, and algorithmic literacies so as to enable more "knowing publics (rather than just known publics)" to emerge (Kennedy & Moss, 2015: 2, original emphasis).

Institutional privacy breaches: datafied schools

Schools are another realm of young people's lives where datafication and surveillance have intensified over the years. Considering that surveillance is so deep-rooted and naturalised within the field of education (Teräs et al., 2020), it is not surprising that the "governance by numbers" logic has become the dominant mode of governance in the education sector (Neumann, 2019). Different educational institutions, from early years to higher education alike, have become accustomed to making use of data-driven educational technologies in a variety of ways – for predicting outcomes and preventing risks, for providing insights into the processes of learning, or for personalising the education system around every student's personal needs (Williamson, 2019). Hence, as we have previously argued (cf. Mascheroni & Siibak, 2021: 149), "the grand narrative of the datafication of education generally focuses on philanthropic goals". At the height of the Covid-19 pandemic, when almost 1.6 billion children

all over the world were compelled to use a variety of data-intensive educational online platforms for remote learning due to lockdown measures (UNESCO, 2020), the student data drain was accelerating and intensifying even further.

In fact, a report by the World Privacy Forum (Dixon, 2020) reveals instances of "coronawashing" (Williamson & Hogan, 2020: 61) as student privacy and security principles were waived during the pandemic. One analysis by the internet research firm Top10VPN reveals that 58% (N=57) of the government-recommended remote learning educational technology edTech platforms studied posed a high risk to children's digital privacy (Migliano & Woodhams, 2020). The above illustrates that the ongoing processes of datafication in schools treats students as "data objects" (Koopman, 2019) rather than "data owners" (Broughan & Prinsloo, 2019). The young did not have the choice to either opt out of increasing dataveillance, or to at least exercise their agency by acting as partners in discussions about what data is collected, for whom, and for what purposes. Furthermore, the datafication of the education sector is not only transforming the ways in which teaching and learning are organized but is also creating a profound effect on young people's experiences of growing up (Pangrazio & Selwyn, 2020). In fact, rather than offering quick technological solutions, datafication happening in the educational sector not only reinforces social problems but may also "exacerbate discriminatory decision-making in favor of those social groups most represented in the systems' datasets" (Selwyn, 2019: 13), leading to considerable data harm (Lupton, 2020a).

One of the most recent and egregious examples of data harm comes from the UK, where in spring 2020, due to the ongoing Covid-19 pandemic, students were unable to take their A-Level exams, which are necessary for admittance to university. The decision by the Office of Qualifications and Examinations Regulation (Ofqual) to build an exam grading algorithm, in the hope of creating a seemingly more objective and more accurate alternative in comparison to the supposedly subjective judgement of teachers, led to a huge "algorithmic grading fiasco" (Kolkman, 2020). The exam regulator's algorithm downgraded

nearly 36% of the grades as lower than what their teachers' original A-Level assessment would have been (Kelly, 2021). Faced with public outcry about the unfairness of the results and the resulting legal action, the UK government had to retract the grades generated by the algorithm and enable about 15,000 students who were at first rejected by their first-choice university to receive the grade based on their teachers' estimates (ibid). The above example is therefore a vivid illustration of how we are only starting to notice, acknowledge, and make sense of dataveillance "when apparently immaterial data begin to have material effects/affects" (Lupton, 2020a: 120).

Identifying the knowledge gaps

A systemic evidence mapping based upon empirical literature published in English between 2007–2019 reveals that present knowledge on the topic has substantial gaps (Stoilova, Nandagiri & Livingstone, 2019). Analysis by Stoilova et al. (2019) indicates that most empirical studies explore children's privacy concerns in interpersonal contexts and are focused upon data that is deliberately and knowingly provided, whereas much fewer studies tackle children's privacy issues in institutional and commercial contexts or explore the data traces and metadata in the context of young people's privacy. Also, only a limited number of empirical studies have investigated possible harm associated with infringements of children's privacy, or the support children expect on the topic; and only a few studies tackle the topic of privacy in the context of young children (ibid).

Considering the abovementioned knowledge gaps, we argue that it is crucial to study datafication and its potential consequences for children's rights and privacy through the lens of the lives of children and families. We believe that only a child-centred approach will enable us to explore not only how datafication operates but also its social consequences and power dynamics. Furthermore, such an approach would also enable us to avoid making absolute and universalising claims on the implications of data-based governance or business models.

Advancing policy change

Stoilova et al. (2019) note that the policy context regarding children's privacy online is controversial and in continuous flux. First, the current normative frameworks that explicitly address children's right to privacy (namely, COPPA and GDPR) focus on children's rights to (data) protection at the expense of their rights to participation, provision, learning, and so on. For example, the requirements regarding parental consent for the processing of the personal data of children under the age of 16, as included in the GDPR Article 8, have proven controversial: the implementation of Article 8 throughout Europe implied the definition of different age limits (13, 14 or 15; see Milkaite & Lievens, 2018) in different countries.

Second, the ever-transforming media environment, with the emergence of ever new platforms and technologies, means that regulation is often outpaced by the rapid diffusion of technological innovations. For example, the GDPR has been criticised for largely ignoring the impact of biometric dataveillance technologies. Policymakers struggle to find a balance between the need to identify general enough categories and to keep up with the latest technological developments. However, 2021 will be celebrated as the year when children's digital rights have finally been recognised. In fact, on 4 February 2021, the UN Committee on the Rights of the Child adopted General Comment 25, which extends children's rights to the digital environment (Livingstone, 2021). While its enforcement will not be without challenges, General Comment 25 marks an important step forward in the recognition of children's right to privacy as part of the complex framework of rights identified under the UNCRC.

Moreover, besides regulation, awareness raising campaigns have been carried out both institutionally – by the Safer Internet Centres coordinated within the Better Internet for Kids framework – or by NGOs; for example, the 5Rights Foundation campaigns for children's rights in the UK and the US. Such campaigns provide parents, teachers, educators, children and ultimately policymakers with valuable recommendations. Yet, the burden of privacy protection cannot be placed upon parents, teachers nor children themselves: alternative

business models should be pursued by platforms and other internet companies that dispense with data collection from and about children altogether.

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