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Children as Data Subjects: Families, Schools, and Everyday Lives

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Introduction

Writing in 2017, Lupton and Williamson noted that 'little research thus far has sought to examine how children are the objects of a proliferating range of digitized surveillance practices that record details of their lives' (Lupton and Williamson, 2017: 780–781). There are now various responses to this scholarly gap concerning the datafied lives of children (Holloway, 2019; Barassi, 2020; Grimes, 2021; Mascheroni and Siibak, 2021; Pangrazio and Mavoa, 2023). This chapter continues the response to this important area relevant to data power by presenting the results of a collaborative writing endeavour that brings together three distinct strands of empirical research situated in three contexts of datafied childhood.

Across various strands of research involving 'sharenting' discourse in the United States, privacy practices in Italian families, and the anticipatory data practices in secondary schools in England (UK), the foundations of neoliberalism, perceptions of risk, and decision-making against the backdrop of power relations permeate the work. The datafication of childhood reverberates with many decision-makers. Parents, teachers, governments, and others often need to make a variety of decisions in their everyday lives: should they use an app or 'smart' connected product? Do they want to opt-in or out of data collection? What should they do with data that have been collected from children? Recognizing these varied contexts, our research addresses some of the many issues facing datafied children, roughly falling between the ages of zero to 18.

Building upon concepts like data assemblages (Kitchin, 2014; Selwyn, 2021) and data futures (Dourish and Gómez Cruz, 2018; Ruppert, 2018), we have conceptualized the threads of our work as a braid. Although the threads of the datafication of childhood could be potentially infinite, Figure 2.1 teases out the three empirical themes upon which this chapter is based: sharenting, connected daily lives, and educational data analytics.

Following this introduction, our chapter begins with the first thread of the braid, sharenting. Kumar critically examines US media coverage of sharenting, a portmanteau of the words 'share' and 'parenting', that refers to parents posting about their children on social media. She uses the framework of governmentality to analyse nearly 250 articles, and she identifies potentiality risk as a neoliberal manifestation of data power. Potentiality risk encapsulates fears that data-driven processes will preclude children from maximizing their individuality and thwart any efforts to become their 'best selves'.

In the second thread, Zaffaroni, Mascheroni, and Amadori share insights from interviews with 20 Italian families with children aged 0–8. Their work identified multiple forms of connectivity (for example, smart phones, connected devices, educational technologies, and so on) through which children's personal information may be shared with other individuals, schools, and corporations. By examining distinct privacy contexts – interpersonal, commercial, and institutional – the study reveals the diverse challenges related to privacy that children and parents face in everyday life. Results show that parents hold different privacy practices and perceptions, ranging from privacy-protective strategies to surveillance realism, which reveal

Figure 2.1: Collaborative writing braid of datafied childhood
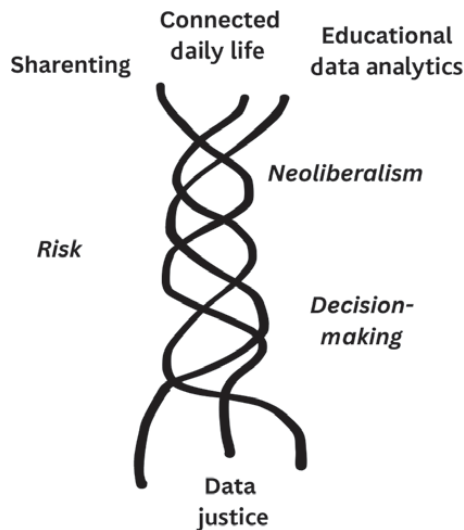
the contradictions, tensions, and anxieties of datafied childhood in family life where both risks and opportunities exist. These privacy practices and perceptions are grounded in a neoliberal context of individual responsibility, wherein parents are burdened with challenging and at times insurmountable responsibility for their children's data.

In the third strand of research, Grant shares ethnographic work on the anticipatory practices of data analytics that are found in English secondary schools in the United Kingdom. The work recognizes that the use of predictive data analytics to anticipate pupils' educational futures has intensified over the last decade, with emerging data-fuelled practices that identify certain pupils as 'risk subjects' to be managed and open to intervention. Neoliberal discourses concerning self-improvement are animated in real life when pupils are encouraged to position themselves on a trajectory towards a narrowly defined and predetermined, 'successful' future, continually prioritizing anticipated futures over present demands.

After exploring these three empirical threads, we move towards the idea of data justice as a potential resistance and response to the datafication of childhood. The data justice section contributed by Smith and Shade provides an opportunity to reflect upon some of the possibilities for intervention and action in response to intensive data collection and processing throughout childhood and beyond. This chapter argues that neoliberal notions of risk and decision-making permeate a variety of contexts of datafied childhood. We posit that while exploration of the datafication of childhood is still nascent, making visible commonalities across datafied childhood contexts provides a robust contribution towards striving for greater data justice.

The figure of the child: how fears about children's digital identities reinforce neoliberal individuality – Priya C. Kumar

Since the Internet entered the domestic sphere, academics, policy makers, and journalists have worried about the risks children face when using digital technologies (Livingstone, 2003; Banet-Weiser, 2004). Decades later, the proliferation of large-scale, data-driven, predictive modelling technologies throughout society raises considerable concern about how datafication can constrain children's lives (Lupton and Williamson, 2017; Barassi, 2020). These concerns are well founded, as the use of such technologies in schools and government agencies poses ethical questions and perpetuates inequities (Jones et al, 2018; Eubanks, 2019; Laird et al, 2022). But how does fear of datafication *itself* work to constrain children's lives? In other words, how do concerns about datafication coalesce into expectations about how children and caregivers should protect themselves and others from datafication's consequences?

I have approached this question through studying a practice that has attracted significant media and scholarly attention in recent years: parents posting pictures of children on social media. Colloquially called 'sharenting', a portmanteau of the words 'share' and 'parenting', the practice has been labelled as problematic and risky by journalists and researchers alike (for example, Kamenetz, 2019; Kopecky et al, 2020). At the same time, the practice is common: 82 per cent of American parents who use social media say they post about their children (Auxier et al, 2020). It also has historical precedent: families have exchanged photographs of children for nearly a century (Chalfen, 1987). I sought to trace what logic justifies concerns about this practice.

By analysing 243 US news articles on the topic using the framework of governmentality (Rose et al, 2006), which is a means of tracing how power works through expertise to regulate the lives of individuals, I found that sharenting discourse harnesses the concept of a digital identity to portray children's presence online as a form of risk (Kumar, 2021). This discourse treats the Internet as a distinct space of existence and equates posting about children with creating their digital identity. It references the consequences of this digital identity, expressing concern that data generated about a child now could affect them negatively in the future. Sharenting discourse states that children could experience physical, psychological, or emotional harm if someone kidnaps or bullies them based on information gleaned from their digital identity. This discourse also suggests that digital identities could foreclose children's future educational or employment opportunities, if college admissions officers or human resources staff negatively judge children based on these identities. This train of thought positions the digital environment not only as a separate sphere, but also one that threatens children. Yet temporality is key here, as sharenting discourse is primarily concerned with effects on the future child (or their adult self). In other words, the underlying concern of sharenting is that parental posting might thwart a child from reaching or achieving their potential.

Thus, I propose that sharenting discourse manifests a distinct form of risk, which I call *potentiality risk*. This risk encapsulates fears that data-driven processes preclude people from becoming their 'best selves'. It responds to anxiety that data-driven decision-making challenges people's agency, eroding their ability to chart their own life path. The neoliberal ideology that drives much of contemporary society impels people to exercise 'choice, autonomy, self-responsibility, and to maximize one's life as a kind of enterprise' (Rose et al, 2006: 91). Potentiality risk is the neoliberal recognition that data power threatens the project of maximizing one's individuality.

Sharenting discourse responds to this risk by holding parents responsible for mitigating the concerns of having a digital identity. It encourages parents to discipline their own behaviour, for instance, by 'thinking before you post', and to take steps to limit the visibility of children's information online. This

discourse implies that parents who fail to take such preventative measures are at fault if (or when) their child experiences negative consequences linked to their digital identities. However, such logic ignores the fact that parents themselves have little control over the way children's information gets used. Indeed, even though corporate practice and legal regulation play a much more consequential role in governing data flows, sharenting discourse positions the commonplace activity of posting on social media as an individual concern with equally individual response.

Thus, I contend that 'sharenting' is not simply a word that describes what parents do. Rather, it is a discursive force that harnesses the concept of risk to distil social concerns of data power into an individual responsibility for preserving neoliberal selfhood. Concerns about sharenting come from a well-meaning place of wanting to protect children and respect their rights. However, efforts to resist data power must go beyond a focus on the actions of individuals and attend to the broader socio-technical conditions that give rise to datafication.

Privacy practices and perceptions in everyday family life – Lorenzo Giuseppe Zaffaroni, Giovanna Mascheroni, and Gaia Amadori

Italian families increasingly rely on Internet-connected devices and toys, which collect valuable insights into various aspects of children's lives – including play, communication, and education – turning them into datafied subjects (Barassi, 2020; Mascheroni and Siibak, 2021). However, our understanding of how the commercial and predictive use of children's personal data affects their social and educational outcomes is still limited (Mascheroni and Siibak, 2021). Concerns about privacy harms and security risks associated with children's data collection and use are widespread. While discussions often portray children and parents as unaware and powerless, further research should investigate how they actively shape their privacy practices and beliefs in response to datafication norms (Mascheroni, 2020).

Existing research on privacy in family life uncovered the tensions arising from various practices, including caring dataveillance (Leaver, 2017), sharenting (Blum-Ross and Livingstone, 2017), and the management of tracking technologies (Sukk and Siibak, 2021). Given these studies, it is now crucial to broaden our knowledge regarding the interconnected and context-dependent nature of privacy management within households. To this aim, we propose to frame privacy practices and perceptions as socially situated and emergent meaning-making processes rooted in everyday life. Building on Stoilova et al's (2019) framework, our study explores various data and privacy negotiations in daily interactions across three relevant contexts: interpersonal, institutional, and commercial. Understanding these

distinct privacy contexts helps us grasp the varied privacy-related challenges experienced by children and parents, as different online environments shape specific expectations, values, and norms. We conducted in-depth interviews as part of a three-year longitudinal mixed-methods research involving 20 families with children aged 0–8 in the Milan metropolitan area, recruited through theoretical sampling. The participating families vary in terms of family composition, socio-economic status, cultural background, and religious participation. The interviews were coded and analysed using the Constructivist Grounded Theory methodology (Charmaz, 2014).

Our findings indicate that interactions among family members, family culture, and the media available at home significantly shape privacy practices and beliefs. Parents' digital privacy practices are shaped by a trade-off between adopting privacy-protective strategies against corporations or potential predators, and enabling children's access to technologies seen as crucial for their development and social connections. Privacy beliefs and practices in the context of the datafied home emerge within a framework of individual responsibility, whereby increasing neoliberal expectations are placed on parents as responsible mediators. Intimate surveillance (Leaver, 2017) is presented as essential to the social expectations and common norms around parenthood to which new parents are taught to conform. Furthermore, our findings reveal the central role of parental mediation, which evolves dynamically and informs privacy management depending on family history and culture, everyday dynamics, and relationships with other social groups and across different privacy contexts.

The context of interpersonal privacy is where parents address most of their privacy concerns and practices. Parents engage in discussions on interpersonal privacy by giving priority to the value of individual control, yet they hold various positions concerning whether or not to engage in privacy-sensitive practices (for example, sharenting). Indeed, interpersonal privacy is where parents exert more mediation over their children's media practices. Parents adopt a combination of enabling and restrictive mediation (Livingstone et al, 2017) in order to increase the safety of children's media experiences. For example, 'guest' or 'Kids' YouTube accounts are sometimes implemented as a way to make children's engagement with online media safer. While children develop 'smart' workarounds to communicate with friends or share content over (or created within) apps that are age-restricted (for example, TikTok), parents reveal their primary attention is towards interpersonal privacy against unknown others, and that they share a sense of unfamiliarity and disengagement with the 'inner' workings of various applications – that is, how they produce data traces for commercial purposes.

In the commercial context, parents often tend to adopt a 'surveillance realism' perspective (Hintz et al, 2018), thus normalizing corporate surveillance and profiling based on the premise they have 'having nothing to hide'. Parents employ both laissez-faire and restrictive strategies

by safeguarding sensitive information against commercial risks, while downplaying the political and social consequences of datafication. Families' daily practices reveal the inconsistencies and uncertainties inherent in navigating surveillance capitalism. Often, paradoxical privacy beliefs and attitudes shape everyday decision-making. For example, some parents frame excessive smartphone use as a psychological issue by subscribing to social pressures and screen time discourses, while they simultaneously accept targeted advertisements and algorithmic decision-making as they ignore or dismiss the resulting biases or power imbalances.

Furthermore, within the commercial context, parents perceive less control over their data and privacy settings compared to the interpersonal context. This is partly due to the prevalent acceptance of surveillance capitalism and the belief that companies hold benign intentions. Parents often feel powerless in controlling commercial privacy settings, in contrast to the interpersonal context where they attribute more agency to themselves. However, parents may implement strategies to minimize children's exposure to profiling and surveillance, often adapting privacy approaches developed in the interpersonal context – thus resulting in various, sometimes inadequate, outcomes.

Regarding the institutional context, our findings indicate that parents generally have limited awareness of its implications. Privacy considerations are often absent when parents contemplate their children's digital interactions within an institutional datafied setting, such as the school. For instance, a 42-year-old mother approved the use of a school app called Kindertap primarily based on her trust in the school and in other parents, assuming that all of them had given their consent. Consequently, discussions regarding the data-driven processes of uploading, storing, and transmitting data through the app were not explicitly addressed. Seemingly, parental trust in the school overshadowed concerns related to institutional and commercial aspects, which were only superficially acknowledged.

In conclusion, our data highlight the situated and interconnected nature of privacy perceptions and practices, influenced by family cultures and media practices. Analysing different privacy contexts – interpersonal, commercial, and institutional – has provided valuable insights into the varying privacy implications and potential clashes that arise within these contexts as media practices unfold. By focusing on privacy in everyday life, we aim to shed light on new research directions that uncover the contradictions, tensions, and anxieties arising from the datafication of childhood and family life.

Pupils' data narratives: anticipating future risks – Lyndsay Grant

Schooling and education are sites in which relationships between the present and the future are brought to the fore, with education commonly positioned

as an institution for preparing young people to successfully inhabit, or sometimes to create, imagined futures (Facer, 2021). The educational aims, practices, and governance regimes embedded in our schools are shaped by the challenges and opportunities we anticipate young people will face in the future. Education cast in this way, primarily as preparation for an anticipated future, is an exercise of power – those who claim knowledge over the future exercise authority over what we should do in the present to prepare for it (Facer, 2021).

The use of predictive data analytics to anticipate educational futures has intensified over the last decade, with large volumes of dynamically updated, automatically processed quantitative data used to support claims of more objective and accurate knowledge about future outcomes and scenarios (Mackenzie, 2015; Smithers, 2020, 2022; Jarke and Macgilchrist, 2021; Lunde, 2022). Such anticipatory data futures are increasingly powerful actors in the governance of education (Amsler and Facer, 2017; Webb et al, 2019). For pupils, predictive data analytics extrapolate from past performance data to anticipate and quantify future outcomes for both individuals and larger cohorts and demographics. In this way, data analytics constructs narratives connecting pupils' pasts and futures, building trajectories towards anticipated futures.

Exploring how education data are used to anticipate pupils' futures, I draw here on an ethnographic study of data practices in Ridgeway School, a secondary school (11–16 years old) in England (UK).[6] I conducted this research over the course of a full school year, following the generation of pupil performance data, its flows through and beyond the school, and its processing, representation, and implementation (Grant, 2022). Here, I argue that the educational data practices at work constructed narratives about who pupils were and where they were going, and were used to rationalize decisions and interventions applied to them in their present moment.

Understanding the high-stakes accountability and governance regimes at work in England provides an important context for the data practices working within this school. Schools' quality and performance are regularly inspected based, in large part, on pupils' performance data. The stakes for schools missing accountability targets are high: more frequent inspection, replacing their senior leadership, and joining a wider chain of sponsored academy schools. Headline school accountability targets are expressed in terms of the percentage of pupils each year achieving specified performance measures. But within schools, these cohort data measures are translated into individual targets for every pupil, with frequent data monitoring used to track their progress, anticipate and intervene in their future performance.

Ridgeway School contained a 'data office' dedicated to monitoring, analysing, intervening, and improving school and pupil performance data. Their key pupil performance monitoring and intervention system was

represented in a 'data wall' displaying information on those pupils at risk of missing targets, comprising postcard-sized printouts containing information on each pupil including current and predicted performance data. Pupils were sorted and ranked in order of priority for being assigned to 'intervention' booster classes, with the aim of altering their predicted futures to better meet school targets.

This data wall, therefore, visualized and constituted pupils as 'risk objects' requiring active management through processes of rationing and prioritizing their assignment to intervention booster classes (Hardy, 2015; Wilkins and Gobby, 2022). Pupils positioned as risks to school accountability targets in this way were also rendered as opportunities for individual and school improvement. Through algorithmically anticipating the risks to accountability targets and rationalizing which pupils to assign to interventions, the school ultimately hoped to improve their future performance measures.

Pupils themselves were continuously made aware of their current position on the trajectory towards this narrowly specified future. For example, in every lesson, pupils selected a sticker detailing the learning objectives corresponding to their personal target level, and evaluated their work against this objective at the end of the lesson. So ingrained was this understanding of learning as 'working through the levels' (Livingstone and Sefton-Green, 2016) that when one teacher gave purely qualitative feedback on pupils' work in an attempt to prevent pupils, in his words, 'thinking of themselves as a number', pupils expressed deep dissatisfaction. Pupils were thus habituated to understand their own identity and learning primarily as progress through quantified levels towards a narrowly defined and predetermined future.

The progress targets upon which schools and pupils were evaluated were, at the time of fieldwork, calculated as three National Curriculum levels between the end of primary school (4–11 years old) and the end of secondary school (11–16 years old). A simple, linear trajectory was plotted between these points to determine pupils' 'expected' progress. In this way, future performance was assumed to be both predictable and calculable, despite educational research suggesting that most pupils do not, in fact, progress in such a constant, linear, and predictable fashion (Education Datalab, 2015). When pupils' data monitoring suggested they were diverging from this anticipated trajectory, they became eligible for interventions, withdrawing from arts and sports subjects to take booster classes in English and maths to catch up to where they 'should' be. The heavy reliance of schools on linear progress measures and booster classes has been described as fuelling an 'intervention culture', a form of dividing children in which some children are removed from the full range of lessons and school activities in order to 'plug gaps' in school data (Llewellyn, 2016; Bradbury et al, 2021). Here, these processes were facilitated, rationalized, and materialized through the anticipatory data practices at work in the pupil data wall.

By encouraging pupils to anticipate potential divergence from that path, pupils were asked to address themselves to a future that would always remain just out of reach. There would always be another level, a next future target to aim for; their achievement in the present moment would never be enough in and of itself, but only a stepping stone towards a future data point. In this way, the predictive data practices at work in this and many other schools, prioritized aspirational data futures over and above pupils' achievement, engagement, or pleasures in the present moment.

The narratives constructed through pupils' data trajectories constitute a form of risk rationality, producing pupils as risk objects, and rendering them amenable to be managed and intervened through data practices of triaging and prioritizing their assignment to intervention booster classes (Hardy, 2015; Wilkins and Gobby, 2022). Indeed, the rise of intervention cultures is part of the response to securing these anticipated risks. In these anticipatory data practices, children's futures are rendered as both known and knowable and as more valuable than their present, limiting opportunities for more meaningful engagement with their achievement, engagement, interests, and concerns in the present moment.

Data justice as resistance – Karen Louise Smith and Leslie Regan Shade

Various examples discussed thus far in this chapter – sharenting (Kumar), surveillance through everyday digital connectivity and smart devices in the home (Zaffaroni, Mascheroni, and Amadori), and intensifying uses of technology and data-driven metrics in the education system (Grant) – lead us towards the question of whether we can resist the datafication of childhood, which appears to be built upon a foundation of neoliberal ideals, which are both socio-technical. At this stage, we pivot to consider the possibilities that *data justice* offers as a form of resistance to configuring young people as data subjects.

Data justice is a concept that broadens data ethics issues and situates them within a social justice framework. As Lina Dencik, Arne Hintz, Joanna Redden, and Emiliano Treré argued, foregrounding social justice concerns can account for 'ongoing historical struggles against inequality, oppression and domination' (Dencik et al, 2019: 876), and provide a critical perspective on systemic and structural conditions that perpetuate inequalities and injustices. Data justice is sometimes approached from an intersectional feminist angle (for example, Taylor, 2017), which is significant as we consider the experiences of young people, because age is an attribute whose effects and experiences intersect with other identity characteristics.

By virtue of age, young people can encounter data injustices within groups, through platforms, or by organizations where they lack power. In many family contexts, it is parents who control the ebb and flow of posts

through their sharenting, and they sometimes also select and configure the smart devices which collect and process their children's data. On social media platforms, young people are subject to the terms and conditions established by the legal teams for big tech corporations and, often, their content can be archived in near perpetuity. Similarly, many virtual learning and course management systems are controlled by companies that can track, profile, and surveil the academic progress of school children and university students. Finally, moving to the macro networked society level, young people's behavioural data are frequently tracked across platforms and subjected to algorithmic processing, which can shape online environments (targeted advertising, mis/disinformation), and access to opportunities (automated processing of job or university applications), often in discriminatory ways.

Various models of data justice including those from Taylor (2017) and the Advancing Data Justice Research and Practice Group (ADJRP) provide insights that are relevant to data justice and young people. Taylor's (2017) model of data justice, is supported by three pillars:

- *visibility* (access to representation, informational privacy, data as a public good);
- *technological engagement* (technological choice and autonomy, freedom to control one's data and to share in the benefits of data); and
- *non-discrimination* (the power to identify, and thus prevent and challenge biased and discriminatory data).

The ADJRP framework for data justice notes Western dominance. A 2022 literature review produced for The Alan Turing Institute in collaboration with The Global Partnership on AI (Leslie et al, 2022), cites Western dominance and biases in much of the work in data justice as a 'critical deficit' (p 8), and calls for 'relocat[ion of] data justice in the decolonial context' (p 14). ADJRP thus calls for a revisioning and reorientation of data justice along a framework encompassing six pillars: *power*, *equity*, *access*, *identity*, *participation*, and *knowledge*.

Ideas such as technological engagement from Taylor (2017) and participation in a decolonial context from ADJRP bring us closer towards more robust possibilities of data justice for children. Data justice for children must be inclusive of a broad spectrum of human rights. Myopic focus on data-centric issues and rights, such as individualistic Western models of 'consent' prevalent in privacy rights, when children often have little to no control over their surroundings (including at home and in school) have proven insufficient. Indeed, such a focus is problematic for everyone in light of the complexities and lack of transparency of data practices of technology corporations and governments. And practices such as data erasure or de-indexing, which are associated with the right to be forgotten, do little to meaningfully right the

fundamental power imbalances involved. Data justice for children could likely be best supported by nations or other contexts where dialogue is fostered to appropriately regulate the situations in which data can be collected from children for commercial purposes, and to guard against discrimination and other algorithmic harms that could impact children. Data justice for children centres on their human rights and strives towards a more just society through fair and equitable access to digital technologies and skills.

Conclusion

In this chapter, we braided three threads of datafied childhood: sharenting, connected everyday lives, and educational data analytics. Concepts such as the potentiality risks of sharenting (Kumar), privacy protection and surveillance realism in family life (Zaffaroni, Mascheroni, and Amadori), and anticipating pupils' futures through data (Grant) reveal avenues for configuring children as data subjects, highlighting the need for children's data justice (Smith and Shade).

As we collectively address concerns of datafication, we must also attend to the way our responses may actually exacerbate, rather than alleviate, the problem. In the case of sharenting discourse, fears about parents' use of social media may intensify the already high levels of pressure and judgement that parents, especially mothers, face from society. Thus, I (Kumar) encourage future work to expand beyond a focus on individual action and towards ways to address the broader socio-technical conditions that give rise to concerns of data power.

We (Zaffaroni, Mascheroni, and Amadori) strongly advocate for additional research to delve into the situated and interconnected nature of privacy practices in the domestic context, particularly regarding privacy concerns in institutional and commercial contexts, and the different forms of data that family members produce and are (un)aware of. To address this shortfall, we propose to continue our focus on the implications of datafication for children's rights in the everyday life experiences of children and parents to gain valuable insights into the social ramifications and power dynamics associated with the datafication of childhood.

Anticipatory data futures risk foreclosing more open-ended possibilities for children's futures. I (Grant) argue that future research could productively engage with children's data in more open-ended, plural, and generative ways, rather than pre-empting pupils' futures and limiting opportunities in the present.

Data justice remains a future ideal for children who live increasingly datafied lives (Smith and Shade). To respond to the identified risks and power asymmetries in datafied childhood, given the persistence of the neoliberal context, two policy avenues are needed. One, regulatory guardrails from

governments across jurisdictions, remain one of the most promising directions to support data justice; self-regulation by corporations has proven insufficient in many instances. Two, future policy should respond to the diverse lived experiences of children and include their voices in decision-making.

Discussants – Neil Selwyn and Luci Pangrazio

This chapter covers an admirable range of issues, and provides a great set of starting points for thinking further about children and young people as data subjects. In this concluding section we want to briefly flag a few points that might be taken forward in subsequent work:

1. *Developing more differentiated understandings of 'datafication' within the 0–18 years age span*
   The different threads in this chapter certainly cover a large span of young people's ages and stages. In moving forward, therefore, we need to pay closer attention to how data power is being differently encountered and experienced by the various cohorts that comprise the '0–18 years' umbrella. For example, how do data privacy contexts for a 15 year old differ from those of an 18 year old, or between toddlers and 'tweens'? What are the changing roles of parents and carers in managing and protecting their children's data as they grow and develop? While the chapter begins to give a sense of these age-related shifts, further work can be done to better understand the different privacy contexts experienced across the life course, and how they are learnt about and experienced.
2. *Scrutinizing the data economy that has grown up around children and young people*
   This chapter understandably focuses on some of the most immediate contexts (home, school) and familiar actors (parents, caregivers, teachers) implicated in children and young people's experiences of datafication. However, many other actors and processes also powerfully shape not only how young people encounter and make sense of data, but also the outcomes that these data may have in the future. In particular, in order to fully grasp the stories presented in this chapter we need to develop better understandings of the data economy – the corporate and technical drivers of where these young people's data goes, what it is used for, by whom, and with what outcomes. That said, it would be naive to assume that greater transparency of these machinations would necessarily ensure better outcomes. Greater understanding of the data economy is only of use if young people have the time and space to interpret this, and then a range of options or alternatives exist to ensure that it is indeed an actual choice. In contemporary society, both of these conditions are increasingly hard to find.

3. *Unpacking what we might currently critique as 'neoliberal' about datafication*
   A recurring point in the chapter's threads is the way datafication serves 'neoliberal' ends. This is an increasingly common conclusion arising from critical accounts of digitalization and datafication. Yet there is a need to give this further thought in future work – developing a more specific and detailed account of what is being argued, and avoiding the deployment of 'neoliberal' simply as a 'sloppy synonym' for the broad denouncement of modern capitalism (Ferguson, 2009). More specifically, then, the sense emerges from this chapter that data are now closely implicated in the techniques and modes of rationalization, auditing, and accounting that are used by power. Of importance here, then, is to now ask more specific questions about the outcomes arising from these forms of datafied rationalization, auditing, and accounting, and to dig further into exactly how these might be explicitly disadvantaging specific groups of children and young people. It is also worth exploring the ways in which digital data are entangled with broader power relations and the politics of oppression. In other words what is especially distinct, different, or new about these data-driven outcomes as a manifestation of neoliberal rationalization?

4. *Data justice as resistance … or complete reimagination of what might be?*
   The chapter (notably the closing contribution from Smith and Shade) appropriately frames data justice in terms of resistance, encouraging us to anticipate ways in which data might become a site of struggle rather than a site of surrender. That said, there is perhaps scope to also be more radical – that is, to engage in a complete rethinking of what forms of datafication might be desirable in young people's lives. In this spirit, it is worth pursuing what Evelyn Ruppert (2018) terms 'counter-imaginaries of datafication' to counter currently prevalent corporate ideas of what is thinkable about data power, therefore developing alternatives to dominant understandings of what practices are preferable and which actors we might want to be performing them. This is no easy task and will involve thinking further about the ontological and epistemological changes that would be necessary in our social institutions and society at large. Nevertheless, it is well worth retaining hope that the dominant forms of datafication currently to be found in young people's lives are *not* a done deal. Instead, we need to take the accounts present in this chapter as a basis from which to anticipate better data futures to come.

Discussants – Marie K. Heath and Daniel G. Krutka

This chapter artfully weaves together differing perspectives, emerging scholarship, and rich contexts to take on a critical topic of data power: the datafication of childhood. Through their collective braiding, the authors

confront the forces at play on the phenomenon of children as data subjects and objects. We bring our background as critical scholars of education and technology to this discussion, picking up threads from this collectively written chapter. We offer a technosceptical lens to think through the role of technology, specifically digital data, in children's lives in and out of schools.

Unfortunately, everyday citizens, and especially children, have too often been afterthoughts in setting the terms for the technological terrain. Silicon Valley capitalists and edtech entrepreneurs often introduce technological 'innovations' with profit motives and without public dialogue or deliberation. The tech industry consistently forces consumers to react to a neoliberal technological world where individuals are left to fend for themselves. Early in Shoshana Zuboff's 2019 *The Age of Surveillance Capitalism* she shares the story of the development of what would be later known as 'smart' home technologies by computer scientists at the Georgia Institute of Technology (Georgia Tech). The researchers operated under the assumption that the data generated by the devices would remain in a 'closed loop', and the data 'would belong exclusively to the people who live in the house' (p 6). Silicon Valley capitalists such as Google disagreed, and the data from our 'smart' devices fuel massive industries and data extraction. Alphabet, Google's parent company, has been repeatedly sued for ignoring laws that protect children from this data exploitation.

Neil Selwyn and Luci Pangrazio offer a helpful definition for *neoliberalism* that accounts for how 'data is now closely implicated in the techniques and modes of rationalization, auditing, and accounting that are used by power'. What might it look like for people to join together to challenge and rein-in exploitative business models that dataify children – and all of us – without consent or consensus? The authors in this chapter offer vivid portraits that help us think through the problem, and how it should be framed. As educators, we similarly seek to set the boundaries of the debate.

We noticed a theme across the vignettes of not only neoliberalism, but also individualism, hypervisibility, and surveillance intruding upon childhood. In each example, a combination of adults, institutions, and technology work to pull children out of the immediacy of childhood's present and into an imagined future of adult creation. Priya Kumar named this *potentiality risk*, an imagined narrowing of a child's opportunity to maximize themselves as individuals because of their parents' choices, made, we would note, in a landscape of surveillance capitalism. Lorenzo Giuseppe Zaffaroni, Giovanna Mascheroni, and Gaia Amadori compared the ways parents navigate surveilling their own children and the ways institutions and commercial entities further surveil their children. Finally, Lyndsay Grant interrogated the transformation of children into numbers as a method to predict their academic futures.

We wonder, does datafication of children and students align with the values that members of our society hold about childhood and 'education'? A common refrain in educational technology circles holds that it is up to people to use technologies for good or bad. However, in his 1992 book *Technopoly*, Neil Postman argued that humans, often without awareness and conviction, have increasingly yielded their morals to the logics of machines. We become like our tools, which tends to work out well for those who profit from them. In his 1954 book *The Technological Society*, Jacque Ellul offered the term *technique* to describe 'the totality of methods, rationally arrived at and having absolute efficiency (for a given stage of development) in every field of human activity'.

With the normalization of surveillance technologies that capture and produce digital data, are we raising children to accept the logics of machines? Let us take Lyndsay Grant's description of the data wall at Ridgeway School where 'pupils were sorted and ranked in order of priority for being assigned to "intervention" booster classes, with the aim of altering their predicted futures to better meet school targets'. Whose vision of 'education' does this represent? Are there any educators, parents, or children who dream of this type of education? Or, does it satisfy the *technique* of machines for data, predictability, prediction? What does a data wall teach children about what is important in their community? And, what is important about themselves? What imagined futures are constrained or eliminated by reducing children to data?

Our classrooms and homes can offer spaces to remake our worlds by empowering young people to interrogate technology and resist. Instead of each individual trying to read unreadable Terms of Service to determine whether the online world is safe, communities can, as the authors of this chapter agree, stand for the common good. This means rejecting datafication (Pangrazio and Selwyn, 2021), discriminatory design (Benjamin, 2019), algorithmic bias (Noble, 2018), surveillance capitalism (Zuboff, 2019), and all other forms of technique that thwart human freedom and social justice. Fortunately, young people are particularly adept at questioning why things are as they are. They often still dream dreams of a more just world.

In our work through the Civics of Technology project (www.civicsoftec hnology.org) and in our scholarship, we seek to struggle alongside young people for more just futures. Children's play often rejects *technique*. As teacher educators, we strive to understand what we should teach young people about data (curriculum), and how we should do so (instruction). We are guided by the assumption that 'technologies are not neutral and neither are the societies into which they are introduced'. Recognizing the force of technologies such as digital data, we utilize technosceptical questions as starting points. Drawing from Postman's 1998 talk (Krutka et al, 2022),[7] modified for this topic, we might ask:

- What do youth give up for the benefits of digital data?
- Who is harmed and who benefits from digital data?
- What does digital data need?
- What are the unintended or unexpected changes caused by digital data?
- Why is it difficult to imagine our world without digital data?

Each of these questions removes us from the neoliberal vision of data and instead towards a data justice movement of co-conspirators and abolition. Karen Louise Smith and Leslie Regan Shade argue for a robust vision of data justice for children that can be taken up at the national level. We agree with the need for developing 'counter-imaginaries of datafication' (Ruppert, 2018). We also contend that educators can advance a data justice curriculum in small acts of resistance and radical revisioning in our classrooms, neighbourhoods, and homes. Maybe in taking our data back, we can replace data walls with the dreams of young people.

Notes

[1] Discussant
[2] Discussant
[3] Discussant
[4] Discussant
[5] Facilitator
[6] Names have been pseudonymized to protect anonymity
[7] www.civicsoftechnology.org/curriculum

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