The Digital Divide: Understanding Vulnerability and Risk in Children and Young People's Everyday Digital Lives

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Introduction

For more than a decade, the use of digital technology (this includes tools, software, and digital media, including social media) has grown, with research evidence suggesting that newer media offer both benefits to the health, safety, and well-being of the so-called digital generation (Boyd, 2008; Hamm et al., 2014; Ito et al., 2008; Kaplan & Haenlein, 2010; O'Keeffe & Clarke-Pearson, 2011) and a number of risks (Baldry et al., 2019; Best et al., 2014; Carroll & Kirkpatrick, 2011; Livingstone et al., 2011a; O'Keeffe & Clarke-Pearson, 2011; Palfrey et al., 2010; Patchin & Hinduja, 2006; 2019; Wei et al., 2020). Evidence-based research focusing on the use of digital technology has identified several benefits, such as 'early learning, exposure to new ideas and knowledge, increased opportunities for

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social contact and support, and new opportunities to access health promotion messages and information' (Chassiakos et al., 2016, p. 1; see also Chiong & Shuler, 2010). The risks of such technology have also been well documented, including negative health effects on sleep, attention, and learning (Bruni et al., 2015; de Jong et al., 2013; Lenhart et al., 2015), exposure to inaccurate, inappropriate, or unsafe content and contacts and compromised privacy and confidentiality (Livingstone et al., 2011b; Moreno et al., 2009, 2016). Many of these risks are related to innate or situational vulnerabilities, but at times the two terms—risk and vulnerability—are used interchangeably in the literature. Whether or not risk and vulnerability overlap is an issue that has received some attention (Beck, 2009; Brown, 2017), and in some cases, the two concepts are considered 'two sides of the same coin' (Beck, 2009, p. 178). Nevertheless, vulnerability 'appears to speak to a sense of social inclusion, empathy and sympathy in a way that risk does not' (Brown, 2017, p. 16), while risk implies the 'chances of adversity translating into actual negative outcomes for children' (Daniel, 2010, p. 233) and the likelihood that something bad can happen.

Consequently, much of the research literature surrounding digital technology refers to children and young people as vulnerable or even at risk (see Anderson et al., 2017; Livingstone et al., 2011a, b). However, what does it mean to be vulnerable or at risk? To better understand risk and vulnerability, there is a need to consider specific kinds of protection, education, and socialisation, all of which are tasks assigned to families (Lafton et al., 2023), schools (Drossel et al., 2020; Nybell, 2001) and other ecosystems surrounding the digital generation. This chapter provides a first step in contributing to a more precise understanding of the concepts of vulnerability and risk regarding the use of digital technology, laying the foundation for some of the discussions in the remaining chapters of this edited volume.

In this chapter, my main objectives are as follows:

- To understand vulnerability and risk and what it means for children and young people to be vulnerable or at risk regarding digital technologies.
- Provide a theoretical contribution to this volume by focusing on vulnerability and risk.

One clear thing is that risk and vulnerability are partly understood within the digital divide literature and that the importance of the various ecosystems surrounding children and young people's everyday lives has a crucial role to play.

The Digital Divide and the Ecological System

The digital divide, which includes both the access divide and the imbalance of digital use, threatens the vision of a democratic space in which everyone has an equal opportunity for participation. Consequently, excluded groups will be at risk of reaping the benefits from digital technology to the same extent as more privileged groups (Blank & Lutz, 2018; Helsper, 2021; van Deursen & Helsper, 2015; van Deursen et al., 2021). This chapter takes as a starting point van Dijk's (2005, 2020) widely used differentiation of digital divide types (motivational, material, skills, and usage) and further work by Helsper (2021) on digital inequality.

In some of the research connected to the work in this chapter, researchers have been specifically concerned with access (first-level divide) (Ayllón et al., 2023; Van Dijk, 2005, 2020) and digital skills[1] (second-level divide) (see van Dijk, 2005, 2020), both of which contribute to the research field on digital inequalities (Helsper, 2021). More specifically, digital and social inequalities render certain subgroups significantly more vulnerable. This is supported by research on digital literacy, which has associated vulnerabilities with socioeconomic and demographic backgrounds (Hatlevik et al., 2018; Mascheroni & Olafsson, 2016). The research by Hatlevik et al. (2018) and Mascheroni and Olafsson (2016) shows that those with lower levels of digital skills can subsequently have lower engagement, resulting in fewer benefits from the use of digital technology (Helsper & Eynon, 2013; Paus-Hasebrink et al., 2014), leading to increased risks (Livingstone et al., 2018). Likewise, studies have

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[1] This chapter is based on the understanding of the need to support the development of digital competence for children and young people, which includes not only digital skills but also media literacy and social competences across their digital ecosystems. For this chapter, digital competence is 'conceptualized in a broad sense where societal issues and a critical approach are emphasized … [and] influenced by the notion of Bildung' (Godhe, 2019, p. 33).

shown that individuals with higher socioeconomic status are more likely to achieve better on both the first and second levels of the digital divide. Those with a more advantaged socioeconomic position have better access to digital technology and more frequently have the skills required to use them when compared with individuals from lower socioeconomic strata (Helsper, 2021; Weiss et al., 2018). There is concern that the digital divide will increase the risks for already vulnerable groups to be not only *left behind* in terms of access but also in developing the digital skills needed for everyday life (second-level divide) and improving overall personal well-being (third-level divide), which will then serve to increase already existing social inequality gaps. Both risk and vulnerability give rise to concrete problems that require empirical investigation, but these empirical investigations need to be structured by theoretical understanding. Although most chapters in this volume provide insights into empirical investigations, this chapter provides a theoretical contribution to understanding vulnerability and risk as it relates to children and young people's everyday digital lives.

In trying to understand what it means to be vulnerable or at risk, it is also important to consider the value of digital activities, along with the ideal uses of technology that form a bridge between the various ecosystems surrounding the digital generation and technology itself (Bronfenbrenner, 1979), or what Johnson and Puplampu (2008) referred to as the techno-subsystem. Ecological systems theory provides a comprehensive framework of environmental influences on development by situating the child or young person within a system of relationships that are affected by multiple levels of interactions with the surrounding environment. Bronfenbrenner (1979) organised the contexts of children and young people's development into five nested environmental systems, with bidirectional influences within and between the systems. The microsystem refers to immediate environments and includes, for example, home and school interactions, while the mesosystem comprises connections between immediate environments (e.g., parent-teacher interactions). Understanding how children and young people value and use digital technology in their everyday lives across these microsystems can help us understand what it means to be vulnerable, which is also related to the digital divide. As O'Neill (2015) argued, ecological systems theory is

highly useful for studying children's and young people's online experiences because it serves to frame digital environments, showing the 'complex interplay between technology and society in which modes of communication and mediated interaction fundamentally shape human behaviour and social life' (p. 35). Moreover, O'Neill pointed out that this framework has been useful for researchers in identifying patterns of risk and the role of vulnerability.

Understanding Vulnerability and Who Is Vulnerable

Although vulnerability is implicitly understood (Hargrave & Livingstone, 2009), there is a need for a clearer definition. At a basic level, vulnerability for children online can mean 'susceptibility to physical or emotional injury' (Munro, 2011, p. 7). From a research ethics standpoint, 'vulnerability arises from a subject's lack of ability to protect their interests, with the lack of decision-making capacity for individuals and with some reference to their environment (e.g. limited access to social goods such as rights, opportunities, and power)' (Bracken-Roche et al., 2017, p. 3). In this sense, children and young people are generally seen as vulnerable regarding research consent. Although understanding vulnerability and how it relates to research consent is important, in this chapter, I am concerned with how the vulnerability is understood in a more general sense, especially how this relates to digital technology. This requires an understanding of how vulnerability is understood as a concept and contributes to some of the work that already considers the analytical implications of developing the concept further (Brown, 2017; Fineman, 2013).

In a recent systematic literature review by Virokannas et al. (2020), they aimed to gain a better understanding of the widely used concept of vulnerability that is so prevalent in academic research and the policy arena. In their work, Virokannas et al. (2020) argued the following:

> Because of its various meanings and contexts, the concept of vulnerability has been criticised by many authors as contested and unclear. It has been claimed to be too loose in policy contexts (Kirby, 2006) and in social work

and social care practice (McLaughlin, 2007), to lack analytical clarity (Brown et al., 2017) and to be used in a stigmatising way when referring to individuals or groups and associated with victimhood, deprivation, dependency or pathology (Fawcett, 2009; Munro and Scoular, 2012). (p. 2)

From a theoretical and ethical position, we should carefully use concepts and consider how they may influence our work and the people involved. More importantly, Cross et al. (2009) warned us of the following:

Vulnerable children and young people are not a self-contained or static group. Any child/young person may be vulnerable at some time, depending on any one, or a combination of, the risks or challenging life events they face and their resilience. (p. 9)

Being vulnerable does not necessarily lead to increased online risks, and the research literature points to a complicated relationship between vulnerability and risk (Livingstone & Helsper, 2010; Livingstone et al., 2018). Although such a relationship may sound counterintuitive, this is because many of the online activities children engage in are not entirely beneficial or entirely risky and are not equally positive or negative for all children. Indeed, it is inevitable that children who engage in a wider range of online activities would be more likely to encounter not only problematic but also beneficial content or contacts (Livingstone et al., 2018).

We must remember that vulnerability will also be influenced not only by the child's or young person's developmental needs but also by their family's capacity to meet these and wider ecosystem factors. In their work on the digital lives of vulnerable children, Katz and El Asam (2019) classified children (0–18 years of age) into five groups: (1) family vulnerability, (2) communication difficulties, (3) physical disabilities, (4) special educational needs, and (5) mental health difficulties. These five groups have been linked to the distinction between natural or innate vulnerability and situational vulnerability (Brown, 2017). For Gudmundsdottir and Hathaway (2020), the vulnerability in an educational context during the COVID-19 pandemic involved the following categories: (1) individual situation (e.g., illness, diagnosis, individualised education

programmes, language difficulties), (2) family situation (e.g., neglect, mental disability, high level of conflict, addiction), (3) peer relationships (e.g., bullying, challenges of establishing and staying in stable friendships), and (4) environment (e.g., poverty, social network, criminal behaviour). This grouping by Katz and El Asam (2019) and Gudmundsdottir and Hathaway (2020) can be understood as both innate and situational, with some overlap between both lists.

Innate vulnerability refers to characteristics such as sex or disability, while situational aspects are social, economic, and living conditions (Brown, 2017; Virokannas et al., 2020). The literature review conducted by Virokannas et al. (2020) showed that most of the articles reviewed focused on children and young people. This might suggest that there is great concern that children and young people, simply by their nature, are deemed vulnerable. In the research literature on digital technology, vulnerability is closely connected to victimhood and risk (Hargrave & Livingstone, 2009; Katz & El Asam, 2019; Livingstone et al., 2012). More recent work has suggested that vulnerability factors in terms of online risk can also include children's age, gender, digital skills, resilience, personality, socioeconomic situation, and family context, both innate and situational (Livingstone & Stoilova, 2021). The work by Katz and El Asam (2019) and Livingstone and Stoilova (2021) has further shown vulnerabilities as linked to online risks, classifying them as the 4Cs: (1) contact, (2) content, (3) conduct, and (4) cyberscams (Katz & El Asam, 2019) or consumer/contract risk (Livingstone & Stoilova, 2021; OECD, 2021). The analysis by Katz and El Asam (2019) showed that being in any of the five vulnerable groups significantly predicted a higher overall score for high online risk. Thus, being vulnerable offline can lead to high-risk situations online.

Although vulnerability and risk are linked (Virokannas et al., 2020), vulnerability is located in the literature on digital inequality and, more specifically, on the digital divide. The work by Virokannas et al. (2020) and Robinson et al. (2020) suggest that digital inequalities also include innate and situational factors, such as gender, sexuality, race and ethnicity, disability, health, education, rural residence, and global geographies. Research on the digital divide began 25 years ago with a focus on understanding the benefits of the Internet, mainly focusing on access and, to

some degree, digital tools (van Deursen & van Dijk, 2019; Robinson et al., 2020). It was assumed very early on that this first-level divide (access) was solved, leading to research on the second-level digital divide by focusing on skills and usage (Hargittai, 2002). Following the research on the second-level divide, more recent work has begun concentrating on the tangible benefits (Blank & Lutz, 2018; Helsper, 2021; van Deursen & Helsper, 2015; van Deursen et al., 2021) or digital outcomes (Wei et al., 2011), which is the third-level digital divide (van Deursen & van Dijk, 2019). Although much of the research is currently focused on other levels of the digital divide, it is argued, similar to other studies (OECD, 2021; Ye & Yang, 2020), that the first-level divides, which have been referred to by Ayllón et al. (2023) as digital deprivation, cannot be ignored. This has become even more apparent as a result of the COVID-19 pandemic, which has brought about renewed interest, relevancy, and urgency to investigate digital deprivation. For those on the wrong side of the digital divide, the result has meant social exclusion in the exercise of civil and human rights, participation in social activities, and being deprived of information and effective communication with other citizens, especially regarding health issues such as a lack of information related to the COVID-19 pandemic (see Li, 2022; Litchfield et al., 2021) and a lack of access to education (Ye & Yang, 2020). Thus, as Molala et al. (2021) argued, there is a mutually reinforcing relationship between the digital divide and social exclusion, leading to increased vulnerability for children and young people. Although social exclusion is the basis for the digital divide, this divide is also an accelerator of social exclusion (Mascheroni et al., 2022). This suggests that vulnerability related to innate and situational factors can be enhanced because of digital inequalities. Yet as López-Aguado et al. (2022) reminded us, digital inequalities are not homogeneous across all vulnerable groups, and the depth of inequality varies between individuals.

However, a sense of urgency regarding education was highlighted in a recent European Parliament press release in which Members of the European Parliament (MEP) discussed the digital divide in Europe:

MEPs deplore the 'severe discrepancies' in learning across the EU during the lockdown, with 32% of pupils in some member states not having had

any access to education for several months. They fear that this will decrease future income levels for a whole generation and negatively impact labour productivity and competitiveness for the European Union as a whole.

Therefore, closing the digital divide must be an immediate concern, with the Commission prioritising investments in connectivity and equipment, particularly in remote and rural areas, as well as instructing and assisting teachers and trainers in how to use the new technology. (European Parliament, 2020, Digital education must be reality for all section)

Being on the wrong side of the digital divide for families can mean further inequalities, especially for parents with low incomes and the lowest levels of education who benefit the most from increased connectivity, pointing to the need to address first-level inequalities because this has 'relatively greater payoff for parents experiencing the most acute second-level digital inequalities' (Katz et al., 2019, p. 331). The research results by Katz et al. (2019) have further shown that increased connectivity has a generational effect: not only is there a benefit regarding the frequency of use, but there is also a benefit in the scope of activities. Thus, parents from high socioeconomic levels (what Katz et al. referred to as high scope) are 'significantly more likely to perceive greater opportunities in Internet use for their children' (2019, p. 331).

Academics, policymakers, educationalists, and the public press have discussed and debated the use and role of the Internet and digital technology in general. Headlines have included alarmist warnings from digital guidelines for parents and the warning of 'too much screen time' to the dangers of social media and 'risky behaviour'. Although some news headlines have tended to overstate the problem, there is a cause for genuine concern. The EU Kids Online research, which began in 2006, focused on children's Internet use, with the second phase focusing more on risk experiences and, to a lesser degree, on opportunities, with risk being closely linked to vulnerability. The results from this research showed, among other things, that 'children who are vulnerable offline are especially vulnerable online' (Livingstone et al., 2011a, p. 44). However, it has been argued that a more balanced consideration of the risks and opportunities of digital technology is essential to replace the often one-sided rhetoric of risk and harm. Thus, the understanding of risk is related

to more than just mere experiences and instead should aim to identify and analyse at-risk groups regarding social disadvantages and barriers that determine their access to digital technology. Accordingly, it is crucial to understand the concept of risk if we want to move beyond this one-sided rhetoric.

The Concept of Risk in Digital Transformations

In exploring the digital generation and digital technology use, there is a tendency towards caution; however, in the wider press, there is a polarised discussion focusing on both risks and opportunities, with opportunities linked to education and skills for children and young people (OECD, 2020). Yet how risk is understood or operationalised in the literature is less clear. According to Ewald (1991), an understanding of concepts involves not only sensibility or intuition but the need to understand the concept in a more general sense. Moreover, the definition of risk can affect the outcome of policy debates and the allocation of resources, including safety measures. Technical experts have generally distinguished between 'objective' and 'subjective' risk. Objective risk refers to the product of scientific research, whereas subjective risk refers to nonexpert perceptions of that research, sometimes exaggerated by other considerations that capture the public's attention and, in some cases, are fuelled by the public media. For instance, moral panics around *screen time* focus simply on use and relating it to risk as opposed to content, which Blum-Ross and Livingstone (2018) argue indicates a homogenisation of media activities that do not differentiate between types of use while simultaneously disregarding the context in which children and young people are using screens. Apart from the definition of risk, we are also reminded of the following:

> The risks of a technology are seldom its only consequences. No one would produce it if it did not generate benefits for someone. No one could produce it without incurring costs. The difference between these benefits and non-risk costs could be called the net benefit. In addition, risk itself is seldom just a single consequence. (Fischhoff et al., 1984, p. 125)

The important point here is that technology—and more importantly digital technology—results not only in risks but also benefits. Although risk concerns many dimensions in terms of social, economic, and living conditions, the concept of risk as related to the digital generation and the use of digital technology has not been fully examined. A sound understanding of risk as a concept is critical for developing an empirical knowledge base as it relates to the digital generation. I believe this is the first step in developing a more comprehensive understanding of risk. Ewald (1991) argued that the everyday meaning of risk is 'a synonym for danger or peril, for some unhappy event which may happen to someone; it designates an objective threat' (p. 199). Furthermore, he saw risk as a collective idea, assuming the following:

> … all the individuals who compose a population are on the same footing: each person is a factor of risk, each person is exposed to risk. However, this does not mean that everyone causes or suffers the same degrees of risk. The risk defines the whole, but each individual is distinguished by the probability of risk, which falls to his or her share. (Ewald, 1991, p. 203)

Given that not everyone will suffer risk or the same level of risk, Ewald saw risk as being close to resilience. Notably, 'resilience embraces the importance of adapting and navigating our way through the precarious nature of complex life' (Pugh, 2014, p. 318). Yet Welsh (2013) warned us that the use of resilience can lead to an emphasis on 'responsiblising risk away from the state and on to individuals and institutions' (p. 15). This caution is particularly important because we want to avoid putting the responsibility of risk on children and young people.

As a sociocultural concept, risk has changed its meaning over time, and as a result of technology, it has acquired a new prominence (Douglas, 1990). The term is no longer natural and in general, it is associated with danger and negative outcomes (Douglas, 1990, 1992; Douglas & Wildavsky, 1982; Hengen & Alpers, 2019). Risk has also been defined as an undesirable event and the effect of that event (Hansson, 2004). Apart from the general definitions of risk, we can distinguish three major theoretical strands of risk within the wider field of sociology. All three involve

understanding risk as a socially constructed concept and that risk is the following:

> … regarded as an idea in its own right relatively independent of the hazard to which it relates. Risk is thus understood in relation to perception that is generated by social processes—such as representation and definition—as much as it is by actual experience of harm. (Burgess et al., 2018, p. 2)

The first of these three strands came from Mary Douglas, who, in the early 1980s, began setting forth an influential perspective on risk and adopting a *cultural anthropological approach*. This approach proposes that risk takes a specific form in modern society. Douglas (1990, 1992) equated risk with the dangers that threaten individuals and collective security and existence. The important question for Douglas (1992) is 'how safe if safe enough' (p. 41)? This may be a relevant question regarding digital technology, given the increasing impact it has on our societies and our everyday lives.

The identification of specific risks reflects the *ways of life* and a 'specific way of structuring social relations and a supporting cast of particular beliefs, emotions, perceptions and interests' (Douglas et al., 2003, p. 100). For Douglas (1992) ways of life or *social solidarities* are linked to 'organising, perceiving and justifying social relations' (p. 100) within society and include four ways of life, namely fatalism, egalitarianism, hierarchy, and individualism. Douglas argued that 'these four ways of life are at issue in every conceivable domain of social life' (1992, p. 100), these domains include the microsystems surrounding the everyday lives of children and young people. Moreover, Douglas et al. suggested that the dominant approach to risk is based on the assumption that 'all individuals are similarly rational, or self-interested' (2003, p. 99), but this does little to explain why individuals and social groups vary in the way they identify and respond to risks. According to Douglas and Wilsavsky (1982), risk is related to *cultural ways of life* that affect the perceptions of risk. Disputes about risk are thus seen as part of an 'ongoing debate about the ideal society' (1982, p. 36). Thus, there is no single agreed-upon assessment of potential threats (Douglas et al., 2003) from phenomena such as digital technology. Instead, different groups such as the digital

generation, their parents, teachers, policymakers, or other stakeholders may have competing views on the nature and threat posed by digital technology, and there are likely to be conflicts and tensions between these views (Douglas et al., 2003). Involving not only the views of adults but also children and young people is crucial to better understanding these tensions while simultaneously giving the digital generation a voice in expressing their beliefs, emotions, perceptions, and interests.

As children and young people around the world are increasingly gaining access to and using digital technology at home, at school, during their leisure time, and as part of civic participation, cultural preferences, and social formation can affect differences in risk (Douglas et al., 2003). Simultaneously, digital inequalities remain in terms of opportunities and risks, which can render certain subgroups significantly more prone to risk. As some of the research has shown, those with lower levels of digital competence can have lower engagement, resulting in fewer benefits from the use of digital technology (Helsper & Eynon, 2013; Paus-Hasebrink et al., 2014). For instance, research has shown that children from high-SES backgrounds are often socialised in ways that reduce their time in screen-based activities compared with low-SES children (Gracia et al., 2019). This suggests that high-SES children grow up in families contributing to privileged digital capital that can mitigate risks and maximise opportunities intrinsic to technology use (Livingstone & Helsper, 2010).

The second major theoretical perspective on risk is closely associated with Beck's (1992) work and can be placed under the heading of *risk society theory*. In our everyday world, the association of the democratisation of risk is deemed more damaging when risk threatens children's well-being (Beck, 1992). Jackson and Scott (1999) argued that 'it is not only children who are perceived as being *at risk* but the institution of childhood itself' (p. 86). Moreover, risks may be produced by social conditions, not unlike those linked to vulnerability, but these need to be assessed and managed by individuals (Beck, 1998). According to Beck (2006), the main challenge is 'how to live in times of uncontainable risks' where individuals have to draw the line between 'prudent concern and crippling fear and hysteria' (p. 345). For the individual, this is challenging, especially given the fact that expert advice can be contradictory and changeable. Beck (2006) referred to 'scientists, whose findings often contradict each other,

who change their minds so fundamentally, that what was judged *safe* to swallow today, may be a *cancer risk* in two years' time' (p. 345, emphasis original). What is clear is that risk involves not only individuals but also the social conditions found in the ecosystems surrounding children and young people. To Beck (2006), it is possible to recognise risk and manage it, yet it is not possible to abolish risk entirely (Burgess et al., 2018). The literature on the digital divide suggests the need for children and young people to possess the skills (Hargittai, 2002) to reap the tangible benefits of technology (Wei et al., 2011; van Deursen and Helsper, 2015). According to Gudmundsdottir and Hathaway (2020), managing risks and the benefits of digital technology are closely related to resilience and self-efficacy, which enable individuals to take advantage of the opportunities digital technologies have to offer. According to Sun et al. (2022), digital resilience requires that children and young people understand when they may be 'at risk online, knowing what to do to seek help, learning knowledge and skills from experiences, being able to recover from appropriate support, and moving forward through self-efficacy in challenges' (p. 7). Thus, if young people never experience risk, then they may never learn to tackle risks or develop digital resilience.

The third theoretical strand on risk is grounded in the *governmentality* perspective of scholars (see Arnoldi, 2009; Mythen, 2004), here following Foucault's (1991) traditions. The work in this strand focuses on how disciplinary institutions such as hospitals and schools or pre-existing authorities (e.g., intrafamilial relations, essentially in the parent-child relationship) create knowledge about risks and the ways they should be collectively and individually managed. Lemke (2001) pointed out that, within this strand on governmentality, '… government refers to a continuum, which extends from political government right through to forms of self-regulation, namely *technologies of the self*' (p. 201; see also Foucault et al., 1988, emphasis original). Moreover, Lemke (2001) argued the following:

> The neoliberal forms of government feature not only direct intervention by means of empowered and specialised state apparatuses but also characteristically develop indirect techniques for leading and controlling individuals without at the same time being responsible for them. The strategy of ren-

dering individual subjects 'responsible' (and also collectives, such as families, associations, etc.) entails shifting the responsibility for social risks … and for life in society into the domain for which the individual is responsible and transforming it into a problem of 'self-care'. (p. 201)

Regarding digital technology, the balance in responsibility of risk should likewise involve technology developers (e.g., private actors), on the one hand, and the government, along with individuals (other stakeholders), on the other hand. Keeping these groups in mind, there is a need to focus on how to provide children and young people with the tools for self-care that are crucial in developing skills for risk assessment and risk management.

There are also criticisms of research on risk, pointing mainly to methodological concerns. Green (2009) cautioned that research framed in terms of risk can force participants to frame their concerns around risk, which creates circularity. Risk researchers find what they are looking for (risk) and disregard other considerations. Moreover, 'analytically foregrounding *risk* means that these other agendas are inevitably interrogated from the perspective of risk' (Green, 2009, p. 505, emphasis original). 'From an empirical standpoint, does framing our observations or analysis with "risk" help or hinder our understanding of *what is going on*?' (Green, 2009, p. 497, emphasis original). Thus, it might be more important to not ask participants how they assess risk but instead to explore when and why risk becomes problematic. The results may give us a better understanding of 'what is going on' in the lives of children and young people and how digital technology impacts their everyday lives, leading to a better understanding of the link between risk and resilience.

In his writing, Zinn (2009) acknowledged the methodological challenges brought up by Green (2009) but was less concerned with seeing these as a major flaw in the research on risk. Instead, he argued that these challenges are as follows:

… a general methodological issue which is relevant for all research which goes beyond a pure description of social reality by referring to explanations as delivered by theoretical concepts. Every strategy to 'observe' social reality is part of constructing exactly this social reality. (Zinn, 2009, p. 511)

He further noted that all theories or concepts will highlight some issues and neglect others. What remains the crucial job of researchers is to identify those factors that are 'valuable in understanding and explaining what we can observe or how' we can observe social reality and that concepts such as gender, ethnicity, age, social class, and so forth overlap in the reproduction of social inequality (Zinn, 2009, p. 511). Although the concept of risk is important, it is also crucial to explore the resilience and opportunities or benefits of digital technology. In this way, we take a wider view than merely focusing on risk, and in doing so, we take the advice of Zinn:

> In my view, it is not a shift beyond risk but a shift from risk and uncertainty to uncertainty and risk (Zinn, 2006). When the risks are increasingly unknown, there is no longer a particular risk but an uncertainty that has to be dealt with. The question is still how the negative side effects of decisions or an uncertain future are managed, but there is growing interest in strategies to manage the uncertain as such. (2009, p. 512)

Our goal throughout this book is to uncover how the digital generation and others (e.g., parents, teachers, policymakers, and other stakeholders) manage uncertainties and, in doing so, how we can uncover the risks, benefits, and opportunities of digital technology.

Conclusion

This chapter has aimed to provide a theoretical contribution to understanding vulnerability and risk relating to children and young people's everyday digital lives by understanding what vulnerability and risk mean for children and young people.

This chapter has shown that vulnerability and risk are linked (Virokannas et al., 2020) but that, empirically, vulnerability is located more with the research on digital inequality and, more specifically, the digital divide. As such, digital inequalities include not only innate vulnerability but also situational vulnerability, such as gender, sexuality, race and ethnicity, disability, health, education, rural residence, and global

geographies (Robinson et al., 2020). Although it has been assumed that the first-level divide (access) has been solved, work by Ayllón et al. (2023) has shown that this is not the case. There is a need to recognise that digital inequality is also related to more than just simple access (first-level digital divide), and we cannot assume if access is solved that other digital inequality issues will be resolved. Thus, vulnerability is linked to all three levels of the digital divide, leading to social exclusion in the exercise of civil and human rights, participation in social activities, being deprived of information and effective communication with other citizens, especially about health issues such as a lack of information related to the COVID-19 pandemic (see Li, 2022; Litchfield et al., 2021) and access to education (Ye and Yang, 2020). The use of ecological systems theory (Bronfenbrenner, 1979) and the focus on the microsystems surrounding children and young people have allowed researchers to uncover the relationship between uses, activities, skills, and risks and how innate and situational vulnerabilities can lead to increasing digital inequalities.

Yet as Cross et al. (2009) reminded us, 'vulnerable children and young people are not a self-contained or static group' (p. 9). This reminder is particularly important because the rapidly changing digital contexts blur the boundaries between the various microsystems that are part of the everyday lives of children and young people (see chapter 'Children's Digital Boundary Crossings when Moving in Between Porous Ecosystems' by Holmarsdottir et al. in this volume). This may mean that vulnerability is not only influenced by the child's or young person's developmental needs but also through support from the actors within these microsystems. As such, understanding not only innate vulnerability but also situational vulnerability is imperative (Brown, 2017).

Furthermore, how we define and understand risk can influence policy debates and the allocation of resources, including the safety measures that are put into place to protect children and young people from harm. Understanding harm can be challenging, as Livingstone and Helsper (2010) pointed out in their research, showing that 'the greater the young person's online skills and self-efficacy, the more—rather than the fewer— risks they encounter online' (p. 318). Thus, Livingstone and Helsper (2010) showed that children and young people's take-up of online

opportunities is positively correlated with their exposure to online risk, with digital skills acting to increase the likelihood of both.

Although online opportunities generally afford positive benefits for children, the existence of those same opportunities can result in negative outcomes, such as digital exclusion, if children and young people are restricted from accessing them. It becomes important for policymakers to strive to address online risks without increasing digital exclusion or leaving children and young people vulnerable to harm (see the chapter 'EU Policy Reflections on the Intersections Between Digital and Social Policies Supporting Children as Digital Citizens' by Shorey in this volume). As Ewald (1991) reminded us, not everyone will suffer risk or the same level of risk, with risk being closely related to resilience. Caution should remain in that we want to avoid 'responsiblising risk away from the state' (Welsh, 2013, p. 15) and on to children and young people. The ultimate goal should be that children and young people not only have access to digital technology but also the skills and empowerment to use it to live happy and healthy lives.

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