Datafication as Parenthesis: Reconceptualizing the Best Interests of the Child Principle in Data Protection Law.

**Abstract**

*The objective of this article is to shed light on a question that has considerable policy significance for the child as a data subject under the General Data Protection Regulation 2016 (‘Regulation 2016/679’) – how can we better integrate the best interests of the child principle, including the emphasis placed by the United Nations Convention on the Rights of the Child (CRC) on respecting a child’s autonomy and development in a datafied environment? This article lays the foundation to an answer in three steps. First, it questions whether the political act of integrating the lifeworlds of children into digital infrastructures of the personal data economy and structuring of responsibilities to be owed by data controllers through data protection rules and principles is truly empowering. Second, it uses the dialectical relationship between critical infrastructures in the datafied environment and data protection rules to explain the ramifications of the analytical shift from children’s rights to information rights, for conceptions and understandings of autonomy, agency and best interests. Third, CRC provisions will be used to expose the incompatibility of the ontological turn initiated by data protection rules and platform infrastructures with received understandings of the best interests of the child principle. The article concludes with an account of how the present gulf that exists in the understanding of the role of CRC and their application in data protection policymaking in a datafied environment could be bridged.*

**Keywords:** children; data protection; privacy; autonomy; children’s rights; platforms; General Data Protection Regulation; Regulation 2016/679; United Nations Convention on the Rights of the Child.

# 1. Introduction.

Sometime in the immediate future the datafied lifeworlds of children may be likened to the transformations ushered in by the then disruptive technology of human communication perfected by Gutenberg.[[1]](#footnote-1) Children’s lifeworlds and experiences which once revolved around social interactions in physical spaces are now seamlessly integrated into digital infrastructures, internet of things (IoT) and intelligent devices. Mobile apps, sensor-based devices, smartphones and tablets provide children with new spaces for mobility and opportunities for realising their rights and freedoms. It comes as no surprise that as children experience their environments through interaction with affordances and computer interfaces, coupled with heightened societal awareness of vast volumes of personal data being collected and processed by providers of technological devices and services, concerns surrounding the datafication of their daily lives and activities have started to dominate policy and scholarly debates. [[2]](#footnote-2) Datafication, for present purposes can be understood as both a social and technical construct.[[3]](#footnote-3) The former emphasises the cultural context of embeddedness and interactions taking place in spaces of data flows mediated by digital infrastructures.[[4]](#footnote-4) The latter brings into sharp focus some of the opportunities and challenges resulting from children’s personal data being transformed into computational form to enhance autonomy and at the same time generating meaning and shaping experiences of reality.[[5]](#footnote-5) The EU General Data Protection Regulation 2016/679 (Regulation 2016/679), which builds on substantive rules and mechanisms originating in an analogue world, is now seen as introducing greater regulatory oversight in respect of children’s expectations regarding their right to self-determination over their spaces for development against the background of technological infrastructures aimed at growing and consolidating its user base.[[6]](#footnote-6) The principal areas within Regulation 2016/679 which have attracted scholarly interest include the practical application of its rules, and an appraisal of the combination of information rights, obligations imposed on data controllers and remedies for non-compliance.[[7]](#footnote-7) Beneficial though the insights are, there is now a long overdue need to augment these contributions with an examination of the instrumental role of data protection law in framing understandings of children’s autonomy, interests and obligations owed to them by those now mediating their lifeworlds.[[8]](#footnote-8) The focus of the article will be confined to a consideration of the potential implications of framing children as data subjects for their spatial, decisional and informational autonomy, with the aim of assessing its significance for social and political understandings of the best interests of the child principle. It asks the question how the best interests of the child principle, including the emphasis placed by the United Nations Convention on the Rights of the Child (CRC) on respecting a child’s autonomy and development in an environment where datafication acts as a parenthesis giving rise to new forms of meaning making, norm production and standard setting within data protection law.[[9]](#footnote-9) Without some reflection on the role of data protection law in framing understandings and conceptions of autonomy through legal narratives of data subjects, information rights and remedies, the significance of its ideological and goal driven objectives for children and their best interests will remain unexamined.[[10]](#footnote-10) The answer to the question is structured as follows. First, it questions whether the political act of integrating the lifeworlds of children into the technological infrastructures of the personal data economy and framing of legal responsibilities to be owed by data controllers through data protection rules and principles is truly empowering. Second, it uses the dialectical relationship between platform infrastructures in the datafied environment and data protection rules to explain the ramifications of the analytical shift from children’s rights to information rights, for conceptions and understandings of autonomy, agency and best interests. Third, CRC provisions will be used to expose the incompatibility of the ontological turn initiated by data protection law narratives and economic and cultural logic of platform infrastructures with received understandings of the best interests of the child principle. The discussion concludes with an account of how using a children’s rights lens could pave the way towards utilising the Data Protection Impact Assessment (DPIA) mechanism to advance an optimal strategy that is commensurate with understandings of the best interest principle under the CRC.

# 2. The Datafication Parenthesis and the Hidden Matrix of Capitalism in Platform Infrastructures.

Platforms have radically transformed the way children now gain knowledge and experience their environments.[[11]](#footnote-11) Access to communication technologies and the Internet is now unquestioningly accepted as being indispensable to children’s development and wellbeing.[[12]](#footnote-12) It has also resulted in the gradual convergence between economic and cultural logic in respect of social acceptance that children acquire skills appropriate for engaging with new communication technologies and the digital environment.[[13]](#footnote-13) The value of promoting digital skills and media literacy is stressed in every activity from education to new modes for expression and participation in leisure and social activities.[[14]](#footnote-14) It is of course hard to disagree that access to new technologies and opportunities provided by platform infrastructures have been beneficial to children. As early adopters of new technologies, children now benefit from ready access to a wide range of resources, increased collaboration and participation opportunities, and new tools for expressing their identity and creativity. Additionally, connectivity enables children to gain access to new avenues for support and care.[[15]](#footnote-15) Given that children’s developmental needs and opportunities now became entwined with new technologies and services primarily provided by commercial actors, it has not gone unnoticed that the narratives celebrating its empowering capabilities are also accompanied by practices and processes which cannot be easily reconciled with long standing societal and legal commitments made to children.[[16]](#footnote-16) Grappling with the cumulative effect of pervasive computing technologies and services, essential for nurturing and promoting children’s development needs, is by no means straightforward as understandings of concepts such as autonomy, agency and consent and the boundaries demarcating public and private spaces are proving to be difficult to delineate. It is possible however to discern from policy debates the realisation that social structures emerging in the hybrid spaces constructed by technological infrastructures, do create barriers to children’s ability to exercise their autonomy and pose challenges for the enjoyment of fundamental rights and freedoms.[[17]](#footnote-17) Technological or digital infrastructures, as Helmond observes, introduce into social contexts automated processes for collecting, processing and generation of new knowledge from personal information.[[18]](#footnote-18) What is less obvious however from policy pronouncements is the presumption that the characterisation of the legitimacy of data mining practices in mediated environments through the lens of information rights, introduction of new obligations for data controllers and adaptation of mechanisms for transparency and accountability will facilitate the public interest in promoting children’s autonomy and best interests. This leap of faith suggests that policymakers may have seriously underestimated the implications of the normative drivers contributing to the blurring of computational and human agency, for what Cohen describes as spaces of semantic ambiguity.[[19]](#footnote-19) Semantic ambiguity, according to Cohen is integral to promoting human flourishing. Its value stems from the belief that semantic ambiguity supports children’s developmental needs and interests. By contrast, the datafication parenthesis raises complex questions about institutional design and the normative goals which define the architecture of technological infrastructures that structure and order children’s lifeworlds.[[20]](#footnote-20) Before we can turn to the appropriate legislative intervention that is needed to address the governance dilemmas emerging from the conditions that now play an important role in the way children exercise their autonomy and agency, a sketch of the hidden matrix of capitalism in platform infrastructures should help highlight some shortcomings in viewing data protection law in instrumental terms. Two material features of the datafication parenthesis will be used to illustrate how their interaction with each other disrupts conventional understandings of autonomy. In the next section, an explanation will be provided of responses to these disruptions within data protection substantive rules and mechanisms.

First, at a general level, datafication reflects the pivotal role of processes of aggregation and capitalisation in platform infrastructures.[[21]](#footnote-21) The ideological impulses and justifications used to legitimate the collection and processing of vast volumes of information generated by children (‘the logic of aggregation’) with the goal of monetising every interaction taking place in these environments (‘the logic of capitalisation’) is embedded within the architecture of platform infrastructures.[[22]](#footnote-22) Despite the hype surrounding the democratization of the Internet, platform infrastructures do not merely act as a conduit for flows of information but have evolved into global businesses offering services as packages. The socio-technological assemblage operates as a governance framework with managerial and hierarchical structures designed to mobilise resources for commodification. As a number of scholars have observed, wealth created by platforms service providers is derived from data generated by users as well from strategies deployed to grow and sustain user participation.[[23]](#footnote-23) The emergence of platform infrastructures as spaces for producing conditions and norms for social ordering is in part due to the use of design tools and techniques, which provide effective means for ordering behaviour and in part due to the indispensability of connectivity for engaging in cultural, economic and political activities. There are two aspects to the conditions that enable technological infrastructures to regulate behaviour which are not readily apparent: first, the immersion of individuals into a framework which is hierarchical and managerial; and second, the deployment of algorithms and tools to steer and influence interactions. Both aspects intersect with and reinforce the primary objective of controlling flows of personal information and gaining competitive advantage. Crucially, instantaneous and constant connectivity combine to shift the production and enforcement of norms and enforcement of standard setting practices away from governments to private actors in the platform society. This shift can be seen in the modes of governance – design interfaces, affordances, mediated environments and the ‘black box’ of decision making tools. This transformation in the way power and authority is now exercised does not take place in a vacuum. The prevailing view of this form of regulatory innovation is presented as a pragmatic response to help foster innovation and accommodate consumer choice. That said, one outcome of this policy has been data protection law’s longstanding quest to manage information asymmetry concerns and power imbalances through formal and informal interventions such as the release of advisory Opinions from data protection authorities and recommendations offered by the influential Article 29 Working Party.

It may be appropriate in light of the discussion to offer some examples of their significance for children’s reasonable expectations to manage their social worlds and control over their personal information. For example, in exchange for free services and access to resources, users are required to relinquish control over their personal information. This practice has long attracted considerable criticism, and when extended to children, reveals the uneasy policy choices that need to be made when balancing ‘children’s interests’ and children’s interests as consumers.[[24]](#footnote-24) While there is room for debate as to whether the ‘free services for personal data’ business model is legitimate, an alternative way of approaching the issue, would be to consider whether it is fair and legitimate for children’s to have their access and freedoms subjected to processes for industrializing their social worlds. Children are now exposed to classification, sorting and indexing techniques at an unprecedented scale. The embedding of technological infrastructures into children’s daily activities make it virtually impossible to demarcate public and private spaces for development.[[25]](#footnote-25) There is also considerable uncertainty about the resulting obligations owed to children by platform providers and the standards and values that are applicable with regard to their personal information, as will be discussed later. One reminder of the considerable power imbalance and information asymmetries that now define relations between children and those mediating their lifeworlds can be seen in the practice of collecting data generated to develop statistical models and profiles to identify patterns, predict and shape behaviour, preferences and values.[[26]](#footnote-26) van Dijck’s observation that datafication of mediated interactions through the deployment of tracking technologies provides a highly efficient means through which to “access, understand and monitor people’s behaviour...” underlines the considerable challenges software analytics and data driven decision making processes create for individuals as the boundaries between nudging and exercise autonomy become difficult to distinguish.[[27]](#footnote-27)

As children’s lifeworlds revolve around hybrid spaces mediated by technological infrastructures, tools and techniques also play a significant in shaping behaviours and prioritising particular forms of interaction. [[28]](#footnote-28) There is little doubt that users retain control over how they access resources and interact with their devices. One way platforms infrastructure realise their economic interests is through the control they exercise over flows of information and monitoring of interactions to incentivize and socialize users.[[29]](#footnote-29) People analytics serves as a strategic tool through which corporations such as Facebook and Google, use digital footprints, sentiments, and preferences to create shadow profiles of each user with the aim of presenting them with content matching these digital identities.[[30]](#footnote-30) News feeds, real time notifications, sharing and design interfaces are used to engage and sustain user interaction with platform services and content.[[31]](#footnote-31) Training data is also used to model human behaviour with a view to targeting them with advertisements, products and services.[[32]](#footnote-32) To paraphrase and extend Foucault’s insights, the datafication parenthesis exemplifies the residual and unobserved power to define and enforce norms, conventions and rules commensurate with their economic interests.[[33]](#footnote-33)

The second material feature of the interaction between connectivity and datafication, which has emerged as a recurring topic of data protection policy debate relates to the uncertainty surrounding platform providers obligations towards children. Many of the ongoing problems of holding platform service providers accountable can be traced back to the legacy of the policy priority accorded to the presumption of technological neutrality.[[34]](#footnote-34) How should conflicts of interests be resolved? Can or should platform providers be expected to fulfil their obligations to children just as the State, parents and educators currently do? [[35]](#footnote-35) As will be discussed later, even though these are novel challenges they are not insurmountable as might first appear. That said, it is true that the question of how to extend societal commitments owed to children into current data protection narratives and rules is not entirely straightforward.[[36]](#footnote-36) Recent governance initiatives such as the consultation on age appropriate code and projects, while acknowledging that benchmarks need to be provided seem to be disposed to engaging with the consequences of “deep mediatisation” on children as consumers rather than as individuals with constitutional rights guaranteed under the CRC.[[37]](#footnote-37) A related issue arising from the interaction between connectivity and datafication, concerns the role of market influenced narratives in structuring understandings of children and their interests as consumers. One consequence of the framing of the discourse with regard to children is that it also dictates the norms and values to be used to formulate questions relating to the accountability of platform infrastructure providers.[[38]](#footnote-38) The immediate governance problem for which an accountability mechanism is needed relates to the persistence of platform providers to commodify every aspect of children’s digital footprints.[[39]](#footnote-39) Controlling attention, for example, has emerged as important feature of children’s lifeworlds in the datafication parenthesis.[[40]](#footnote-40) Wu, reflecting on dominance of corporations such as Amazon, Facebook and Google draws parallels between orthodox capitalist institutional and organisation structures for production, exchange and commodification and the new currencies of wealth – participation, attention and personal data.[[41]](#footnote-41) His account of data mining practices of Google and more generally the evolution of attention as a commodity underlines the consequences of childhood and spaces for development operating under an autonomous framework for rule making and standard setting. Increased connectivity shows how quickly the spaces inhabited by children can be leveraged by platform infrastructures to pursue their economic goals.[[42]](#footnote-42)

One thing that should be clear from this account of the datafication parenthesis and its relationship with the hidden matrix of capitalism is that children’s transition from spaces of semantic ambiguity to spaces mediated by dominant commercial actors bring to the foreground the intractable problems data protection law faces in responding to the disruptions to conventional understandings of autonomy, agency and best interests. Instances of the tensions created by the relationship between datafication and the ideological drivers of data processing operations and their role in embedding market conceptions of autonomy, agency and relationships into the hybrid spaces for generating value and development are worryingly familiar. Children continue to be regarded as a target for new range of products and services.[[43]](#footnote-43) Sensor based toys, software and mobile applications embody an important part of the technical and design apparatus through which social worlds of children are now mobilised and managed.[[44]](#footnote-44) In a recent report issued by the World Health Organisation (‘WHO’) specific concerns about data driven advertising and practices not only violating children’s reasonable expectations of privacy, autonomy and agency but also threatened to undermine the right to health under the CRC. [[45]](#footnote-45) It was found that many children were monitored without their knowledge by trackers and their digital footprints were transformed into data to be used to create profiles, and target them with marketing content and services.

Three features of the relationship between the datafication parenthesis and the hidden matrix of capitalism leave open to question practical, conceptual and constitutional challenges that require addressing within data protection law if children’s rights and guarantees under the CRC are to be taken seriously. First, access and participation in communication spaces provided by content and service providers is conditional on users providing personal information, internalising rules on visibility, sharing and generating content.[[46]](#footnote-46) Second, the power imbalance is further accentuated by platform providers and businesses using their control over access to services and resources to define roles, norms and expectations through structuring flows of information in the form of haptic instants, news feeds and targeted advertisements based on predicted personality traits, sentiments and behaviour.[[47]](#footnote-47) Third, technological infrastructures and affordances now provide a new environment where understandings of fundamental notions of childhood, autonomy and interests are being subtly reconfigured through statistical correlations and algorithmic data driven decision making.[[48]](#footnote-48) If platform infrastructures possess design and technological tools to modulate a child’s autonomy and agency, it could be argued that the choice for data protection law will in all likelihood depend on whether information rights of children and corresponding obligations owed by data controllers is now to be viewed through the lens of the CRC or the teleological assumptions of the market.

**3. Data Protection Law, Information Rights and the Best Interests of the Child.**

Before taking the discussion further, it is important to state at the outset that any attempt to formulate conceptions of best interests, including those involving the interpretation of obligations owed by data controllers towards children, must take into account the strategic and political dimensions of two policy objectives of data protection law. The updating of the dense framework of rules and mechanisms under Regulation 2016/679 not only reflects its source for interpreting fundamental concepts such as autonomy, rights and freedoms but also draws attention to the analytical shift in the way children’s developmental needs will viewed against the background of balancing the dual objectives of facilitating free flow of information with the need to safeguard individuals’ fundamental rights and freedoms. The paradox and conflicts embedded in the dual policy goals should not be lost.[[49]](#footnote-49) The questions and intricacies involved in balancing the dual objectives have already contributed to considerable discussions and theorizing, which include regulatory strategies aimed at eradicating or at the very least minimizing information asymmetries and power imbalances through clarifying the scope of substantive rules and use of design mechanisms.[[50]](#footnote-50) Crucially, the adoption of market narratives and conceptions of managing relations within data protection law makes it possible to suggest, that its regulatory framework would now be employed as a catalyst for the logics motivating data processing operations.[[51]](#footnote-51) Three distinct but interrelated standard setting mechanisms provided by Regulation 2016/679 will be used to illustrate the consequences of the ideological ends for understandings of children’s autonomy and interests in mediated spaces: ordering of relations between data subjects and data controllers, discourses for standard setting over processing of personal data and safeguards. Specifically, the analysis will be limited to identifying and explaining why the predominant emphasis placed on rules developed to manage legal relations between data subjects and data controllers; conditions when processing of personal information is deemed fair and lawful; and resolution of disputes, as a commencing point for framing children’s best interests may unwittingly contribute to the mistaken assumption that capitalisms ideological ends complement CRC’s standards and values.

*Framing Relations between Data Subjects and Data Controllers.*

Data protection law provides a set of substantive rules and procedural mechanisms that structure and order relations between data subjects and data controllers.[[52]](#footnote-52) These rules reinforce the primacy of three key elements central to dictating understandings of best interests and autonomy in respect of the relations between data controllers and children: (i) information rights possessed by data subjects is confined to the processing of personal data; (ii) processing is lawful only if one of six conditions are present; and (iii) an expectation that data controllers’ respect the information rights of data subjects and observe all fair processing principles. Personal data, for example, is deemed to be “processed” when data is collected, stored or transmitted.[[53]](#footnote-53) Of particular relevance to the child’s rights to self-determination is Article 4(1) Regulation 2016/679, which defines “personal data” as “any information relating to an identified or identifiable natural person”. Any information which enables a child’s identity to be determined by reference to age, physiological, social, biological or economic attributes would be regarded as coming within the scope of “personal data”.[[54]](#footnote-54) This will include data processing operations that readily enable a child to be indirectly identified or even rendered identifiable through device fingerprinting and tracking of browsing activity.[[55]](#footnote-55) Even pseudonyms used by a child, which can subsequently be used to single out a child from a group would now be regarded as “personal data” under Article 4(1).[[56]](#footnote-56) While questions about what constitutes personal data or whether personal data is being processed is unlikely to pose interpretational difficulties, it may be more useful to examine two important ways discourses on information rights and problem solving, which are integral to framing relations between data controllers and data subjects, leave unaddressed the contingency of autonomy and how this may preclude a response towards a consideration of children’s best interests that goes beyond the recognition of their consumer interests.[[57]](#footnote-57)

*Discourses for standard setting: Rights, obligations and duties.*

Data protection rules not only structure the relations between data controllers and data subjects but they now establish a framework of rights, duties and obligations governing these relations.[[58]](#footnote-58) Personal data is required to be stored in a form which enables data subjects to be identified for a duration no longer than necessary.[[59]](#footnote-59) Processing of personal data will only be lawful if one of six grounds are available. [[60]](#footnote-60)For example, processing of personal data will be lawful if the activity is seen as necessary for the performance of a contract or compliance with a legal obligation to which the controller is subject.[[61]](#footnote-61) These are perfectly legitimate constraints on a child’s right to determine how its personal information is collected, processed and subsequently used. Consent provides another lawful ground for processing. Concerns regarding power imbalances are anticipated by the provision made in Article 4(11) that consent is:

“freely given, specific, informed and unambiguous indication of the data subject's wishes by which he or she, by a statement or by a clear affirmative action, signifies agreement to the processing of personal data relating to him or her.”

As a matter of principle, the ability to refuse processing of personal information, when no other lawful grounds are present, can be seen as ensuring that individual’s agency and autonomy continue to be respected. In permitting consent to be relied upon as a lawful ground data controllers are required to make clear the purposes for which personal information is being collected and processed.[[62]](#footnote-62) There are specific safeguards introduced by Article 8 for children between the ages of 16 and 13 when consent is relied upon as a lawful ground for processing of personal data in relation to the offer of information society services. [[63]](#footnote-63) The rationale for incorporating safeguards into Regulation 2016/679 stems from well-publicised concerns regarding children’s susceptibility to marketing strategies or their perceived propensity to agree to onerous terms and conditions when subscribing to social media content and services.[[64]](#footnote-64) Finally, personal data can be lawfully processed in advancing legitimate interests of the data controller or third parties. Article 13(2)(d) requires data controllers to make explicit the legitimate interests pursued by them when reliance is placed on Article 6(1)(f). When relying on this ground for processing, data controllers are specifically required to adopt measures which ensure that children’s interests and fundamental rights are not undermined as a consequence of data driven practices. [[65]](#footnote-65) To satisfy this ground, data controllers merely need to identify the legitimate interests being pursued and process information that is necessary to achieving this purpose before undertaking a balancing test.[[66]](#footnote-66) Other mechanisms and provisions are provided with the aim of promoting greater accountability and transparency. Article 7(1) and (2) impresses upon data controllers the importance of ensuring that any assent to terms relating to the collection and use of personal information must be preceded by meaningful, accessible and clear information made available to children.[[67]](#footnote-67) Explicit consent must be obtained when a child’s sensitive data is processed to ensure that harms or privacy risks do not materialise.[[68]](#footnote-68) Data controllers are also expected to make clear to children that the right to withdraw consent can be exercised at any time.[[69]](#footnote-69)

There is an inbuilt assumption in writings on the strategic value of Regulation 2016/679 that information rights, rules on fair and lawful processing will provide children with mechanisms for legal accountability and that ultimately these processes will promote their autonomy and best interests.[[70]](#footnote-70) However, the construction of children as data subjects and the emphasis on individual responsibility in exercising information rights and focus on proof of breaches of information rights or distress or harm being suffered is particularly problematic not least in the way tensions inherent in the hybrid spaces are devolved to doctrines and mechanisms that were not developed with children in mind. Two points can be noted. First, there is no presumption in favour of children’s best interests being accorded the status it has under the CRC. Neither do the recitals in Regulation 2016/679 entertain or acknowledge the specific provisions made under Article 24 of the Charter of Fundamental Rights.[[71]](#footnote-71) Second, one prominent feature of the datafication parenthesis that is not emphasised sufficiently is the ease with which providers of new technologies and services continue to rely on ill-defined boundaries between innovation, customisation and their economic interests or those of a third party as a lawful ground for processing.[[72]](#footnote-72) There is growing evidence that children are either unaware of their information rights or may have formed the view that withholding consent would not be beneficial if it results in their being denied access to resources and services.[[73]](#footnote-73) In light of the numerous ways personal data can now be collected, aggregated and knowledge generated by individuals to shape the conditions that define the spaces inhabited by children not only as individuals but as a group, the question that should be confronted is whether data protection’s alignment with economic and ideological conceptions of autonomy and market relationships provide a legitimate commencing point for conceptualizing a child’s best interests and developmental needs.[[74]](#footnote-74)

*An emerging framework for children and their best interests?*

Regulation 2016/679 animates new ways of thinking about governance of children’s lifeworlds and its interaction with datafication and economic organizations. The contributory role of Regulation 2016/679 in providing norms and structures for ordering relations and dispute resolution can for example be seen in the way understandings of best interests of a child’s autonomy are conflated with data protection standards for legitimating the boundaries of data subjects’ entitlements and expectations; and incorporation of market oriented conceptions of individuals and mechanisms for managing relations. Even though information rights and prescriptive obligations and duties are regarded as important processes for standard setting, this should not disguise the fact that Regulation 2016/679 does not adequately engage with the greater challenge datafication poses for children’s autonomy and agency. It is true that platform providers as data controllers are now subjected to explicit obligations relating to the adoption of technical and design solutions such as privacy by design and conduct of risk impact assessments.[[75]](#footnote-75) Data controllers under Regulation 2016/679 are also required to provide data subjects with meaningful information regarding the logic, the significance and consequences of automated decision processing practices such as profiling.[[76]](#footnote-76) Articles 24 and 25 for example, require data controllers to “implement appropriate technical and organisational measures”, by default and to demonstrate compliance with obligations under Regulation 2016/679. Wachter rightly observes that data controllers in specific instances will now be required to provide individuals with general information when decisions are automated without any human input under Articles 22(1) and (4).[[77]](#footnote-77) However, it is difficult to see how these mechanisms for accountability can make meaningful inroads into the hidden matrix of platform infrastructures for institutional design and regulation given that data protection policymakers have yet to reconcile its policies and framework with CRC conceptions of children’s evolving capacities and best interests.[[78]](#footnote-78)

One consequence of framing children’s interests through data protection law’s substantive and procedural rules is that it leads three domains critical to their development to be exposed to manipulation and aligned with normative preferences of the personal data economy.[[79]](#footnote-79) The first relates to an ability to define spaces for participation, identity experimentation and privacy (‘spatial autonomy’).[[80]](#footnote-80) The second is in many ways derivative of the ability to manage spatial boundaries, whereby access to information and rights to determine how and why personal information is collected are now aligned closely with the norms and logic of infrastructures mediating connectivity and mobility (‘decisional autonomy’).[[81]](#footnote-81) Finally, the embodied nature of the interaction serves as a reminder that we cannot readily assume that traditional conceptions of autonomy in the way children define and experience their social worlds can be easily transposed into environments designed to sustain commercial goals (‘informational autonomy’).[[82]](#footnote-82)



Regulation 2016/679 plays a crucial role in embedding a paradigm shift from that of “children’s rights” to “information rights”. It can be questioned whether the creation of a virtuous cycle of rights to self-determination and installation of transparent and accountable processes can in themselves be seen as being sufficient to regard societal responsibilities and obligations towards children as being discharged. From a children’s rights perspective, the datafication parenthesis begins to take a normative and instrumental shape whose conditions seem far removed from what we would legitimately expect as conducive to promoting their developmental needs and best interests.[[83]](#footnote-83) One possible way forward towards mitigating the far reaching ramifications of the datafication parenthesis and the narrow focus seemingly mandated by data protection rules and norms would be to turn to the CRC to make clear that addressing the governance challenges should not be a matter of discretion but of constitutional importance.

**4. Can the United Nations Convention on the Rights of the Child Help?**

One of the most powerful statements which echo growing concerns about the significance of the datafication parenthesis for children’s reasonable expectations that their foundational rights and freedoms provided under the CRC continue to be respected, can be gleaned from the House of Lords Select Committee’s recommendation that:[[84]](#footnote-84)

‘Minimum standards should incorporate the child’s best interests as a primary consideration, and in doing so require companies to forgo some of their current design norms to meet the needs of children.’

This observation by the House of Lords Select Committee seems to suggest a renewed willingness to question the extension of data processing techniques and market norms onto developmental spaces inhabited by children. Questions about the salience of children’s rights have now started to emerge from the fringes of data protection policy debates.[[85]](#footnote-85) A recurring idea based on evidence drawn from children’s experiences as well as well-founded accounts of barriers and challenges to their autonomy is that regulatory solutions are unlikely to be found as long as CRC norms and principles are not placed at the core of data protection policymaking and rules.[[86]](#footnote-86) Livingstone for example has called for a child’s evolving capacities to be integrated into determinations of whether a particular data mining is fair and lawful.[[87]](#footnote-87) Adopting a similar line of rights focussed reasoning, Barassi emphasises both the value of taking into account a child’s evolving capacity and developmental needs following the surge in targeting children and their parents with voice-enabled technologies such as toys and smart devices.[[88]](#footnote-88)How should data protection law and its dual policy objectives be interpreted in hybrid spaces for development? Is it possible to integrate the best interests’ principle and its cluster of values into Regulation 2016/679? Neither accounts of the growing scholarship revolving around children and their digital rights provide us with a framework for reimagining how best to answer to these questions against the background the framework provided by data protection law. A reexamination of the role and value of the CRC as a standard setting mechanism may help expand the narratives shaping current policy and regulatory discourse, before exploring what this approach might entail in terms of reframing the governance problem within a technological infrastructure that serves as a catalyst for commodification and monetization.

## The Convention as an Institution of Standard Setting.

When Lord Scarman handed down his judgment in *Gillick v West Norfolk and Wisbech Area Health Authority and Department of Health and Social Security*[[89]](#footnote-89) and Baroness Lady Hale articulated her thoughts in *Regina v Secretary of State for Education and Employment and others (Respondents) ex parte Williamson (Appellant) and others*[[90]](#footnote-90) about the public interest in creating conditions for children to flourish and develop, they were reminding society and all stakeholders of the continued salience of the wisdom enshrined in the CRC and the child’s best interest’s principle on the one hand and adults obligations towards children on the other.[[91]](#footnote-91) The previous discussion highlighted how the best interests of children were either being viewed narrowly or aligned with the normative ideology of technological infrastructures serving as vehicles of the new wealth paradigm. Before we can formulate how data protection law can better integrate principles and values enshrined in the CRC, a brief discussion is needed of the role and value of the best interests of the child principle in widening the narrative space of information rights. There are three aspects to the standard setting role of the best interests of the child principle, which need to be borne in mind: descriptive, normative and procedural. These can be elaborated briefly.

The Council of Europe recently published its *Guidelines to respect, protect and fulfil the rights of the child in the digital environment*. Its intervention is noteworthy as it reflects the growing social and political consensus that the governance issues raised by datafication and platform infrastructures mediating the lifeworlds of children can be addressed by drawing on the constitutional framework provided by CRC. Four values provide the core of the descriptive landscape of children’s rights: the right to development, the right to non-discrimination[[92]](#footnote-92), the best interests principle[[93]](#footnote-93) and the right to be heard and participation.[[94]](#footnote-94) These foundational values have been identified to ensure that the regulatory and institutional frameworks developed, will provide a principled and coherent basis for accommodating and prioritising a child’s specific developmental needs and interests. There is an implicit acknowledgement in the CRC that if the social obligation towards children is to be fulfilled it should not be undertaken on an *ad hoc* basis but requires commitment from political institutions and organizations The recognition that children are beneficiaries of core rights envisage that adults and institutions have a responsibility in designing structures in society to facilitate opportunities for agency, participation and give appropriate consideration to children’s views. Article 2 CRC for example, imposes an obligation on the State (and adults) to ensure that every child can realise his or her rights without discrimination of any kind. Not all rules originate directly from the State, institutions or organizations. Article 12 CRC, requires institutions and society to respect a child’s right to participate in decisions that affect their lives. Emerging from the four foundational values are rights central to facilitating optimal development: the right to access, receive and impart information and ideas and use the means of their dissemination, the right to privacy, and the right to rest, recreation and leisure.[[95]](#footnote-95)

As noted in the discussion on Regulation 2016/679, to help ensure that children’s best interests are not compromised, a number of normative and substantive adjustments had to be made to smooth the operation of data protection rules to children as data subjects and to constrain abuses in data processing practices by data controllers. The narrow construction of ‘interests’ however needs to be addressed, if Regulation 2016/679 is to deliver on its promise of promoting and securing a child’s best interests. To begin with, the right of the child to have his or her best interests considered as a primary consideration is a cardinal principle set out in Article 3 CRC. Respect for a child’s best interests requires that institutional design and practices integrate this principle when guiding policies and data processing operations. The role and value of the best interests of the child principle as both a constitutional as well as a standard setting mechanism is an important one since it requires data controllers and regulatory frameworks to be attuned to understandings of the child’s development needs, evolving capacity and human capabilities. Peleg’s conception of the interplay between the best interests principle, a child’s evolving capacity and the general right to development provides us with an insight into the regulatory innovations and adaptations that need to take place.[[96]](#footnote-96) He highlights the value of human rights norms such as respect for dignity and equality of treatment. It is not merely an abstract or morality of aspiration since it can be made relevant to children’s daily lives and needs when combined with the capability approach as propounded by Sen and Nussbaum (Capability Approach).[[97]](#footnote-97) The theory of capabilities and human flourishing is central to Peleg’s view that a children’s rights approach requires sensitivity to not only to their evolving capacities but that necessary conditions are created to ensure that their human rights are respected and not undermined.[[98]](#footnote-98) Constraints imposed on autonomy either through legal rules or technological infrastructures can undermine capabilities for human flourishing, such as control over one’s environment, association and expression. For children’s best interests to be served, Peleg observes that a commitment to their autonomy and agency will require the creation of conditions in which children can realise their capabilities and freedoms in their daily activities. [[99]](#footnote-99)

We can expand Peleg’s account of the right to development in two respects relevant to the discussion. First, as children’s online and offline experiences become inseparable, Peleg’s framing of the centrality of the right to development, highlights the adverse implications of the logics of aggregation and capitalisation which now render a child’s interactions permanently searchable, accessible and calculable. The prevalence of software analytics and algorithms predictive capabilities for personalizing services improve and impact on how children manage public and private spaces (spatial autonomy), choices, preferences and values (decisional autonomy) and self-determination of personal information (informational autonomy) is an area that is under researched and the full implications for their development not fully understood.[[100]](#footnote-100) Second, as children make the transition from “being” to “becoming”, the power imbalance and information asymmetries also introduces a particular governance challenge regarding the way their experiences and understanding of the world are increasingly based on models derived from statistical correlations and driven by algorithmic processes.[[101]](#footnote-101) This is important since the expansion of spaces for development to include networked spaces also means that as children move from spaces of dependency to autonomy, the datafication of their everyday lives can have profound and far reaching effects on their right to have their spaces for development free from servicing and sustaining organisational goals and business models.[[102]](#footnote-102)

The Committee, in its recent General Comment No. 14, has suggested that the best interests of the child principle serves not only as a substantive right but advocates processes that serve to resolve power imbalance and information asymmetry issues. As a procedural mechanism the best interests’ principle aims to ensure that any exercise of power or authority must be consistent with constitutional guarantees set out in the CRC. In resolving questions about the legitimacy of decisions or rules, the best interests of the child principle can be regarded as embodying a system of procedural fairness which recognizes the intrinsic value that children should be respected as individuals and their dignity respected. Procedural fairness viewed through the lens of the CRC requires that any transparent and accountable process must have as its goal the production of outcomes appropriate to the person concerned. For a child to be treated with respect and dignity, procedural fairness will require at the very least a systematic consideration of “how children’s rights and interests are or will be affected by their decisions or actions”.[[103]](#footnote-103) Furthermore, an important element of procedural fairness, can be found in the Committee’s proposal that: [[104]](#footnote-104)

“[W]hen determining best interests, the child’s views should be taken into account, consistent with their evolving capacities and taking into consideration the child’s characteristics.”

The descriptive, normative and procedural dimensions of the best interests of the child principle are important to the arguments pursued in this article in two respects. First, it stresses that societal obligations towards children, particularly in embedding norms and behaviour cannot be winnowed through techniques and strategies that render children’s best interests and the personal information that define their lifeworlds divisible. Second, the requirement for States to ensure that that these obligations are realised through institutional and regulatory processes. There is a more general observation that needs to be made about institutional design and rulemaking in the context of the platform society and responses to manipulative practices that too often gloss over the contradictory promises of respecting the contextual integrity of spaces for development.[[105]](#footnote-105) Consider as an example the controversy surrounding Facebook’s study, *Experimental Evidence of Massive-Scale Emotional Contagion through Social Networks*, when it was discovered that users engagement with posts were treated as a laboratory experiment to develop and train its systems. The public backlash also serves as another reminder that as children become increasingly dependent on social media platforms for exploring their freedoms and opportunities, information rights, valuable as they are, should not be seen as exhaustive of their fundamental rights under the CRC. Integrating a CRC compliance mindset should ensure that policy responses to the disruptive nature of platform infrastructures take into account the fact that these individuals are not simply consumers but are also children.[[106]](#footnote-106)

Datafication, raises difficult public policy questions regarding the role of data protection law with regard to safeguarding and enhancing children’s rights. Cases such as *Gillick* and *Williamson* provide some illustrations of the influence of the Convention and the subtle way its narratives and values can be used to extend its reach into disparate domains such as platform infrastructures while ensuring that balances continue to be maintained between individualism, agency and dignity on the one hand and protection, paternalism and competing liberal values of democratic societies on the other.[[107]](#footnote-107) The problem the datafication parenthesis poses for data protection law is not resolved by merely providing children with information rights. The Council’s recent adoption of the EU Guidelines for the promotion and protection of the rights of the child (EU Guidelines) also points to the broader normative context within which children and their developmental needs now needs to be understood:

“rights-based approach encompassing all human rights is based on the universality and indivisibility of human rights, the principles of participation; non-discrimination, transparency and accountability.”

What is needed is an approach which reimagines data protection law and its narratives in a way which leads corporations and platform service providers to desisting from using those practices and activities that undermine the contextual integrity and ability of children to exercise their spatial, information and decisional autonomy. Before responding to the task of identifying what is involved in such an approach, the intrinsic value of the ideas provided by Helen Nissenbaum to the CRC will be described.

## Datafication and Contextual Integrity

Children’s rights and the opportunities new technologies make available for their agency and autonomy are meaningless until we take into account their reasonable expectations when navigating the spaces mediated by platform infrastructures. One of the most persuasive heuristics proposed in thinking about the decoupling of individual’s autonomy and flows of information in networked environments is the theory of contextual integrity. Though not formulated with children in mind, Nissenbaum’s theory of contextual integrity provides us with a core set of tools that help reimagine a child’s autonomy and the value of maintaining boundaries between public and private spaces for development against the against the backdrop of flows of information which now constitute children’s social worlds and mediated experiences.[[108]](#footnote-108) The theory of contextual integrity is founded on two ideas which conceptualizes social domains as context driven spaces for development, expression and participation:[[109]](#footnote-109)

“that privacy (or informational) norms require all relevant parameters to be specified including actors (functioning in roles), information types, and transmission principles. Omitting any one of these yields rules that are partial and ambiguous. The second fundamental idea is of context specific ends, purposes and values, which extend the significance of privacy beyond the balancing of interests, harms and benefits.”

Nissenbaum avoids using categorical frames such as public and private spaces to defend individuals’ privacy and rights to self-determination. In seeking to establish the provenance of values of autonomy, obscurity and reasonable expectations Nissenbaum draws on social understandings of three interrelated elements – contexts, information norms and transmission principles.[[110]](#footnote-110) Information norms and expectations can either be derived from evolution of social or cultural values, created by the law or imposed by technological infrastructures. The theory draws on what has been characterised as norms of appropriateness and norms of distribution that cohere with individuals’ reasonable expectations regarding the collection and processing of information generated by their activities and interactions. Depending on how these norms and roles interact, breaches of contextual integrity can be identified and steps taken to help maintain respect for individual’s choices and preferences.[[111]](#footnote-111) The theory of contextual integrity is intended to draw attention to the multiple ways individuals express their identities, the roles they assume and the dilemmas they encounter as social domains are nested in technological infrastructures which structure information norms and transmission principles which users must subscribe to if they wish to access these spaces for mobility.[[112]](#footnote-112)

Nissenbaum’s scholarship may help further our insights on what respecting the contextual integrity of a child involves as the persistence of collapsing contexts, blurring of public and private spaces and information flows pose challenges for children and their autonomy. There are a number of important parallels between the theory of contextual integrity and CRC principles.[[113]](#footnote-113) Nissenbaum’s concerns about privacy harms resulting from contextual integrity being violated for example, are not dissimilar to the “indivisibility of rights” arguments or Peleg’s insistence that respect for a child’s human right to development requires adults and society not to erode the conditions necessary for promoting capabilities and human flourishing. Children, like adults have to make concessions regarding their autonomy, privacy and interests in full knowledge that the social domains of physical places can now be readily and efficiently reassembled by platform providers by managing flows of information.[[114]](#footnote-114) The theory draws attention to the way dominant internet intermediaries leverage the information asymmetries to embed their control over flows of information with the consequence of individuals having to make tradeoffs in managing their identity and privacy.[[115]](#footnote-115) Her alignment of respect for contexts with meanings and values individuals attach to information, multiple roles and settings is consistent with Peleg’s observations regarding the diverse ways children understand, interact and experience their social worlds and management of their boundaries for development.[[116]](#footnote-116) Nissenbaum’s theory of contextual integrity highlights the challenges and complexities of managing daily interactions in spaces mediated by commercial actors and data driven operations. The dilemma facing children and not just adults, in managing their privacy and identity in spaces mediated by technological infrastructures can be traced back to structural power imbalances and information asymmetries. As discussed earlier, data processing operations such as algorithmic decision making, constant monitoring and surveillance and imposition of burdens on children to undertake repetitive privacy management tasks as not only violating the contextual integrity of a child’s spaces but pose potential risks to the enjoyment of all their rights. While there is a clear role for children to assume responsibility for the information generated by them, respect for contextual integrity envisages that controllers of flows of information have corresponding obligations and responsibilities in the development of design and operations for collection and processing of personal information. Respect for the contextual integrity of spaces for development provides us with three routes to integrating CRC narratives into GDPR and data driven operations of platform providers: first, by viewing data subjects as children with constitutional rights under the CRC, second, placing emphasis on the relationship between the best interests’ principle and the right to development, and third, the need to reconceptualise mediated spaces as social resources for a child’s development.[[117]](#footnote-117) Finally, a commitment by policymakers towards children and their best interests must embrace a wider set of normative considerations, than is presently the case under Regulation 2016/679.

Three brief observations can be made by way of conclusion. First, children have a right of equal concern and that their actual and future autonomy should be safeguarded and fundamental rights enhanced. Second, respect for the child’s autonomy and agency does not simply end with providing children with a set of information rights and creating mechanisms for resolving conflicts. As children’s social lives now revolve around mediated environments, with opportunities for realising their freedoms, it will also require investigation of whether barriers (legal and technological) undermine these values. This is one interpretation of the observation made by the Committee that before a determination can be made as to whether an action is in the child’s best interests, weight and consideration must be given to the *context* in which their unique needs, capabilities and expectations are to be realised.[[118]](#footnote-118) Third, the evolving capacities principle, foreshadows the argument that respect for contextual integrity can be eroded by data mining operations whose aim is to transform children’s digital footprints into commodities. The normative value of the best interests principle, when seen in light of capabilities and evolving capacity, also serves to counteract the economic rationality of the platform ecosystem’s conception of childhood and spaces of semantic ambiguity: being always connected, normalisation of sharing, visibility and surveillance, and datafied experiences.

What is now needed is an illustration of how a narrative space for CRC norms could be created with the aim of enabling crucial first steps to be taken in initiating a dialogue that is long overdue.[[119]](#footnote-119) The DPIA will be used as example to illustrate how the normative framework provided by the CRC could provide a basis facilitating debate and reform.

##  The Child’s Best Interests and the Datafication Parenthesis: Data Protection Impact Assessment as a Case Study.

Technological infrastructures and flows of personal information confront platform providers and organisations with the task of managing the impact of network systems and data driven practices on individuals’ information rights and interests. [[120]](#footnote-120) As Wright and Raab observe, the growing use of systems and data driven operations to process personal information can have ramifications on individuals that go beyond traditional concern with network security and privacy to encompass social, economic, financial and psychological considerations.[[121]](#footnote-121) Impact assessments within the context of the processing of personal information can be understood as:[[122]](#footnote-122)

 “a methodology for assessing the impacts on privacy of a project, technology, product, service, policy, programme or other initiative and, in consultation with stakeholders, for taking remedial actions as necessary in order to avoid or minimise negative impacts.’’

Regulators and scholars regard impact assessments as a proactive risk management mechanism helping data controllers anticipate the impact of their data processing operations and thereby minimise individual’s exposure to privacy risks or harms.[[123]](#footnote-123) Parker likens impact assessments as a rapid response mechanism, enabling organisations to address technical or processing problems that may arise from the implementation of data processing devices or software.[[124]](#footnote-124) Waters while taking a not dissimilar view regards impact assessments as promoting system resilience and trust and confidence amongst consumers.[[125]](#footnote-125) The GDPR regards data protection impact assessments as an important part of its regulatory toolkit, given the expansive nature of complex information systems and the heightened risks to individuals interests and their fundamental rights from large scale data processing activities. Data controllers are now required to develop an assessment framework which can be integrated into different layers in an organization’s data processing operations before a new technique or system is used.[[126]](#footnote-126) There is no standardised DPIA benchmark introduced by Regulation 2016/679 but the mandatory processes that need to be considered can be inferred from the wording in Article 24(1) which requires taking:

“into account the nature, scope, context and purposes of processing as well as the risks of varying likelihood and severity for the rights and freedoms of natural persons, the controller shall implement appropriate technical and organisational measures to ensure and to be able to demonstrate that processing is performed in accordance with this Regulation. Those measures shall be reviewed and updated where necessary”.

Transparency is regarded as important, with the DPIA emphasising that data controllers take account of risks to individuals’ rights and privacy that may arise from the use of computer systems or automated processes. It is with this objective in mind that data controllers are required to maintain a record of processing activities and reasons for processing and the type of data being processed and the measures taken, as required by Article 32(1). [[127]](#footnote-127) Failure to comply with the processes fully and accurately as stipulated by Regulation 2016/679 can result in a fine of 10M€, or in the case of undertakings such as Facebook, Amazon and Google, a maximum of 2 % of the total worldwide annual turnover of the preceding financial year, whichever is higher.[[128]](#footnote-128) The range of measures that data controllers need to take to demonstrate compliance should not be limited Article 24(1) processes. DPIAs need to be also considered alongside Article 35(7), which delegates to data controllers the factors to be taken into account when undertaking impact assessments. These will include standards for ensuring that potential risks to individuals’ fundamental rights are identified and measures for their resolution are both proportionate and necessary. The mechanism provided by Article 35 is consistent with the broader strategy of the Commission, which is to ensure that high risks to individuals from processing practices or introduction of new or innovative technologies are managed through the adoption of responsive solutions at the very early stage of the process. As a mode of governance, DPIAs complement and interact with technical and software approaches, to promote greater transparency and accountability.[[129]](#footnote-129)

Notwithstanding the rationale of embedding risk management norms into data protection operations, it is appropriate to acknowledge that more could be made of mandatory DPIA processes to embed CRC norms and values.[[130]](#footnote-130) At present the DPIA and privacy by design approaches adopt a narrow regulatory approach, focusing on risks associated with the processing of personal data.[[131]](#footnote-131) Article 35(3) for example only requires impact assessments to be conducted in respect of three specific types of processing operations:

a. automated processing which involves a systematic and extensive evaluation of individuals personal traits and on which decisions are made which produce legal effects or have similar significant affect;

b. large scale processing of special categories of data relating to criminal convictions or offences; and

c. systematic monitoring of a publicly accessible area on a large scale.

Data controllers’ obligations under the DPIA are confined to “processing of special categories of [personal] data”, where “systematic monitoring” has been undertaken and decisions reached by “automated processing”. Article 35(3) also restricts the obligation to undertake impact assessments only in respect of processing operations deemed to pose “high risks” for individuals. Impact assessments will only be undertaken if the data controller concludes that the processing of a child’s personal data is unlikely to “result in a high risk to the rights and freedoms of natural persons”. However, this sets the benchmark far too high and removes from scrutiny and accountability a considerable range of automated data mining and behavioural targeting practices.[[132]](#footnote-132) Some of the guidance provided by the Article 29 Working Party and the Information Commissioner’s Officer has helped to emphasise the importance of accommodating children’s particular needs and interests. However, the continued focus on whether data processing operations are likely to give rise to serious harms to children continues to be a major hurdle in .[[133]](#footnote-133) The most obvious area of Regulation 2016/679 disposition towards prioritising and promoting its own understandings of best interests and good governance can be seen in the challenges posed by big data processes and automated decision making processes now used to shape children’s autonomy and experiences. For example, accountability arises when the processing practice gives rise to “legal effects or significant consequences”. Profiling is not prohibited per se and DPIA and data protection rules limit the processes for challenging the dominance of this in-built structure for accountable decision making. It is useful to note that should this approach to the application of the precautionary principle be mitigated there still remains the important question of how policymakers aim to bridge, the conflicting priorities between Regulation 2016/679 and CRC. The wide ranging and sometimes technical nature of the debates leaves relatively unresolved the task of re-imagining the DPIA accountability mechanism and generally Regulation 2016/679 through the use of CRC rules or for that matter, Article 52(1) of the Charter. Article 52(1) of the Charter, it should be recalled, provides that *any limitation on the exercise of the rights and freedoms laid down by the Charter* must be provided for by law, *respect their essence* and, subject to the principle of proportionality. Integrating a children’s rights lens into data protection law’s accountability mechanisms would be both coherent and principled.

If an instrumental understanding of autonomy does not provide a coherent and principled way forward, what can we do about this? The insights generated in this article may enable us to re-position the CRC and children into data protection policymaking. In light of the normative framework provided by the CRC and the salience of the respect for the contextual integrity of development spaces heuristic, one way of embracing the governance challenge would be to initiate a long overdue and meaningful dialogue that goes beyond focusing on information rights and risks to an assessment of platform providers and industry’s responsibilities towards creating an environment that coheres with children’s reasonable expectations and is in keeping with international commitments made by States under the CRC. Nissenbaum’s emphasis on individuals reasonable expectations and the need to respect their contextual integrity brings into sharp focus the importance of widening the discourse on information rights and autonomy to include a honest and critical debate about mediated spaces as social resources for development rather than an environment for converting children’s digital footprints into assets of value.

 Another way forward which may help remedy the gulf that exists between data protection policy and the CRC is the imposition of the requirement for data controllers to demonstrate that in all actions or decisions leading to or resulting from the processing of personal information, the child’s best interests is a paramount consideration.[[134]](#footnote-134) Given the indivisibility of children’s online and offline rights, data controllers should now be required to assume responsibilities commensurate with the immense powers they possess in shaping and mediating interactions of children. Respect for the contextual integrity of the spaces for development is a useful heuristic and can serve to address two particular shortcomings in the DPIA. First, the impact assessment process and considerations envisaged in the DPIA seem to provide a standardised, almost mechanistic approach to assessing children’s interests and needs. The DPIA attaches little or no significance to the fact that children are not a homogenous body or the value to be attached to their opinions.[[135]](#footnote-135) It is particularly noticeable that not only does the DPIA fail to give policy priority to a child’s evolving capacities but glosses over the fact that children and adults may not necessarily be affected in the same way from a data processing operation or new technology. Even though data processing operations may not be regarded as posing “high risks” the enjoyment and realisation of their rights may still be impaired or undermined by affordances and data mining practices that normalise surveillance and externalise responsibility for privacy management.[[136]](#footnote-136) As Livingstone rightly observes, presuming similarities or differences between adults and children underestimate the complexities involved in assessing impact of new technologies and the Internet on children’s rights, experiences and developmental opportunities.[[137]](#footnote-137) This is an important point. Younger children may have less awareness of privacy and the information or decisional risks associated with their online activities such as gaming or interacting with videos on YouTube.[[138]](#footnote-138) The omission from the DPIA of any specific consideration of the question of how data processing operations impact, for example a child’s decisional, informational or spatial autonomy continues to be an important area of concern for children and their parents. Impact assessments need to consider not only the type of data processing operations or systems being used but children’s motives and psychological attributes which may lead them to engaging in interactions and participating in communities that mirror their tastes, lifestyles and interests. Second, the child’s right to be heard continues to be an undervalued resource in data protection policymaking and it is noticeably absent in the DPIA process.[[139]](#footnote-139) Children’s rights scholars and organisations continue to urge policymakers and data protection authorities to increase their engagement with children.[[140]](#footnote-140) The current emphasis on delegated rule enforcement and high threshold for compliance would seem to be at odds with understandings of accountability under the CRC. The right to participation and the right be heard is particularly relevant as children are unlikely to pursue rigorously any violations of their data protection rights, taking into account the fact that privacy violations often go unnoticed.[[141]](#footnote-141)

To help overcome the abstract nature of the treatment of the public interest dimensions to the child as a data subject in the datafied society, it may also be useful to incorporate four critical questions that may help realign Regulation 2016/679 with CRC standards and values. First, how do design and data processing operations cohere with children’s reasonable expectations that the contextual integrity of their spaces for development are respected? Second, what steps are taken to ensure that automated decision making processes, including profiling, is consistent with respect for equal treatment and dignity so that their personal information is not treated as ‘packages to be moved around?[[142]](#footnote-142) Third, do access to resources and opportunities to realise fundamental freedoms depend on children agreeing to all data collection and sharing practices? Fourth, what steps are taken to provide children with a “voice” or opportunity for participation in decisions that affect their autonomy? These four questions, though by no means exhaustive, are underpinned by two ideas. One is that instrumental conceptions of autonomy need to give much greater weight and policy significance to the impact of mediated contexts and data practices on children’s access to information and knowledge. Second, in matters of public policy, a much grounded insight is needed regarding the impact of data infrastructures controlled by commercial entities on children’s development and how data protection rules can promote conditions for human flourishing.[[143]](#footnote-143)

It is essential that we are clear about the narrative value of these four questions and why their integration into data protection policymaking matters from the perspective of a children’s rights approach.[[144]](#footnote-144) These four questions require policymakers and platform providers to engage with the narratives of capability, evolving capacity and the child’s best interests and as a consequence understand their responsibilities to children as provided by the CRC.[[145]](#footnote-145) The CRC offers an invaluable constitutional resource, without which society’s commitment towards children’s rights are unlikely to be to be realised and the limits inherent in data protection rule in the platform environment going unnoticed.[[146]](#footnote-146) It is important to stress that platform providers, as information gatekeepers are not proxies for parents but their new responsibilities and obligations stem from the immense power that resides in their ability to exercise influence over the way children exercise and experience their autonomy. The account provided of CRC values and its relevance to providing a moral imperative urging self-restraint from data controllers through a principled narrative framed around the interaction of best interests of the child and respect for contextual integrity becomes a sub-set of integrating CRC standards into fair and lawful processing so that discourses for challenge and accountability can be better facilitated. CRC norms and values can help steer platform providers and policymakers towards developing legal, technical and design solutions that balance innovation opportunities with societal obligations towards children in a coherent and principled manner.

What might a children’s rights lens towards an accountable framework involve? Three can be outlined. Any children’s rights approach in data protection law must identify with the CRC’s *substantive* framework for rights, obligations and norms which can be easily understood and taken into account when assessing impact, regulatory approaches and solutions.[[147]](#footnote-147) The “evolving capacities” turn, provides an important corrective to the dominant narrative of children as consumers. While data protection rules emphasise the autonomy of individuals and relations in a market economy, the evolving capacities turn ensures that difficult issues relating to the ambiguity of the rules and obligations towards children are not glossed over. Technological developments such as voice recognition, predictive analytics and algorithms for personalizing content and services foreshadow some of the ways decision making and autonomy is gradually being shifted to machines to facilitate convenience and configure choices and preferences. As machine agency becomes pervasive how children experience and gain knowledge of themselves, their surroundings and the world cannot remain insulated from its effects. The dominance of design values of mediated spaces with its emphasis on economic self-interest can be balanced by the *normative* framework of CRC. The normative influence, for example springs from a desire to emphasise the fairness and legitimacy of restraints (formal and informal) and the expectation that duties, powers and obligations are exercised in a way that takes into account the best interests of the child. This concern for accountability, fairness and legitimacy manifests itself in the social and political recognition that fulfilling obligations to children continues to be a shared social responsibility.[[148]](#footnote-148) The wealth of jurisprudence contained in the CRC provides policymakers with an authoritative aid to interpreting data protection rules and informing policy options. The emphasis that understandings of the child’s agency and autonomy should be grounded on human rights and capabilities is critical, not only in terms of placing the child at the centre of regulatory efforts but provides a principled and coherent basis for assigning to data controllers the responsibility for protecting the child’s fundamental freedoms and rights.[[149]](#footnote-149) Finally, its *instrumental* role should not be underestimated as the move is made for the need to engineer a shift from viewing children and their autonomy as a data protection problem to one of enhancing and promoting children’s nights. The CRC provides an approach that should help reconstitute the responsibilities and obligations of the State and platform providers towards children.[[150]](#footnote-150) The right to development and respect for contextual integrity permits data protection policymakers to use established social norms and accepted understandings of what is appropriate or reasonable in the child’s best interests to encourage States and its institutions to design laws and formulate policies that adhere to the ideals of the CRC.[[151]](#footnote-151) It is only through integrating the CRC and its vision of childhood into the DPIA and Regulation 2016/679, can we move towards developing a principled framework that reverses the trend of viewing the child data subject simply as a consumer in a platform society.

# 5. Conclusion.

Emerging scholarship on the construction of the child as a data subject has been guided by mechanisms for problem solving and objectives circumscribed by Regulation 2016/679 when seeking to reconcile data protection policy with CRC foundational principles and norms. One outcome of using data protection law’s substantive and procedural framework to address the governance challenges raised by the sociotechnical assemblages created by platform infrastructure providers is its validation of generalized assumptions that a child’s best interests can be comprehensively understood and defined by legal construction of information rights, duties and remedies. It is perhaps unsurprising that the assumption and expectation engendered by this narrow policy lens has resulted in little or no consideration being given to the datafication parenthesis and what this implies for the role of data protection law in legitimating a normative shift to the way infractions into a child’s spatial, decisional and information autonomy are interpreted, understood and resolved. The datafication parenthesis offers an alternative frame through which we can begin to grapple with concessions of constitutional significance being made when data protection rules and norms are elevated as an instrument to reinforce understandings of relations between children, their personal data and infrastructure providers. The datafication parenthesis also helps direct focus on how the considerable power devolved to platform infrastructure providers enable them to create social structures that prioritise new cultural and legal understandings of children as consumers with very little transparency and accountability.[[152]](#footnote-152) The discussion in this article makes three contributions to policy and scholarly debates relating to children and their information rights. First, it bridges the gap that presently exists in respect of the interaction between the datafication parenthesis and understandings of best interests and what the resulting lack of clarity as to its meaning might imply for providers of new technologies and services seeking to fulfill their obligations towards children as data subjects. Second, given that children’s interests are already highlighted in recitals and provisions in Regulation 2016/679, the article highlights one possible way data controllers can or should be steered towards creating conditions for human flourishing; a child’s evolving capacities and best interests must provide the commencing point for mapping the contours of their developmental needs rather than framing and conditioning their experiences and rights to their lifeworlds through an intricate regime of information rights, duties of data controllers and remedies. Third, the use of DPIA as a case study, points to one strategy for operationalising CRC norms and values to help mitigate the fact that Regulation 2016/679 provides little by way of clarification on the content of a child’s best interests and demonstrate their functional value against the background of algorithms and real-time software analysis which treat children’s lifeworld as resources that can be monetised. Given the indispensability of data infrastructures to the realisation of children’s rights and the digitalisation of their lifeworlds, as a way of finding a balanced solution it is time we focused on this question as a regulatory priority, “What visions of childhood are being promoted by the datafication parenthesis and Regulation 2016/679?” It is too early to say if Regulation 2016/679 will be regarded as a watershed moment when concerns about the datafication of children’s lifeworlds led to the promulgation of a Digital Rights Convention for Children.

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