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How to cite:

Tatlow-Golden, Mimi and Garde, Amandine (2020). Digital food marketing to children: Exploitation, surveillance and rights violations. *Global Food Security*, 27, article no. 100423.

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Version: Accepted Manuscript

Link(s) to article on publisher's website:
<http://dx.doi.org/doi:10.1016/j.gfs.2020.100423>

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Digital food marketing to children: Exploitation, surveillance and rights violations
Global Food Security
Pre-proofs version

Abstract

Unhealthy food marketing has long been identified as a systems factor with negative health effects on children. The data-driven, personal data extraction and behavioural design practices of 21st century media advertising in digital technology systems mean that food marketing now sits at the intersection of multiple harms, infringing not only children’s rights to health and to food, but also their rights to privacy and to be free from exploitation. This further sharpens the need for State regulation to protect children and their rights effectively.

Keywords

Marketing, advertising, children, youth, privacy, rights, exploitation, food

1. Introduction

Food marketing actively contributes to complex food and economic systems that negatively influence child health via food development, distribution, marketing, preferences, purchase and eating (Lancet Commission, 2019; WHO, 2016a). Multiple major systematic reviews over the last two decades have determined the extent, nature and impact of food marketing on children and established a scientific consensus (for summaries, see Cairns et al (2013); Boyland and Tatlow-Golden (2017)). Almost all such marketing promotes unhealthy food (for a definition, see Table 1), presenting a distorted picture of consumption, normalizing unhealthy eating, and increasing requests for, purchase and eating of unhealthy food, which is directly linked to growing childhood obesity and weight gain, and related non-communicable diseases (NCDs) (WHO, 2016a, 2016b; Unicef, 2018a, 2018b).

Table 1: Defining unhealthy food

<p>‘Unhealthy food’ can be defined as food that is nutritiously poor and contains high levels of saturated fat, trans-fatty acids, sugar or salt (HFSS). It has often undergone major industrial transformation and when consumed, it makes the total diet less healthy (Scarborough and Rayner, 2014). In this paper, we use the term unhealthy food to refer to HFSS food, drawing on existing WHO regional nutrient profiling models with a particular focus on total fat, saturated fat, total sugars, added sugars and salt (e.g. WHO, 2015; PAHO, 2016; WHO, 2017). Notwithstanding their differences, these models provide evidence-based, objective food categorization systems to determine the healthfulness of a given food and, thus, whether its marketing should or should not be allowed.</p>
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In 2016, the World Health Organization (WHO)’s Commission on Ending Childhood Obesity (ECHO) concluded that the evidence was ‘unequivocal’ that marketing of unhealthy food and sugar-sweetened beverages was related to childhood obesity (WHO, 2016a, p. 18). It also reiterated the calls on Member States to implement the WHO Set of Recommendations (WHO, 2010), which the World Health Assembly unanimously endorsed and which urges Member States to limit the impact of unhealthy food marketing on children (WHA Resolution 63.14, 2010).

Yet, children remain exposed to high levels of unhealthy food marketing. As we have argued (Unicef, 2018; WHO 2018a; WHO 2018b), regulation globally is either absent or tends to rest on ineffective industry-led self-regulatory pledges. In the few countries where legally binding regulation has been introduced, the rules are generally too narrow in scope to protect children effectively from exposure to unhealthy food marketing: not only do these rules often apply to marketing around programming overtly directed at younger children, leaving adolescents unprotected, but they also tend to focus on traditional media, rather than around the media content that children of all ages actually watch, leaving a broad range of media unregulated – particularly digital media.

In this paper we make the case that the advent of digital media substantially extends the effects of food marketing on children's wellbeing – via effects on their privacy and via affordances of digital media that permit behavioural manipulation and hence exploitation. We outline key challenges that States should meet to protect children from unhealthy food marketing, particularly digital marketing (see summary in Table 2, and see Table 3 for a definition of digital marketing) and the value of taking a child rights approach to addressing such marketing.

Table 2: Key challenges States should meet to protect children from unhealthy food marketing

<p>States should acknowledge the particularly pervasive, immersive and engaging nature of digital marketing with its appeal to children and young people. Regulation should apply not only advertising spots inserted between programmes, but to the full range of promotional techniques, including those used within programmes and media content (e.g. advergames, vloggers), as well as peer-to-peer dissemination on social networks, sponsorship and many others.</p>
<p>States should move away from a focus on advertiser intent (restricting marketing that is “targeted at children”) or child proportions of audiences, and instead regulate media locations where the greatest child audiences are found to effectively limit children’s exposure to, and therefore the overall impact of, unhealthy food marketing.</p>
<p>States should protect all children from the harmful impact of unhealthy food marketing and move away from models of advertising restriction that prioritise advertising literacy, i.e., based on developmental accounts of the cognitive ability to understand advertising. Marketing effects research indicates that advertising works through emotional and implicit routes, and evidence is lacking that the cognitive ability to identify advertising and its persuasive intent actually provides protection against marketing effects. The exploitative behavioural design of digital media platforms has the potential to magnify such effects, attenuating users' agency and autonomy. All children, including adolescents as well as younger children, should therefore be protected from the harmful impact of unhealthy food marketing.</p>
<p>States should acknowledge the cross-border implications of digital marketing which accentuate the need for international cooperation. Cross-border cooperation is particularly important in regions where cross-border marketing is widespread due to cultural and linguistic closeness.</p>

Table 3: Definition of digital marketing

<p>Building on our 2016 definition (WHO, 2016b, p.11), we define digital marketing as promotional activity, including advertising, delivered through a digital medium, that seeks to maximize impact through creative and/or data analytical techniques, including:</p> <ul style="list-style-type: none">• persuasive design and creative methods that seek to capture attention, extract digital labour, build brand-consumer relationships, and activate implicit emotional persuasion. Examples are immersive narratives or social- entertainment- and humour-based approaches; ‘influencers’ popular with children, such as YouTube ‘vloggers’ (video bloggers); transmission through social networks (e-Word-of-Mouth); augmented reality, online games and virtual environments• analysis of data including personal data, to maximize the impact of creative methods and to target marketing at specific groups, individuals and moments of vulnerability. Examples of such data are emotions, attention, responses, preferences, behaviours, geo-location, demographics and others.

The prevailing narrow approaches to regulating unhealthy food marketing are problematic as media landscapes have changed dramatically. The shift to digital has brought effective new marketing methods for unhealthy food (Table 4) and pervasive new media practices, including personal data extraction, extensive experimentation and behavioural manipulation. With growing device availability and digital media engagement around the world, increasing numbers of children are exposed to these practices and thus experience multiple additional harms. It is therefore urgent that those seeking to understand the global food system, not least regulators, understand these amplified and wider harms that digital food marketing presents for children.

Table 4: The effectiveness of digital food marketing

Although we are not aware of studies *comparing* the impact of digital to traditional marketing on children, surveys of teens in the UK and the US indicate that they appreciate and engage with digital marketing (WHO, 2016b). Significant detrimental effects of digital marketing on the intended use and actual consumption of unhealthy commodities (food beverages, alcohol and tobacco) were found in most studies in a recent review of effects on children and young adults aged 12 to 30 years (Buchanan et al., 2018). Murphy and colleagues (2020) found that adolescents attended for longer to unhealthy food ads in social media, compared to ads for healthy foods or non-food items, that they rated peers more positively who had unhealthy food marketing in their social media feeds, and were more likely to 'like' unhealthy food marketing. They also recalled and recognised unhealthy items better than healthy or non-food items. Online unhealthy food marketing is associated with greater consumption: a survey of children aged 10 to 16 years in Australia showed that those who engaged more with food content online, particularly videos, were more likely to consume unhealthy food (Baldwin, Freeman & Kelly, 2018). Forde and colleagues (2019) found that of multiple promotion approaches studied, adults' self-reported exposure to digital promotions as well as traditional ones were both associated strongest with the greatest sugar sweetened beverage consumption.

Not all studies show increased effects for digital media – for example, media 'multitasking', watching more than one screen at a time, can interfere with message recall (Garaus, Wagner & Back, 2017). Yet social media platforms report that digital marketing amplifies audience reach, advertising memorability and advertisement liking (WHO, 2016b). Econometric analysis of brand marketing in Europe found that employing online marketing as part of a campaign nearly doubled returns on television and cinema advertising and companies promoting unhealthy food report not just additive but powerful synergistic effects for their campaigns in social media. For example, a Cadburys chocolate online video achieved four times the return on investment compared to television, and Coca-Cola reported greater return on digital marketing compared to television advertising for video ads (WHO, 2016b). Even in markets where consumers may tire of extensive advertising, integrated, multi-channel campaigns including digital marketing are found to be 31% more effective than non-integrated campaigns at building brands (Kantar Millward Brown, 2017a).

Unhealthy food marketing is also increasingly identified as a pressing children's rights concern (Garde, 2011; Mills, 2012; Handsley et al, 2014; Tatlow-Golden et al., 2016; WHO, 2016b; O'Cathaoir, 2017; Garde et al, 2017; Unicef 2018a, 2018b; WHO, 2018a; Ionata et al, 2018; Unicef, 2019a, 2019b). In 2016, the WHO ECHO Commission stated:

Government and society have a moral responsibility to act on behalf of the child to reduce the risk of obesity. Tackling childhood obesity resonates with the universal acceptance of the rights of the child to a healthy life as well as the obligations assumed by State Parties to the Convention of the Rights of the Child. This new perspective offers some potential to increase the pressure on States to effectively address the various harms associated with the marketing of unhealthy food to children (WHO, 2016a).

The marketing of unhealthy food negatively affects many of the rights enshrined in the CRC. Discussions on rights

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to health and food have been well rehearsed elsewhere (e.g. WHO 2016a, WHO, 2016b; WHO, 2018a; Unicef, 2019b; for a more extensive list of the rights affected, see Unicef, 2018a; O’Cathaoir, 2017). In addition, however, the marketing of unhealthy food in digital media also specifically harms the child’s rights to privacy and, we argue, freedom from exploitation. These rights constitute the focus of this paper.

The advent of the internet and digital media and its many applications provide unrivalled opportunities for children. It is estimated that one in three internet users are children, and that one in three children are internet users (Unicef, 2019a). This offers opportunities for learning, civic participation, creativity and communication (Unicef, 2019a; Lievens et al, 2018). Facilitating children’s participation in these media is therefore essential. However, this should not come at the price of already-identified harms to health, nor of further harms facilitated by new digital media ecosystems (WHO, 2016b, 2018a; Unicef, 2018a).

We therefore argue that food marketing should be considered in its wider context, and in particular the context of the 21st century digital media ecosystem and the marketing strategies that it facilitates and on which it is built. We highlight how radically different digital marketing is from broadcast and retail marketing and make the case that this system is exploitative because it is designed to extract from children their personal data, as well as their attention and their engagement, in order to generate value for digital platforms, marketers and companies. We also consider the limitations of advertising and media literacy as a solution, and what the European Union General Data Protection Regulation (GDPR) does (and does not) offer to address the problems highlighted. We therefore argue that, as unhealthy food marketing not only interferes with child health, but also engages actively in privacy-breaching and other exploitative practices, a child rights approach offers added value to regulators and advocates for protecting children, defined as everyone under 18 years of age (CRC, 1989) (See Table 5).

Table 5: The value of a child-rights based approach to unhealthy food marketing

The UN Convention on the Rights of the Child (CRC), adopted in 1989, has become the most ratified human rights instrument in the world (CRC, 1989). The CRC has 54 articles and three Optional Protocols. In its affirmation of children as individual rights holders, distinct from their parents, it illustrates a human rights approach that recognizes children as social actors in their own right. Children’s rights are both inalienable and universal. Moreover, in its amalgamation of civil and political, as well as social, economic and cultural rights, the CRC symbolizes the indivisible and interrelated nature of all human rights. As an international human rights treaty, States Parties to the CRC are legally bound to uphold its provisions.

The CRC was adopted thirty years ago, when obesity was not considered a major global public health problem. Like other human rights instruments, however, it should be interpreted in order to provide guidance to States facing new challenges: as noted by the Committee on the Rights of the Child, ‘children’s health is affected by a variety of factors, many of which have changed during the past 20 years and are likely to continue to evolve in the future’ (CRC Committee, 2013, para. 5).

A children’s rights approach to obesity and NCD prevention requires that the CRC and other international human rights instruments guide all policies with a foreseeable impact on children, including the regulation of business practices affecting food consumption. States should therefore prioritize issues, such as the availability of ‘safe and nutritionally adequate food’ and the shaping of ‘a healthy and safe environment’, which have gained in prominence in recent years (Office of the High Commissioner for Human Rights, 2013, para. 99; see also Unicef, 2019b) and should include the digital environment. States should also regulate harmful commercial practices and implement the WHO Recommendations which should guide the interpretation of what the CRC requires from States to ensure that they uphold their legal obligation to protect children’s rights from these practices (Unicef, 2018; Unicef, 2019b).

However, the CRC does not only mandate that States ensure that children are ‘granted such protection and care as is necessary for their well-being’ (Article 3(2)), and in particular respect, protect and fulfil their right to the

enjoyment of the highest attainable standard of health (Article 24). It also confers on them participation rights, which States must similarly respect, protect and fulfil. More specifically, children have the right to freedom of expression, which includes freedom to seek, receive and impart information and ideas of all kinds, regardless of frontiers, either orally, in writing or in print, through any media of the child's choice (Article 13(1)). To this effect, States shall ensure that children have access to information and material from a diversity of national and international media sources, especially those aimed at the promotion of his or her social, spiritual and moral well-being and physical and mental health (Article 17).

Adopting a children's rights approach to the prevention of childhood obesity and related NCDs has several benefits (Unicef, 2018; Garde & Curtis, forthcoming, 2020):

- *Accountability* – A children's rights approach guarantees a degree of State accountability, making effective remedies more likely where rights are violated. This, in turn, facilitates the translation of the commitments and obligations established in the CRC into practicable, long-lasting and realizable entitlements, guaranteed by independent monitoring bodies, including courts and national human rights institutions.
- *Empowerment* – Once the concept of 'rights' is introduced in policy-making, the rationale for preventing childhood obesity no longer comes only from the fact that children have *needs* but also from the fact that they have *rights* – entitlements that give rise to legal obligations on the part of States.
- *Legitimacy* – Because children's rights are inalienable and universal, there is an inherent legitimacy to the language of human rights. Consequently, arguments based on children's rights can ensure that an issue is given special consideration and that competing interests lose legitimacy if they are incompatible with children's rights.
- *Advocacy* – An approach based on human rights provides an opportunity to build strategic alliances, coalitions and networks with other actors who share a similar vision and pursue common objectives. In relation to childhood obesity, a children's rights approach is likely to encourage the involvement of a broad range of actors who may not have viewed marketing of unhealthy food to children as a concern of children's rights. In turn, this is likely to help galvanize political will and increase pressure on governments to ensure that they comply with their human rights obligations, particularly under the CRC.

2. Data extraction, targeted marketing and the child's right to privacy

Article 16 CRC provides that 'no child shall be subjected to arbitrary or unlawful interference with his or her privacy' and that 'the child has the right to the protection of the law against such interference'. The right to privacy traditionally guarded against excesses of government intrusion into private domains, including family, home and correspondence. However, the digital age has led to an expansion in the understanding of privacy to include a right to the protection of personal data. Human rights apply equally online as they do offline, and the duty of States to protect and advance the right to privacy must meet the current global realities of pervasive collection, storage and retention of children's data, and the aggregation of their data (Unicef, 2018a; on the relationship between digital marketing and the child's right to privacy, see also Lievens et al, 2018; Verdoodt, 2019).

An increasingly personalized, data-driven food marketing ecosystem

Digital marketing relies extensively on trade in one of the most powerful and lucrative commercial sources: personal human data. As Joseph Cannataci, UN Special Rapporteur on the right to privacy, has noted:

Every search, every read, every e-mail or other form of messaging, every product or service purchased leaves

hundreds of thousands of electronic tracks about an individual which are capable of being aggregated into forming a very accurate profile of that individual's likes, dislikes, moods, ... shopping patterns... interest(s) and sometimes even the relevant opinions... access to such data or exploitation of such data in a variety of ways is now one of the world's largest industries generating revenues calculated in hundreds of billions most usually in the form of targeted advertising (Cannataci, 2016).

This global data economy has become entirely reliant on the extraction of personal data, largely generated by or in the services of the advertising technology or 'adtech' industry. This new data-advertising model has been characterized as 'advertising as surveillance' (Bodle, 2017) within a wider regime of 'surveillance capitalism' (Zuboff, 2019). As a result, the digital marketing of unhealthy food to children raises significant concerns relating to the protection of children's personal data and privacy, as food and adtech companies extract vast amounts of user data subjectivities for profit.

Data allows for the personalized 'micro-targeting' of marketing messages, which magnifies the persuasive power of marketing and increases the likelihood that the very children who are more vulnerable to marketing for unhealthy food will be targeted, and with modes to which they respond (WHO, 2016b; on health inequities, children's rights and obesity, see also Garde, Gokani and Friant-Perrot, 2018). Furthermore, data extraction allows advertisers to draw inferences, experiment constantly, and analyse responses instantaneously to craft their methods more precisely. It amplifies marketers' ability to hone content for specific audiences, drawing not only on age or demographics but also location, interests, moods and other personal characteristics (WHO, 2016b, 2018a).

In digital media, data is also combined across applications and systems. For example, geolocation data, accessed via settings on children's devices or in apps, can serve ads that are specific to users' locations in real time (Baus, 2014). Indeed, music streaming service data is even used to infer users' moods, for which music is considered an effective proxy (WPP Data Alliance, 2016), and to serve ads relevant to real-time emotion. Data can also be used to target typically harder-to-reach groups, such as those in rural areas, to increase uptake among young people (Weissbrot, 2018). Data can be used to profile and target particularly vulnerable groups, for example targeting by ethnic group, which increases young people's responsiveness – further amplifying the ways that marketers take advantage of existing economic and other inequalities (Bragg et al., 2019; Montgomery 2015). The content of such targeted advertising, with a focus on role models, influencers, and others of particular appeal to children, to increase its receptivity, combined with greater exposure based on targeting, is likely to result in amplified responsiveness to such media. This capacity for targeted marketing becomes of ever-increasing concern, as digital media use rates grow globally, and as companies marketing unhealthy food increasingly focus their efforts on minorities and low- and middle-income countries.

Furthermore, as children engage with unhealthy food marketing in digital media, thus demonstrating an interest in such products, ever more personal data is generated that can allow inferences to be drawn about their long-term health risks. The application of such inferences is increasingly being reported in relation to health or other insurance, job offers, financial services, differential pricing, and other forms of automated disadvantage (Allen, 2018, Pasquale, 2015). In this way, the harms following from data extraction relating to food marketing extend beyond health concerns to encompass the potential to disadvantage children in their later lives, through discriminatory 'social sorting' practices (Lyon, 2009).

Improving privacy policies?

The commercial commodification of private data raises all the more acute privacy concerns as individuals are, by and large, neither conscious of, nor would most consent to, the sale and continuous re-sale of their data if given a choice.

Despite the existence of so-called 'privacy' policies, children of all ages and their parents are rarely able to make free and informed decisions about participation online that might protect them from adtech companies' extensive extraction and sale of their personal data. Firstly, opting out of data extraction is rarely an option where digital platforms such as search engines and social media have captured most of the market. There is no choice offered:

either consumers accept the terms or they cannot access the service at all. This is highly problematic, bearing in mind that children’s right to participate in the digital environment should neither be contingent on the extraction of their personal data, nor on their exposure to unhealthy food marketing (WHO, 2016b, 2018a; Unicef, 2018a).

Secondly, policies are so vague regarding extensive and common data extractive practices that it is impossible for users to assess the ‘short or long-term costs of divulging information because they do not know how the data will be used and by whom’ (OECD, 2017, p. 25). It is often argued that making privacy policies more accessible to children, so that they can better understand what they are signing up to, may alert children to some consequences of online engagement (Children’s Commissioner, 2017). Yet easier-to-read policies cannot provide sufficient protection from the depredations of the adtech ecosystem and are not, therefore, in themselves a solution. Adtech companies also have a responsibility to ensure that children’s personal data are not extracted unnecessarily, and States have the corresponding obligation to regulate the extraction and use of personal data to ensure that the right of the child to privacy is effectively protected.

Banning child profiling for marketing purposes

To effectively protect children’s privacy rights, States should ensure that service providers limit to the bare minimum any collection, processing and retention of children’s personal data (Unicef, 2017, p.93).

The Council of Europe Guidelines for children’s rights in the digital environment have urged States to ensure that stakeholders (processors, parents, educators and others) are aware of data protection rights and respect them (Council of Europe, 2018, Rec. 27) including for smart devices (Rec. 36). Further, the Guidelines have called for restrictions on the profiling of children by digital media:

Profiling of children, which is any form of automated processing of personal data which consists of applying a ‘profile’ to a child, particularly in order to take decisions concerning the child or to analyse or predict his or her personal preferences, behaviour and attitudes, should be prohibited by law. (Rec. 37)

Table 6 briefly assesses how the EU General Data Protection Regulation deals with privacy policies and child profiling, and its limitations.

Table 6: The EU General Data Protection Regulation, children’s personal data and their right to privacy

The GDPR is often seen as one of the most progressive regulatory frameworks in place for the protection of online privacy and personal data and is increasingly used as a model for regulators around the world. Nevertheless, the jury is still out on whether the GDPR has fundamentally altered data-driven business models and organizational data practices. The project of EU harmonization remains work in progress (Tene, 2020).

The GDPR is a cornerstone of the EU Digital Single Market Strategy. It is intended to protect the rights of data subjects to privacy and data protection (Article 8, Treaty on the Functioning of the EU; Article 16, EU Charter of Fundamental Rights), whilst facilitating the free movement of data. It specifically recognizes that children are vulnerable data subjects and require special protection. In particular, its Preamble not only mentions that ‘children merit specific protection with regard to their personal data’ but also that such protection is particularly important ‘for the purposes of marketing or creating personality or user profiles and the collection of personal data with regard to children when using services directly to a child’ (Recital 38).

The GDPR has several enforcement features that make it a particularly far-reaching legislative instrument. First, it has a broad territorial scope and applies to adtech giants such as Google and Facebook who are established outside the EU when they operate in the EU (Article 3). Moreover, it mandates that each Member State establish an independent public supervisory authority (Article 51) and provide for a complaint mechanism which is in addition to and does not prejudice possible lawsuits (Article 77). The deterrent effect of the GDPR is further compounded by the possibility it offers to impose significant fines in case of non-compliance, up to EUR 20

million or up to 4 % of the total worldwide annual turnover of the preceding financial year, whichever is higher (Article 82). Based on Google's worldwide annual revenue in 2017, that figure could amount to \$4 billion. Nevertheless, it is necessary to ensure that these provisions are effectively implemented, and sufficient resources are devoted to their enforcement. The many complaints made to UK and Ireland regulatory authorities concerning infringement of the GDPR suggest that adtech companies still frequently infringe its provisions on a very large scale (Ryan, 2019).

However, the effectiveness of the GDPR to protect children from unhealthy food marketing rests primarily on the substantive provisions it lays down. The starting point of the GDPR is that 'the processing of personal data for direct marketing purposes *may be* regarded as carried out for a legitimate interest' (Recital 47). Regrettably, however, little guidance overall is available on the extent to which the collection and processing of children's personal data is legitimate and therefore lawful.

The processing of personal data is conditional. Article 6(1) GDPR provides that processing shall be lawful *only if and to the extent that* at least one of the following applies:

- (a) the data subject has given **consent** to the processing of his or her personal data for one or more specific purposes;
[...]
- (f) processing is necessary for the purposes of the **legitimate interests** pursued by the controller or by a third party, except where such interests are overridden by the interests or fundamental rights and freedoms of the data subject which require protection of personal data, in particular where the data subject is a child.

Consent

Where processing is based on consent, the controller shall be able to demonstrate that the data subject has consented freely to the processing of his or her personal data (Article 7). For children, the processing of the personal data of a child in relation to the offer of information society services directly to the child shall be lawful where the child is at least 16 years old, except if Member States have decided to lower the age to up to 13, giving rise to different age thresholds from one Member State to another. Below this age, the processing may only be lawful if that consent is given by the holder of parental responsibility over the child (Article 8). Information relating to the processing of personal data must be given in writing to the data subject in a concise, transparent, intelligible and easily accessible form, using clear and plain language, in particular for any information addressed specifically to a child (Article 12).

As others have noted, these provisions give rise to legal uncertainty and may not be sufficiently protective of adolescents (Lievens and Verdoodt, 2017).

Profiling

Even when consent has not been obtained, processing may be necessary for a 'legitimate purpose'. Advertising and other forms of marketing are considered as playing an important role in facilitating the establishment and functioning of the internal market. However, the right to promote one's goods, services and brands is not absolute, and Article 6(1)(f) itself recognizes the need to balance potentially competing rights and interests: the legitimate interests of commercial operators to promote their goods, services and brands, on the one hand, against the rights and interests of data subjects, and particularly children, on the other. A proportionality analysis is key to the implementation of Article 6(1)(f) GDPR (see also Recital 4).

Article 22 is the only provision that deals specifically with the profiling of data subjects. It does not focus specifically on children but provides that data subjects have the right not to be subject to a decision based solely on automated processing, including profiling, which produces legal effects concerning him or her or similarly significantly affects him or her (though they may give their consent). Recital 71 GDPR adds that automated processing should not concern a child. One can therefore conclude that the GDPR bans the profiling of children for marketing purposes when such profiling is based solely on automated processing. However, it does not

prohibit other forms of processing of children's personal data for marketing purposes (the processing may not be solely automated), and Member States cannot the provisions it lays down and ban, at national level, the processing of children's personal data for marketing purposes. This situation is regrettable in that it does not reflect the growing research that has identified that unhealthy food marketing to children is harmful to their development and therefore in violation of their rights and interests, including their right to privacy.

The only option that an EU Member State retains to protect children is to argue *on a case by case basis* that the use of personal data to develop children's profiles and use these profiles to direct marketing campaigns to children is incompatible with Article 6(1)(f) GDPR because it violates children's rights and would fail to meet the proportionality test that this provision requires.

It is arguably somewhat paradoxical that the GDPR, which goes much further in acknowledging the specific needs of children than its predecessor, has missed the key point that the targeting of children for marketing purposes – be it through solely automated processing or not – can be harmful, particularly if it is used to promote unhealthy food. This is disappointing as the EU has made grand rhetorical statements over the last 15 years on the importance of ensuring that children's rights are effectively protected in all its policies (Garde, 2011; Garde et al, 2017). As it stands, the GDPR does not pay sufficient attention to Article 24 EU Charter and Article 3(5) of the Treaty on the European Union which require that EU institutions protect the rights of the child and ensure that the best interests of the child shall be a primary consideration in all EU policies. This, in turn, creates legal uncertainty, and creates a conundrum for Member States who would like to protect all children from harmful commercial practices more holistically and specifically ban the collection, processing, use and retention of their personal data for the marketing of unhealthy food.

The use of personal data in the digital advertising ecosystem is key to concerted efforts to influence individuals' behaviour. Analyses of the negative impact of this data exploitation are gathering force. The implications for children's well-being and development in such media contexts are considerable. However, we argue that the exploitation of children in this ecosystem goes beyond the extraction and use of personal data and encompasses other marketing techniques to which we now turn.

3. Engaging, manipulative marketing and the child's right to be free from exploitation

Article 36 CRC requires that States 'shall' protect children from 'all other forms of exploitation' (i.e. forms of exploitation not specifically covered by Articles 32-35 CRC).

Brands selling unhealthy food have long employed marketing tactics of strong appeal to children (see e.g., Cairns, 2013; Boyland & Tatlow-Golden, 2017; WHO, 2016b; Unicef, 2018). Even before the advent of digital media, the argument has been made that marketing typically constitutes manipulation, as it is emotional (not informational) communication that bypasses rational decisions (Nairn & Fine 2008; Binet & Field, 2009; Haan 2010; Berman, 2015).

This argument was even presented successfully in 2016 before a Brazilian Sao Paulo court in which Alana, a non-profit organization challenged the lawfulness of the *It's Shrek Time* marketing campaign involving a tie-in agreement encouraging children to collect different wristwatches with the picture of licensed cartoon characters from the animated movie *Shrek*, for each purchase of a packet of cookies. In particular, the court highlighted that children were especially vulnerable, and the Brazilian Constitution enshrined, as an absolute priority, the protection by the State of children, safeguarding them from any form of exploitation. Marketing strategies are illegal if they exploit the poor discernment of children and condition the purchase of a thematic watch to the acquisition of a given quantity of food products. The notions of commercial 'exploitation' and 'manipulation' were at the heart of the decision and warrant scrutiny, not least because the rationale underpinning consumer protection laws and policies postulates that child-consumers deserve specific protection from commercial practices that exploit their vulnerability (Garde & Byrne, 2020).

When examining the affordances of digital media, the potential for persuasive impact to be amplified is considerable, and so is the potential for the exploitation of child-consumers – not only younger children but also adolescents. Marketers take advantage of structural features and affordances of digital media platforms, particularly those offered by social media. Multiple strategies operate even further beyond the cognitive radar than in traditional advertising, blurring the boundaries between marketing and media content. These distract children from the selling intent of the marketing campaign and engage them through the use of entertaining, highly immersive marketing strategies, including advergames (Nairn & Fine, 2008; Harris et al, 2012; Folkvord et al, 2014) and influencers, as we discuss below.

In digital media, marketing for unhealthy food is created to be even more invasive, immersive, entertaining, and engaging (Montgomery & Chester, 2009; Kelly et al, 2015; Tatlow-Golden, et al., 2016; WHO, 2016a; WHO, 2016b). With striking visuals including cartoons, and an emphasis on humour and fun, it frequently features competitions, entertainment events, and internet, movie and sports celebrities popular with children. With humorous and engaging, brand-building content (Boyland et al, 2012; Montgomery, 2015; Tatlow-Golden et al, 2016; WHO, 2016b), brands encourage photo and video sharing, offer game play, spread the word about popular local events and occasions, and offer prizes or gifts such as product samples and branded music- or sport-related items (e.g., branded music speakers, or sports team paraphernalia), that have considerable appeal for children (Montgomery & Chester, 2009; Horta et al, 2018; Marti-Pellon & Saunders-Uchoa-Craveiro, 2015; Tatlow-Golden et al, 2016; Taylor & Jacobson, 2016; WHO, 2016b).

Most children globally access the internet and digital applications via mobile devices. For example, in Brazil, Chile, Argentina, South Africa and Italy among other countries, over 80% of children who access the internet at least weekly do so via mobile phone (Unicef, 2019c). Receiving marketing on a mobile device, described by marketers as the ‘brand in the hand’, is more personal, increasing opportunities to establish ‘intimate relationships’ with customers (Sultan & Roan, 2005; Fritz, Sohn & Seegebath, 2017). In addition, ‘native’ marketing is favoured by the food and drink industry (IAB, 2018) and encouraged by the algorithmic strategies of social media companies (WHO, 2016b). This marketing is not separated out from social media content, but rather shown within it, reflecting its look and feel, and compared to more distinct and easily identifiable ‘display’ advertising, it is particularly effective in generating purchase intent: according to advertisers’ data, native advertising delivered a greater subconscious reaction and a 28% increase in advertising viewed on mobile devices (WARC, 2018).

Food is often promoted in digital media through the use of ‘influencers’ popular with children (Montgomery & Chester, 2009; Montgomery, 2015; WHO, 2016b). Food is the second most active industry in ‘influencer’ marketing on media sharing sites such as YouTube (Influencer DB, 2018). Social media influencers’ popularity is extensive, and children trust them more than movie celebrities (WHO, 2016b). The most popular have millions of channel subscribers and their videos are viewed by many more (WHO, 2018a). In the UK, marketers report that, although young people have negative views of some advertising, they are significantly more receptive to celebrity and influencer marketing (Kantar Millward Brown, 2017b). Children aged 13 to 15 years in Norway described believing that YouTube influencers’ promotion of products was genuine and (ironically) free of any influence (Norwegian Consumer Council, 2019). Experimental studies have established that influencer promotion of unhealthy items is effective with children: they eat more snacks after viewing influencer food marketing compared to children who watched videos of the same influencer promoting non-food items (Coates et al, 2019).

Food marketing in social media aims to go beyond messaging to include powerful relationship-building. McDonald’s, for example, considers social media to be an opportunity to access a ‘two-way street allowing dialogue, kinship and collaboration’ with consumers (IAB, 2016). Coca-Cola’s Chief Digital Officer argues that consumers ‘participate, actively and co-create’ ‘tens of thousands of times a day because of their love and their community with the brand’ (Birmingham, 2018), underlining the function of such marketing as a sociable, peer-based activity that also aims to cultivate a parasocial relationship between social media users and the brand itself.

Social media networks also encourage extensive peer transmission of marketing content through children’s peer groups and beyond (Montgomery & Chester, 2009; Montgomery, 2015; WHO, 2016b). The use of hashtags and prompts to ‘like’, ‘share’ and ‘tag’ others in advertising posts facilitates the rapid, exponential spread of marketing

through diverse networks (Buchanan et al, 2018; WHO, 2016b). In essence, this amounts to recruiting children to act as peer marketers. This is likely to be particularly powerful for unhealthy food as teens prefer to share unhealthy food marketing posts compared to healthy food marketing posts or marketing for non-food products; they also pay more attention to these posts and remember them more (Murphy et al, 2020).

In low- and middle-income countries, these strategies of employing influencers, celebrities, and young people's engagement are being used in digital media marketing campaigns to build unhealthy food into 'daily brands'. In Ghana, for example, a fast food chicken campaign combined affordable fast food prices with aspirational themes such as climbing the ladder from the 'streets'; employed a local celebrity singer to associate himself with the brand; and generated activities on Facebook, Instagram and Twitter encouraging local young people to add their own comments and photos (Searcey & Richtel, 2017). In Brazil, food brands use strategies such as photos, conversations with users, videos, promotions and celebrity endorsements, with Facebook having become a key site for marketing of unhealthy food with tens of millions of 'likes' for brand pages associated with unhealthy foods and beverages (Horta et al, 2018).

Beyond the question of digital media marketing's effects on purchase and consumption, related, deeper questions arise regarding its wider impact on all users, including children. Advertising provides the business model of much of the internet (Bodle, 2017). Under the guise of participatory cultures of interactivity, users' labour, in the form of attention and interactions with advertising, is translated into economic value for digital platforms, marketers and brands (Laestadius & Wahl, 2017). This process by which consumers engage with and co-create value for brands, has come to be termed 'prosumer capitalism' (Cova & Cova, 2012; Ritzer & Jurgenson 2010; Ritzer, 2015). To foster maximum attention, engagement and interactions, persuasive design methods are employed to 'hook' site users (Eyal, 2014; Fogg et al, 2009; Seaver 2018) and promote actions which generate value for digital advertisers, whether for dwell time, 'likes', 'shares' and posting of written and visual content, as well as search. At the same time, users' access to information about themselves, how this is held and used by digital media platforms for advertising, is withheld from them, restricting users' autonomy (Bodle, 2017). In these ways among others, commercial actors benefit, to the detriment of consumers, such that 'the digitization of commerce dramatically... empower[s] corporations to discover and exploit the limits of each individual consumer's ability to pursue his or her own self-interest' (Calo, 2014, p.999).

In their robust analysis of data-driven practices in digital media, Susser, Roessler and Nissenbaum (2019) conclude that these practices constitute 'manipulation' at such a scale that they represent a threat to human autonomy. They define manipulation as involving an intentional, covert attempt to influence a person's decision-making by targeting and exploiting their vulnerabilities. As digital media catalogue individuals' preferences, interests, habits and choices, to identify individuals' weaknesses and vulnerabilities, Susser and colleagues conclude that these technologies present threats to individual autonomy, with grave implications for human agency, as "being steered or controlled, outside our conscious awareness, violates our autonomy, our capacity to understand and author our own lives" (p.13). In this context Couldry and Mejias (2019) have argued that, as data extraction practices entail the 'subjection of human beings to new types of relations configured around the extraction of data' (p. 4), they are no less than a form of new colonialism. Couldry further expands that indeed, it is difficult to grasp

"the sheer boldness of the unspoken corporate vision that connects all of our specific data relations: the ambition to remake social processes so that they are fused indissolubly and irreversibly with processes of *profitable data extraction*, which in turn are based on *continuously tracking* human subjects with a view to *continuously influencing* them and nudging them ever more securely into circuits of extraction" (Couldry, 2020, p. 28; emphasis in original).

Yet grasp this, and tackle it, we must – in particular when considering the rights of children.

The right of the child to be free from exploitation

As mentioned above, the CRC condemns all forms of exploitative practices: not only specific forms detailed in Articles 32 to 35, but also 'all other forms of exploitation' in Article 36. This allows the CRC to adapt to new forms of exploitative practices. We argue that many of the commercial practices employed by the digital media and adtech systems we describe above fall within the scope of Article 36.

The term ‘exploitation’ refers to one person or persons taking unfair advantage of a child by encouraging or coercing the child, by whatever means, to undertake an activity that provides that person and/or persons with a benefit. The benefit gained by the persons or persons exploiting the child, whether financial or otherwise, is not commensurate with the benefit, if indeed there is any benefit, gained by the child (Tobin, 2019, p.1403). The techniques digital media deploy to capture children’s attention, to target them directly with the promotion of harmful forms of marketing, and to engage directly in transmission of marketing through the use of peer-to-peer and other under-the-radar techniques, among others, all allow digital media and brands to influence children, often beyond consumers’ awareness, whilst increasing profits at low costs, and therefore amount to the exploitation of children-consumers. In fact, the rationale underpinning consumer protection laws and policies postulates that children-consumers are particularly vulnerable and deserve specific protection from commercial practices that are misleading, aggressive or *otherwise unfair* (see for example the Directive 2005/29/EC on business-to-consumer unfair commercial practices, specifically Article 5(3); Garde, 2011).

Article 36 CRC lays down a mandatory obligation on States who “shall” protect the child against exploitation. The CRC Committee has noted:

‘Shall take’ is a term which leaves no leeway for the discretion of States parties. Accordingly, States parties are under strict obligation to undertake ‘all appropriate measures’ to fully implement this right for all children (CRC Committee, 2011, para. 37).

We argue that this duty requires that States carefully consider the growing presence of digital media companies in children’s lives. As Susser, Roessler and Nissenbaum (2019) show, digital media *manipulate* users, by means which they are not and cannot be aware of, thus affecting their autonomy. It is our contention that when those users are children, this constitutes a form of exploitation within the scope of Article 36 CRC and requires that States effectively regulate the digital environment to protect them from such exploitation.

Importantly, the aim ‘must be to protect children but they are not to be reduced to mere objects in need of protection’ and States must act to ‘embolden and empower them’ (Tobin, 2019, p. 1403). Advertising and media literacy education is often proposed as the solution to the persuasive tactics employed by marketers. Although these are of course essential, we do not agree that literacy can protect users, whether children or adults, against many of the manipulative practices of digital media. There is, to date, almost no evidence that it protects children against food marketing (WHO, 2016b). This is discussed further in Table 7.

Table 7: The role of advertising literacy in protecting children’s right to privacy

Existing child-focused food marketing laws and regulations are typically based on the assumption that younger children are more vulnerable than older children to marketing effects, as their cognitive abilities are less well-developed. Yet in their teens, children may in fact be *more* vulnerable to marketing and advertising (WHO, 2016b).

The ‘consumer socialization’ approach has sought to identify when children acquire the ability to recognise an advertisement and to understand that it had persuasive intent. By approximately 12 years of age, children generally have the cognitive skills to do so (John, 1999). Most regulation specifies that children under 12 years receive protection (WHO, 2018a), on the assumption that the ‘magic age’ (Nairn & Fine, 2008) of media literacy confers children with the ability to protect themselves.

The immediate, engaging, humorous, appealing, peer-based effects employed in digital media are very powerful for teens. Emotional advertising is more effective than informational ads, even for adults (IAB, 2018), and advertising also works through subconscious routes, which cannot be guarded against with cognitive strategies (Folkvord et al, 2016; Nairn & Fine, 2008).

Resisting powerful, emotional advertising techniques is effortful, requiring self- and emotional regulation and

motivation – which adolescents may lack (Rozendaal et al, 2011). Furthermore, developmental psychological and social research indicates that teens identify with fast food, with the aspirational themes its marketing features, and with the cultural (music, sporting, gaming, internet, lifestyle) heroes who promote it extensively (Bragg et al, 2016; Bragg et al, 2018). Other factors further increase the likelihood that teens will enjoy, and be persuaded by, fast food marketing, such as the effective way that marketing for unhealthy food appeals to contemporary teen identities across the world, including in low- and middle-income countries where they position them as young people who eat modern foods in contrast to the diets of older generations (WHO, 2016b). Indeed, teens are more likely to engage in identity work in social media via advertising for unhealthy foods compared to other products, 'liking' it more readily (Murphy et al., 2020). For these reasons, a focus on conscious, cognitive resistance is misplaced as many teens will not be able, or motivated, to activate this.

Advertising literacy is often promoted as the solution to advertising effects, but there is little evidence for its effectiveness (Harris, 2014). It rests on a normative, 'adult' notion of a rational, sophisticated, media-smart consumer, and does not account for children's complex, diverse relationships with media content (Buckingham, 2005). Although advertising literacy training can raise scepticism about ads, scepticism and understanding of ads have not been found to reduce food advertising effects (Harris, 2014). A novel avenue is a recent US social justice-focused intervention with teens that positioned marketing as misaligned with teen values of justice and autonomy, and affected boys' (but not girls) school cafeteria food choices (Bryan, Yaeger & Hinojosa, 2019). However, this requires replication and testing in different settings. Advertising and media literacy certainly have a crucial part to play in active citizenship in media-saturated cultures – but advertising knowledge alone cannot form an effective 'shield' against the appealing, persuasive, overwhelming food advertising being targeted at children, including teenagers, today.

Rather, media- and advertising-focused education should embolden and empower children, and those who are charged with protecting them, to advocate for their right to participation in digital media that are not designed to be exploitative. The child's right to participate in the digital environment should not depend on exploitation, including being exposed to unhealthy food marketing: it is only then that the child's interrelated rights to participation, health, privacy and freedom from exploitation can all be effectively upheld. Relevant recent developments in the field that occurred during the finalising of this paper are outlined in Table 8.

Table 8: Recent developments on children's rights in the digital environment and unhealthy food marketing regulation

Several relevant developments have taken place in the summer of 2020 as we were completing this paper. Two relate to restricting food marketing in digital media, and two to children's digital rights more generally.

In August 2020, **the UK government announced plans to restrict online marketing of unhealthy food** before 9pm by 2022, and to further consult regarding introducing a complete online ban of such marketing (DHSC, 2020). The effectiveness of these restrictions is not yet known, as there are challenges in implementing several forms of online marketing including influencer marketing and social media marketing. Furthermore, the restrictions are likely to apply to advertising of products (while allowing brand advertising to continue) and the UK nutrient profiling approach has been identified as lax compared to other systems (Scarborough et al., 2013).

Also in August 2020, **Google Ads announced a new rule to restrict unhealthy food marketing** to be implemented from October 2020, whereby companies will self-declare that ads feature unhealthy products. These ads will only be served to UK and EU users with a declared age of 18 and above (Google, 2020). As with the UK restrictions, these limitations will be product-based – they will continue to allow advertising for brands – and will be guided by specified fat, sugar and salt levels in these products. How the age declaration will be applied, which Google and YouTube users will be in scope, and how this industry-led scheme will be monitored all remain to be seen.

Regarding children's digital rights, the **UK Age-Appropriate Design Code** - rooted in CRC principles – is due to come into force in September 2020 which marks the start of a 12-month transition period. The first of its kind (5 Rights, n.d.), it sets a high bar by expecting default privacy protection in digital media for those under 18 years. However, the Code is not legally binding but rather sets expected standards (ICO, n.d.). How (and whether) digital applications and platforms will interpret and apply the Code remains to be seen, as does the stance that will be taken by the ICO as regulator to a Code of expectations rather than legally binding provisions.

Finally, a draft **General Comment on children's rights in relation to the digital environment** (CRC Committee, 2019, 2020) is under consultation in late 2020. We very much hope that it will comprehensively address the protection of the rights of all children from harmful marketing, including unhealthy food marketing, and in particular that it will recognise the exploitative nature of the digital adtech ecosystem and its impact on children's agency and autonomy.

As the CRC Committee has stated, 'the concept of the child's best interests is aimed at ensuring both the full and effective enjoyment of all the rights recognized in the Convention and the holistic development of the child... and no right could be compromised by a negative interpretation of the child's best interests' (CRC Committee, 2013, para. 4). The child's best interests, which shall be upheld as a primary consideration (Article 3(1) CRC) should not be sacrificed on the altar of commercial gain (Garde and Byrne, 2020).

4. Conclusion

The evidence accumulated over the last 20 years unequivocally demonstrates that unhealthy food marketing is harmful and contributes to unhealthy diets, childhood overweight and obesity and related NCDs. The design of the digital ecosystem, including the advertising technology on which it relies, now presents still further challenges as it involves multiple deprivations of children's rights and interests. These include engaging in extraction and sale of personal data, privacy and consent violations, and behavioural targeting and manipulation.

In this paper we have expanded the child rights analysis of the impact of food marketing on children, drawing together analyses of exploitation in the data-driven digital ecosystem, and its impact on human agency, autonomy and social relations. We conclude that contemporary food marketing practices not only infringe children's rights to health and food, but also their rights to privacy and freedom from exploitation. Under the CRC and other international human rights instruments, States have a legal obligation to respect, protect and fulfil children's rights. To discharge these obligations and contribute to protecting the best interests of the child as a primary consideration, as mandated by Article 3(1) CRC, in the context of food marketing, States must implement the WHO Set of Recommendations comprehensively, and address child rights violations in the digital ecosystem in which food marketing is so active. We therefore hope that child rights advocates and protectors will now meet the imperative to grasp the scale of the corporate vision to extract value from social relations through interaction with, and in the service of, digital marketing.

Acknowledgments and funding: This paper used as its starting point the authors' joint contribution to *The State of the World's Children: Children, food and nutrition: Growing well in a changing world* (Unicef, 2019) for which they received some funding from Unicef.

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