

**MEDIJI I PUBLIKE**

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*MEDIA AND AUDIENCES*

# MEDIA REPRESENTATION OF CHILDREN'S PRIVACY IN THE CONTEXT OF THE USE OF "SMART" TOYS<sup>1</sup> AND COMMERCIAL DATA COLLECTION

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## ABSTRACT

*The growing use of "smart" toys has made it increasingly important to understand the various privacy implications of their use by children and families. The article is a case study of how the risks to young children's privacy, posed by the commercial data collection of producers of "smart" toys, were represented in the media. Relying on a content analysis of media coverage in twelve European countries and Australia collected during the Christmas season of 2016/2017, and reporting on a follow-up study in selected countries during the Christmas season of 2017/2018, our article illustrates how the issue of children's privacy risks was dealt with in a superficial manner, leaving relevant stakeholders without substantive information about the issue; and with minimum representation of children's voices in the coverage itself.*

## KEYWORDS

INTERNET OF THINGS, PRIVACY, COMMERCIAL DATA COLLECTION, CHILDREN'S RIGHTS

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## INTRODUCTION

The issue of children's<sup>2</sup> and young people's privacy in digital environments is a well-researched topic. Most studies, however, tend to focus either on the safety implications of children sharing their information online or on children's privacy concerns with regard to their parents, other adults and peers. Few studies discuss the threats to children's privacy presented by the processes of data collection that take place on social media and other online platforms (Holloway and Green, 2016; Lapenta and Jørgensen, 2015; Livingstone, 2018; Montgomery *et al.*, 2017a, 2017b; Van der Hof, 2014). The prospect of having children's online searches, purchasing patterns, product preferences and other behavioural traces recorded into profiles, which future employers or university admissions officers might be able to obtain from data brokers, may appear to be daunting. The issue has become increasingly important with the advent of "smart-devices" or "Internet of Things, (IoT)", which refers to "Internet-connected sensors" that "transform the ordinary objects in people's everyday lives—from thermostats to refrigerators to cars—into "smart" devices that can communicate with each other" (Montgomery *et al.*, 2016; 3 cf. Maddox, 2016). These range from wearable fitness bands to internet-connected household appliances and "smart toys," such as the voice-enabled *Hello Barbie* (see Image 1) and robots equipped with artificial intelligence. Such toys can be responsive to children's actions based on the children's input (data) that they collect. The media news about *Hello Barbie*<sup>3</sup> caused public outrage internationally when consumer advocacy groups revealed that the data collected from children were sent to company servers with dubious safety standards. The collection of personal information, without parental consent, from children under thirteen goes against the US Children's Online Privacy Protection Act (COPPA) and the European General Data Protection Regulation (GDPR) (Holloway and Green, 2016).

### THE CASE FOR STUDYING THE PRIVACY OF VERY YOUNG CHILDREN AND PRIVACY PROTECTION FROM COMMERCIAL DATA COLLECTION

We study privacy as a children's right to have control over their personal information. In the context of commercial data collection, privacy refers to knowing how the data that are being collected for commercial purposes are used, and having control over these data (Montgomery *et al.*, 2017b). Commercial data collection as a risk to young children's right to privacy is a doubly under-researched topic. Firstly, most research on children and the internet tends to focus on older children, who perform more varied and complex activities online, and who have the literacy skills to be more participative in research, by answering surveys, for instance (*e.g.* Haddon and Livingstone, 2012; Mascheroni and Olafsson, 2014). Secondly, most of the research on privacy is focused on how children share information about themselves in digital contexts, which can also jeopardize their safety (*e.g.* boyd, 2014; Davis and James, 2013; Lapenta and Jørgensen, 2015; Dias *et al.*, 2016; Holloway and Green, 2016; Holloway *et al.*, 2016). Privacy risks to young children, stemming from companies

<sup>2</sup> In this study, the term 'children' refers to anybody under the age of eighteen.

<sup>3</sup> Illustrations of some of the toys can be found in the appendix.

collecting data from them for commercial purposes are expected to increase with the proliferation of “smart” devices. In the last few years, some studies have focused on young children’s (under eight years old) digital technology use via qualitative approaches (e.g. Holloway *et al.*, 2013; Chaudron *et al.*, 2015; Dias and Brito, 2016). This strand of research has indicated that a significant number of young children perform online activities in an autonomous way, and often without any parental co-use or supervision, leaving them vulnerable to privacy infringements.

### TOPIC OF OUR STUDY: PRIVACY FROM COMMERCIAL DATA COLLECTION

Children are confronted with advertising, branded content and product placement on digital devices. Companies can collect data through apps and they also use in-app and YouTube advertisements to easily lead young children to clicks that drive them to websites that use cookies, which exemplifies the process of commercial data collection (Dias and Brito, 2016; 2017). While some smart toys do not have screens, affording a human-like interaction with children (such as the toy Cayla), most of them are application (app)-operated (Mascheroni and Holloway, 2017). All the privacy risks that young children face in apps also apply to app-based smart toys, thus making it imperative to conduct research that clarifies what is being marketed to children, how children are using these products, and if parents and children are aware of all of their implications.

Contemporary digital ecologies such as social media and the Internet of Things are based on data mining for commercial purposes. This is due to the vast amounts of data collected from users (van Dijck, 2013; Vaidhyanathan, 2011) and because of the increasingly sophisticated tools based on artificial intelligence that a number of smart toys deploy. These technological advances “have produced an expanding arsenal of analytic tools that are enhancing the ability of social media companies and their advertisers to glean valuable insights from the oceans of data they generate” (Montgomery, 2015: 776; Smith, 2014a, 2014b). Such data collection is bound to increase with a growing use of “smart” devices, including “smart” toys. These practices include one-to-one marketing, which targets individual users and is based on data collected from them, rather than demographic groups, which was the analog era paradigm, as well as viral marketing and other engagement strategies, typical of social media platforms and today’s digital ecology (Montgomery, 2015; Pechman *et al.*, 2005). These practices include real-time bidding, location targeting and various “dynamic creative ads” which are tailored to users’ individual profiles (Montgomery, 2015; Montgomery *et al.*, 2017a).

### CONSEQUENCES OF COMMERCIAL DATA COLLECTION

There is limited research about how data are collected from children via “smart” toys for marketing purposes or how the sharing of such data with brokers can affect children (Dobbins, 2015; Holloway and Green, 2016; Rafferty *et al.*, 2017). Nonetheless, there is

increasing speculation about the dangers associated with the possibility of admissions officers at universities and future employers being able and lawfully allowed to purchase files on children's online searches and purchasing habits from data brokers; and to consult these for admissions or employment selection purposes (Adler, 2017; Veliz, 2017). There is some research which has shown that food marketing on digital media can have influence over children's food preferences and that such impact, because of the emerging, technology-enabled marketing techniques is likely to be stronger than that of the traditional media (Kelly *et al.*, 2015). Research that has measured similar effects with regard to the use by children of "smart" devices and "smart" toys in particular is almost non-existent. However, given that these devices are designed around current data collection practices, one can surmise that these issues will gain increasing importance with respect to "smart" toys in particular.

"Smart" toys have already posed challenges in the form of security breaches and violations of the above mentioned laws. In early 2017, a smart teddy bear toy "leaked 2 million parent and kids message recordings" (Franceschi-Bicchierai, 2017). Following the leak of 800,000 account credentials, hackers stole the data and then held them for ransom. Previously, a hacker stole children's pictures as well as recordings and chats with parents, after the popular children's smart technology maker V-tech was breached (Franceschi-Bicchierai, 2015; Holloway and Green, 2016). Most recently, consumer protection advocates have pointed to problems with the popular doll Cayla (which was subsequently banned in Germany, for instance) and the robot i-Que (see Image 2), an incident that arose during our data collection (Forbrukerridet, 2016). Consumer rights advocates argued that anyone could take control of the toys by means of a mobile phone, and pointed to the problematic terms of service that allowed companies to share users' personal information with unnamed third parties as well as subjecting children to hidden marketing practices (Forbrukerridet, 2016). Research that has examined digital media practices for children under eight called for the industry to ensure "privacy by design" and to ensure that children are protected from "inadequate commercial practices" (Chaudron *et al.*, 2015: 8).

### **PRIVACY AND "SMART TOYS" IN THE CONTEXT OF CHILDREN'S RIGHTS**

With the advent of the IoTs, wearable devices and "smart" toys for children, issues of big data and young people's online rights have become increasingly important. A growing concern is that such toys and wearables can easily be used by very young children, and parents do not always have adequate knowledge about the possibilities and potential risks of such products (Blum-Ross and Livingstone, 2016; Staksrud, 2013). The United Nations Convention on the Rights of the Child (UNCRC) provides a relevant framework with regards to these new developments (Livingstone *et al.*, 2015). It stipulates that the child shall be protected "against all other forms of exploitation" and the relevant question is to what extent this includes also the recording of data from children's play with a toy for commercial purposes (UN, 1989). The protection of children's privacy, also encompassed by the Convention, assumes a new dimension as the range and speed of the divulged

information cannot be controlled. At the same time, a relevant question to ask is to what extent this also violates children's freedom of expression as well as their freedom of thought, both protected in the scope of the Convention, if they cannot be fully aware if their conversation is being recorded by third parties or not.

However, mere banning of such technologies for children can bring about a conflict with other UNCRC articles, which demand that young people have access to media content that is of a social or cultural benefit for them, as well as access to age-appropriate leisure and recreation activities (see Livingstone, 2014; Frau-Meigs, 2011). "Smart" toys and wearables can be of educational benefit for children if they are designed carefully and with respect to the demands and rights of young users. It is important that adults (and not only parents) are aware, not only of the potential risks, but also of the opportunities that "smart" toys may offer. Greater public sensibility may force the industry to invest in more safety by design, and increase the awareness about the promotion of digital literacy in the handling of smart toys and wearables.

Nonetheless, the rights of children have been neglected in most policy debates regarding the regulation of the Internet, by focussing on the economic and political interests of adults instead. Livingstone and O'Neill have criticised this approach (2014; see also Livingstone, 2014, 2017, 2018), raising the question of whether the UNCRC can serve as a basis for a policy strategy for the regulation of the Internet, which does not only serve the interests of adults, but also of children and adolescents. This is relevant also to IoT and "smart" toys because it stresses the importance of listening to children's voices and respecting them and their rights as full members of our society. New possibilities of play and communication should not only be discussed from the perspective of consumer's rights or parental rights, but also from the perspective of children's rights.

## CASE STUDY OF MEDIA COVERAGE

In our case study of media coverage, we build on previous studies of the media coverage of risks and opportunities of digital media for children (Haddon and Stald, 2009; Mascheroni *et al.*, 2014; Ponte *et al.*, 2009). We have researched media coverage of "smart" toys designed for young children (under the age of eight) in twelve European countries and Australia. General media coverage published online, in the Christmas period of 2016/2017, has been collected (online newspapers, broadcasters' websites, magazines, journalist blogs and tech blogs), but also YouTube tutorials, product reviews on Amazon, mummy blogs and parenting magazines. We specifically focus on privacy in the face of risks from data collection that these toys are collecting for commercial purposes (advertising or selling data to third parties). The media coverage of risks and privacy issues in particular was largely dominated by a campaign initiated by a Norwegian consumer advocacy group that exposed privacy issues and legal violations with regard to two popular smart toys—a doll named Cayla and a robot named i-Que. Due to the perception that media coverage might be biased by the Norwegian consumer advocacy group, this study was repeated with the same research design one year later (Christmas period of 2017/2018)

in Germany and Austria (Trültzsch-Wijnen and Lampert, 2018). The focus of this paper is on the results of the first international comparative study due to the fact that the sample of the second study is much smaller - covering only two countries. Nonetheless, some additional information from the second study is provided where it is found to be useful for complementing or reflecting on the results of the original study.

## **RATIONALE FOR THE CASE STUDY ON MEDIA COVERAGE OF PRIVACY FROM COMMERCIAL DATA COLLECTION**

Media representations are particularly important in shaping perceptions about new technological artifacts (Du Gay *et al.*, 1997), such as “smart” toys. The increasing influence of social media commentary on public views is evident (O’Keeffe and Clarke-Pearson, 2011). Therefore, in this cross-national study, commentaries such as YouTube channels, tech and parenting blogs have been considered. Online searches have made it much easier to find and access a great amount of material pertinent to media coverage.

It is important to study media coverage of smart toys not only because this is a new technological phenomenon and media coverage can shape people’s perceptions about it (Haddon and Stald, 2009; Mascheroni *et al.*, 2014; Livingstone, 2009; Staksrud, 2013; Ponte *et al.*, 2009); but also because such coverage can influence parental perceptions about risks, as well as children’s perceptions about risks (Mascheroni *et al.*, 2014). To our best knowledge, there are no previous studies focusing specifically on the media coverage of young children’s privacy in digital environments with respect to data collection for commercial purposes. There are studies that examine media representations of children in the mainstream press (Ponte, 2007). Previous studies on children and the internet indicated a strong focus on risks as well as the lack of children’s voices in media representations (Ponte *et al.*, 2009). Media coverage of digital risks can be particularly influential on children’s perceptions when children do not have a direct experience of such risks, which could be the case with privacy risks in the context of commercial data collection (Lapenta and Jørgensen, 2015; Mascheroni *et al.*, 2014).

## **METHODOLOGY FOR THE CASE STUDY**

Our study analysed data collected for a larger project within the COST Action 1410 – The Digital Literacy and Multimodal Practices of Young Children (DigiLitEY) that sought to map representations of smart toys across Europe and Australia. While the project examined both media representations and advertisements, our study focused specifically on the data about media representations, looking particularly at the issue of children’s privacy and commercial data collection and exploitation. The project involved twelve countries (Austria, Australia, Finland, Germany, Italy, Lithuania, Malta, Portugal, Romania, Slovenia, Spain and Serbia). A research design of quantitative and qualitative content analyses was applied.

Broadly, smart toys were defined as those that include “electronics consisting of microprocessors that are controlled by software that enable interactivity with the user” (Mascheroni and Holloway, 2017: 5). In order to be included in the study, the toys had to have one or more of the following characteristics: 1. connected to online platforms or to other toys through WiFi or BlueTooth; 2. the toy is equipped with sensors; 3. the toy can also interact one-on-one with children (Mascheroni and Holloway, 2017 cf. Holloway and Green, 2016). Some of these toys could simulate human interaction or be programmable by users but this was not a pre-requisite for considering the toys in our sample as “smart”.

The search for articles was interactive. Each national team member was asked to perform online searches using the following keywords: (toddlers OR children OR preschoolers OR parent OR teacher AND smart toys OR IoT toys OR Internet-connected toys OR product name). The research group then listed all the toys that had been found through the initial searches and compared them against the above-mentioned criteria on what constitutes a smart toy. Only toys that, in addition to meeting the “smart toy” criteria, according to their product descriptions, were specifically intended for children under 8, were included (other toys were excluded from the sample). Participants were asked to use the local version of their search engines *e.g.* Google.es (but there was no requirement on which search engine to use and they were not specifically instructed to anonymise the search). Hence it is important to emphasise that only the toys that had already been in the media coverage were represented. Therefore, the sample was not representative of the “smart” toys market.<sup>4</sup> In the first week of March of 2017 another round of the search was conducted by typing into search engines all the product names (toy brands) that had been found during the first round of the search and that had been classified as “smart”. Only the stories that had been published in the Christmas season were considered.

## SAMPLE

The sample included a total of 203 pieces collected from twelve countries. While all researchers were asked to collect between three and fifteen pieces, researchers in some countries could not find as many as fifteen pieces (and sometimes found as few as four, whereas some found a lot more than fifteen (*e.g.* as many as 57 in Germany)). The screening requirement regarding the articles themselves was that the item should be at least 200 words long but authors did not hand-search for specific data sources (*e.g.* specific newspapers). For the follow-up study in Germany and Austria, media representations were searched with the same methodology as in the first study with a result of 53 new pieces for the Christmas season 2017/18 in the German language area (there were 77 pieces in total for 2016/2017).

Media representation items were classified into two main categories: 1. Online versions of what is traditionally understood to be “a media outlet” (newspapers, magazines, broadcasters’ websites<sup>5</sup>); and 2. What we refer to as ‘commentary’, *i.e.* media pieces that are end-users’ outputs and are not attached to media outlets in a traditional sense:

<sup>4</sup> For the final list of toys in this sample see the DigiLitEY report (Holloway and Mascheroni, 2017: 20).

<sup>5</sup> This category also included technology blogs and journalists’ blogs.

parenting blogs (including mummy bloggers), tutorials on YouTube (including those made by children), product reviews on Amazon or parenting YouTube channels.

Prior to the actual coding, a detailed codebook which listed the variables to be used was created (Lynch and Peer, 2002). Each item was coded according to the codebook for comparative analysis, which asked researchers to code for the type of media outlet or platform (ten categories such as newspaper, magazine, journalist blog, technology blog, to name but a few); type of toy (eight categories, *e.g.* toys based on voice or image recognition, app-enabled mechanical toys such as drones, toys to life *etc.*); source of news (seven categories *e.g.* academic or empirical research; government law; reaction to a new toy or trend *etc.*); information on whose views were represented (*e.g.* parents, manufacturers, regulators, consumer protection advocates, children *etc.*); general evaluation (positive, negative, both or neutral-descriptive), and risks and opportunities discussed (*e.g.* for learning/cognitive development, entertainment, social-emotional development *etc.*)<sup>6</sup> Researchers were also asked to select the two most relevant excerpts (quotes) from each piece, which reflected the key points and the focus of the piece, and to translate them from their national language into English, and to include them into the database. The data collected in each country were later combined into a general database as an excel file. Subsequently, a comparative investigation that combined a quantitative analysis of the coding categories (data analyses completed in excel) and a qualitative analysis of these excerpts was implemented.

### Inter-coder reliability

To ensure inter-coder reliability within each national team, each commentary was separately coded by two researchers. However, the inter-coder reliability was not calculated but rather the team members discussed the differences and decided on which coding should be adopted based on the codebook. Inter-coder reliability among different national teams was not calculated due to language differences. In point of fact, all the stories would have needed to be translated into a common language (*e.g.* English), which was not possible. Nonetheless, national team members had frequent discussions on selection criteria and coding decisions in order to ensure consistency in coding across the network.

### Quantitative analysis

The main objective of this case study was to seek to understand how privacy risks from commercial data collection through smart toys were represented in European media in relation to the privacy of children. Furthermore, the identity of voices (*e.g.* children, parents, teachers, companies, *etc.*) that were represented in the debate (with a specific interest in whether children's voices were present - consistently with a children's rights approach) was analysed. Thus, the following research questions (RQs) were addressed:

- 1) To what extent is the issue of children's privacy in the context of commercial data collection present in the media representations of smart toys?

<sup>6</sup> The codebook was provided as a supplementary document.

- 2) How relevant is the issue of children's privacy in the context of commercial data collection in the overall coverage?
- 3) Are there relevant differences or patterns with respect to how this issue was covered across media platforms?
- 4) Whose voices were most frequently represented in connection to commercial data collection?

### Qualitative analysis

For the qualitative content analysis, the above-mentioned excerpts (quotes) from the stories that discussed privacy in the context of commercial data collection were analysed in order to examine how this issue was presented. A specific focus was placed on identifying the toys that were labelled as most problematic in the coverage; how privacy from commercial actors was covered when compared to other concerns such as children's privacy from parental oversight and government spying; whether any positive aspects of smart toys were covered, in which outlets and how; as well as whether privacy was described as a children's right or a consumer right. All the stories that included the topic of privacy in the context of commercial data collection were checked to verify whether a specific issue (e.g. the controversy over toys such as Cayla and i-Que) was the main topic and the rationale for the story. To ensure inter-coder agreement, qualitative analysis was done by one of the authors of the article and a research assistant who examined the selected quotes and the stories.

## RESULTS OF THE CASE STUDY<sup>7</sup>

### Quantitative analysis

RQ1: The issue of commercial data collection as a risk for the privacy of children was featured in 34% of the news and commentary pieces (corresponding to 69 media representations from a total of 203 collected), marking it as an important issue in the public debate.

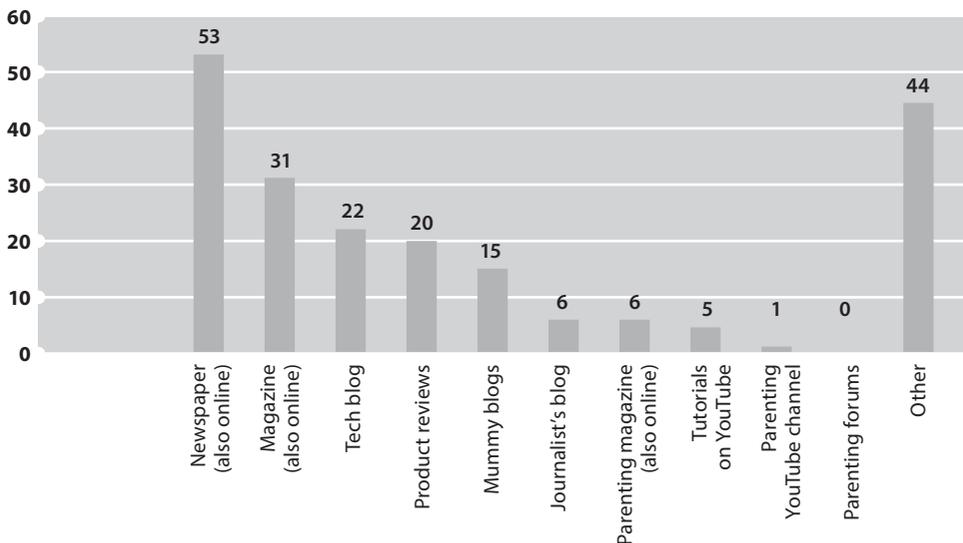
RQ2: When it comes to the relevance of commercial data collection as a privacy risk: This topic was the sole focus of only 4% of news and commentary pieces (eight in total). It was rarely covered on its own without the mention of other privacy risks, such as children's safety and e-safety, surveillance (from government or from other people in a child's environment, or more rarely, parents). In fact, the great majority of pieces, 89%, (66 stories) addressed all of these themes in a very general manner, mentioning these different privacy risks: safety, e-safety, surveillance, privacy from parents in combination (see Figure 1). Generally, risks were covered slightly more frequently (50% of the news stories and commentary pieces) than the opportunities afforded by smart toys (positive aspects), such as for learning and entertainment (47% of the total).

<sup>7</sup> The distribution of media items found *per country* can be found in the appendix.



▲ Figure 1. Percentage of media representations (labelled in the graph as “commentary pieces”) covering different privacy risks, N = 203

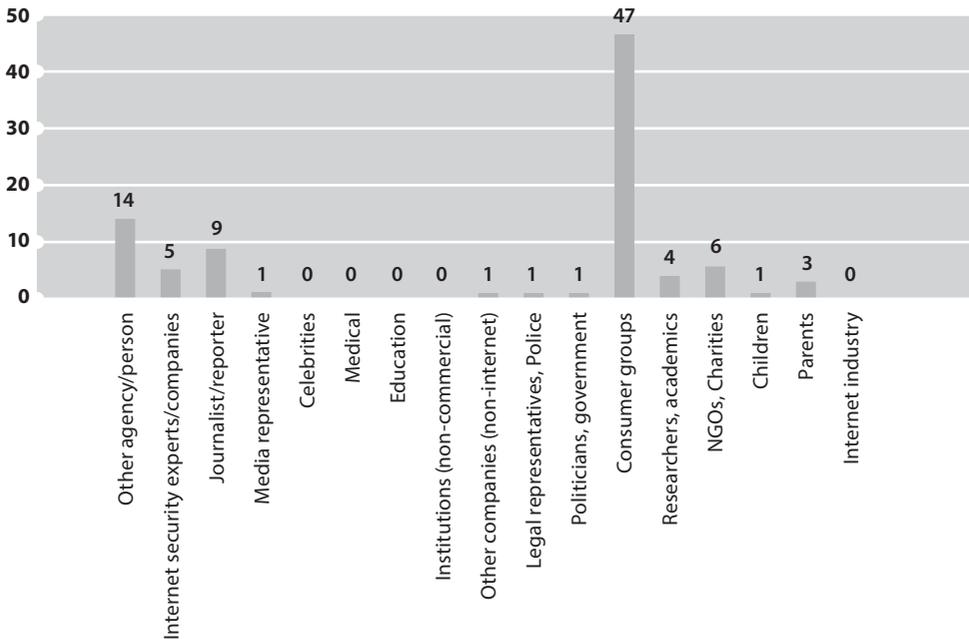
For Germany and Austria, slightly more negative news stories and commentaries can be found in the Christmas period of 2017/2018 (24%) than in the year before (19%). At the same time sole descriptions of “smart” toys declined from 22% in 2016/2017 to 3% in 2017/18, while articles and comments that stress risks and opportunities alike could be found more often in 2017/18 (35% in comparison to 21% in the year before). No changes could be found regarding positive media coverage (37% in both years).



▲ Figure 2. Number of pieces mentioning commercial data collection and privacy, by type of media platform, N = 203

RQ3: Commercial data collection was predominantly covered by technology blogs, but it was also significantly present in magazines and newspapers (see Figure 2). The issue was completely absent from most of the commentary pieces like mummy blogs, product reviews and parenting YouTube channels.

RQ4: Consumer groups were the main “voice” in these news and commentary pieces. The other stakeholders were relatively absent from this debate. There was some information about the views of journalists and reporters, companies and experts working in security and NGOs (charities). The absence of two very important stakeholders from this debate, parents and children, is particularly relevant (See Figure 3).



▲ Figure 3.  
Number of pieces mentioning privacy risks, by views reported,  
N = 203

### Qualitative analysis findings

In the majority of the items that discussed commercial data collection (those that were quantitatively coded for “commercial data collection”), various aspects of privacy were the central themes of these news stories and commentaries. The themes ranged from sharing of data with undisclosed third parties and problematic privacy terms, to so-called “hidden advertising” and listening in on parent-child conversations, storing these on company servers with problematic security standards.

## MOST PROBLEMATIC TOYS FOR PRIVACY

Toys based on voice/image recognition and app-enabled toys were the ones that raised most concern and received the most coverage. They engaged in direct interaction with children, and thus afforded more possibilities for data collection, therefore presenting a greater risk. More specifically, the two toys, the doll Cayla and robot i-Que were the central topic of almost all the stories that referred to commercial data collection. Only a handful of stories addressed the issue of privacy in the context of commercial data collection in a more general way and were not explicitly triggered by the campaign from the Consumer Protection Groups, which exposed the problems with Cayla and i-Que.

## COMMERCIAL DATA COLLECTION VS. GOVERNMENT SPYING AND PARENTAL OVERSIGHT

Possible privacy infringements from other adults in a child's environment was the other risk that was most often mentioned in conjunction with privacy from commercial data collection. Stories showed concern about the fact that by using Bluetooth, anyone with even a minimum understanding of technology could take control of these toys and spy on children or on the children's interactions with their parents. The possibility of government surveillance through smart toys was the focus in only two quotes. Few stories raised the issue of whether children also have the right to privacy *from* their parents, discussing these toys in the context of parents spying on children's activities, such as in the following story from Austria:

*Besides the possibility for violating data protection by a profit-oriented company, the even greater problem is that parents are able to bug the dialogs between the toy and their child, which is a clear violation of the confidence between parents and children.*

Furthermore, the issue of privacy in the context of commercial data collection was rarely elaborated on beyond the key concerns that the alliance of several national consumer protection groups, which initiated the campaign about Cayla and i-Que, reported in their communication to the press. Many stories referred to the consequences of hidden advertising for children's behaviour (purchasing preferences). Cayla's app had been developed by a company with ties to the Walt Disney company and therefore featured information about Disney movies, and liked to chat with children about these, thus exposing them to content.

A number of stories in several countries referred to this issue in almost a similar text, which could have also been a component of the press release from the consumer alliance (e.g. Germany, Austria, Spain, Romania and Portugal), such as in the following quote:

*The Bluetooth-connected doll is unsecure and an unprotected door to the outside world (...) She doesn't only love horses and can multiply 5 x 20, she also loves the world of Disney films.*

## POSITIVE ASPECTS OF SMART TOYS?

The positive aspects of these toys (e.g. entertainment or learning opportunities) were rarely mentioned in stories referring to commercial data collection. Some stories emphasised that the toy's ability to provide smart answers to children's questions was in fact undermining their privacy and safety, or that the toy's capabilities were unimpressive in comparison to possible harms.

Magazines and tech blogs were more likely to depart from standard, press release-driven reporting. Some of the stories in such outlets did not focus only on Cayla or i-Que and provided more elaborate information on privacy implications of commercial data collection by discussing other toys as well. Such stories were also more likely to take a less alarmist approach about the toys.

## CONSUMER RIGHTS VS. CHILDREN'S RIGHTS?

Some media reports cited specifically one member of the alliance of national consumer protection organisations, the Norwegian Consumer Protection Office, whose activities spearheaded internationally this campaign, and were reported on by the mainstream media in the United States as well. Although the Norwegian Consumer Protection Office presented the issue in terms of children's rights, this was not a dominant interpretation of the issue across the coverage. It was referred to as such in only five stories. When rights were referred to, *consumer* rights were the dominant feature.

The stories accused the companies of bad practices following the consumer protection agencies' reports. However, the responsibility for protecting children's privacy and for taking measures when infringements do take place, was not always explicitly mentioned in the stories. Issues of responsibility were the focus of eight stories. These included parental responsibility to be informed and to explain to their children what the possible dangers of internet-connected toys were. National Consumer Protection Agencies were frequently mentioned as being able to help users who purchased the toy or provide more advice to help in ensuring that such incidents did not happen in the future. Governmental responsibility in the sense of ensuring that command-and-control regulation should effectively prevent such cases from happening in the future, was rarely mentioned (two stories).

## CHANGES IN COVERAGE OVER TIME

In Germany and Austria the study was repeated exactly one year later in order to find out if the focus of the topics discussed changed, when the campaign of the National Consumer Protection Agencies was not present in the general media coverage anymore. In the second wave, twenty articles were found, fewer on the negative effects of "smart" toys than in the first wave. Nonetheless, more risks were mentioned. This means that risks

were discussed in a more differentiated manner in the second wave of data collection. But the risks that were mentioned most frequently in 2016/17 remained the same in 2017/18 (privacy from other people, institutional surveillance, commercial exploitation, hacking). While privacy from other people, institutional surveillance and hacking were mentioned significantly more often in the second wave, the number of mentions on commercial exploitation specifically remained the same.

## DISCUSSION

### Summary of the scope of the article and relevance of the study

This article sought to provide an overview of available research on young children's privacy from commercial data collection focusing specifically on "smart" toys; followed by the results of an exploratory case study on the media coverage of privacy from commercial data collection that takes place via these emerging technologies (Livingstone, 2018; Montgomery *et al.*, 2017a). Media coverage is particularly important in shaping perceptions about new technological artifacts (Du Gay *et al.*, 1997); and media coverage of online risks is shown to influence parental and children's perceptions of risks, especially in the case of risks that children may not have direct experience of, such as privacy in the context of commercial data collection (Mascheroni *et al.*, 2014). Our case study is a content analysis of online news and commentary pieces about "smart" toys in twelve European countries and Australia, collected during the Christmas season of the year 2016/2017 and followed by a smaller scale study in Germany and Austria only during the Christmas season of 2017/2018. The study examined the prevalence of this issue in the coverage, as an indicator of its overall salience; how this aspect of privacy was covered, and especially as compared to other aspects of children's privacy (*e.g.* privacy from parents or other adults in a child's environment, and in the context of government surveillance); which platforms were more likely to cover the issue and how such coverage differed according to the platform; and consistently with children's rights theoretical framework, whether children's voices were represented in the debate (Livingstone *et al.*, 2015). This is important to know bearing in mind the growing awareness of the importance of children's agency as reflected in the policy debate as well.

Furthermore, as per the children's rights framework, the question as to how the responsibility for ensuring children's right to privacy in the context of commercial data collection, was covered: Which stakeholders (toy companies, governments, parents, consumer protection organizations, non-governmental organizations, *etc.*) were described as being responsible for ensuring that children were protected from such privacy infringements.

### Implications of our findings

Our findings indicate that the coverage of commercial data collection was superficial. Most of the pieces that discussed the topic of commercial data collection were driven by the campaign from the consumer protection advocacy groups in several countries, which

raised concerns about two toys, doll Cayla and robot i-Que. The privacy consequences of commercial data collection from children were rarely elaborated on or explained. Only six stories that covered privacy in the context of commercial data collection during the Christmas 2016/2017 season did not mention these two toys and most of the stories were triggered by the campaign from consumer protection advocacy groups. While over a third of our sample covered the issue of commercial data collection that year, this issue would have hardly been in the coverage had the campaign not coincided with our time window for data collection. For instance, while most stories reported that personal information collected from families could be shared with unknown third parties, stories rarely elaborated on the implications or possible consequences for children's privacy in this process, especially in the long term. The stories typically did not go beyond the two toys in question and did not examine the potential dangers from other toys on the market that have similar functions. Rather, the issue was briefly touched upon, and lumped together with other types of privacy concerns and the coverage across the countries bore a striking similarity, as if written from the same press release. This is underpinned by the second wave of data collection in Germany and Austria during the Christmas Season 2017/18. There, the discourse on risks seemed to be more differentiated in comparison to the year before. Such findings are perhaps an indicator that this aspect of privacy remains a less understood issue, of little salience in the public agenda (Haddon and Stald, 2009; Mascheroni *et al.*, 2014; Ponte *et al.*, 2009). If parents or older children were to rely on media to learn about these privacy risks, they would be left with little explanation and even little information, had it not been for the consumer protection advocates' campaign.

### **Commercial data collection as an obscure topic, removed from average user**

A complete absence of commercial data collection and privacy from commentary pieces such as mommy blogs, parenting forums or YouTube channels, as well as from product reviews, is an important finding as such sources are perhaps most likely to reach parents. The few pieces that elaborated on privacy implications beyond Cayla and i-Que were found on tech blogs and journalist blogs, which may not be the sources that many parents frequent. If the information about commercial data collection was to reach parents or older children who are able to read, it was not balanced by the opportunities afforded by these smart toys (*e.g.* learning or entertainment) as these were rarely present in the stories that covered such privacy risks. If they were mentioned, the information was used to reinforce the point that their positive aspects were overshadowed by privacy perils.

### **Who holds the responsibility for protecting children's privacy?**

It was mostly parental responsibility to ensure that their children's privacy was protected as well the responsibility of consumer protection groups, which were discussed in the pieces. A conspicuous absence of governmental responsibility to ensure effective privacy regulation is important to observe, especially from the perspective of current regulation, which places the onus on parental consent and hence parental responsibility to be acquainted with these privacy dangers (Blum-Ross and Livingstone, 2016). Scholars have observed before, the growing tendency to place the onus for protecting children

from harm in digital environments on parents or even children rather than on institutions such as governments or the industry (Staksrud, 2013; Livingstone, 2009). Parents and children, however, may not have sufficient knowledge and resources to handle digital risks and this overwhelming focus on parental responsibility in the media coverage can contribute to the perceptions that parents need to learn to handle these risks on their own.

### Missing children's voices in the media coverage and children's rights

Children's voices remain hardly represented in pieces covering commercial data collection, which is in line with previous research that examined this issue in the broader context of digital risks and opportunities (Ponte *et al.*, 2009). This finding is important from the perspective of rights as it may indicate that children are not perceived as the key stakeholders in data collection that centres on them and can have implications for their future. Finally, that the right to privacy from data collection for commercial purposes is a children's right was rarely mentioned in the pieces. Rather, the issue was most frequently addressed in terms of consumer rights. This finding is relevant from the perspective of the normative debate about privacy being a children's *citizen right* (and consequently a *digital citizen right*) rather than merely a *consumer right*, the scope of rights granted to consumers being narrower (Staksrud, 2013; Livingstone, 2009). As consumers, children's rights are guaranteed to them only with respect to the given product, should they (or their parents) be able to or "choose to procure it" (see Staksrud, 2013: 154). Such limited representation of commercial data collection and children's privacy could potentially lead to a narrower understanding of the scope of children's rights in the public debate and especially among parents. Coupled with the low representation of government responsibility, such coverage could help shape an inaccurate perception that ensuring privacy is left in the hands of corporations, rather than it being a citizen and children's right and that adequate government regulation should ensure its protection. In terms of policy implications, this case study could point to the need to discuss privacy in the context of data collection for commercial purposes as part of digital literacy or digital citizenship educational programs for children; it could also be used as a signal that relevant authorities need to create information campaigns on this issue for parents. Despite the growing stress placed on children's rights and agency in policy circles (Livingstone *et al.*, 2015), the low level of representation of children's voices is important as it indicates the perception that children are not the ones to be consulted when it comes to their own privacy.

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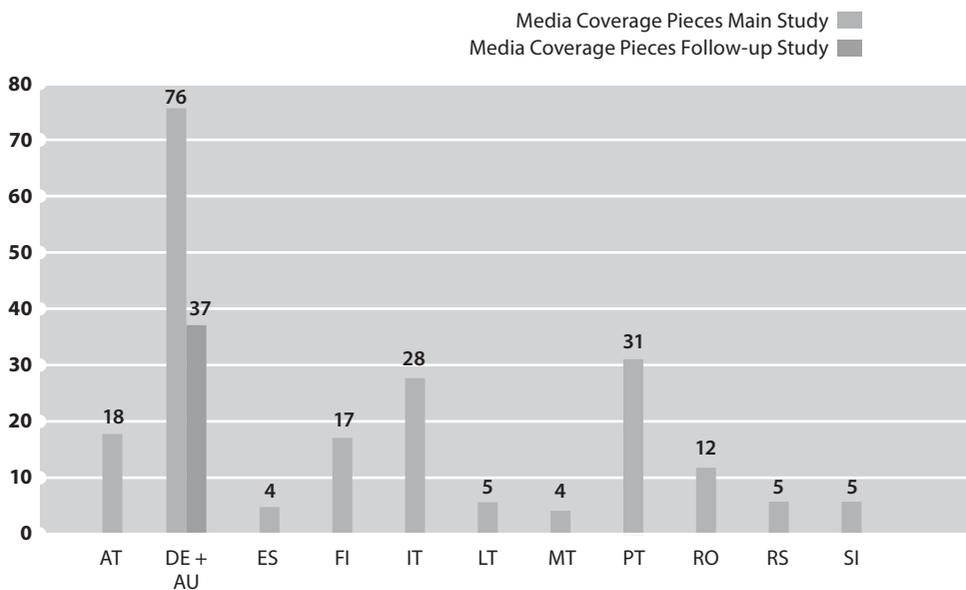
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## Appendix



▲ Figure 4.  
Number of news and commentary pieces per country  
in both data collection waves

Examples of toy brands from the coverage



Image 1.

"Creepy 'Hello Barbie' Doll Will Spy on Your Kids" by Mike Licht, NotionsCapital.com is licensed under CC BY 2.0. To view a copy of this license, visit: <https://creativecommons.org/licenses/by/2.0>



Image 2.

i-Que Robot as found in the coverage in Spanish El Pais

# MEDIJSKA REPREZENTACIJA DJEČJE PRIVATNOSTI U KONTEKSTU UPOTREBE „PAMETNIH“ IGRAČAKA<sup>1</sup> I PRIKUPLJANJA PODATAKA U KOMERCIJALNE SVRHE

Tijana Milosevic :: Patricia Dias :: Charles Mifsud :: Christine W. Trueltzsch-Wijnen

**SAŽETAK** *Zbog sve veće upotrebe „pametnih“ igračaka sve je važnije razumjeti kakve posljedice njihovo korištenje ima na privatnost djece i obitelji. Ovaj rad predstavlja studiju slučaja o medijskoj reprezentaciji rizika korištenja „pametnih“ igračaka i otkrivanja privatnosti djece od strane proizvođača koji prikupljaju komercijalne podatke. Oslanjajući se na analizu sadržaja medijskih objava u dvanaest europskih zemalja i Australiji, prikupljenih za vrijeme božićnih blagdana u sezoni 2016./2017., te na daljnju analizu sadržaja medijskih objava u odabranim zemljama, prikupljenih za vrijeme božićnih blagdana u sezoni 2017./2018., ovaj rad pokazuje kako su teme dječje privatnosti obrađene na površan način, pri čemu dionici ostaju bez nužnih informacija o toj temi, a dječji izvori u samim objavama minimalno su zastupljeni.*

## KLJUČNE RIJEČI

MREŽNO POVEZANI UREĐAJI, PRIVATNOST, PRIKUPLJANJE PODATAKA,  
KOMERCIJALNE BAZE PODATAKA, DJEČJA PRAVA

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