THE PLACE OF DIGITAL DEVICES IN THE HOME AND FAMILY ROUTINES OF YOUNG CHILDREN (3-7) IN MADRID

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ABSTRACT

We present results from a study exploring the place of digital technologies in young children's daily routines. The data includes home observations, interviews and video home-tours with 9 families and 10 children, between 3-7 years of age, from the Madrid (Spain) metropolitan area. We draw on socio-cultural and ecological theory and examine the interrelationships between adult home activities, children's care and activity needs and the co-organization of family routines. Our sample allows dividing the children in two age groups and the cross-sectional analysis suggests a developmental pattern in the co-organization of this family activity and participation system. Younger children seem to have a more autonomous use of digital devices compatible with parental attention to other house chores or work-related demands. Older children continue to use digital devices but with more engaged mediation strategies on the part of parents. More generally, our data suggest that digital devices (in the set of urban/suburban «European» families we have studied) play an important role in the co-organization and development of children's family life.

KEYWORDS

Children's Routines, Digital Media, Ecocultural Theory, Parental Mediation – Home

SOMMARIO

L'articolo presenta i risultati di uno studio che esplora la collocazione delle tecnologie digitali nelle routine quotidiane dei bambini. I dati includono osservazioni a casa, interviste e videoriprese a casa con 9 famiglie e 10 bambini tra i 3-7 anni, dell'area metropolitana di Madrid (Spagna). Ci siamo basati sulla teoria socio-culturale ed ecologica e abbiamo esaminato le interrelazioni esistenti tra attività domestiche degli adulti, cura dei bambini e co-organizzazione delle routine familiari. Il nosto campione ci ha permesso di dividere i bambini in due gruppi di età e l'analisi cross-sezionale ha suggerito un modello evolutivo nella co-organizzazione di attività e del sistema di partecipazione familiare. I bambini più piccoli sembrano fare un uso più autonomo degli strumenti digitali compatibile con l'attenzione parentale ad altre faccende domestiche o richieste legate al lavoro. I bambini più grandi continuano a utilizzare gli strumenti digitali, ma adottando strategie di mediazione più impegnate da parte dei genitori. Più in generale, i nostri dati suggeriscono che gli strumenti digitali (nel set di famiglie «europee» che abbiamo studiato in contest urbano/suburban) svolgono un ruolo importante nella co-organizzazione e nello sviluppo della vita familiare dei bambini.

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Routine di bambini e adolescent, media digitali, teoria ecoculturale, mediazione parentale, casa

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1 Introduction: Understanding children's digital home routines from a socio-cultural and ecological perspective

Contemporary socio-cultural developmental theory provides powerful frameworks to understand children's learning and development in family and community settings. Among these, the model developed over decades by Rogoff and her colleagues, termed *Learning by Observing and Pitching In* (LOPI) in its latest formulation (Paradise & Rogoff, 2009; Rogoff, Mejía-Arauz, & Correa-Chavez, 2015; Rogoff, 2016), is probably the most elaborate account. We will highlight three features of the framework in connection to the goals of this paper. First, LOPI stresses how children develop and learn in informal settings through social practices and interactions with other adults and children that are not necessarily organized as explicit (verbal) instruction – and yet are meaningful, purposeful, systematic and culturally valued (i.e. *educational* in a broad sense). Second, even though the focus is on social participation and children's contribution to community endeavors, LOPI needs not be structured around *apprenticeship* (cf. Lave, 2011; Lave & Wenger, 1991), as children's membership and incorporation into family or community life is taken for granted. Finally, more importantly for this article, researchers in this tradition have advanced constructs that can be particularly useful to understand young children's engagement with digital media in their homes and family activities. In particular, the notion of *learning ecology* (de León, 2015; Erickson, 1996) allows to understand, with minute interactional detail if necessary, how participants co-construct action activity systems through which children learn to manage everyday community and family tasks, display mastery and progressively gain autonomy. In contemporary children's lives these learning ecologies can certainly include or even gravitate around digital devices.

However, there are some challenges in applying directly the LOPI framework to the study of young children's digital practices in Western families – such as those examined in this paper. On one hand, the bulk of LOPI research has focused on indigenous non-industrialized societies in which family life, work and community life are significantly intertwined and children are not separated/relegated from «productive aspects» of the community and economy. In contrast, the children and families in this paper reflect the social organization and construction of childhood of post-industrial families (e.g. Ochs & Kremer-Sadlik, 2015; Sefton-Green et al., 2016) in which, among other things, work and family life are clearly separated, the organization of children's learning is structured around schooling and family/domestic time is singled out as a specific and developmentally relevant feature of young children's experiences. On the other hand, the focus on digital technologies and devices poses new questions and challenges that, at first glance, are not easily reconciled with a socio-cultural approach focused on cultural transmission and production. Digital technologies and devices (especially the type that will be under examination in this paper) are new cultural artifacts to both adults and children and, consequently, digital

expertise or «novicity» is not necessarily structured around age or family roles. Further, as previous analysis of the data suggest (Matsumoto et al., 2016), children's learning in relation to digital devices and technologies is often construed as autonomous and self-guided (Lange, 2014). Thus, parents – or children – do not always identify easily or report explicitly socially meaningful and organized practices through which children learn to use digital technologies and devices.

In this context, an analytical alternative that we would claim is largely compatible with the above discussion, is to draw from an ecological-systemic perspective (Neal & Neal, 2013; Plowman, 2015a; Rosa & Tudge, 2013) and, particularly, from two central tenets of this approach. First, ecological theory understands children's (nuclear) families and homes as a micro-system in which children's activities and needs are interrelated and mutually constituted with those of other family members. Second, consequently, the unit of analysis centers on children's everyday routines (Poveda et al., 2007; Tudge & Hogan, 2005) and, specifically in this paper, on how digital devices and practices are inserted in children's home lives and the total system of demands and constraints placed in the organization of family members time and activities. To advance our argument below, given participating children's age range (3-7 years of age), that children are «separated» from their parent's work or central chores in the maintenance of the household and that play/engagement with children is singled out as a particular type of activity, digital devices might have a central place in arranging children's care and time under conditions in which children require «constant monitoring but not necessarily engaged interaction from adults/caretakers» (Slembrouck and Hall, personal communication, 5 April 2016).

Drawing from theses premises, this paper examines how digital technologies and devices are inserted in the daily routines and activities of young children of primarily middle-class nuclear families in the Madrid metropolitan area. After presenting the context and methodology of the research project, we examine how children's autonomy is constructed in relation to digital devices and how children's engagement with digital devices is mediated by the demands and organization of activities of all family members. In the conclusions we return to some of the conceptual issues outlined above and discuss how our data and young children's digital practices should be situated developmentally in relation to children's changing participation in family life and their involvement other settings.

2 Methodology

2.1 *Design and participants*

The methodology of this study draws on a qualitative-interpretative research framework (Gaskins, Miller, & Corsaro, 1992; Geertz, 1973). In order to understand the organization of children's and their caretakers daily home routines and

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their activities around digital media, we use data collection procedures drawn from the protocol developed by the EU Joint Research Center (JRC) for the study «Young children (0-8) and digital technology» (Chaudron, 2015) replicated in Spain during 2015 (Matsumoto et al., 2016).

In this paper we combine data from 5 Spanish families with children between 6-7 years of age who participated in the EU-JRC coordinated study (Matsumoto et al., 2016) and an additional sample of 5 children between 3-5 years of age and their families, allowing us to consider developmental changes cross-sectionally. All the participating families lived in the Madrid metropolitan area and were recruited and sought out to represent a diverse sample in terms of socioeconomic conditions, family configurations and residence (Table 1).

TABLE 1

Socio-demographic profile of the participating families (the focal child in each family in bold)

	Family members	Age	Highest level of education/ present level of schooling	Family income*	Origin
Family 1	Manuel	43	University (Undergraduate)	High-income	Spanish
	Tamara	42	University (Undergraduate)	High-income	Spanish
	Gael	9	4th grade	High-income	Spanish
	Mark	7	2nd grade	High-income	Spanish
	Mario	5	Preschool	High-income	Spanish
Family 2	Noelia	49	Spanish Baccalaureate	High-income	Spanish
	Izan	6	About to start 1st grade**	High-income	Spanish
Family 3	Jimena	39	University (Undergraduate)	Low income	Spanish
	John	7	Completed 1st grade	Low income	Spanish
	Aissa	5	Completed preschool	Low income	Spanish
Family 4	Alfonso	46	PhD	High income	Spanish
	Ester	41	PhD	High income	Spanish
	Álvaro	9	Completed 3rd grade	High income	Spanish
	Diego	6	Completed 1st grade	High income	Spanish
	Raúl	2	Completed Nursery school	High income	Spanish
Family 5	Alberto	39	Compulsory Secondary Education	Lower middle class	Spanish
	Sandra	37	Master Degree	Lower middle class	Spanish
	Asier	6	Completed 1st grade	Lower middle class	Spanish
	Lidia	2	No schooling	Lower middle class	Spanish
	Alba	2	No schooling	Lower middleclass	Spanish
Family 6	Ainhoa	38	Advanced Technical Training	Higher middle class	Spanish
	Carlos	39	Advanced Technical Training	Higher middle class	Spanish
	Julia	4	Preschool	Higher middle class	Spanish
	Luis	2	Nursery school	Higher middle class	Spanish

	Family members	Age	Highest level of education/ present level of schooling	Family income*	Origin
Family 7	Esteban	37	University (Undergraduate)	High income	Argentina
	Marta	35	University (Undergraduate)	High income	Argentina
	Gabriela	5	Preschool	High income	Spanish
	Ada	3	Nursery school	High income	Spanish
Family 8	Coral	41	Unknown	Low income	Bolivia
	Hala	4	Preschool	Low income	Spanish
Family 9	Sonia	43	University (Undergraduate)	High income	Spanish
	Javier	44	PhD	High income	Spanish
	Laura	15	10th grade (Secondary)	High income	Spanish
	Aine	11	7th grade (Secondary)	High income	Spanish
	Naira	3	Preschool	High income	Spanish

* Income is calculated and distributed based on Eurostat criteria and categories.
** Some interviews were conducted over the summer while others were conducted early in the 2015-16 school-year, consequently families described their children's educational level as «just completed...» or «about to start...».

2.2 *Data collection procedures*

Data collection included interviews and video-home tours in the homes of participating families following a protocol developed by the JRC study (Chaudron, 2015; Matsumoto et al., 2016). First, we carried out a video home-tour led by the focal child: we asked him/her to give researchers a tour of their home, showing us the digital devices present at home, the digital devices he/she used, and the main activities the child conducted with the devices in each of the home spaces shown in the tour. Second, we interviewed the child, using a set of cards which represented digital devices (tablets, smartphones, etc.) and other non-digital activities (play in the park, swimming, etc.) in order to facilitate conversation with the child. The interview focused on the child's digital activities and his/her perceptions about these activities. Also, during the interview, if possible, we asked the child to demonstrate their use of digital devices, showing the kind of activities they usually performed on these devices. We also interviewed at least one of the parents (in two-parent homes), focusing on completing and verifying the information provided by the child as well as exploring parental perceptions about their children's digital experience and their role as mediators of their children's digital activity. In most cases, all interviews and interactions with children were video-recorded and completed with additional photographs taken by researchers, while interviews with adults were only audio-recorded. On practically all occasions, two researchers were present in the data-gathering home visit and in all cases, except one in which the parental interview was postponed for a second visit, all data was gathered in a single home visit which usually lasted around 2-3 hours. Finally, after the data collection process we emailed the par-

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ents a small questionnaire to gather and confirm the basic socio-demographic information of the family.

On most occasions, immediately after each home visit, researchers compiled their field notes and discussed reflections on the development of the home visit and made preliminary analytical comments (which were audio-recorded). Video and audio-recordings from this home visit were later transcribed as time-coded extended summaries contextualized with field-notes and visual information from the recordings.

2.3 *Analytical procedures*

Collected data was analyzed both through an inductive and theoretically guided logic, following the general procedures outlined in thematic analysis (Braun & Clarke, 2006) or the analytical steps discussed by LeCompte (2000). Specifically, for the objectives of this project and the questions guiding this paper, the analysis is structured around two analytical steps. A first, primarily inductive step, focused on identifying children's digital practices: what they do with digital media, what devices are used, when are they used or who are they used with. These can be understood as initial codes/categories that allowed to catalogue children's digital activity in their family and home settings. A second step was much more conceptually guided and attempted to build a pattern from the different data sources (i.e. child and parental data) regarding how digital devices and practices are inserted in and help organized children's routines and time management within the family.

These conceptually defined patterns guide the presentation of the data in the following section and articulate our answers to the questions behind this paper. Admittedly, our analysis primarily draws from «manufactured» (cf. Silverman, 2007) verbal reports through interviews, elicited home tours and other tasks, rather than extensive observations of children's digital practices in their homes. Within the cross-national EU study this article stems from, this methodological decision favors maintaining a relatively standardized protocol across research contexts. Yet, this methodological set-up has consequences in terms of relevance of the obtained data in relation to the particular goals of this paper, an issue we return to in the final discussion.

3 Findings

We have identified different ways in which children and their caregivers organize their digital routines at home, and the relationship of these activities with other tasks carried out at home. We present the results around two themes: 1) Children's autonomy and family co-constructions of time uses; 2) Interdependencies in the organization of family routines.

3.1 *Children's autonomy and family co-constructions of time uses*

Digital technology (broadly defined in the study to include computers, tablet devices, smartphones, digital television and radio, video-games, etc., Matsumoto et al., 2016) is a resource available in all the households we have studied and is accessible to all children in the sample. Primarily, digital technology is a tool to manage children's free time that allows for diverse activities to take place at home. In other words, the discourses of parents and children show that digital activities are seen as a means of entertainment that complements other traditional games and activities at home, adjusting to the tastes and interests of children. However, how and where families engage with digital devices in managing their routines differs among the children we interviewed. Our analysis suggests there are two patterns in relation to how digital activities are inserted in children's routines and time management strategies. The main variable behind these patterns seems to be children's age, rather than family socio-economic status or family composition (as we discuss below gender is not controlled in this sample).

Pattern 1:

The first pattern fits with Naira (3), Julia (4), Hala (4) and Gabriela (5) – the relatively younger children of the sample – who have access to digital devices for a relatively large amount of their free time (two of the mothers report that up to two hours on weekdays). What is characteristic among the four girls[1] is that they make use of different digital devices to «fill» or supplement their spare time: either when they cannot find other available activities (see Extract 1) and/or other members of the family or friends are busy performing other tasks – the latter, a point we elaborate in more detail in the following section. This also happens with other participating children, but it was more frequently reported in the case of these four younger girls.

Extract 1: Interview Gabriela (5)[2], family 7

Researcher: «How often do you use the tablet? Do you use it every day?».

Gabriela: «No, when I'm bored and do not know what to do».

However, the type of argument given by Gabriela to choose the tablet or other devices as solution to lack of alternatives to occupy their free time does not mean that these children engage with digital technologies automatically as a «default option». Rather, digital devices are inserted within a daily routine that parents tend to describe as composed of multiple, relatively short, activities:

[1] We use the term «girls» to refer to these four participants who are, incidentally, female. However, we do not explore gender differences or can claim that there is a gender pattern in our analysis or data.

[2] All interviews were conducted in Spanish and the extracts were translated into English by the authors of this paper.

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Extract 2: Interview Ainhoa (38), family 6

«(2) Of course, they come home from school, for example, and go crazy trying to watch cartoons, right? So, you put the TV on. But, well, they are very small, and so they see it for ten minutes, they see it, and suddenly they go play with something else [...]. Suddenly, after a while hooked on that, they stop playing and go watch TV [again].»

Pattern 2:

The second pattern fits with the rest of the children who participated in the study: Aissa (5), John (7), Marcos (7), Izan (6), Asier (6) and Diego (6) – the older group of children. Here digital technology is also present within the leisure time activities of the children; however, compared to the previous group, there are two noticeable differences. On one hand, they use technology for a smaller amount of time, mainly because engagement with digital technologies is balanced with their increasing participation in other spaces outside the home: extracurricular activities (e.g. chess, music, sports, Scouts, etc.) or other outdoor activities (e.g. playing on the street or park with peers and family). Yet, less time spent on digital devices is not related at all to children's lessening interest in digital media:

Extract 3: Interview Noelia (49), family 2

«[...] For example, before he got up and so and I had to take it [the tablet] away. Saturdays, he got up from bed and the first thing he asked for was the tablet because he «didn't have school» [...] He would come into my room and the first thing he used to say was «mama, give me the tablet» [...] During the week he does not usually play [with the tablet] [...] because during the week he has to do other things [including an extracurricular activity] and we have almost no spare time [...].»

On the other hand, children in this pattern engage in a wider range of digital activities and practices than the previous group. For example, video-consoles appear as another type of play, which includes on-line interactions with other players and friends – for example, Clash of Clans in the case of Marcos (7). These children also identify and request the installation of specific applications. In turn, these transformations are tied to (or have an effect) on parental behaviors in relation to children's digital practices. Parents have to be more involved in children's use of these digital devices (i.e. have to download apps, monitor the technical set-up for video games, etc.) and, additionally, most mothers[3] of this group of children start to explicitly comment how they try to limit the time spent by their children with technology and, mainly spell out two arguments for doing so. First, they express increased concerns about the risks that children can encounter on the Internet as a result of the greater number of on-line activities children begin to engage in (these concerns are particularly linked to access to violent content or contact with strangers). Second, parents also start putting

[3] Again, here we do not claim to identify or discuss a gender-related pattern, simply that the interviewed parent for these families was in most cases the mother.

forward the view that digital activities are in competition with, and taking time away from, traditional forms of play and relationship with peers – in a context in which children's leisure time is starting to be perceived as limited:

Extract 4: Interview Noelia (49), family 2

«[...] Because, as I do not let him take the device [to the park] [...] In the end, when he is on the street that's when he is with other kids [...], you have to take them there because if I leave him here all the afternoon [he will be playing with the device all the time] [...] but if I take him to a park, he has to play and relate with other children [...].»

In the case of girls from the first group – Naira (3), Julia (4), Hala (4) and Gabriela (5) – limitations and restrictions on the time-use of the devices do not appear much in parental discourses. This seems to be related to the role digital technology has in shaping children's routines and the management of care needs – which we discuss in the following section. Parents of younger children are also less concerned about the types of activities carried out by these four girls. They perceive that their daughters' digital experiences, especially their online activities, at the moment are clearly bounded to a set of contents, interests and applications. That is, the digital activities of these children are mainly limited to certain applications (e.g. Angry Birds games, feeding, caring for an/ or dress dolls, painting, simple games) and consuming media such as songs, cartoons and children's programs, through hand-held devices, and they only use the applications that are specifically designed for children (for example, TV apps and channels for children, downloaded content specifically managed by parents). Some parents even simply trust that the browsing history and recommendations generated in open sites such as Youtube direct the children only to appropriate content that might be interesting to the child – even if this content might be seen as odd by adults:

Extract 5: Interview Sonia (43), Family 9

«[...] Occasionally I glance over and ask her «What is this?» You see things like those *Kinder Eggs* videos where they see if there is something inside the eggs, they are a little strange [...] but we take a look from time to time and that's it. I think if she sees something that is not for children, she does not watch it [...].»

3.2 *Interdependencies in the organization of family routines*

As noted briefly in the previous section, digital practices that children perform at home take place in the framework of other family members' activities. That is, their digital activities are complementary and interdependent to the tasks and roles played by other family members. What varies from child to child is how this interdependence is shaped in each family. Furthermore, children's digital activities are subject to some form of parental supervision, which is also organized differently in each household.

In the case of the younger children, Naira (3), Julia (4), Hala (4) and Gabriela (5), digital technology was presented as a means to «occupy» free time in their

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children. Parents, in their discourse, make explicit the fact that digital technology serves as a means to have their daughters «entertained» on their own while they do other activities at home (house chores, attend other children in the home, work, etc.). In other words, parents present digital technology, especially hand-held portable devices (but not only), as a resource to manage the care and attention needs of younger children. This is what we referred to in the introduction as «constant monitoring without engaged interaction»: digital technologies afford young children an interactive space (but not with the parents) and parents the possibility of attending to other demands while their young children are safely occupied. This allows parents to monitor children intermittently, either when children are in the same room (e.g. do the ironing in the living room while the child watches television) or when the parental focal activity takes place in a different part of the home. In these latter situations, parents do monitor, from time to time, the activity their daughters are performing or even ask their children to move their activity to where the adults are. For example, some parents will ask children to play and use tablets and smartphones in the living room, so they can monitor the activity of the child and they can «be with everybody else» (Ainhoa – 38 –, family 6).

However, this arrangement, regardless of whether it involves children present or not in the same room, does not mean that parental and child activities operate in completely isolated and independent ways. Rather, this constant supervision/intermittent engagement of children and their digital activities fosters moments of interaction. These interactions might be initiated by the parents (e.g. Extract 5), who supervise or might be intrigued by the child's digital activity, or begin in response to the demands of the child. For example, during the data collection sessions, when Gabriela (5) or Hala (4) were trying to teach us how to use their CD players and had difficulty in doing so, their parents intervened and completed their daughter's actions – an exchange that gave the children the opportunity to observe how this was done and to participate in carrying out the actions (Rogoff, 2014).

The older children of our sample – Aissa (5), John (7), Marcos (7), Izan (6), Asier (6) and Diego (6) – also engage in digital activities on their own (or with their siblings) while their parents are busy with other tasks. However, the parents of these children, in their discourse, do not tie these uses of technology to a strategy around the care needs or management of free time of their children. In this group of children, technology moves into different spaces in family routines as their roles and needs also change. Children like Marcos (7) and John (7), who had already completed 1st grade at the time of the study, begin to bring homework or have to complete school-related activities at home. This involves new uses of digital technology for the children and new demands for parents (i.e. supervise that children complete tasks or assist with the setup of the digital tool connected to schooling). These children as well as others in this older age-group also start to use digital devices in relation to new activities they begin to participate in or new interests the start to develop (e.g. athletics or chess). Finally, this second group of children and their parents also report engaging in shared

digital activities among all family members, such as watching movies together on Friday evenings or the weekends. In short, alongside more individual and autonomous activities, children over five years of age (approximately) and their parents start reporting uses of digital technologies that involve more interaction with other family members, whether in connection to school, their own emerging interests or family leisure.

In turn, the more complex and varied digital practices of this older group of children involve different control and monitoring strategies on the part of parents. Within the older children we found two parental mediation styles in relation to the digital activity of their children.

1) On one hand, in the case of Aissa (5), John (7) or Mark (7), parents allow their children relatively open access to the Internet and other features of family digital devices but also monitor intermittently how their children use digital devices on-line. This permits parents both to be «on top» of what their children do and to also assist in the broader range of digital activities these children begin to engage in. For example, Jimena (39, family 3) and Manuel (43, family 1) said that when their children handle Internet or carry out more difficult activities (e.g. finding, opening and running applications to paint or conduct Google searches for particular tasks, such as cooking recipes) with computers or other devices they tend to be present to monitor how children handle the task or to assist them in their activities. Also, some of these more «complex» digital activities are performed on devices that are mainly owned by parents and might be important tools for their work and/or family management, so this closer monitoring is directly tied to concerns about the «safety» of the device. In relation to this, we must briefly note there is a broader issue in relation to the number of digital devices in the home, ownership of these devices and access by children to these devices, examined in the broader report (Matsumoto et al., 2016). Most homes have multiple devices, some of which are exclusively used by parents (for work) but, in most families, there are more delicate, expensive or work related digital devices owned and used by parents that will nevertheless be used by the children, under special conditions and more supervision from the parents.

2) In the case of Izan (6), Asier (6) or Diego (6), parents do put into action steps that limit on-line features in devices and the connection to the Internet, such as turning off the wi-fi connection in tablets or disabling network connectivity features of video-game consoles. Consequently, these parents also have almost complete control over what applications are installed in devices, what can be downloaded and what games children use and how they use them. In this way, autonomy around digital devices is redefined: this group of children is able to use digital devices (primarily vide-games and hand-held tablets) for relative long periods of time without direct supervision but under conditions in which parents have attempted to limit surprise uses or unexpected content and features to emerge.

To recapitulate, we have explored how digital technology is inserted in the daily routines of children and their caregivers at home and how activity frameworks around digital devices are co-constructed and negotiated in the family

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context. We have argued that, among other things, these activities are linked to the changing attention needs, interests and extra-familiar (i.e. school and after-school activities) demands of the children who have participated in this study. This is why, with all the necessary precautions, we have structured the narrative cross-sectionally and suggest potential developmental patterns by grouping the children in two, partially overlapping, age groups (3-5 years of age and 5-7 years of age). Based on our data, the four younger girls spend more time with digital devices, but do so at times in which the other (adult) family members are occupied with other tasks and children have not «found» other activities to spend their time independently. Complementarily, this arrangement allows parents to handle «constant monitoring» of their children without having to sustain «engaged interactions». The older children in the study, quantitatively speaking, are reported to spend less time in digital activities at home, but these are more varied than in the previous group, as a result of their increasing involvement in other spaces (i.e. incipient uses of digital media associated with school and homework) and their emergent interests. In turn, the parents of these children start to express more explicitly concerns about the risks associated with digital activities and put into action more pro-active and regulatory strategies in relation to access and use of digital devices of their children. Drawing from these findings, in the final conclusion we return to the conceptual issues that opened the paper and discuss how the digital practices of young children at home can be interpreted from an eco-cultural perspective.

4 Conclusions

The goal of this paper is to situate young children's home digital practices within their global daily routines and arrangements in family life. To do this we have attempted to situate and interpret our research within a contemporary socio-cultural and ecological perspective, that is, within an approach that would fit well with Plowman's (2015a, 2015b) recent ecocultural approach to young children's digital practices. We are aware of the possible methodological shortcomings of our data to engage in these discussions, as in contrast to other proposals, we collected primarily interview data in a single home visit (cf. Plowman, 2015b; González-Patiño & Esteban, 2015) – which, on the other hand, allowed establishing a shared methodology for a collection of cross-national/regional studies and comparisons (Chaudron, 2015; Matsumoto et al; 2016). Yet, we would like to think our data and analysis can contribute to, at least, two lines of discussion within this socio-cultural systemic/ecocultural perspective.

First, our data show how digital technologies are reported as intimately tied to care arrangements of children in their homes and the multiple demands and tasks that family members in the home must face as part of family daily life. More broadly, within this logic, home emerges as a co-constructed space where the activities of children and their caregivers are always related and interdependently

organized. Interdependencies that also change over time in family life, given changes in the demands and activities of children or in how parents intervene in the digital activities of their children. Obviously, these care demands and daily challenges in arranging family life are not new nor do they emerge as a result of the appearance of digital technologies. Rather, the issue would be to reflect on the particular affordances that current digital technologies (i.e. interactive, connected, tactile, hand-held, etc.) have as a resource, among many other things, to monitor children and momentarily withdraw parents from engaged interaction with their children – as what is a consistent finding is that young children have access to and use multiple digital devices in their homes. One possible answer (to which we return in part below) is that digital devices have, at least, two features that make them «more interesting» than other available alternatives to children and parents. On one hand, they allow children more control and interactive experiences (i.e. agency) than other media devices. On the other hand, parents value both some of the content that children access via digital devices and the fact, in itself, that digital technologies will be an important and integral part of the future school, social and work lives of their children (cf. Nixon & Hateley, 2013). It is here where a brief contrast with television, the «other» historical time-consumer/occupier in contemporary children's lives, might be worthwhile – especially in the Spanish broadcast television context. Although the situation has changed in the past few years with the implementation of digital television, for quite some time in Spain the main concern was that, in fact, television programing did not include any time slots or programs specifically designed and targeted for children. Therefore, through the media consumption of other family members, children were basically exposed to content not directed or suitable for children. Digital devices change this radically and facilitate creating a media repertoire (Hepp, 2014) for children in which parents can control or even promote content and children's digital media practices – or at least, have certain confidence that the content their children access is «appropriate» for them (albeit «peculiar»).

Second, our data point towards (as said, in an indirect and rough brush-stroke fashion far from the micro-interactional detail of linguistic ethnographic studies) the learning ecologies (de León, 2015) that the focal children and other family members create around digital technologies: who they interact with when using digital devices, how they reportedly learn and solve problems around the use of digital devices and when and where they do this. Indeed, future research drawing on detailed observations of family interactions around digital technologies would be able to examine and unpack these learning ecologies. What our reported data indicates is these ecologies are created, at least in part, by parents as part of the mediation strategies they develop in relation to how children learn to use digital devices (Matsumoto et al., 2016). These strategies include both direct involvement with the children and digital devices and creating the conditions so children can observe and «learn on their own» how to use digital devices, at a generational and historical moment in which these technologies and devices are also relatively novel to parents.

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Finally, our results provide a portrait of the digital practices and experience of young children at a particular juncture of their development – within the Spanish or more broadly Western/European cultural context. Children are seen as having sufficient maturity (over 3 years of age) to not require uninterrupted focused supervision and care, especially within the confines of their homes, and they are young enough (below 7 years of age) that their time and activities are not yet not heavily structured by the demands of school (i.e. homework) or multiple after-school activities (cf. Poveda et al., 2007; Lareau, 2002). In this context, what emerges is children's autonomy and agency in relation to digital technologies and media, as space where children are granted relative independence and can exercise some control. Again, we are far from claiming that the incorporation of digital technologies has restructured the organization of child development, as for example, «autonomy» and «initiative» have been discussed as the developmental milestones of this age group since, at least, Erikson's (1959) classic account of psychosexual development. Underscoring the particular organization of young children's early use and incorporation of digital technologies helps us understand their digital funds of identity (Esteban-Guitart & Moll, 2014; González-Patiño & Esteban, 2015), how digital devices and media are incorporated into the daily live of young children and appropriated as a semiotic and learning resource. A focus that opens the door to further research on the developmental trajectories of children's digital practices or on generating more detailed accounts of the digital activities we have identified.

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