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Online On The Mobile: Internet Use On Smartphones And Associated Risks Among Youth in Europe

G Stald

Lelia Green
Edith Cowan University, l.green@ecu.edu.au

M Barbovski

L Haddon

G Mascheroni

See next page for additional authors

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Online on the mobile: Internet use on smartphones and associated risks among youth in Europe

Stald, G., Green, L., Barbovski, M., Haddon, L., Mascheroni, G., Ságvári, B., Scifo, B. and Tsaliki, L.

Summary

1. This report analyses how children aged 9-16 changed their internet use between 2010, when most children used fixed computers and laptops, and 2013, with over one-quarter (c. 28%) of 9-12 year olds, and three-fifths (c. 60%) of 13-16 year olds, accessing the internet via a smartphone.

2. Children experience slightly increased risk when accessing the internet via a smartphone or tablet. Historically, such children came from richer, more privileged backgrounds, and spent more time online: all linked with risk exposure. Now that most 13-16 year olds have smartphones, they are no longer an elite. Along with extra risk, children with smartphones access the internet more often, engage in a greater range of activities, and have a higher number of skills.

3. The likelihood of children experiencing three or more risks has not changed greatly between 2010 and 2013, except for a rise in the 9-10 age group (from 1% on 2010 to 4% in 2013), and a rise among girls (14% in 2010, 17% in 2013). Among 9-10s, 19% encountered one or more risks online in 2010, while this rose to 24% in 2013.

4. While younger children are less likely than older children to encounter online risks, they are more likely to be affected by the risks they experience. Parents of younger children with smartphones should be encouraged to actively regulate their child's internet use. The younger the child, the more their parents should involve themselves.

5. For six of the seven risks investigated in 2010 and 2013, the proportion of children experiencing the risk has risen. Fewer children (aged 11-16) had received sexual messages: this had declined from 14% in 2010 to 11% in 2013.

6. 2010 data indicate that parents whose children had smart handheld devices were less likely to lay down rules around their child's internet activities. Although this group of children were comparatively privileged, and older, and more likely to encounter risk, parents seem to have trusted their child to make good choices. Given that mobile internet access is associated with fewer parental restrictions, this 2010 data raises concern in 2013, now that so many more children have smartphones.

7. In 2010, parents of children with smart handheld devices were also less likely to use technology filters to keep their child safe. This may reflect the difficulties parents experienced in finding consistent, easy-to-use, handset controls to support their child's safe mobile internet use. In 2013, many more parents are allowing children to use smartphones, but we do not know much about their strategies for keeping children safe.

8. Children's risk experiences vary with gender and age, and this is clear from both the 2010 and the 2013 data. Smart media introduce new risks such as geo-locational data and apps which connect mobile users with co-present strangers. Such risks to children's safety have yet to be investigated.

9. National differences are important but the overall picture is one of "more and more": more access, more often, using more devices, with more risk. As Livingstone et al say (2011: 142) "children's experiences of online opportunities and risks go hand in hand – the more of one tends to mean the more of the other".

Major recommendations

1. Industry stakeholders – software developers, technology companies, service providers – should prioritise the development of a suite of consistent, easy-to-use, handset controls which parents can use to support and monitor their children's safe mobile internet use.

2. Smartphones pose new risks for children, requiring new research.

INTRODUCTION

This report explores and analyses potential correlations between online access from smart, mobile phones, and patterns of experience of risks. Online communication and information is increasingly accessible to young people from several platforms apart from traditional PCs. Whereas mobile platforms may provide primary online access for some, and supplementary access for others, these platforms share the characteristics of being personal, portable and potentially always on and at hand. Since the EU Kids Online survey was conducted in 2010, smartphones have grown from being an occasional option for some privileged children and young people in some countries to being the main handheld mobile device among European youth. Hence this report primarily focuses on smartphones, young people's mobile internet access and the associated risks of these.

Two questions are particularly pertinent here: does the evidence indicate that access to the internet from smartphones expose children to more risk and harm? And is the risk children experience when they go online from their smartphone of a different nature to the risk experienced when using traditional online access via a desktop or laptop computer?

The past 20 years can be seen as a consistent narrative of children's increased media access first in their homes, then in their bedrooms (TVs, stereos, games consoles, PCs) and finally at their fingertips (iPods/MP3 players, mobile phones, smartphones). Once children are in a position to access the internet on a personal, handheld device, it becomes increasingly difficult for parents (and researchers) to keep up to speed with their online activities, and help prepare them to manage the experiences and risks they may encounter - hence, the challenges in mediating their online activities, while supporting them in exploring new opportunities and helping them cope with problematic outcomes, all at the same time. Further, many children have access to fast, immediate, cross-functional online connection through smartphones, and this underlines the challenge facing parents, educators, policy makers and researchers.

Data

This report is primarily based on the outcomes from the EU Kids Online survey from 2010. We also include results from the Net Children Go Mobile survey from 2013 since results from this study demonstrate that the percentage of European children who now own and go online from a smartphone has increased dramatically over the past three years. Further, our findings from the EU Kids Online survey in combination with those from the Net Children Go Mobile research indicate a range of correlations between certain patterns of use, exposure to risk, and potential actions. Where the 2013 statistics from seven countries verify those derived in 2010 from 25 countries, the results are likely to be relevant for many children across many countries, and policy recommendations at all levels are consequently paramount.

EU Kids Online

Year: 2010
Participants: A random stratified sample of 25,142 children aged 9-16 who use the internet, plus one of their parents, was interviewed during Spring/Summer 2010 in 25 European countries.
Countries: Originally, 25 European countries participated in the survey (Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Lithuania, the Netherlands, Norway, Poland, Portugal, Romania, Slovenia, Spain, Sweden, Turkey and the UK). Australia also did the same survey in 2010-11, and Brazil and 8 other European countries have since followed
Link:
http://www.lse.ac.uk/media@lse/research/EUKidsOnline/Home.aspx
Funding: The EU Kids Online network is funded by the EC Safer Internet Programme

The countries that are included in the EU Kids Online survey represent Europe as a whole while the countries that participate in the Net Children Go Mobile project can be said to be emblematic of sociocultural and technological differences across Europe. According to the Full Findings report from the Net Children Go Mobile project. "The countries differ in many respects: in terms of their particular historical domestication of mobile phones, which may now influence the domestication of smartphones and other handheld devices; in terms of the digital cultures of their youth; in relation to the incidence of online risks among children; and finally, in terms of childhood and parenting cultures." (Mascheroni & Ólafsson, 2014: 7). In the present report we draw partly upon the 2010 picture based on the overall European data and we

extract findings for the seven countries that were included in the Net Children Go Mobile project.

Net Children Go Mobile

Year: 2013-14

Participants: A random stratified survey sample of 2,500 children aged 9-16 who use the internet, in Denmark, Italy, Romania and the UK, was interviewed between May and July 2013; and in Ireland between November and December 2013. Portugal and Belgium subsequently joined the research and their data have also been included here.

Countries: Denmark, Italy, Romania, and the United Kingdom were funded by the EC Safer Internet Programme. Belgium, Ireland, and Portugal participate on a self-funded basis.

Link: http://www.netchildrengomobile.eu/

Funding: The Net Children Go Mobile project is funded by the EC Safer Internet Programme

Although we do not directly include findings from other studies it is important to note that general trends as well as country specific characteristics are supported by various sources, such as Ofcom's *Children and Parents: Media Use and Attitudes Report*, published at the end of 2012; the GSMA survey from 2013 on *Children and their Mobile Phones* (GSMA 2013); the Pew Research Center's Survey concerning Teens and Technology (Madden et al., 2013); and The 2013 Mobile Youth Report.

Definition of 'mobile' and 'smartphone'

Definitions of mobile media have been constantly changing, depending upon technological and social innovations and contexts of uses. In the EU Kids Online project we describe mobile communication technologies as devices and services that support mediated social connectivity independently of the mobility status of the user or technology and that enable communication while in transit, thus affording enhanced flexibility for the user (Campbell, 2013). That is to say, while the devices are not necessarily used on the go, they facilitate the use of mediated communication or information consumption while one, or the other, or all, communicating parties are on the move. These devices are connected to the internet via 3G/4G or wireless, and the technologies concerned include smartphones, featured phones, tablets, portable games consoles, and e-book readers. 'Simple', or old-fashioned, mobiles could and can be connected to the internet via WAP technology, but not in the easy access and operational way equivalent to going online from a computer. Users of simple mobiles can, however, also participate on occasion via voice or text communications with someone who is part of the mobile-connected group.

The EU Kids Online study included mobile internet access in the definition of internet connectivity through investigating internet access via mobile phones (push-buttons) and other handheld devices (e.g. smartphones, iPod Touch, Blackberry), while maintaining an analytical distinction between the two. We deliberately did not use the term "smartphone" in the EU Kids Online questionnaire, and consequently we did not use that category in the analysis. The reasons for this choice were because we did not want to exclude the, at that time not unimportant, group of users of transitional phones (e.g. iPod Touch and Blackberry devices), and because the use of smartphones in the 9-16 age group had not yet reached a critical mass in any of the participating countries. Across the EU Kids Online respondents aged 9-16, 12% were eventually to report having used handheld devices to access the internet in 2010, with more than one in five child participants saying this in Norway (31%), the UK (26%), Ireland (23%) and Sweden (22%). Finally, in 2010, the term "smartphone" was still being "negotiated" as a standard popular and academic term. The distinction made by the EU Kids Online research network between "mobile" and "other handheld devices" is pertinent, since it seems that accessing the internet through conventional mobile phones showed little increase in the likelihood of children being exposed to online risks, while access using other handheld devices (i.e. smartphones) appeared associated with a higher increase in risk experiences (Stald & Ólafsson, 2012). The details of those risks were to be further investigated in Net Children Go Mobile and are discussed here.

In the Net Children Go Mobile survey from 2013, the categories used for portable and mobile devices were "laptop computer", "mobile phone that is not a smartphone", "smartphone", "tablet", "E-book reader" and, "other handheld devices", but a major focus was placed on smartphones and tablets, due to the findings from EU Kids Online. In the EU Kids Online research, "other handheld devices" includes "e.g. iPod Touch, iPhone or Blackberry" (Livingstone et al 2011:22). In Net Children Go Mobile, the term "smartphone" is further defined as a handheld mobile device with "an operating system that facilitates cross-media interaction, internet access, applications, and most

likely with a touch screen. Beyond technical affordances, however, are the new forms of sociability that smartphones allow" (Bertel & Stald, 2013:199).

In this report we will use the term "other handheld device" when referring to the EU Kids Online findings, and "smartphone" when we refer to the Net Children go Mobile results. We maintain this distinction because it is a means of making precise reference to the relevant data.

Definition of 'risk' and 'harm'

When discussing the research design for EU Kids Online it soon became clear, that definitions and perceptions of 'risk', and of 'harm', vary from one country to another, and from one context to the next. The following quote displays the common understanding:

> Risk does not necessarily result in harm, as reported by children. Children who use the internet were asked if they had encountered a range of online risks and, then, if they had been bothered by this, where 'bothered' was defined as something that "made you feel uncomfortable, upset, or feel that you shouldn't have seen it." Findings vary by child (e.g. age, gender), country and risk type, so generalisations should be treated with caution. (Livingstone et al. 2011:6)

The Net Children Go Mobile project refers to the same definition in their full findings report from 2014 (Mascheroni & Ólafsson, 2014:49). The comparison between EU Kids Online and Net Children Go Mobile data indicate that risk experiences online have increased (as self-reported), especially among girls and teens. The increased reported risk which may have had harmful consequences might also be an outcome of children's greater awareness regarding the dangers of online communication.

ACCESS AND USE OF MOBILE DEVICES

When we use the EU Kids Online data to examine the experiences of children who access the internet using handheld devices we identify two key findings in the areas of (i) age and (ii) gender:

(i) **Age**. The data show that one in three European children aged 9-16 who used the internet (33%) in 2010, went online via a mobile or handheld device: 22% via mobile phones, and 12% via a handheld device. The children who used handheld devices to access the internet were most likely to be older, as demonstrated in Table 1. This may have meant that they also had more access to financial resources through part time work, etc. The Net Children Go Mobile data indicate that even if the 'age effect' has become less pronounced as smartphones and associated services are taken up throughout the community, 13-16 year olds are still more likely to go online from a smartphone (62%) than 9-12 year olds (31%). Children across Europe are getting their first smartphone at a younger and younger age and this mirrors the same dynamic as when children gained access to mobile phones almost two decades ago.

(ii) **Gender**. Slightly more boys than girls went online from other handheld devices in 2010, but with some national diversity across the 25 participating countries (Table 1).

Table 1 demonstrates these observations around age and gender and also indicates that children who had access to handheld devices in 2010 generally had a greater range of internet access options than other children. It compares the access opportunities available to three groups of children in the EU Kids Online study: (i) children who went online using a mobile phone, but did not have access to a smart handheld device; (ii) children who did have access to a smartphone/other handheld device; and (iii), children who had access to neither of these.

Table 1: EU Kids Online (25): Comparing children's access to mobile technologies in terms of their other technological resources

	Handheld device	Mobile phone but no handheld device	Neither mobile phone nor handheld device
Girls	11	22	66
Boys	13	22	65
9-10	5	14	81
11-12	8	21	71
13-14	13	25	62
15-16	19	28	53
Low SES	8	21	71
Medium SES	11	24	65
High SES	17	23	60
Shared PC	13	23	64
Own PC	14	26	60
Television set	25	49	27
Mobile phone	28	72	0
Games console	29	43	29
Own laptop	23	26	51
Shared laptop	16	24	60
All Children	12	22	66

Question:
QC300a-h: Which of these devices do you use for the internet these days? (Multiple responses allowed)

Base:
All EU Kids Online children aged 9–16 who use the internet (N = 25,142)

As Table 2 shows (below), comparing the seven countries in the Net Children Go Mobile research (2013) with the same seven countries three years earlier as recorded in the EU Kids Online findings (2010), the gender difference in which slightly more boys then had access to handheld devices has been replaced by an opposite difference where slightly more girls now have access to smartphones. There are, however, some gender-related differences in both studies that cannot be explained simply, but which appear to reflect the national context. The data from both studies demonstrate that boys are slightly more likely to own devices other than mobile phones (and other handheld devices/smartphones, and stationary computers), than girls. Such devices might include games consoles and laptop computers. In terms of access, it seems that girls' slightly greater access to mobile phones and other handheld devices/smartphones in 2013, as shown in the Net Children Go Mobile research, helps equalise media and connectivity opportunities across gender. It may be that this reflects differences between girls' and boys' aspirations in terms of the technologies to which they hope to gain access.

Table 2: EU Kids Online (7 countries, 2010) compared to Net Children Go Mobile (Net Children Go Mobile, same 7 countries, 2013): Mobile internet access by age, gender and device

		EU Kids (2010)		Net Children Go Mobile (2013)	
		Handheld device	Mobile phone	Smart phone	Mobile phone
9-12 years	Boys	8	22	28	8
	Girls	7	22	28	13
13-16 years	Boys	19	39	59	15
	Girls	17	37	62	22
Total	Boys	14	31	44	12
	Girls	12	30	45	18

Questions:
EU Kids Online question: [QC300 a-h]: *Which of these devices do you use for the internet these days?*
Net Children Go Mobile question: [Q2 a-h]: *When you use the internet these days at ..., how often do you use the following devices to go online?*

Base:
EU Kids Online children aged 9-16 from 7 countries (2010; BE, DK, IE, IT, PT, RO, UK; N = 7,077)
Net Children Go Mobile children aged 9-16 from the same 7 countries, N = 3,565)

Table 1 demonstrates that children who in 2010 used a handheld device to go online were more likely to have access to other means of connecting with the internet than children who went online using a conventional mobile phone. Both had a greater range of internet-access technologies than children who could not access either a mobile phone or a smart handheld device. The data indicate that a child who has access to a variety of online-enabled platforms will generally have a background of extended internet use. A further finding of the EU Kids Online survey is that children with a range of options for going online integrate mobile devices within a variety of other platforms. Access to the internet using exclusively mobile devices was uncommon; instead, mobile internet access was more common among children who went online from a variety of platforms. The comparison with the Net Children Go Mobile 2013 study (Table 2) corroborates this finding, concluding that children go online via a wide range of devices, and that internet access via a desktop computer or a laptop is increasingly being supplemented by access via other platforms.

The EU Kids Online data allows an investigation of children who had personal access to online technology compared with those who had shared access. These data indicate that children who have access to the internet from more personal platforms, such as their own computer or laptop, are also more likely to have a handheld device, though country differences are significant. One possible implication is that children who are comparatively privileged in financial and technological terms choose to invest in a range of different and complementary ways to go online and to stay connected.

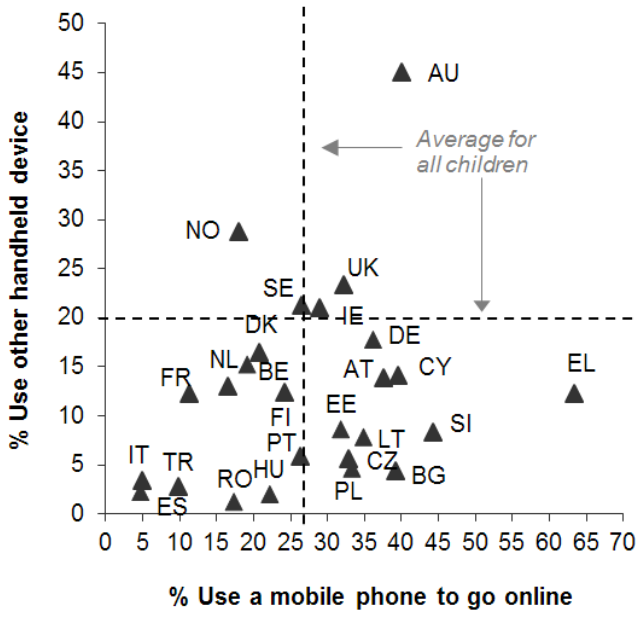
Access to the internet through mobile technology varied considerably by country, reflecting a country's relative financial position. As well as being older, the children most likely to have extensive access to handheld devices in 2010 lived in countries with greater financial resources. The general connection between patterns of access, use and national GDP was investigated in 2010 (Lobe et al, 2011). The data showed that children in countries with a higher GDP were more likely to have online access from more devices and to have online access from handheld devices. Figure 1, below, shows that Norway, UK, Ireland, Sweden, Germany and Denmark are among the countries with the highest proportion of children accessing the internet using a handheld device. A number of factors other than simple GDP may also be relevant, however. For example:

- The list of EU Kids Online countries with a higher GDP is also the list of these nations which were first to experience widespread use of the internet. Thus children who accessed the internet using another handheld device were also more likely to live in a country which had been online for the longest time. These countries were also more

likely to have children going online at a younger age than later-adopting countries, and for longer each day, with comparatively more online skills. (See the full EU Kids Online report for more details of these associations.)

- The diffusion of mobile phones and other handheld devices demonstrated in the EU Kids Online data indicates that countries can be grouped into 4 categories (see Figure 1). First there are countries where the use of both mobile phones and other handheld devices to go online was below average (Spain, Italy, Romania and Turkey). Second come countries where there was an average use of mobile phones, but a below average use of handheld devices. This group includes Slovenia, Bulgaria, Portugal, Poland, the Czech Republic, Hungary, some Baltic countries and, to an extent, Greece. Third are countries where mobile access was characterised by the use of handheld devices other than mobile phones (mainly Northern European countries). Fourth come countries where there is above average use of both handheld devices and mobile phones. This group includes the UK, Germany, Ireland and other countries.

Figure 1: EU Kids Online (25, plus AU): Use of other handheld devices versus use of mobile phones to go online



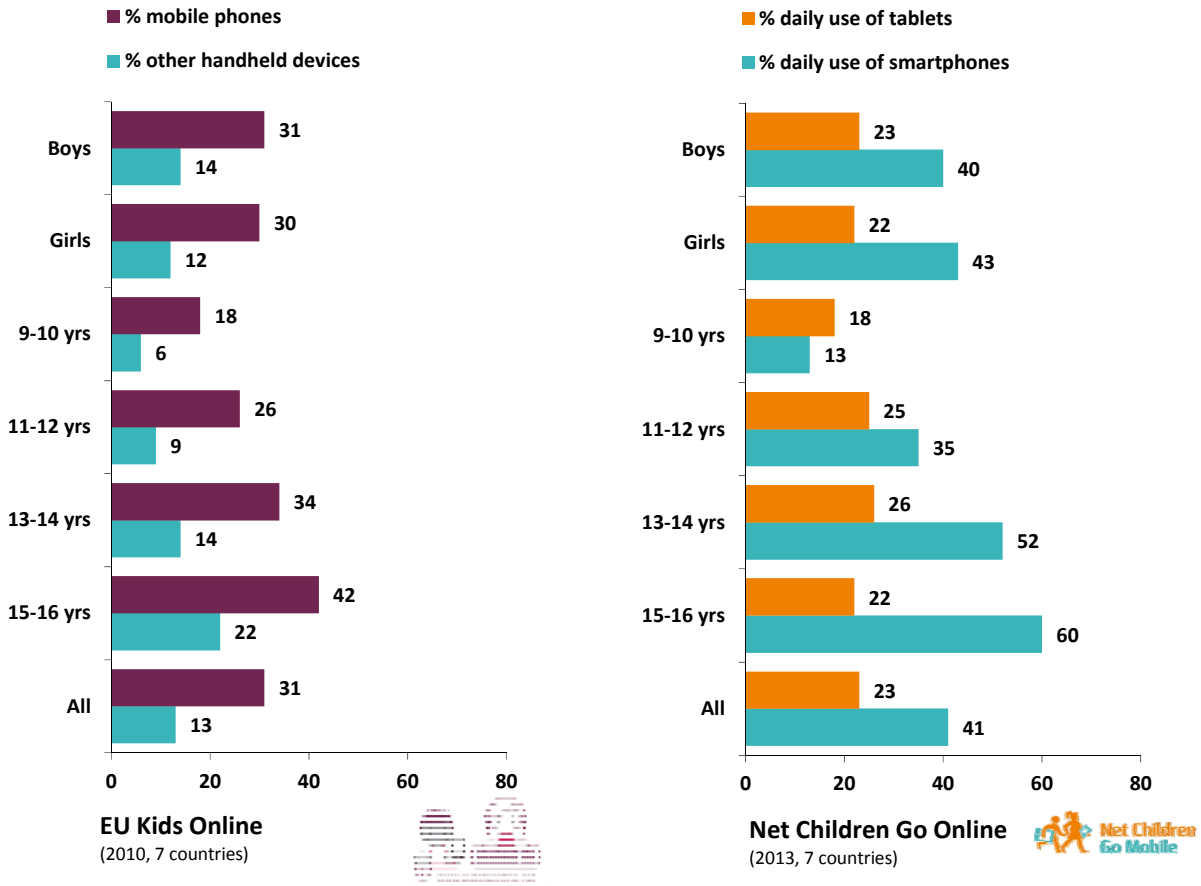
These relationships are demonstrated in Figure 1, where the countries with below average use of both mobile phones and handheld devices are in the bottom lefthand corner, and countries with above average use of both mobile technologies are in the top righthand quadrant. The countries in the top lefthand area have above average use of handheld devices and below average use of mobile phones, while the countries in the bottom righthand area are the opposite: they have above average use of mobile phones and a below average use of handheld devices.

The extreme outlier in this chart is Australia (AU; Austria is AT), with 46% of Australian children saying that they had used a handheld device to access the internet in the previous twelve months. The Australian data was collected between October 2010 and January 2011 (inclusive), by the same company and in the same way as in Europe, but with a smaller representative sample than in EU Kids Online. This collection period overlapped with the EU Kids Online data collection period, which was between April and November 2010. The last EU Kids Online participant country to finalise data collection was Norway, with the highest EU Kids Online reported rate of access to handheld devices at 31%. Norway and Australia are both high income countries and are both early adopters of new technology. The data here suggests that the end of 2010 and the beginning of 2011, and the important Christmas gift-giving rituals common to many western nations, may have meant that this was a critical period for adults' and children's take up of handheld devices/smartphones, and of children's access to these. Interestingly, the Australian data also indicates that Australian children are more likely to have been bothered by something they encountered online in the previous twelve months than was the case with any country participating in the EU Kids Online study. This was true for 30% of Australian children compared with an average 12% across Europe (with significant country variation) (Green et al, 2011). These findings allow a *prima facie* speculation that children's access to handheld devices is associated with a higher chance that a child will say they have been bothered by something they have encountered online.

The findings from The Net Children Go Mobile study (Mascheroni et al, 2013) show that three years later the picture in Europe is changing, with smartphones increasingly integrated within children's everyday lives (Figure 2, below). Access to smartphones is also rising fast in countries with the lowest take-up rates of handheld devices at the time of the EU Kids Online survey in 2010. One example is Italy, where only 4% of children aged 9-16 went online from a handheld device

in 2010. This is made clearer when we compare the 2010 EU Kids Online data from the seven available countries from the Net Children Go Mobile project: Denmark, Ireland, Italy, Lisbon, Portugal, Romania, and the UK with that collected three years later:

Figure 2: Comparing children's access to mobile devices in 2010 (EU Kids Online [7]) with children's access in 2013 (Net Children Go Mobile)



Questions:
EU Kids Online question: [QC300e, h]: *Which of these devices do you use for the internet these days?*
Net Children Go Mobile question: [Q2 d,e]: *When you use the internet these days at ..., how often do you use the following devices to go online?*

Base:
EU Kids Online children aged 9-16 from 7 countries (2010; BE, DK, IE, IT, PT, RO, UK; N = 7,077)
Net Children Go Mobile children aged 9-16 from the same 7 countries, N = 3,565)

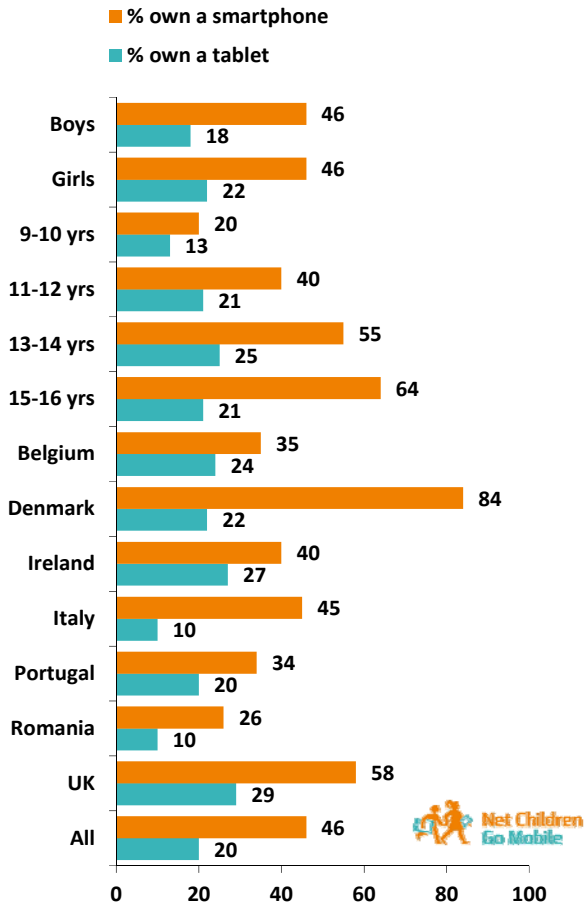
These data show that smartphones now are more widely used than mobile phones were three years ago in every age group apart from 9-10 year olds. Further, daily use of tablets is more widespread in the under 15s in 2013 than handheld devices were in 2010. Children across the seven Net Children Go Mobile countries analysed have far greater access, far sooner, to much more sophisticated technology than might have been suspected from the earlier data.

Taken as a whole, the findings from both studies reveal a major longitudinal trend in the diffusion of smart mobile devices among children. In most countries, the adoption of the mobile internet is shaped by a "more and more" logic: almost all children who access the internet from a handheld device also have other kinds of personalised online access (e.g. their own laptop). Thus, smartphones reinforce the privatisation of internet access.

Still, the national differences are visible and important to keep in mind when we look at the implications of children's unlimited online access from numerous platforms in terms of their potential exposure to risk,

experience of harm and development of coping strategies. Each individual country's history and experience with online media is reflected in these differences. As Figure 3 below indicates, according to the 2013 data, there are still substantial variations in ownership of smartphones and tablets among the seven Net Children Go Mobile countries. The difference compared with 2010 is that many more children in these countries have access to the internet from mobile devices, and a proportion of children have a choice of smartphone/tablet when they wish to go online. Given that the privileged situation of 2010 (access to a personal handheld internet-enabled device) is the common circumstance in 2013, we can assume that more children in Europe will be choosing between a range of online-connected devices when they want to access the internet.

Figure 3 (Net Children Go Mobile): Ownership of smartphones and tablets by age, gender and country



Question:
Net Children Go Mobile question: [Q3 d,e]: *Do you personally own or have for your private use any of these devices?*

Base:
Net Children Go Mobile children aged 9-16 from 7 countries, N = 3,565)

RANGE OF ACTIVITIES

EU Kids Online data in 2010 indicates that children with access to a handheld device have an average repertoire of 9.3 out of 17 (9.3/17) online activities, compared with the 6.9/17, activities indicated by those without access to a handheld device (whether or not they had access to a mobile phone). The seven countries examined here to allow a more direct comparison with the 2013 data from Net Children Go Mobile participants have lower combined averages in 2010, partly because only 14 activities are considered compared with the full 17 in the EU Kids Online study (Livingstone et al 2011: 34), and partly because we have considered a combined group of children with access to a handheld device and/or a mobile phone as constituting the EU Kids Online participants with expertise in mobile technology. There are still some differences between groups with mobile access and those without, with an average of 6.5/14 activities (with access to a mobile and/or handheld device in the previous year) compared with 5.3/14 activities (without access to a mobile or handheld device). Interestingly, the digital activities gap seems to have widened with the greater access to smartphones and tablets, according to the 2013 data from the Net Children Go Mobile study, also in Table 3. Here the three years' time period plus access to smartphone technologies indicates an overall increase in activities to 6.9/14 in the smartphone and/or tablet cohort and a comparatively reduced activity base for those without such access, to 4.7/14.

It is striking that, none of these cohorts crosses the threshold of having 50% of the activities investigated, 7/14, whereas the 2010 EU Kids Online group with access to a 'handheld device' (but not including mobile users) had 9.3/17 activities, crossing the 50% threshold (averaging 55%). This may have also been an indicator of the privileged financial, social and educational status of this comparatively small group of children. While having a handheld device in 2010 could clearly lead to an increase in some activities, such as visiting an SNS profile, using IM or email, etc., it is less obvious why it should lead to a greater range of activities such as creating an avatar. In Table 3, both studies show that users of mobile devices engage in more activities, suggesting that breadth of use may be related to an interest in using, and access to, mobile internet connectivity. This tendency towards an association between activities and more advanced technology access is further strengthened by the quasi-longitudinal data.

Table 3: Online activities by whether child uses a handheld device to go online or not (EU Kids Online [7], 2010) and by whether a child uses a smartphone, and/or a tablet (Net Children Go Mobile, 2013)

	EU Kids (2010)		Net Children Go Mobile (2013)	
	Uses a mobile or other handheld device	Does not use a mobile or other handheld device	Uses a smartphone and/or tablet	Does not use a smart handheld device
	% of children who say they have...			
Used the internet for school work	84	82	80	72
Watched video clips	84	77	92	76
Visited a social networking profile	74	58	83	57
Used instant messaging	69	62	73	41
Read/watched the news on the internet	31	29	39	26
Played (internet) games on your own or against the computer*	82	80	69	65
Played games with other people on the internet	50	43	51	44
Downloaded music or films	52	42	55	36
Put (or posted) photos, videos or music to share with others	47	32	60	32
Used a webcam	37	31	32	20
Put (or posted) a message on a website	39	21	38	22
Visited a chatroom	26	19	31	17
Used file sharing sites	19	12	27	8
Created a character, pet or avatar	25	18	16	12
Spent time in a virtual world	19	13	18	11
*Average number of activities (out of 14)***	*6.5*	*5.3*	*6.9*	*4.7*

Questions:
EU Kids Online: [QC101]: Have you ever played internet games on your own or against the computer [QC306a-d, QC308a-f and QC311a-f]: Which of the following things have you done in the past month on the internet? *(Multiple responses allowed)* and [QC300h, e]: Which of these devices do you use for the internet these days? ('Uses a handheld device' means that the child uses either a mobile or a handheld device for internet access.)
Net Children Go Mobile: [Q9a,e and Q12c]: How often you have done it in the past month? (Who answered other than "Never or almost never" or "Don't know, can't remember") and [Q3 d,e]: *Do you personally own or have for your private use any of these devices?*
* Please note the slightly different wording of the questions:
EU Kids Online: "Have you ever played internet games on your own or against the computer?"
Net Children Go Mobile: "How often have you played games on your own or against the computer?"
** For calculating the average value the activity "Played (internet) games on your own or against the computer" was omitted.

Base:
All children who use the internet in the 7 Net Children Go Mobile countries considered in this report.
EU Kids Online children aged 9-16 from 7 countries (2010; BE, DK, IE, IT, PT, RO, UK; N = 6995)
Net Children Go Mobile children aged 9-16 from the same 7 countries (N = 3565)

SKILLS

As demonstrated in Table 3, children who used a handheld device or mobile phone in 2010 also engaged in more activities. This, in turn, allowed them to develop and demonstrate a greater range of online skills (Table 4, below). Taken together, these two tables may indicate that these children were already sophisticated technology users, prior to the acquisition of their handheld device, and that it may have been this sophistication that prompted the investment in the handheld device rather than the child subsequently learning a broad range of skills as a result of owning the device. This is certainly likely to be true of the 'early adopters' (Rogers, 1995) in each age cohort.

Table 4: Digital safety and literacy skills by whether child uses a handheld device to go online or not (children aged 11+).

	EU Kids Online (2010)				Net Children Go Mobile (2013)			
	9-12 years		13-16 years		9-12 years		13-16 years	
	Hand-held user	Non-user	Hand-held user	Non-user	Smart-phone	Non-user	Smart-phone	Non-user
	% of children who say they have...							
Compare different websites to decide if information is true	37	29	61	56	38	21	74	55
Change filter preferences	16	15	42	35	18	13	50	35
Bookmark a website	54	45	77	71	60	32	84	61
Block unwanted adverts or junk mail/spam	42	29	66	57	37	19	69	48
Delete the record of which sites you have visited	35	28	62	58	48	25	79	57
Change privacy settings on a social networking profile	40	32	69	65	47	20	85	60
Block messages from someone you don't want to hear from	47	42	76	71	55	22	88	66
Find information on how to use the internet safely	51	41	70	66	45	29	76	59
Average number of skills	**3.1**	**2.5**	**5.1**	**4.7**	**3.3**	**1.7**	**5.9**	**4.3**

Questions:
EU Kids Online: [QC320a-d and QC321a-d] *Which of these things do you know how to do on the internet?*
Net Children Go Mobile: [Q26a-d and Q27a-c, e] Which of these things do you know how to do?

Base:
EU Kids Online children aged 9-16 from 7 countries (2010; BE, DK, IE, IT, PT, RO, UK; N = 5,213)
Net Children Go Mobile children aged 9-16 from the same 7 countries (N = 3,468)

As Table 4 demonstrates, even younger handheld device/smartphone users have more skills than those without access to this technology, and they develop this skill advantage into the older age groups. Whether this group of internet users have more skills as a result of their mobile access, or whether their mobile access is one aspect of a number of factors associated with the development of higher level skills (such as coming from a more prosperous family) is unclear. Interestingly, the comparative disparity between the skill sets of children who have accessed the internet in the past year using a handheld device (2010) and a smartphone (2013), and those who have not, decreases in the older-age cohorts suggesting that the eight safety skills investigated are more widely appreciated by older children, regardless of their use of mobile technology.

In the years between 2010 (EU Kids Online) and 2013 (Net Children Go Mobile), however, a range of new skills became relevant, such as: changing a smartphone screen saver; deactivating data displaying a child's geographical location; locking out the push notifications for updating different apps; blocking pop-ups which promote apps, games and other commercial content or services; protecting a smartphone with a PIN code; and, finding information about how to use smartphones safely. It is not possible to assess growth in these skills since 2010, since they were not relevant at that time and not investigated, but this list serves as an indication that new technologies and new circumstances require the development of new strategies and skills to help keep children safe.

RISKS RUN BY CHILDREN WHO ACCESS THE INTERNET USING A HANDHELD DEVICE

The available data indicate that children who have access to handheld devices and smartphones are more likely to encounter risks online. This is demonstrated by the Table below (Table 5), which examines the impact of handheld device/smartphone access upon exposure to seven different kinds of risk. This data, comparing the seven Net Children Go Mobile countries' data from 2010 with that from 2013, indicates the exposure to risk has increased in all categories apart from receiving sexual messages (sexting) and underlines the association between use of a handheld device/smartphone and greater risk exposure. As is indicated in Figure 4, below, however, this group of children is not uniquely at risk; the risks they encounter are in line with the risks encountered by older children aged 15-16. (Further risk profiles are also investigated in Tables 7 and 8, following.)

Table 5: Comparing risks experienced by handheld device users (2010) and smartphone users (2013)

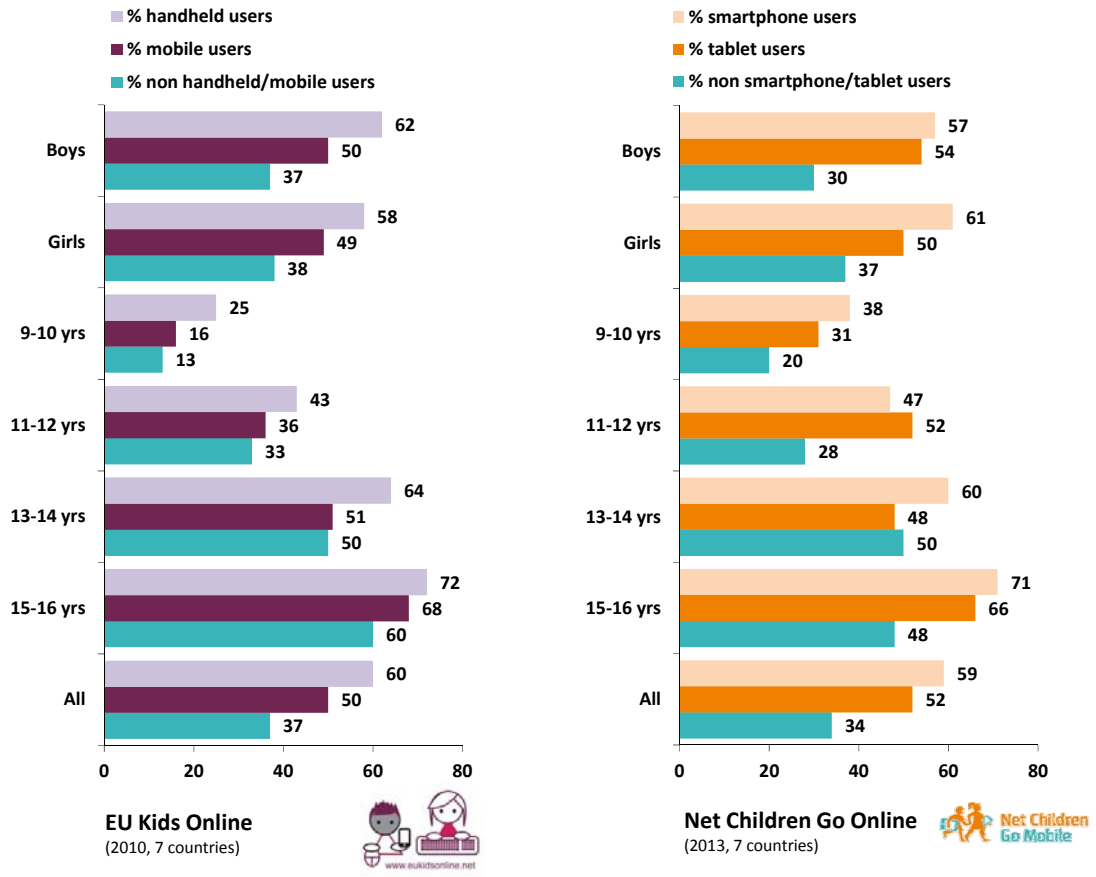
	EU Kids Online (2010)	Net Children Go Mobile (2013)
	% children experiencing the risk	
Seen hate messages (11-16 years)	13	20
Received sexual messages (11-16 years)	14	11
Seen sexual images online (9-16 years)	15	18
Been cyberbullied (9-16 years)	7	12
Seen pro-anorexic sites (or sites promoting eating disorders) (11-16 years)	9	13
Met online contact offline (9-16 years)	8	12
Bothered or upset online (9-16 years)	13	17

Questions (in the order in which they appear in the table):
EU Kids Online: [QC142d, QC167, QC131, QC115, QC142c, QC148, QC110]
Net Children Go Mobile: [Q44e, Q42, Q35, Q33b-i, Q44c, Q39, Q30]

Base:
EU Kids Online children aged 9-16 from 7 countries (2010; BE, DK, IE, IT, PT, RO, UK; N = 5,213)
Net Children Go Mobile children aged 9-16 from the same 7 countries (N = 3,468)

Figure 4, below, demonstrates the general exposure to risk in the previous 12 months of children who had access to a handheld device, a mobile, or neither (2010) with children who have access to a smartphone, a tablet, or neither (2013 Net Children Go Mobile data).

Figure 4: Comparing the risk profiles of mobile and handheld users (EU Kids Online 2010) and tablet and smartphone users (Net Children Go Mobile 2013), by % of children who indicate that they have been exposed to at least one risk in the previous 12 months.



Questions: Risks identified by both researches*: (1) seeing online sexual images, (2) receiving sexual messages, (3) being cyberbullied, (4) meeting new people online, (5) meeting online contacts offline, (6) seeing negative user-generated content, (7) experiencing personal data misuse*
EU Kids Online: [QC128, QC115, QC167, QC147, QC148, QC142a-e, QC143a-d] Questions on encountering individual risks. [QC300 a-h]: *Which of these devices do you use for the internet these days?*
Net Children Go Mobile: [Q33b-i, Q36c-j, Q37, Q39, Q43a-j, Q44a-f, Q45a, b-d] Questions on encountering individual risks. [Q3 d,e]: *Do you personally own or have for your private use any of these devices?*

Base: EU Kids Online children aged 9-16 from 7 countries (2010; BE, DK, IE, IT, PT, RO, UK; N = 6,995)
Net Children Go Mobile children aged 9-16 from the same 7 countries (N = 3,567)

When we examine this data, we note that with the exception of one category, the handheld/smartphone group is the group most likely to have encountered at least one risk in their internet use in the previous twelve months compared with the other cohorts of children. The sole exception to this generality is the risk profile of tablet users in the 11-12 year old cohort. It is possible that this reflects a gendered division of access with boys using tablets (for gaming) and girls using mobiles, since girls are often trusted with such technologies at a younger age than boys. The data from Table 2 indicates slightly greater mobile use by girls, and boy tablet users are a little more likely than girl tablet users to say they have encountered an online risk. More investigations would be required to confirm this hypothesis, but the overall picture clearly indicates an association between risk exposure and mobile internet access.

Treating the data as a quasi-longitudinal study, it is also apparent that risk exposure has increased a little overall, but somewhat more so in the younger age

groups, especially 9-10. This is a matter both of particular concern and particular opportunity. We know from the EU Kids Online research that children in this age group are less likely to encounter risk online, but more likely to say that they feel bothered by it when they do so. This is clearly evident in the case of younger children's exposure to sexual images online (Livingstone et al 2011: 31). In terms of an opportunity, younger children (aged 9-12) are more likely than older peers to look to parents and other significant adults in their lives for guidance around their internet activities (Livingstone et al 2011: 114-5). Active parental mediation (see below), education and improved safety features may help address this challenging increase in risk exposure among younger children.

Table 6 compares actual risk experiences as experienced by children from the same seven countries across the two studies, according to whether or not the child has access to the internet via a handheld device (2010) or smartphone (2013):

Table 6: Comparing online risk and harm experienced by EU Kids Online children (7 countries, 2010) compared with Net Children Go Mobile children (2013)

	EU Kids (2010)						Net Children Go Mobile (2013)					
Age	9-10		11-13		14-16		9-10		11-13		14-16	
2010—Handheld device user?	Yes	No	Yes	No	Yes	No						
2013—Smartphone user?							Yes	No	Yes	No	Yes	No
	% of children who say they have...											
Seen sexual images online	7	5	11	10	29	22	7	6	14	8	35	18
Been cyberbullied	4	3	7	7	11	8	13	8	14	5	16	12
Seen or received sexual messages online	-	-	7	7	23	18	-	-	7	4	21	11
Had contact online with someone not met face-to-face before	16	11	24	24	40	37	30	9	25	17	40	26
Met an online contact offline	4	2	5	5	14	12	1	7	9	9	19	15
Come across potentially harmful user-generated content	-	-	17	12	32	24	-	-	23	14	37	21
Experienced misuse of personal data	-	-	11	9	13	10	6	6	7	3	13	6
Acted in a nasty or hurtful way towards others online	7	7	11	8	14	10	-	-	-	-	-	-
Sent or posted a sexual message online	1	1	5	4	4	2	-	-	-	-	-	-

Questions (in the order in which they appear in the table):
EU Kids Online: [QC131, QC115, QC167, QC147, QC148, DC142x2, DC143x2, QC125, QC179]
Handheld includes handheld-and-mobile, while non-user has neither handheld nor mobile [QC300e,h]
Net Children Go Mobile: [Q35, cyberb, Q42, Q37, Q39, Q44a-f, QC143a-d, Q33b-i)
Smartphone includes smartphone-and-tablet, while non-user has neither smartphone nor tablet [Q2 d,e]

Base:
EU Kids Online children aged 9-16 from 7 countries (2010; BE, DK, IE, IT, PT, RO, UK; N = 5,213)
Net Children Go Mobile children aged 9-16 from the same 7 countries (N = 3,468)

In all categories bar one, the risks encountered were greater in the group of children with mobile access to the internet than in the group without. The sole exception, and one of particular concern, is the 9-10 age group of Net Children Go Mobile where 7% of respondents in that cohort who do not access the internet using a smartphone say they have met a person offline that they otherwise only knew online. Only 1% of smartphone users in this age group said they had experienced this risk. In all other cases and age groups, the risk exposure was equal or greater for the mobile access group than it was for the group without mobile access to the internet in the previous year. Even so, as Figure 4 indicates (above) the risks associated with mobile access have not greatly changed, although the children with mobile access have greatly increased in number. The increased risks associated with personal and portable communications technologies, and indicated in the preceding Tables and Figures, were already evident in the EU Kids Online data as Table 7 indicates here:

Table 7: Factors affecting children's likelihood of experiencing one or more risks, EU Kids Online (25) 2010

	No risks experienced	One or two risks experienced	Three or more risks experienced
	% of children in each category		
Boys	53	35	12
Girls	54	32	14
9-10	81	18	1
11-12	62	31	8
13-14	44	40	17
15-16	32	43	25
Child uses internet everyday	43	39	18
No access at home	66	25	9
Access at home,but not in own room	62	29	9
Access in own room	45	37	17
Neither mobile nor handheld device	59	31	10
Mobile but not handheld	48	36	16
Handheld device but not mobile	34	47	20
Either a mobile OR handheld	44	38	19
Both mobile and handheld device	37	38	26

Questions:
Risks identified by both research projects*: (1) seeing online sexual images, (2) receiving sexual messages, (3) being cyberbullied, (4) meeting new people online, (5) meeting online contacts offline, (6) seeing negative user-generated content, (7) experiencing personal data misuse*
EU Kids Online: [QC128, QC115, QC167, QC147, QC148, QC142a-e, QC143a-d] Questions on encountering individual risks. [QC300 a-h]: *Which of these devices do you use for the internet these days?*

Base:
All EU Kids Online respondents (N = 25,142)

Table 7 demonstrates that there is a significant difference in risk exposure between children who did not use a handheld device or an everyday mobile phone in 2010, with 41% experiencing one or more risks; and those who used either a handheld device or a mobile phone, with 57% experience one or more risks; and those who went online using a handheld device (but not a mobile phone), with 67% experiencing one or more risks. The very small group of children with the greatest exposure to additional risk was the group with access to both a handheld device and a mobile phone. These technology users were the second most likely group to encounter one or more risks, with 64% saying they had done so, but were the most likely to indicate that they had experience three or more risks with 26% indicating this.

Given these figures, however, the group most likely to encounter one or more risks is children aged 15-16, with 78% indicating that they had done so and 25% indicating that they had experienced three or more risks. Being aged 15-16 is as accurate a predictor of risk exposure as having access to a handheld device to go online. There is an indication here of the clustering effect: almost all of these factors are linked together and associated with age. For example, the average time spent online by 15-16 year olds in the EU Kids Online study was 118 minutes per day, more than twice as much as 9-10 year olds' 58 minutes per day (Livingstone et al 2011: 26). Thus, children who spend at least 120 minutes online per day are likely to be older, as are children who access the internet using a handheld device. Older children also encounter more risks online: "14% 9-10 year olds have encountered one or more of the risks asked about, rising to 33% 11-12 year olds, 49% 13-14 year olds and 63% 15-16 year olds". (Livingstone et al 2011: 6)

An overall finding of the EU Kids Online project is that children's experience of the internet, and the opportunities they access as a result, correlates with their exposure to risk. As Livingstone et al., state the situation: "Broadly speaking, children's experiences of online opportunities and risks go hand in hand – the more of one tends to mean the more of the other" (2011: 142). Effectively, older children have had more experience of the internet over the years, they also go on the internet for more hours per day and they are more likely to have access to more technologies for going online in more places. All of these aspects increase their opportunities to use the internet for beneficial purposes such as education, creativity and self-expression, but they are also associated with an increase in risk.

Table 8 allows us to compare these details from EU Kids Online (2010) with Net Children Go Mobile data (2013), using only the seven EU Kids Online countries subsequently investigated via the Net Children Go Mobile research.

Table 8: Factors affecting children's likelihood of experiencing one or more risks, Net Children Go Mobile 2013

	No risks experienced	One or two risks experienced	Three or more risks experienced
	% of children in each category		
Boys	57	31	12
Girls	52	32	17
9-10	76	20	4
11-12	62	30	8
13-14	45	37	18
15-16	37	38	25
Child uses internet everyday	49	35	16
No access at home	70	21	9
Access at home,but not in own room	47	42	11
Access in own room	55	30	15
Neither tablet nor smartphone	66	26	8
Tablet but not smartphone	58	33	10
Smartphone but not tablet	40	38	22
Smartphone OR tablet	44	37	20
Tablet and smartphone	43	38	20

Questions on risks:
Risks identified by both researches: (1) seeing online sexual images, (2) receiving sexual messages, (3) being cyberbullied, (4) meeting new people online, (5) meeting online contacts offline, (6) seeing negative user-generated content, (7) experiencing personal data misuse [Q33b-i, Q36c-j, Q37, Q39, Q43a-j, Q44a-f, Q45a, b-d] Questions on encountering individual risks.

Questions on access:
[Q1 a,b] How often you go online or use the internet at the following locations?
[Q3 d,e]: Do you personally own or have for your private use any of these devices?

Base:
Net Children Go Mobile children aged 9-16 (7 countries) (N = 3,567)

These figures indicate that children in 2013 without access to a smartphone or tablet were less likely to have encountered one or more risks than children in 2010 without access to a handheld device or a mobile phone: 41% of the 2010 cohort had encountered one or more risks, compared with 34% in 2013. In 2013, 43% of children who had access to a tablet (but not a smartphone) had encountered one or more risks. This is somewhat less than the risk experience of children with access to a mobile device, but not a handheld, some three years previously (52%). The other categories of children's access to technology in 2010 are also associated with increased risk: mobile or handheld (57% exposure to one or more risks), both mobile and handheld (64%), and handheld but not mobile (67%). This divergence in risk profiles between 57%-67% compares with a more consistent risk profile in 2013, where there are relatively few differences between children who have access to a smartphone but not tablet (60% exposure to one or more risks); children who have access to a smartphone or tablet (57% exposure), and children who have access to both a tablet and smartphone (58% exposure). All of these 2013 risk profiles are broadly in line with those experienced in 2010, however, and less than the risk associate with being 15-16 in 2013 (63%).

What might be of greater interest here, however, is that the riskier profiles associated with technology use in 2013 are almost at the same level as those associated with children in the 13-14 age group, 55% of whom have experienced one or more risks. This is a similar risk profile to that which related to the same aged children in 2010 (57%). The comparative data might indicate that the smartphone and/or tablet use is generally associated with a lower level of risk in 2013 than access to handheld technology did in 2010, although the risk profiles of children aged 9-10 (19% in

2010; 24% in 2013) gives no room for complacency. 11-12 year old risk profiles are essentially unchanged at 39% (2010) and 38% (2013).

It would appear that supporting younger children's safe use of mobile internet-connected technologies is an important and increasingly pressing priority. Parental mediation has an active role to play in this, in combination with a range of other measures which involve multiple stakeholders from software developers and industry players through to policy makers, regulators and educators.

PARENTAL MEDIATION

From the 2010 data, it would appear that the parents of children with access to handheld devices are noticeably different in terms of the ways they mediate their children's experiences. One of the clearest differences, shown in Table 9, is that this set of parents (whose children have handheld devices) is less likely to impose a range of rules regarding internet use. Although there is some variation in the rules parents apply according to the age of the child, this difference in terms of the imposition of rules generally applies across all the age groups considered. Parents' use of rules that generally start with the phrase 'Do not …' is sometimes referred to as 'restrictive mediation' since these parents use restrictions to regulate their children's use of and access to the media.

Table 9: Parents' restrictive mediation strategies (EU Kids Online 2010)

	Does not use handhelds	Uses a handheld device
	% who say they are never allowed to do the following	
Use instant messaging	21	10
Download music or films on the internet	33	21
Watch video clips on the internet	16	5
Have your own social networking profile	30	14
Give out personal information to others on the internet	66	59
Upload photos, videos or music to share with others	41	25

Question:
[QC328]: For each of these things, please tell me if your parents CURRENTLY let you do them whenever you want, or let you do them but only with your parent's permission or supervision, or NEVER let you do them, and [QC300h, e]: Which of these devices do you use for the internet these days?

Base:
All EU Kids Online children (N = 25,142)

Back in 2010, the children who had access to handheld devices were also the children who were (or whose parents were) more likely to use newer technologies ('early adopters') and more likely to have access to more financial resources. It may be that these features are more associated with a less restrictive style of parental mediation than any association between parents and their child's use of a specific technology. Even so, as the data are investigated further, it appears that parents who are less inclined to impose blanket rules, and who wish to negotiate with their child, are more likely to allow their child access to a handheld device. Instead of saying 'You are never allowed to do x', these parents may prefer to reach a shared understanding about their child's appropriate online behavior through other means. Part of the process of reaching the shared understanding between parent and child may involve trusting the child more. This aspect of parental mediation can be explored through parents' responses to questions which ask whether they use electronic means (such as filters) to check up on their children's internet use. Table 10 shows that parents of children with smartphones are less likely to use electronic monitoring strategies.

Table 10: Parents' electronic monitoring strategies (EU Kids Online 2010)

	Does not use handhelds	Uses a handheld device
	% who say parents check...	
Which websites you visited	47	40
The messages in your email or instant messaging account	26	21
Whether you give out personal information to others on the internet	40	36
If you upload photos, videos or music to share with others	37	32

Question:
Eu Kids Online: [QC330a-d]: Does your parent / do either of your parents sometimes check any of the following things? and [QC300e,h] Which of these devices do you use for the internet these days?

Base:
All EU Kids Online respondents who use the internet at home (N = 19,464)

As noted above, there is a question of causality: is it the handheld device itself which is the critical factor in the parents' behavior? For example, do parents choose not to use electronic monitoring because of the sheer difficulty of keeping tabs on their child's activities when the child uses portable communication media, including whether the child is keeping to the family's rules about internet use? Even though a parent might still choose to monitor the electronic trail (browsing history) left on the family computer used by their child, children with personal portable media can use these technologies for activities they do not want their parents to see. Parents may decide not to set rules in situations where it is difficult to check whether or not the rules have been obeyed, and they may decide that a smartphone or other personal media device is too personal and private for them to feel comfortable in checking it.

That said, given that we have seen that most children with handheld devices also access the internet in other ways, including through computers, parents could have chosen to continue some low key monitoring of their child's online activities in terms of looking at what their child does as they use the internet. It seems, however, that parents of children with handheld devices are also less likely to monitor their children closely in other ways. For example, they say they are less likely to sit with their child when the latter is using the internet (36% of parents whose children have handheld devices vs. 45% for parents of children without). They are also less likely to say they stay nearby when their child is using the internet (38%: 49%). Both of these active mediation (internet monitoring) activities are more popular with parents of younger children, however, and children with access to handheld devices, especially in 2010, were more likely to be older, and this will also impact upon these data, and upon their parents' monitoring styles. Even so, it is reasonable to assume that once a parent has allowed the child access to an internet-connected mobile device, their main strategy for finding out about their child's internet use is via communication: negotiation and discussion.

Taking the various tables together, the data indicate that it is the parents' mediating style, plus their access to relevant resources, that has most influence upon a parent's decision to allow their child to have a handheld device or smartphone. If parents are less likely to impose general rules in the first place – if such parents are more willing to trust their child, and less concerned with monitoring them – then their child's use of portable media is less likely to worry them. Although it is much more difficult for parents to monitor their child's use of a handheld device than their use of non-mobile internet-connected devices, the Net Children Go Mobile data demonstrate that more and more parents are coming to terms with this challenge and allowing their children to have a smartphone. Questions regarding mediation by parents of smart phone uses are also discussed in Haddon and Ólafsson (2014).

PERSPECTIVES

We have seen how children and young people inhabit complex digital environments in which mobile media are assuming an increasingly important role. This is particularly true of smart, mobile devices, technologies which redefine the 'ordinary' mobile phone into a sophisticated, networked, cross-content, social and geo-locative communication device. The increasing take-up of the smartphone represents a shift in online practices from the desktop computer, the laptop and the traditional mobile to the various interconnected, always available, mobile smartphone and tablet-based

contexts of everyday life. The growing use of mobile technologies implies a progressive digital colonisation of children's lives, reshaping the interactions of younger actors with time, space, communication, cultural production and consumption. The widespread transition from mobile phone use to smartphones and tablets turns the practice of 'going mobile' into a crucial feature of contemporary audiences (Goggin, 2011).

Children's mobile internet safety

One thing that seems fundamentally associated with children's use of smartphone technology is the speed at which they may experience risk while using mobile devices. We need to understand whether the immediacy with which children can distribute and share user-generated content (for example, related to sexting, or cyberbullying) through mobile use, leads to them acting without thinking, when it would be wise for them to first reflect on the possible negative consequences of their actions. This is only one way in which speed and ease of mobile access increases the risks encountered by children, however.

We also need to investigate other ways in which the increased use of mobile devices may intensify the online risks already highlighted by the EU Kids Online research in 2010, and underlined by the Net Children Go Mobile findings in 2013. Such investigations raise, for example, questions around children's social presence and the development of social norms. Important issues to be addressed include adult access to children's private technologies including whether or not parents wish to use 'compulsory checking' of the devices. Exposure to commercial content and the protection of privacy are among a range of further relevant issues. Other challenges that can be seen as potential new risks are associated with geo-positioning and near-field communication technologies that are able to locate a mobile user's position, and connect that user with content, services and other users who may be located nearby. These various geo-positioning services offer significant scope for the abuse of personal data, geo-location tracking and threats to privacy (for many different purposes, be it for commercial goals, or for grooming).

Adult mediation of children's mobile safety

The mobile reconfiguration of children's media ecologies poses new challenges in terms of parents', teachers' and youth workers' desires to mediate children's access and promote internet safety. Many parents are asking questions (Haddon, 2013) about, for example, the 'right age' for a child to use (and even own) smart mobile technologies. Further, smartphones' location-based features allow monitoring of children's mobility at a distance. Does this kind of application threaten the reciprocal trust that exists within family relationships, or risk further complicating the tensions which may characterise 'fractured' families? Are there less intrusive ways to engage in active parental mediation? Tentativeness and uncertainty relate to the social and cultural perception of these devices as being new. Do mobile devices really challenge the existing guidelines for education around internet safety, and the child-centred development of online skills? Alternatively are mobile devices, like so many others before them, nothing more than the latest 'screen activity', able to be dealt with (or perhaps avoided) on a case by case basis using the conventional range of adult rules and sanctions?

A number of questions are of crucial interest to educators, policy makers, legislators, law enforcers (e.g. around 'sexting') and industry players, and these questions are much more than domestic issues. Which rules should parents impose regarding their child's use of smartphone and tablets (for example, in terms of where they might be used, or for which purposes), and which rules will be enforced by, say, their child's school? How can responsible adults manage children's use of these devices in a range of settings, given that active surveillance of children's internet and media use is made more difficult by personal and portable media? Will parents and others demand (and then use) sophisticated control software for smartphones? Possible future developments involving all stakeholders combine some protections for children with their increased media usage, but they also raise significant issues around privacy, autonomy and control since they permit the active monitoring of children's mobile activities by both parents and commercial/industry players.

Finally, mobile media pose significant regulation challenges for schools and other educational agencies. Some teachers perceive tablets and smartphones as new tools for engaged learning, but they can also represent a source of distraction. How should teachers manage the question of whether and when to allow or forbid the use of smartphones and tablets in school-based contexts? And how can they best be used to enhance children's educational experiences and opportunities?

Public policy on specific children's mobile safety

The new challenges posed by children's mobile internet access and smartphone application (app) use also have important implications for public policy. These changing circumstances need to be investigated and analysed in order to inform awareness-raising initiatives, and to provide the evidence base for new safety tools and regulation. Paradoxically, at the point when domestic practices around the regulation of ICTs and the internet have become more valued within public policy frameworks, parental mediation is seemingly undermined or hindered by the social and technological changes associated with mobile media. What do parents need to know and be aware of when monitoring their children's use of such portable media and smartphone apps? How should existing public policy advice for parents and others change in relation to the adult mediation of children's mobile use?

Some new safety tools are on offer from mobile operators and software houses, and other tools and software are in development. None of these are without their costs, however, and it is important to understand how best to address adults' worries around safety without compromising children's privacy and autonomy.

Finally, while it is parents who have been most concerned about these issues to date, industry playersand government sectors also need to consider new regulation and the development of codes of practice for the mobile apps and online services available to children.

In summary, the findings from the EU Kids Online research in 2010 have been underlined and confirmed by the recent results of the Net Children Go Mobile study in 2013. These two studies, together, have provided substantial insights and important knowledge about how children's internet access is changing in terms of speed, flexibility and sophistication. Yet, at the same time, these technologies raise age-old questions around parents' responses to their child's activities and how to keep children safe while enabling them to acquire the skills and competencies which will serve them best as autonomous and responsible adult contributors to society. This short report has raised a number of questions that need to be investigated more closely in focused studies across Europe and internationally, as well as in the context of the cultural diversity represented by smartphone usages in each individual country and nation.

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As a major part of its activities, EU Kids Online conducted a face-to-face, in-home survey during 2010 of 25,000 9- to 16-year-old internet users and their parents in 25 countries, using a stratified random sample and self-completion methods for sensitive questions.

Now including researchers and stakeholders from 33 countries in Europe and beyond, the network continues to analyse and update the evidence base to inform policy.

For all reports, findings and technical survey information, as well as full details of national partners, please visit www.eukidsonline.net

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