Children's commercial media literacy: new evidence relevant to UK policy decisions regarding the General Data Protection Regulation

The UK has until May 2018 to incorporate the General Data Protection Regulation (GDPR) into British law. Article 8 states that, unless member states decide otherwise, children under the age of 16 years old will require parental permission to use "information society services", which refers to most online resources. Most provisions of the GDPR are to improve personal data protections for the general public. Some provisions specifically concern additional protections for children, given their supposed lower levels of media literacy.

At present, in both the UK and European debates over the GDPR, little or no evidence has been cited regarding children's need for protection or, indeed, the ability of their parents to protect them. This short report examines whether and how age makes a difference to levels of media literacy, particularly commercial (or advertising) literacy which, it has long been theorised, increases in stages through childhood and early adolescence. We take note of the International Chamber of Commerce's recent reiteration of its commitment to protecting under 13s from undue commercial pressures (see also the US's COPPA), and of recent European research showing that children are vulnerable to such pressures.

New analysis based on Ofcom's data on media uses and attitudes

To guide the UK in making this decision, we have conducted an exploratory analysis of the following survey data:[1]

- Ofcom's 2016 children's and parents' media use and attitudes dataset (children 5-15; adults with a child 3-15 living at home for whom they have parental responsibility)[2]
- Ofcom's 2015 adults' media use and attitudes dataset (ages 16+)[3]

We have selected for analysis the survey questions that concern media literacy in relation to the internet, focusing on commercial and critical dimensions of literacy.[4]

[1] These were made available to us by Ofcom; thanks to

[2] Following the ways in which the Ofcom reports define the internet-using population (p.9 of the adult questionnaire, p.51 of the children's questionnaire), from the children's survey, we selected all children aged 8-15 who report using the internet anywhere (QC10, options 1-9); N=908 (out of 977 children in total). Some questions are asked only of 12-15 year olds (N=463).

[3] From the adult survey, we selected adults who report using the internet anywhere (IN1 (code 1) OR IN3 (code 1-9) OR IN4 (code 1-11); from these, we selected 16-21 year olds (N=158 internet users, out of 162 respondents) and linked their answers to those of younger respondents from the children's survey. For 16-21 year olds, N's per year are small and should be treated with caution.

[4] Note that this analysis is constrained by the particular questions asked by Ofcom, and by the statistical care needed regarding available data for internet users of each age (year). These questions do not capture the range of concerns about children's understanding of online services in relation to personal data and marketing.

Note by way of caution that sampling considerations mean that while we are confident of the overall patterning of the data, findings for particular ages should be treated as indicative only, especially for the 16-21 year olds where sample sizes are often small.[5]

Indicators of commercial literacy across the age range

Figure 1, below, shows that:[6]

- **Children's commercial literacy increases fairly steadily from age 8 to young adulthood**. Specifically, they become gradually less likely to think that all information on news media sites is true (blue line) and more likely to know that sponsored results on Google are adverts that have paid to be there.[7]

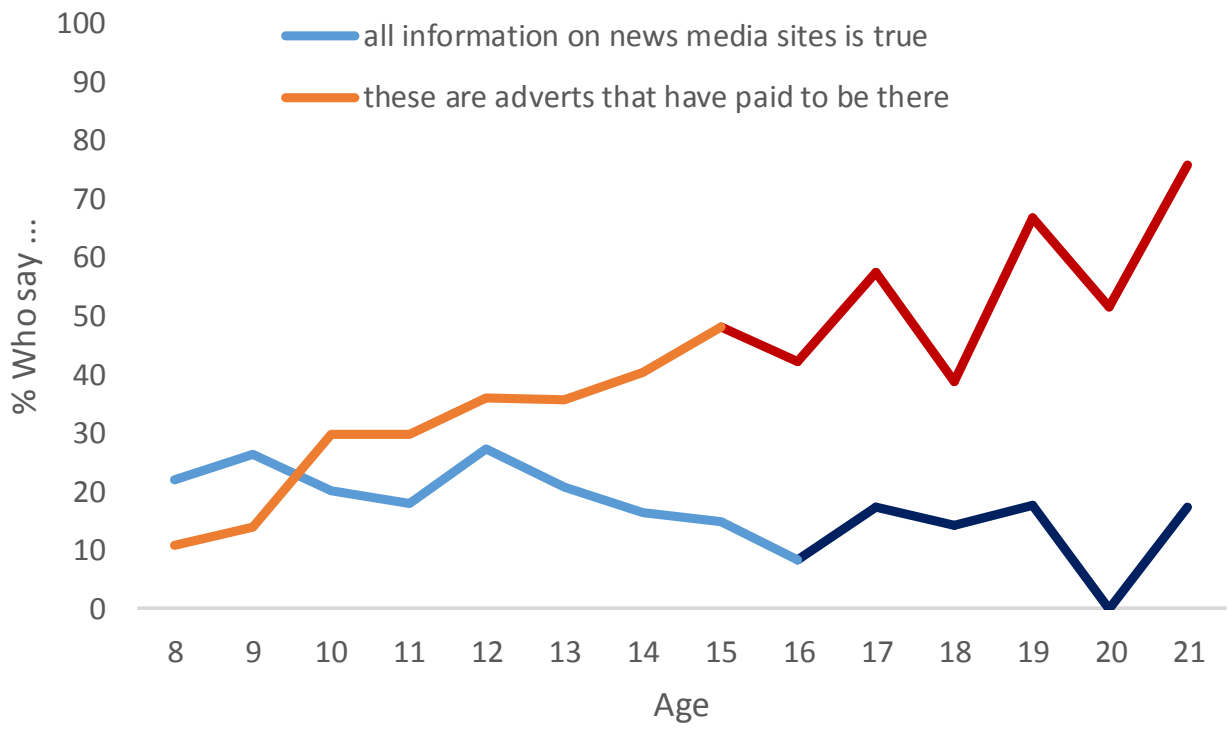
- **There is a noticeable improvement in commercial literacy from 13 to 16.** This could support the intention behind GDPR article 8 that those below 16 merit parental protection. Or it might reflect the benefits of the UK computing curriculum, so that if UK schools children taught commercial literacy education earlier, 13 year olds could learn that older teens learn, obviating the need for parental protection for younger teens.

[5] The data used in this analysis are designed to be representative of children and adults within the following age bands: 8-11, 12-15, 16-24, 25-34, 35-44, 45-54, 55-64, 65-74 and 75+. It was not designed to be representative for each individual year within those bands. This also means that sample sizes for some ages are very small. The data in this analysis should therefore be treated as indicative only. However, with all due caution, we report findings by year given the specific policy interest in comparing the commercial literacy of teenagers aged 13, 14, 15 and 16. Our focus, however, is on the overall patterning of commercial literacy by age.

[6] Note that some sample sizes for children 8-15 fall below 100, and those for 16-21 year olds are considerably smaller and so should be treated as indicative only.

[7] Blue line: QC15C (ages 8-15) When you go online do you visit sites or apps about news and what is going on in the world, for instance BBC news, CBBC Newsround, newspaper websites like the Daily Mail or the Guardian, or news apps or sites like Buzzfeed? **IF YES** - Do you believe that all of the information you see on these sites or apps is true, most of it is true or just some of it is true? The graph shows percentage of those who do visit such sites (N=589) who say "all is true". For ages 16-21, the plot shows those who answer IN41A (N=121) who respond with option 5.

Orange line: QC26 (ages 8-15) This is a picture from a Google search for 'children's trainers' (SHOWCARD C26). (SHOWCARD C26A, which showed the first three results at the top of the list, which were distinguished by an orange box with the word 'Ad' written in it) Do you know why the three results at the top of the page have been listed first? The graph shows respondents who use search engines (N=908) who chose the 'right answer' (option 1). For ages 16-21, the plot shows those who use search engines (N=149) who answer IN52 (SHOWCARD: Here's an image from a Google search for 'walking boots'. Do any of these apply to the first three results that are listed?) who respond with the option 'These are adverts/ sponsored links/ paid to appear here.'



Note that Ofcom also asked whether children thought all the information on social media sites was true, but only 2% of 8-11 year olds and 4% of 12-15 year olds agreed with this – fewer than in 2015, and fewer than adult respondents from the 2015 survey also.

In relation to trusting Google search results, Figure 2, below, shows the results for search engine users aged 8-21. This suggests that:[8]

- **With increasing age, children gain the commercial literacy to realise that some but not all search engine results can be trusted. However, there is no strong increase in understanding through the early teens, the main gain being among younger children.[9]**

- On this basis, one might conclude that 13 year olds are almost as literate as 16 year olds (it being younger internet users who lack commercial literacy).

[8] Note that some sample sizes for children 8-15 fall below 100, and those for 16-21 year olds are considerably smaller and so should be treated as indicative only.

[9] Note: Data for 8-15 year olds from QC24 (When you use Google to look for something online, you are given a list of websites in the Google results page). All answer options are shown, with option 2 in green being the 'right answer'); N=748. Equivalent data for 16-21 year olds from IN45; N=149.

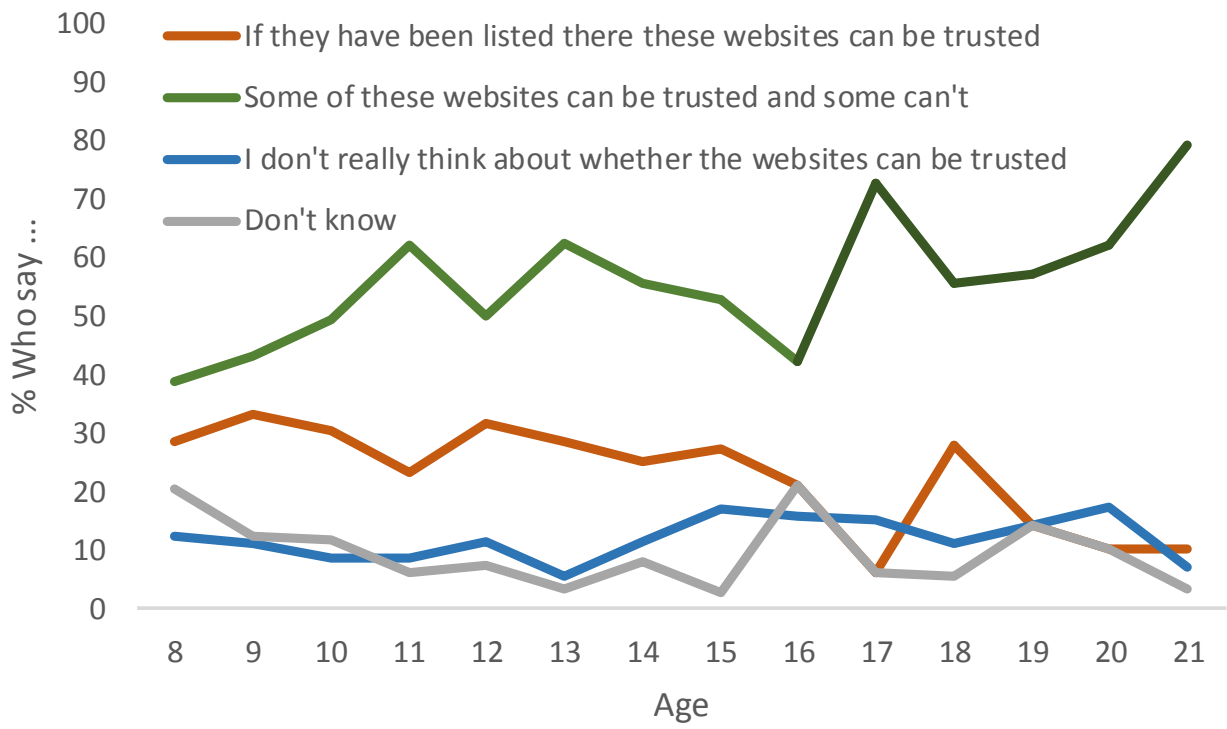
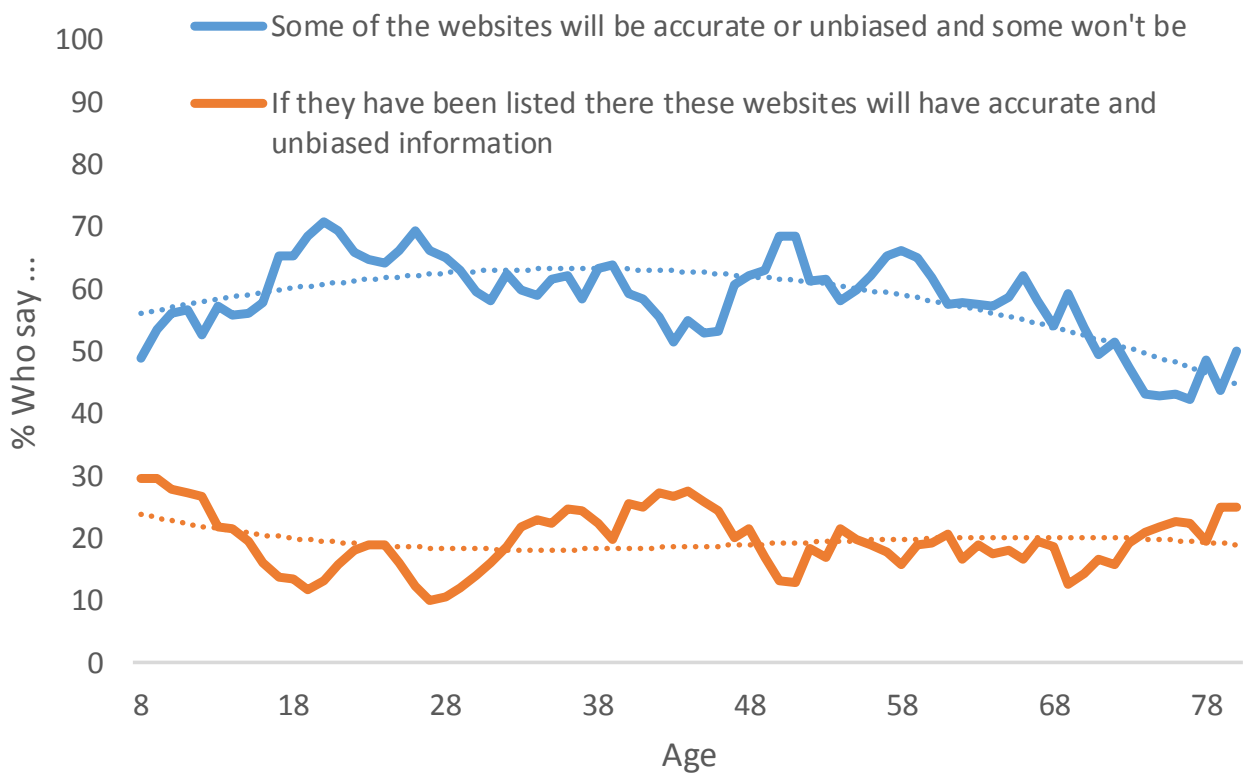


Figure 3, below, shows the same data across the adult age range, revealing that:[10]

- Both younger and older people have somewhat lower levels of critical digital literacy compared with those aged around 30 to 60.
- The gains made through adolescence continue up to the late 20s, with no obvious cut-off in commercial literacy terms at the age of 16.
- Also noteworthy is the finding that **around one third of adult internet users believe that Google results can all be trusted**. This suggests the need for greater transparency from search engines and/or greater digital literacy education for all adults, not just children.

[10] Note: Data from IN45: When you use a search engine to find information, you enter a query in the search box and the search engine will then show some links to websites in the results pages. Which **one** of these is **closest to** your opinion about the level of accuracy or bias of the information detailed in the websites that appear in the results pages? N=1328. The graph shows a 5-year smoothed line, which is reliable, but it should not be interpreted in relation to any particular year.



Indicators of commercial literacy for 12-15 year olds

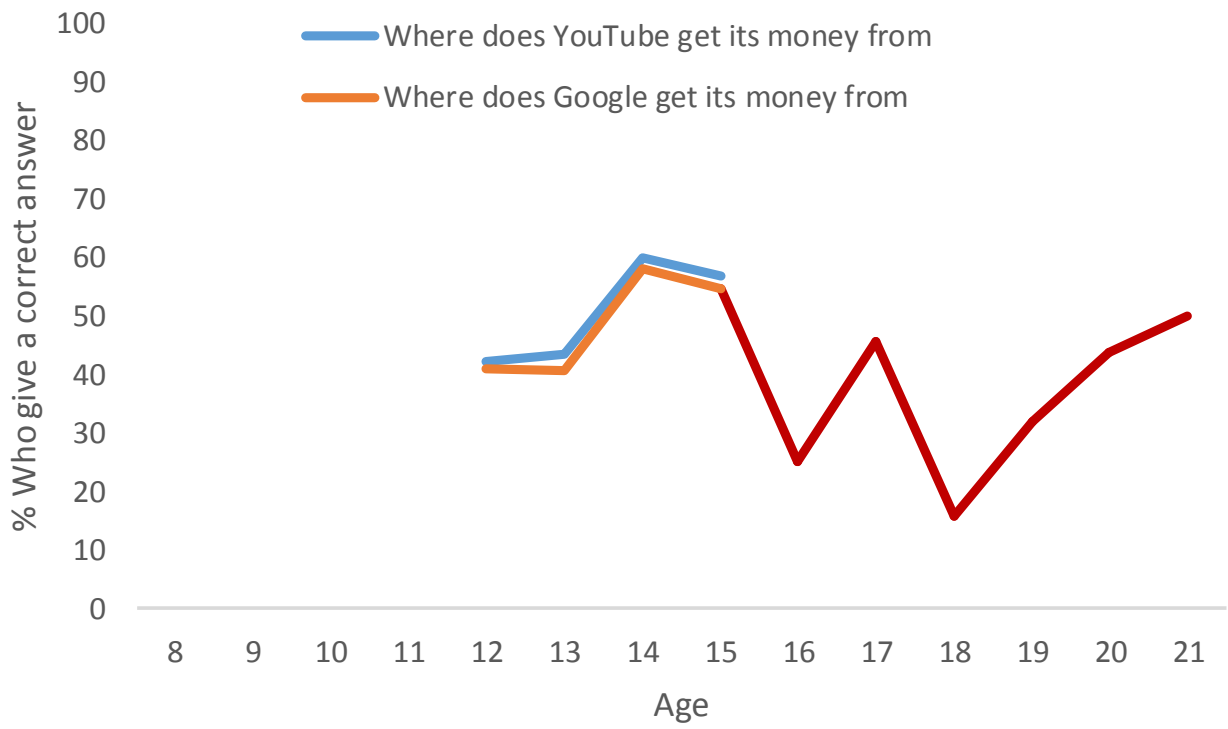
Ofcom asks children and adults if they know how media are funded, as an indicator of commercial literacy. Figure 4, below, shows answers for YouTube and Google:[11]

- **This graph suggests a marked increase in children's commercial literacy from the age of 12 to 15 years old.[12]**
- Interestingly, the answers for Google suggest that 14 and 15 year olds have greater literacy than older teenagers and young adults.

[11] Note that some sample sizes for children 8-15 fall below 100, and those for 16-21 year olds are considerably smaller and so should be treated as indicative only.

[12] Blue line: QC9 Where do you think YouTube mainly gets its money from (asked only of 12-15 year olds who use YouTube; N=407), with the graph showing the percentage who chose option 3 (the 'right answer' – advertising).

Orange line: QC25 Where do you think Google mainly gets its money from (asked only of 12-15 year olds who use search engines; N=409), with the graph showing the percentage who chose option 3 (the 'right answer' – advertising). This line has been extended with the adult data for search engine users, using question IN33 (options 6 and 8 are the correct ones, according to Ofcom 2016 p.137 footnote); N=158.



It is worth noting that combining children's data with data from adults across the age range gives little confidence that commercial literacy continues to increase with age, or that parents have the necessary knowledge to protect their children. Indeed, **the majority of UK adults (including many parents) do not know how Google is funded.**[13]

Last, through questions asked only of 12-15 year olds, the Ofcom data suggests that children do gain greater commercial literacy by the age of 15 compared with what they know at 12 or 13 years old, as shown below. Figure 6, below, shows that:[14]

- **From 12 to 15 children's commercial literacy rises considerably, as they learn that advertising is personally targeted (blue line) and that vloggers are paid to promote products (orange line).**[15]

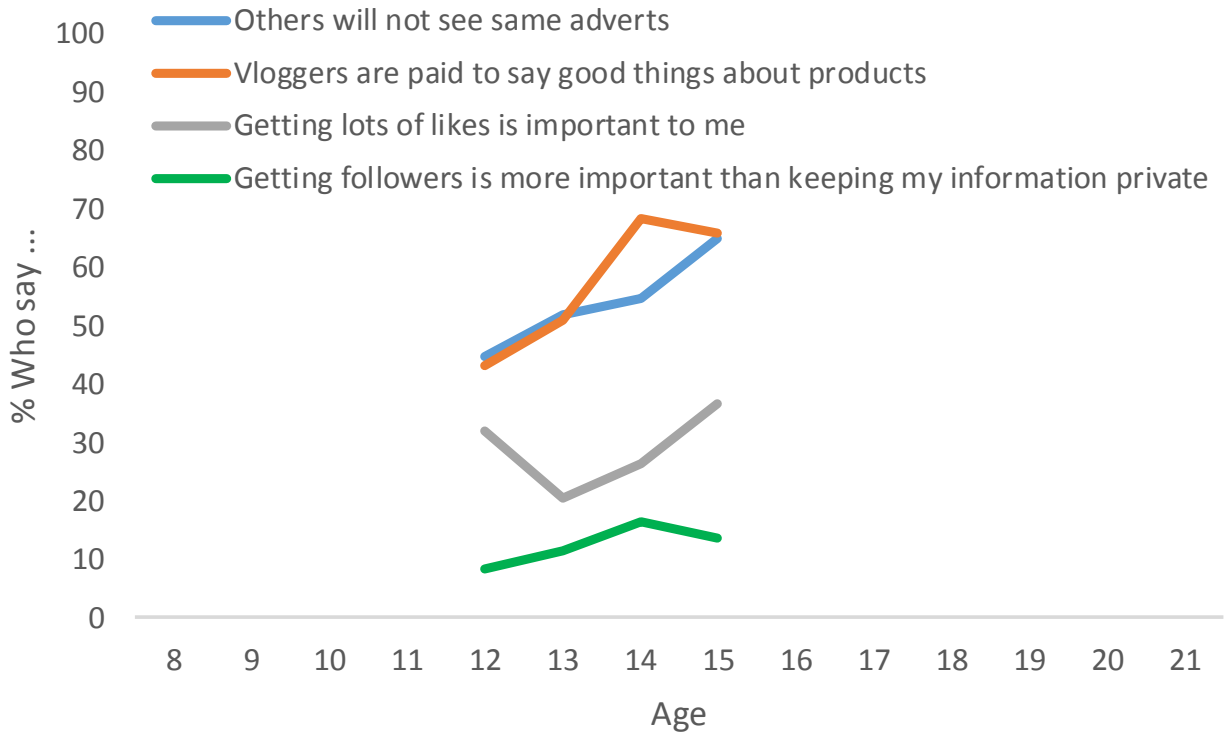
- The graph also shows, albeit less clearly, that from 12 to 15 children become more likely to value getting 'likes' online and more likely to provide personal data in order to gain 'followers'.

[13] According to Ofcom's 2015 data, 46% of adults aged 16+ gave the correct response, 22% an incorrect response, and 32% said they did not know.

[14] Note that some sample sizes for children 8-15 fall below 100.

[15] Note: data from children's survey: QC32 (N=463) When someone else visits the same website as you, do they see the same adverts? Option 2 (right answer) is shown. QC33 (N=463) Why do vloggers say good things about a product? Option 1 (right answer) is shown. QC22A (N=335) Getting lots of likes is important to me (social media users only). QC22B (N=335) Getting followers is more important than keeping my information private (social media users only).

- Thus, it is by no means clear that a critical understanding of the digital environment results in cautious behaviour regarding personal data protection.



What can we conclude?

The intent of the GDPR is to reduce children's vulnerability to commercial and data risks. Broadly speaking, teenagers' commercial media literacy increases from the ages of 12 to 15 (although not necessarily much more thereafter). This suggests that requiring parental consent up to the age of 16 would have benefits in terms of children's privacy and data protection.[16]

- In other words, since the evidence suggests that children progressively gain in media literacy with age, experience and maturity, it can be concluded that they should rightfully be protected by parents and regulation when younger.

- However, as children grow older, setting rules that they are not allowed to be on social networking sites becomes less effective.[17] The requirement for parental consent could, therefore, result both in increased deception and evasion on teenagers' part and, possibly, inequalities in who can or cannot obtain parental consent.

[16] It might also bring benefits in terms of a reduction in safety risks, though there are many indeterminacies here. We note that a parallel analysis could be conducted on Ofcom's data on risk by age.

[17] EU Kids Online found across Europe that some 30% of 16 year olds whose parents wouldn't allow them to use social networking sites did so anyway.

- Alternatively, it could be argued that the present findings show the benefit of school-based media literacy education enjoyed by older teens and, if extended more systematically to younger children, this would serve to protect their privacy from commercial exploitation even without parental oversight.[18]

- In short, the observed gap in commercial literacy between 13 and 16 year olds could be filled by more and better media education in school for all children, certainly from 11 years old (ready for 13), if not earlier, so they learn the critical skills needed to protect themselves in the commercial environment.

- Also likely to prove effective would be fairer dealing with children by companies so that they understand better, from a younger age, how online services are funded, how their data are treated, and what choices and forms of redress are available to them.

Looked at this way, the present data measure the size of the gap to be filled, to bring 13 year olds up to the knowledge of 16 year olds (and, ideally, to bring up the knowledge of the entire population from present insufficient levels of knowledge about the commercial environment and the conditions of online data exploitation).[19]

If the UK selects 16 rather than 13 as the age for parental consent of children's internet use, to the likely dismay of teenagers, also important would be the likely costs in teenagers' reduced opportunities for creative, educational, civic and communicative activities online.[20]

As ever, children's rights to protection online must be considered in the light of their provision and participation rights, reconciling potential conflicts of rights and seeking their best interests overall.

[18] The UK computing curriculum states that from Key Stage 1 (ages 5-7), children should be taught "use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies." See https://www.gov.uk/government/publications/national-curriculum-in-england-computing-programmes-of-study/national-curriculum-in-england-computing-programmes-of-study However, this is not a compulsory school subject and it is not clear when or who is taught it.

[19] In a future analysis, we could seek the factors that predict children's levels of commercial literacy (such as gender, social grade, extent of internet experience, parental mediation). Most valuable would be the effort to predict (via multiple regression) the commercial literacy correlates of QC26 and QC24. Thus we might discover who would be more vulnerable should the decision be taken to reduce the parental consent requirement in GDPR article 8 from 16 to 13 years old.

[20] Ofcom (2016) notes that among 12-15-year-old internet users, 44% used an internet-enabled device to make a video, 18% music, 16% an animation, 13% a website, 11% a meme or gif, 9% an app or game, 6% a vlog and 4% a robot. Further, 30% of 12-15 year olds have gone online for civic activities such as signing a petition, sharing news stories, writing comments or talking online about the news.