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Risky social networking practices among 'under-age' users: Lessons for evidence-based policy

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Abstract

European self-regulation to ensure children's safety on social networking sites requires that providers ensure children are old enough to use the sites, aware of safety messages, empowered by privacy settings, discouraged from disclosing personal information, and supported by easy to use reporting mechanisms. This article assesses the regulatory framework with findings from a survey of over 25000 9-16 year olds from 25 European countries. These reveal many under age children users, and many who lack the digital skills to use social networking sites safely. Despite concerns that children defy parental mediation, many comply with parental rules regarding social networking. The implications of the findings are related to policy decisions on lower age limits and self-regulation of social networking sites.

Keywords

Children, social networking sites, skills, risk, privacy, Internet

The social networking skills and practices of 'under-age' users: Lessons for evidence-based policy

Social networking among children and young people

In the last few years, a new type of communicative practice – social networking - has swept the internet-using world, seamlessly converging one-to-one, one-to-many and, especially, some-to-some communication within closed or partially closed circles of peers on social networking sites (SNSs). Since SNS communication is multimodal (text, image, video, sound), incorporating messages, chats, photo albums, blogs, and other applications, it affords users both opportunities and risks. Although most SNSs were designed for and primarily are used by adults, children and young people have taken up social networking with alacrity, and it is reshaping youthful practices of communication, identity and relationship management (Livingstone, 2008; Patchin & Hinduja, 2010).

For parents, child protection experts, and other policy makers, youthful social networking is raising many safety concerns, since the young are still developing the social and emotional competencies to manage self-expression, intimacy, and relationships (Coleman & Hagell, 2007). Evidence of online bullying, harassment, grooming, and other forms of potentially harmful or inappropriate conduct and contact adds support to the view that, if young users are ineffective in managing online privacy and intimacy, the costs to their safety and well-being may be considerable (Erdur-Baker, 2010). In response, the internet industry has developed a range of consumer strategies and technical tools to minimize these risks, ranging from a straightforward attempt to ban children younger than 13 years old from using these sites, or in certain cases to design SNSs strictly for children, to the provision of safety tools such as privacy settings, 'report abuse' buttons, reactive content moderation services, management of default safety settings, and safety guidance for children and parents. But little is known about the effectiveness of these industry provisions or their take up by users, and regulators are concerned that the services available to children should meet the standards for children's services.

In Europe, following the principles for regulating information society established in the Bangemann report (1994) and the European Council's (1998) *Recommendation on the establishment of a framework for comparable and effective protections of minors and human dignity*, forms of co- or self-regulation are widely practiced, being strongly preferred to legislative solutions especially in the fast-moving, international and technologically-complex domain of the internet (Tambini, Leonardi & Marsden, 2008). Held (2007: 357) distinguishes between co- and self-regulation noting that co-regulation includes all of four features of regulation, while self-regulation omits those that rely on the state (i.e. 2 and 4):

> '(1) The system is established to achieve public policy goals targeted at social processes;

> '(2) There is a legal connection between the non-state regulatory system and the state regulation;
>
> '(3) The state leaves discretionary power to a non-state regulatory system;
>
> '(4) The state uses regulatory resources to influence the outcome of the regulatory process (to guarantee the fulfillment of the regulatory goals).'

In the absence of such a role for the state, it is particularly important for industry to ensure that outcomes fulfill the regulatory goals. Ideally, this should be observed and evaluated independently by researchers, child welfare organizations, experts in compliance, and so forth. The *Safer Social Networking Principles for the EU* (2009a), facilitated and monitored by the European Commission's (2009b) Safer Internet Programme, has been signed by most major providers operating in Europe. These Principles state that SNSs[1] should apply seven broad forms of protection:

1. 'Raise awareness of safety education messages and acceptable use policies to users, parents, teachers and carers in a prominent, clear and age-appropriate manner;'
2. 'Work towards ensuring that services are age-appropriate for the intended audience', using measures to ensure that under-age users are rejected and/or deleted from the service.
3. 'Empower users through tools and technology', including privacy provisions that ensure that profiles of minors are set to 'private' by default, that users can control who can access their full profile, that allow their privacy settings to be viewed at all times, and that ensure that the profiles of underage users are not searchable;
4. 'Provide easy-to-use mechanisms to report conduct or content that violates the Terms of Service;'
5. 'Respond to notifications of illegal content or conduct;'
6. 'Enable and encourage users to employ a safe approach to personal information and privacy' (e.g. information used for initial registration or information visible to others) to enable informed decisions about what they disclose online;
7. 'Assess the means for reviewing illegal or prohibited content/conduct.'

While the benefits of social networking are many, media coverage amplifies the perceived risk of harm: recent examples include "Facebook murderer who posed as teenager to lure victim jailed for life" (Carter, 2010), "Teens charged in attack on third teen after Facebook post" (D'Marko, 2011), "Doctors warn of teen 'Facebook depression'" (Tanner, 2011). On the assumption, implicit or explicit, that older children have the resilience to cope with risks (so that they do not result in harm), a core purpose of the above Principles is to prevent children judged too young to cope with certain kinds of content or conduct online, from being exposed to them,

either by implementing age-specific protections (usually minors aged under 18) or by preventing users younger than (typically) 13 years. Similarly, relevant legislation concerns consumer protection, privacy rights, and particularly in relation to children, age restrictions. Most significant, the US COPPA law prevents commercial services being offered to children under 13 years old without verifiable parental permission (Federal Trade Commission, 1998). Since several social networking services are used across borders, US based SNSs, such as Facebook, set a lower user age limit of 13 years.

On the internet no-one knows who is an adult and who a child, and SNSs rely heavily on users' professed ages or dates of birth (boyd & Hargittai, 2010). However, many question the effectiveness of the existing age verification techniques, suspecting that some users are 'under-age'. More generally, evidence regarding the effectiveness or otherwise of age restrictions relies on the SNSs' self-declaration reports as independently monitored by professionals commissioned by the EC, rather than on direct knowledge of children's use of SNSs. This article reports the findings from large, multinational survey of 9-16 year olds that included questions about their social networking practices, their management of privacy, and their use of safety tools, and parental mediation. The survey questions examine the practices of SNS use as experienced and reported by young users. Setting aside Principles 5 and 7, which address illegal content (which for ethical reasons could not be addressed in the survey), we investigate five research questions related to the remaining Safer Social Networking Principles.

- RQ1: Are under-age children (for most sites, under 13 years old) using SNS? (cf. Principle 2).
- RQ2: Are the settings of minors (under 18 years old) set to private? (cf. Principle 3)
- RQ3: Are children who use SNS aware of safety messages regarding online risks? (cf. Principle 1)
- RQ4: Are users able to use the SNS mechanisms provided to manage problematic experiences? (cf. Principle 4)
- RQ5: Are users able to manage their personal information safely on their SNS profile? (cf. Principle 6)

In relation to the first question on which children use SNSs, we inquire into the effectiveness of parental mediation in relation to children's internet use (Livingstone & Helsper, 2008; Thierer, 2009) in order to determine the policy balance between industry and parents' responsibility.

- RQ1a: Are parental rules, when applied, effective in banning children from having an SNS profile?

The research questions investigated in our analysis flow directly from the framing of the regulatory principles. However, the research project underlying this article was guided by a theoretical framework constructed to explain children's online experiences. Following Bronfenbrenner's (1979) ecological model of children's social development, this encompasses

individual factors (demographic, psychological), forms of social mediation (parental, peer, school) and country-related characteristics (socio-economic, technological, educational, regulatory, cultural values) hypothesized to account for children's online activities. Following the new sociology of childhood (James, Jenks & Prout, 1998), we argue that online activities are inherently neither beneficial nor harmful; rather, outcomes depend on the above factors in combination with the characteristics of internet use (notably, the nature, frequency, and context of use – including privacy, level of digital literacy and safety skills and coping skills; Livingstone, Haddon, & Görzig, in press). The interactions among these variables are not well understood, but clearly the digital literacies required to use social networking sites will depend in part on the affordances of these sites and the complex intertwining of the socio-cognitive and technological determinants of user agency (Bakardjieva, 2005).

Method

Survey sample and procedure

A random stratified sample of approximately 1000 internet-using children aged 9-16 years was interviewed in each of 25 European countries (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, the UK). These countries were selected to represent the economic, geographic, and cultural diversity of European countries (including all large and most small countries in the European Union - EU) plus Norway (the earliest adopter of the internet in Europe) and Turkey (a culturally diverse, late internet-adopting, and aspiring member of the EU). It is beyond the scope of this article to examine cross cultural differences except insofar as they derive from the specific affordances of the nationally dominant SNS (but see Lobe, Livingstone, Ólafsson, & Vodeb, 2011, for comparative country findings).

The total child sample was 25,142; one parent (the one who knew most about the child's internet use) was also interviewed. In depth interviews permitted careful exploration of the contexts of children's internet use as well as detailed accounts of the nature, skills, and social mediations that characterize their use. The questionnaire, translated and back-translated from English into 24 languages, underwent cognitive testing and pilot testing to aid completion by children. Interviews took place during spring and summer 2010 in children's homes, conducted face-to-face but with private questionnaire completion (computer-assisted or pen-and-paper) for sensitive questions related to risk. Average interview time per child was 45 minutes (see Ipsos/EU Kids Online, 2011).

Measures

Variables were measured as follows (see Table 1).

Dependent variables:

- Use of SNS: 'Do you have your OWN profile on a social networking site that you currently use, or not?' (yes = 1, no =0). Those who said yes (N=15,303 unweighted) were asked: 'Which social networking profile do you use? If you use more than one, please name the one you use most often.' Further questions were prefaced thus: 'For the next few questions I'd like you to think about the social networking profile that you use most often.'
- Digital skills (11-16 year olds only): 'Which of these things do you know how to do on the internet? (1) Change privacy settings on a social networking profile. By this I mean the settings that decide which of your information can be seen by other people on the internet. (2) Block messages from someone you don't want to hear from. By this I mean, use the settings that let you stop someone else getting in touch with you on the internet. (3) Find information on how to use the internet safely.'
- Privacy: 'Is your profile set to …? Public, so that everyone can see. Partially private, so that friends of friends or your networks can see. Private so that only your friends can see.'
- Disclosure: 'Which of the bits of information on this card does your profile include about you? A photo that clearly shows your face. Your last name. Your address. Your phone number. Your school. Your correct age. An age that is not your real age.'

Independent variables (child):

- Age: 9-16 years; for logistic regression this was centered on 12 years.
- Gender: coded as girls = 1, boys =0.
- Frequency of internet use: 1=daily, 0=less than daily.
- Location of internet use: in their own bedroom, at home but not in their own bedroom, elsewhere only; represented by two binary variables comparing each type of non-bedroom access with having access in the bedroom.
- Mobile use: access the internet using a mobile phone, a mobile device or neither; represented by two binary variables comparing those who have access via each type of mobile device with those who do not have mobile access.
- Time spent online: in minutes, estimated by combining answers to "About how long do you spend using the internet on a normal school day / normal non-school day?"
- Country of residence: 24 binary variables with the UK as a reference point.
- Name of SNS used: six binary variables, as explained below, with Facebook as reference point.

Independent variables (parent):

- Parental rules: 'Is your child is allowed to [Have his/her own social networking profile] all of the time, only with permission/supervision or never allowed?' This was coded into two dummy variables comparing (a) those allowed to do this only with permission/supervision vs. those allowed to do it all the time, and (b) those never allowed to do this vs. those allowed to do this all of the time.

Table 1 about here

Data analysis

For the descriptive statistics, data were weighted using design weights to adjust for unequal probabilities of selection; non-response weights to correct for differing levels of response across population subgroups; and a European weight to adjust for country contribution to the results according to population size. Data for the multivariate analysis are not weighted. For full details of sampling and procedures, see Ipsos/EU Kids Online (2011).
A logistic regression analysis was conducted to estimate the influence of the independent variables on the likelihood of a child having a SNS profile. Odds ratios show how a change in the independent variables relates to the likelihood of the child having a profile. Logistic regression models are non-linear and if the results are reported as predicted probabilities, they depend on the coding of independent variables in the model. Continuous variables are centered on a number close to their mean.

Results

SNS use among European children

Fifty-nine percent of 9-16 year olds who use the internet in the 25 European countries surveyed – 38% of 9-12 year olds and 77% of 13-16 year olds - have their own SNS profile. Among online activities, social networking is one of the most popular, after using the internet for school work – 85%, playing games – 83%, and watching video clips – 76% (Livingstone, Haddon, Görzig, & Ólafsson, 2011). Age differences are large (ranging from 26% of 9-10 year olds to 82% of 15-16 year olds), while gender differences are small (60% girls, 58% boys). Country differences are also sizeable, ranging from 46% in Romania to 80% in the Netherlands. These may reflect differences in broadband penetration, parenting practices, or youth peer cultures, or may be the result of the characteristics of the SNS in that country (SNSs vary in their affordances and in most countries there is a dominant SNS).

Out of the 76 different SNSs named by children in the survey, and after discarding SNSs mentioned by fewer than 100 users, the survey revealed six SNSs - Nasza-Klasa in Poland, schülerVZ in Germany, Tuenti in Spain, Hyves in The Netherlands, Hi5 in Romania (and, as a

secondary service, in Portugal), and Facebook – as being dominant in 17 of the 25 countries. Facebook is the only or main SNS for 57% of 9-16 year olds with an SNS profile, across the whole survey sample (and for 34% of all internet-using children). Also, though not further analyzed here, at the time of the survey, Iwiw and Myvip divided the market in Hungary, with other SNSs used as secondary services in some countries (e.g. MySpace, Bebo). Table 2 summarizes the main characteristics of these sites.[2]

Table 2 about here

SNS use among under-age children

RQ1 asks about under-age children's use of SNS. For Facebook and Hi5 (following the US COPPA law), minimum age for registration is 13; for Tuenti (as mandated by Spanish child protection legislation) it is 14; for schülerVZ, it is 12 (the site is linked to the secondary school system); for Hyves and Nasza-Klasa, there is no age limit (although for Hyves users under 16, the site states as an assumption that children will obtain parental consent; see Lobe & Staksrud, 2010).

Figure 1 displays country differences in SNS use by age. There is a generally positive trend across age such that the more teenage SNS users in a country the higher is the participation of younger children, although in the countries in the lower right hand quadrant (Norway, UK, Belgium, Ireland, France - all 'Facebook countries'), under-age use (by 9-12 year olds) is less common despite widespread use by teenagers. In Germany, where schülerVZ is dominant, the age restriction (of 12 years old) is largely maintained, possibly because registration is tied to school affiliation, a condition that applies also to Tuenti in Spain.

Lack of an effective age restriction on the dominant sites in Hungary, Poland, and the Netherlands seems to result in a higher than average proportion of 9-12 year olds, and this is also the case in Lithuania, where the most used SNS, One.lt, seldom enforces its stated age limit of 14, according to the EC assessment of implementation of the Principles. The presence of some 'Facebook' countries in the upper half of the figure also raises questions about the possible variable implementation of age restrictions by Facebook across countries.

Figure 1 about here

While the Principles assign to SNS providers responsibility for ensuring that 'under-age' children do not register, which the above findings suggest they are not meeting, parents are also accountable. Figure 2 compares SNS use among children of different ages according to whether their parents ban, monitor, or permit SNS use. It suggests that parents are moderately effective notwithstanding popular claims that children will evade or ignore parental strictures if they choose. However, there is a clear relation between parental restrictions and age: among children

whose parents impose no restrictions, most have an SNS profile (ranging from 71% of 9 year olds to 92% of 16 year olds). Among those whose parents ban their use of SNS, the age difference is even more marked: younger children appear to respect parental regulation (e.g. only 3% of 9 year olds whose parents ban SNS use have a profile) but from 13 years old, a minority of teenagers flouts parental bans (rising to 30% of 16 year olds). For all groups, there is a rise in SNS use around 13 years, the age at which most sites permit registration, although the more striking finding is that if parents ban SNS use for children over 13, most children do comply.

Figure 2 about here

The probabilities of a child having a SNS profile, based on age, parental restriction, and country reveals that 9 year olds in Hungary (22% have profiles), Lithuania (17%), Estonia (14%) and Poland (13%) are most likely to ignore parental bans. One could speculate that, as relatively recent entrants to the EU, these countries are new to both mass internet use (children and parents may lack the necessary digital skills) and the regulatory context being established by the European Commission.

SNS users' privacy settings

RQ2 refers to SNS profile settings among legal minors, that allow unknown others to view their full profiles (i.e. 'public', part public and part private - 'friends' and 'friends of friends' can view their profiles, or private - only friends can see them). Principle 3 of the European self-regulatory guidance states that private should be the default setting, and together with protections concerning the searchability of children's profiles, this would protect children from inappropriate or harmful contacts from unknown other users (although not from 'friends'). Among social network users, 43% keep their profiles private to all but friends; 28% have profiles that are part public-part private, allowing friends of friends to see them; 3% claimed not to know their privacy settings (Livingstone, Haddon, Görzig, & Ólafsson, 2011). Not knowing is an interesting indicator of digital skill, ranging from 9% among 9-10 year olds to just 2% of 15-16 year olds. It is also an indicator of the user-friendliness of the network design, with only 1% of Tuenti users admitting not to know their setting compared to 5% of Nasza-Klasa and Hi5 users. Twenty-six percent of the children surveyed set their profiles to public, allowing anyone to see them.

Country differences are substantial, ranging from public profiles for 50% of children in Hungary (and almost the same percentages in Poland and Turkey) to only 11% in the UK (with similar low levels in Ireland, Norway, and Spain; Tables 3 and 4). This may reflect familiarity with the internet (early adopter countries making more use of privacy settings) or the relative success of awareness raising strategies, more prominent in some countries than others. Since

'Facebook' countries include those where high and low percentages of children set their profiles to private, it seems unlikely that the differences are due to features of the SNS.

Children's awareness of online safety messages

RQ3 refers to children's awareness of safety messages regarding online risks (cf. Principle 1). Although the survey only measures children's self-reported ability to find information about safeguarding against online risks, the responses are encouraging. Over two-thirds (70%) said they did not know where to find such information, ranging from over half of children in Turkey and Italy, to almost four-fifths of children in Austria, Estonia, Finland, the Netherlands, and Slovenia. It is unclear whether the greater difficulties faced by children in Cyprus, Hungary, Turkey, Italy, and Denmark are due to the design and availability of safety information online, the levels of awareness raising in these countries, or the digital skills of the children.

Table 3 about here

Table 4 about here

Use of SNS mechanisms to manage problematic experiences

RQ4 refers to the use of SNS mechanisms provided to manage problematic experiences (cf. Principle 4). Several mechanisms should be available, including the facility to block unwanted messages from other users (since these might be bullying, harassing, or grooming). Three-quarters (76%) of 11-16 year olds say they can block unwanted messages, although ability depends on age: 58% of 11-12 year olds and 80% of 15-16 year olds know how to block unwanted messages.

More important, perhaps, than blocking unwelcome messages is the child's ability to impose privacy on his or her profile, especially as SNS are often used without adult supervision. Tables 3 and 4 show considerable variation in children's SNS management skills by country and age. On average, 72% say they can change their privacy settings, with the highest percentage in Finland (91%), followed by Sweden (89%), Slovenia (88%), Norway (87%), and Denmark (86%). Children's ability to manage privacy settings varies by SNS – with the highest skills reported by Hyves users and the lowest by Hi5 users (see Table 4). This might be attributed to the specific features of the SNS. For example, Hi5 profiles are set to public by default and settings are not easy to find on the site; features such as "Flirt" (where one can search for dates) might make the user choose to maintain a public setting. Although profiles on Hyves are also public by default, many parents insist they are reset to private. This reflects the greater familiarity with the internet than the parents of Hi5 users (Romanian), and to potential country level differences in user experience. None of the SNS can be said to provide settings that are

easily manageable by children. For example, despite the popularity of Facebook (increasing even in countries where other sites, such as Hyves or Hi5, have dominated hitherto), one in four Facebook users said they could not change their privacy setting.

Disclosure of personal information on SNS profiles

RQ5 refers to whether users can manage/protect personal information on their SNS profile (cf. Principle 6). The related survey question asked whether the child revealed "address or phone number on your SNS profile" – a significant disclosure given the emphasis in guidance to children and parents that such information should not be disclosed online. The survey responses show that few children do provide this information: only 11% revealed their addresses (although the numbers are higher in Hungary, Lithuania, and Turkey) and only 7% reveal their phone numbers (with higher numbers in Lithuania and Estonia). It can be concluded, therefore, that , in practice, children do not disclose personal information. However, there are differences among sites, with users of Nasza-Klasa disclosing the most information and users of Tuenti disclosing the least (Table 4).

Explaining children's SNS use

We take advantage of this sizable and rich dataset to try to explain which children use SNS (policy concern focusing on under-age users), and which children have their profiles set to public (supposedly increasing vulnerability to a range of online risks). First, since just over half of European children use SNS, with considerable variation by age and country, we conducted a logistical regression to identify the factors that explain which children have profiles (see Table 5). It was expected that older children and those with no parental restrictions on SNS use would be more likely to have SNS profiles.

Model 1, which measures the effect of gender and age, shows that the likelihood of a child having his or her own SNS profile increases substantially with age (by 56% for each additional year) and that girls are 30% more likely on average than boys to have a profile. Model 2 includes the amount of internet use (whether daily or not, plus minutes per day online) and the locations for accessing the internet (a proxy for flexibility and privacy of use). This improved the model fit, but the coefficients for gender and age were mostly unchanged. Daily internet users are twice as likely as other children to have a SNS profile, and the likelihood of having a SNS profile increases by about 40% for each additional hour of internet use. Not having access to the internet in their own bedroom decreases the likelihood of a child using SNS by around 30% (compared to children with access in their bedrooms), and not having access at home decreases the likelihood even further. Mobile access increases the likelihood of using SNS, but mainly for those children with access via a handheld device (e.g. a smart phone).

Model 3 adds parental restrictions on SNS use, which considerably improves the model fit. Children whose parents say that they restrict their child's SNS use are much less likely to have a SNS profile than those whose parents who do not impose restrictions: if parents only permit the child to use SNS under supervision, the likelihood of the child having a profile decreases by 57%; if the parent does not permit any SNS use, the likelihood of the child having a profile decreases by 97%. As Figure 2 suggests, the effectiveness of parental restriction depends on the child's age. Thus, in Model 4 we test the interaction between age and parental restrictions, and between age and gender (interaction effects among other variables in model 3 were not significant). Although this produced only a limited improvement in the model fit, it is statistically significant and provides a better explanation for SNS use. The difference between models 3 and 4 is a reduction in the coefficient of age (from 1.21 to 1.12), indicating that the observed age difference in SNS use is partially explained by different parental rules for children of different ages. Specifically, the older the child, the more likely they will set up a SNS profile even if their parents do not permit this. The small interaction effect between age and gender indicates that the likelihood of having a SNS profile increases with age slightly more for girls than for boys.

Adding countries to the model did not improve the model fit, suggesting that observed country differences are primarily due to factors already measured – frequency/amount of internet use, parental permission, usage location – rather than to cultural or other factors differentiating countries. Similarly, for the interaction between countries and parental restrictions (i.e. whether parental restrictions have different effects in different countries), this is statistically significant but does not provide real improvement in the model fit.

Table 5 about here

The second logistic regression analysis estimates whether the factors that influence the likelihood of having a SNS profile influence the likelihood that the child's profile will be set to public. Additionally, the model estimates whether the particular SNS (out of the six main sites) makes a difference. Since SNSs other than Facebook are largely confined to single countries, country differences are controlled for in the model (to isolate the differences between SNSs). The model shows that older children are more likely to have public profiles (see Table 6). Also important is the amount of time spent online, with each extra hour on the internet resulting in a 7% increase in the likelihood of the SNS profile being set to public. Children only permitted to use SNS under supervision are less likely to have public profiles, as are children whose parents say that they do not allow them to have SNS profiles. Specific SNSs make a difference – Nasza-Klasa users (in Poland) are very likely to have a public profile, while Tuenti and Hi5 users are less likely to do so. Compared to children in the UK, children in all other European countries (except Ireland) are more likely to have public profiles.

Table 6 about here

Conclusions

Three main players participate in the practical management of online risks to children – the industry providers of content and services, parents, and children. The recent rise in the popularity of social networking services has set these groups at odds; providers generally intend these services for adults, thus setting a lower age limit of 13 years or thereabouts, while children have grasped this new opportunity to pursue friendships online, widen their social circles, develop intimacy, and, most often, to chat about anything and everything in their daily lives. Parents are caught in the middle, wanting their children to 'fit in' with their peers but on the whole aware that these services were not designed for use by children.

The aim of the present paper was to compare the European Safer Social Networking Principles with children's social networking practices and experience. We conceptualize children's activities online as emerging from the interaction between technological affordances (in this case, of social networking sites) and their specific contexts of internet use, skills, and literacies, as shaped within concentric circles of social influence (here, peer norms and parental mediation) and country factors (not examined here, but pertinent to the interpretation of observed country differences). Logistic regression analysis found that older children, girls, and those who use the internet frequently, particularly if they have access to flexible/private locations for use, are more likely to have SNS profiles. Further, the age difference for SNS use partly results from parents' different rules by age – restricting younger children more and older children less - and partly results from older children being less compliant (more likely to have a SNS profile even though their parents do not permit it). A second logistic regression showed that the explanation for why a quarter of children make their SNS profile public depends on age, time spent online, the specific SNS site used, and parents who do not restrict their SNS use.

While variation by age, parenting, SNS used and country can be expected in studies of childhood and media, it poses a problem for the standardization of outcomes required by policy makers, especially when regulation is applied cross-nationally. What do the present findings mean for the recently implemented self-regulatory framework designed to ensure children's safety on social networking sites, *Safer Social Networking Principles for the EU* (2009)? Since this represents a major policy effort by multiple actors across industry, child welfare, educators, and governments to minimize the risks associated with social networking for children, and since it also illustrates European commitment to promote self-regulatory rather than legislative solutions to the internet, much rests on evaluating whether SNS providers do, as promised, ensure safety measures are available, accessible, and sufficient.

This article compares the requirements set by the Principles with the skills and practices of children and the rules set by parents. While recognizing that the lower age limits varies among SNS, the most striking finding (relating to RQ1) is that current age-restriction mechanisms are

not effective; 38% of 9-12 year olds use SNSs, many on sites that specifically ban their age group. Moreover, although many younger children use SNSs despite the service declaring it is not permitted, most (especially younger children) do comply with parental rules. However, the subtle interaction between SNS terms of service and parental expectations is clearly under pressure from peer norms (Pasquier, 2008).

Some policy stakeholders argue that it is of little consequence if younger children use these sites provided their profiles are private. Indeed, the Principles require the profiles of all those under 18 to be set to private. However, one in four 9-16 year old SNS users claims that his or her profile is public (RQ2), and younger children are no more likely than teenagers to have private profiles. Unless industry self-regulation becomes more effective, these children's safety will depend substantially on their own skills and practices. Since younger children than anticipated by site developers are using SNS sites in ways contra to the Principles, it should be of concern to policy makers that between a quarter and a third – and a considerably higher fraction of younger users - cannot find safety information (RQ3), block unwanted messages from other users (RQ4), or change their privacy settings (RQ5).

Although for more than half of 9-16 year olds, the Principles appear to work fairly well, for a sizable minority of children, this is not the case, especially in some countries, and especially for younger children. On the one hand, we can conclude that, as a policy intervention, establishing these Principles has already had some significant benefits: compared with before the Principles were formulated, it is far easier now to employ privacy settings, find safety information, use safety tools, and so forth. On the other hand, with the rapid expansion of SNSs in many countries, often those where national regulations are weaker (Lobe, Livingstone, Ólafsson, & Vodeb, 2011), and with growing pressures for ever-younger children to join the sites, we would urge industry players to work harder to meet their commitment to ensuring children's online safety. But there are some complexities and indeterminacies, especially concerning cross-national differences and differences in the affordances of particular SNSs. For example, do more UK children set their profile to private because they are more aware of safety advice or because privacy defaults are more effectively applied by Facebook in the UK? Similarly, is the higher level of skill among Hyves users due to greater awareness raising efforts in The Netherlands or because the site is more user-friendly increasing children's confidence? To what extent the actions and skills of children, and parental concerns and mediating activities, co-evolve within the particular context in which children use SNSs, and the extent to which children's skills and practices are attributable to the affordances of SNS design or to their own competences and cultural preferences, is difficult to determine.

There are growing public calls for SNS providers to remove age restrictions and to recognize that children want – and have the right to - use these services. Despite the practical difficulty that US-based sites especially must be COPPA compliant (boyd, Gasser and Palfrey, 2010), Facebook's CEO recently announced his wish to remove age restrictions (see Wall Street Journal, 2011; see also Spotlight On 2011). Also, some child welfare organizations argue that if

children can be accurately identified by age on registration, then providers could be required to and would be able to deliver targeted age-appropriate protective advice/measures including upgraded control features, child-friendly user tools and safety information, privacy settings by default, and easy-to-use reporting mechanisms.

However, we would dispute these claims. If the European self-regulatory approach is to succeed, the present findings should be used as independent evidence of a review of the European Safer Social Networking Principles. Given the present assessment of lack of effectiveness, policy should require providers to strengthen current child protection. The argument for retaining age restrictions on SNS use, and requiring that providers should employ improved age verification mechanisms and increase efforts to ensure that younger children do not have SNS profiles, is supported by the present findings on parental mediation. If age restrictions are removed, the numbers of young children using SNS would likely rise substantially, passing regulatory responsibility to parents who, based on the evidence from this survey, might find this difficult. About half of parents want to restrict their children's use of SNS. More fundamentally, this conclusion implies that it is in children's best interests that younger ones do not use SNSs (or at least, those used also by adults) unless appropriate safety features are in place. In other words, we suggest that the risk (to privacy, safety and self-esteem of children) is likely to outweigh the benefits of SNS use. Although the evidence for this claim is sparse, we would call for qualitative research to explore the unfolding interaction among children's desires, parental concerns, technological affordances, and observable outcomes. There is scope also for further research into the effectiveness and legitimacy of self-regulation for child protection on the internet.

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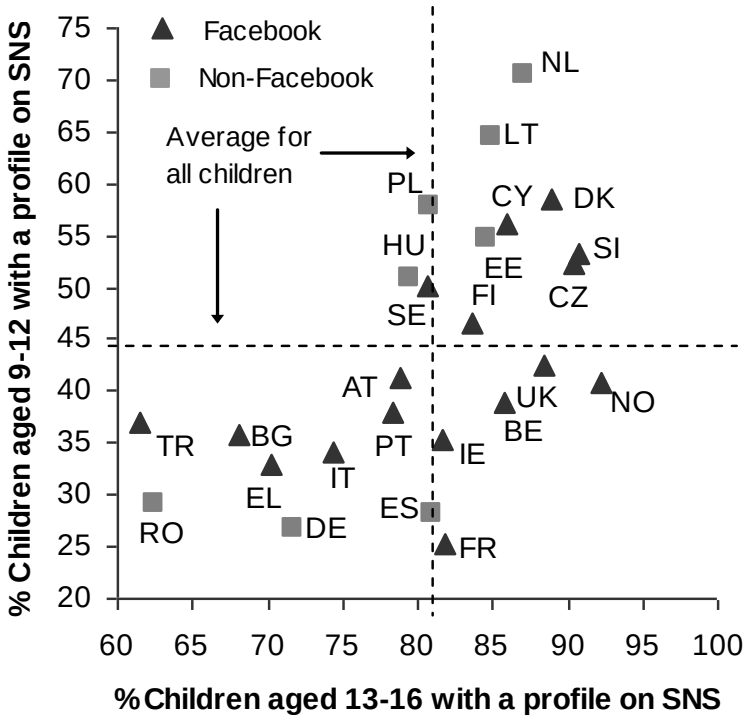
Table 1: Correlations between variables used in the analysis (Pearson correlation coefficients significant at p<0.05 unless noted as n.s.)

Base ('Use of SNS'): children who use the internet. Base (all other variables): children who use SNS.	Range	Mean	Use of SNS	Change privacy settings	Block messages	Find information on safe internet use	Public. partially private. private	Address	Phone number	Age	Girls	Daily use	At home but not in own bedroom	No access at home	Uses mobile phone to go online	Uses handheld device to go online	Time spent online (minutes)	SNS only allowed with permission
Use of SNS	0 – 1	0.59	1.00															
Digital skills: Change privacy settings	0 – 1	0.72	0.49	1.00														
Digital skills: Block messages	0 – 1	0.76	0.39	0.51	1.00													
Digital skills: Find information on safe internet use	0 – 1	0.70	0.22	0.39	0.43	1.00												
Privacy: Public, partially private, private	1 – 3	2.17		0.05	0.08	0.03	1.00											
Disclosure: *Address*	0 – 1	0.11		-0.04	-0.05	n.s.	-0.15	1.00										
Disclosure: *Phone number*	0 – 1	0.07		0.03	0.05	0.03	-0.11	0.33	1.00									
Age (centered on 12 years)	9 – 16	13.45	0.44	0.19	0.19	0.18	-0.02	n.s.	0.06	1.00								
Gender *(girls)*	0 – 1	0.51	0.03	0.03	n.s.	-0.02	0.11	-0.05	-0.05	n.s.	1.00							
Frequency of use *(daily)*	0 – 1	0.77	0.43	0.19	0.18	0.18	0.02	-0.05	n.s.	0.22	n.s.	1.00						
Location: At home but not in own bedroom	0 – 1	0.31	-0.17	-0.07	-0.05	-0.03	0.08	-0.04	-0.04	-0.17	0.04	-0.08	1.00					
Location: No access at home	0 – 1	0.08	-0.20	-0.13	-0.15	-0.14	-0.12	0.14	0.04	n.s.	n.s.	-0.38	-0.19	1.00				
Mobile: Uses mobile phone to go online	0 – 1	0.26	0.10	n.s.	n.s.	n.s.	0.02	-0.02	0.02	0.06	n.s.	0.04	n.s.	-0.06	1.00			
Mobile: Uses handheld device to go online	0 – 1	0.16	0.14	0.09	0.10	0.08	0.04	n.s.	0.04	0.14	-0.03	0.13	-0.11	-0.10	-0.25	1.00		
Time spent online (centered on 60 minutes)	5 – 270	105.91	0.36	0.16	0.17	0.13	-0.06	n.s.	0.08	0.28	-0.04	0.35	-0.18	-0.15	0.04	0.14	1.00	
Parental rules: SNS only allowed with permission	0 – 1	0.23	0.08	-0.12	-0.12	-0.11	0.05	-0.03	-0.05	-0.22	n.s.	-0.16	0.10	0.06	-0.03	-0.06	-0.19	1.00
Parental rules: *SNS not allowed*	0 – 1	0.06	-0.68	-0.08	-0.08	-0.06	-0.04	n.s.	-0.02	-0.09	n.s.	-0.11	0.02	0.09	-0.03	-0.02	-0.09	-0.14

Table 2: Main features of dominant SNSs in Europe

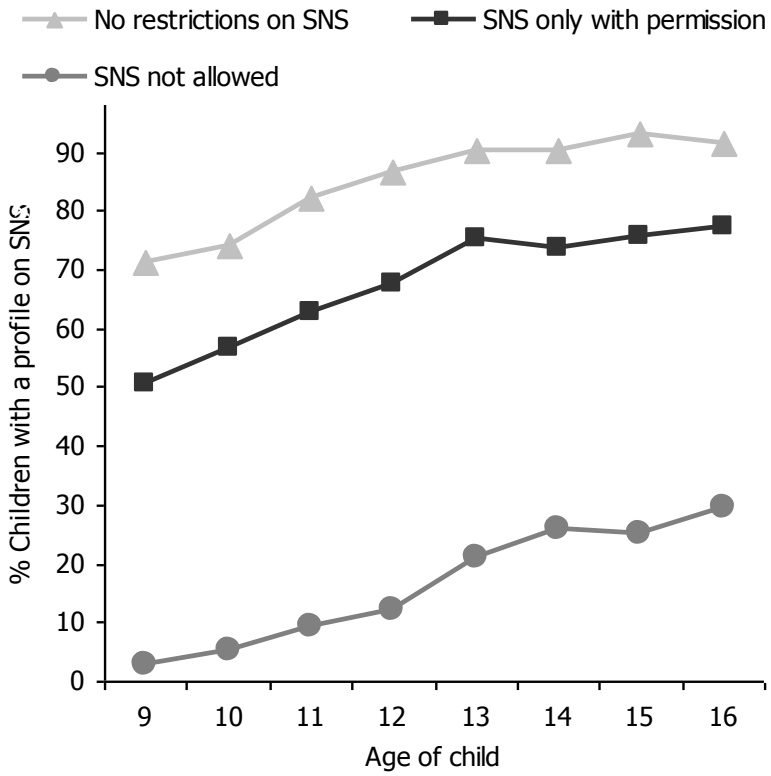
Name of SNS	Country of origin	Date launched	Age restrictions	Active users (2010)
Facebook	USA	2004	13 years minimum	500 million +
Nasza-Klasa	Poland	2006	Persons under 18 require parental permission	14 million +
SchülerVZ	Germany	2007	12-21 years only	5.8 million
Tuenti	Spain	2006	14 years minimum, by invitation only	10 million
Hyves	The Netherlands	2004	Parental consent expected for under16 years	8 million
Hi5	USA (in Europe, mainly used in Romania)	2003	13 years minimum	25 million

Figure 1: Children's use of SNS, by age and country



Note: The figure includes all SNS users as a percentage of all children in that age group, with countries labeled 'Facebook countries' if Facebook is the main SNS in that country.
Base: children who use the internet.

Figure 2: Child has a SNS profile, by age and parental rules



Base: children who use the internet.

Table 3: Children's digital skills and SNS practices, by country

	% SNS profile is public	% who say they can… (only 11-16 year olds)			% who display	
		find safety info	block messages	change privacy settings	address	phone number
Austria	19	80	83	77	11	7
Belgium	27	66	83	77	11	6
Bulgaria	30	77	93	84	7	4
Cyprus	27	58	70	67	5	2
Czech Republic	33	70	76	86	11	13
Germany	22	75	75	75	9	6
Denmark	19	63	84	86	9	7
Estonia	29	84	91	78	12	21
Greece	36	66	67	61	11	1
Spain	13	69	84	73	8	5
Finland	28	93	91	91	5	4
France	21	73	88	84	5	5
Hungary	54	58	59	57	29	7
Ireland	12	70	80	75	8	2
Italy	34	58	64	58	14	4
Lithuania	30	76	85	74	21	23
Netherlands	18	81	91	84	12	7
Norway	19	73	87	87	10	8
Poland	37	77	74	80	15	10
Portugal	25	69	75	73	4	4
Romania	42	71	66	57	17	6
Sweden	30	72	87	89	5	6
Slovenia	23	85	84	88	14	4
Turkey	44	55	57	52	20	7
UK	11	71	76	67	3	5
All	26	70	76	72	11	7

Base: children who use SNS aged 9-16 (for digital skills items, only those aged 11-16).

Table 4: Children's digital skills and SNS practices, by demographics and SNS site used

	% SNS profile is public	% who say they can… (only 11-16 year olds)			% who display	
		find safety info	block messages	change privacy settings	address	phone number
Boys	30	71	71	75	12	8
Girls	23	69	74	77	9	5
9 – 10 yrs	28	-	-	-	11	5
11 - 12 yrs	26	57	58	62	10	4
13 - 14 yrs	25	70	72	77	11	6
15 - 16 yrs	27	77	80	83	11	9
Facebook users	25	69	72	76	10	6
Nasza-Klasa users	38	76	80	73	15	10
SchülerVZ users	20	77	75	74	8	6
Tuenti users	11	69	73	84	9	5
Hyves users	17	80	83	91	12	7
Hi5 users	33	64	52	64	15	5
Other SNS users	34	65	68	73	12	7
All	26	70	76	72	11	7

Base: children who use SNS aged 9-16.

Table 5: Logistic regression models of the log odds of a child having a SNS profile

	Model 1	Model 2	Model 3	Model 4
Intercept	1.28	0.67	2.79	2.90
Girls	1.30	1.44	1.50	1.47
Age	1.56	1.40	1.21	1.12
Daily use		2.59	2.03	2.04
At home but not in own bedroom		0.71	0.87	0.87
No access at home		0.50	0.58	0.57
Uses mobile phone to go online		1.17	1.18	1.17
Uses handheld device to go online		1.70	1.68	1.70
Time spent online		1.38	1.19	1.19
SNS only allowed with permission			0.43	0.41
SNS not allowed			0.03	0.03
Girls x Age				1.08
Age x only allowed with permission				n.s.
Age x not allowed				1.19
-2 Log likelihood	28284	24635	16578	16491
Cox & Snell R Square	0.18	0.26	0.44	0.45
Nagelkerke R Square	0.25	0.35	0.61	0.61
Model chi-square	4991	7263	13410	13497
Degrees of freedom	2	8	10	13

Base: children who use the internet.

Table 6: Logistic regression for the log odds of a child having a public SNS profile

	EXP(b)		EXP(b)	EXP(b) for Age x country
Intercept	0.42	Austria	0.51	1.31
Girls	n.s.	Belgium	n.s.	n.s.
Age	0.65	Bulgaria	0.36	n.s.
Daily use	n.s.	Cyprus	n.s.	0.83
At home but not in own bedroom	n.s.	Czech Republic	0.44	n.s.
No access at home	n.s.	Germany	n.s.	n.s.
Uses mobile phone to go online	n.s.	Denmark	1.52	0.73
Uses handheld device to go online	1.23	Estonia	n.s.	1.40
Time spent online	1.07	Greece	n.s.	n.s.
SNS only allowed with permission	0.87	Spain	n.s.	0.82
SNS not allowed	0.68	Finland	0.66	0.80
Girls x Age	n.s.	France	n.s.	n.s.
Age x only allowed with permission	1.22	Hungary	0.08	1.39
Age x not allowed	1.39	Ireland	1.64	n.s.
Nasza-Klasa	0.28	Italy	n.s.	n.s.
schülerVZ	0.46	Lithuania	0.30	1.42
Tuenti	2.05	Netherlands	0.38	1.46
Hyves	0.36	Norway	n.s.	0.78
Hi5	n.s.	Poland	0.29	1.30
Other SNS's	0.62	Portugal	1.60	n.s.
		Romania	0.50	n.s.
		Sweden	n.s.	0.83
		Slovenia	n.s.	n.s.
		Turkey	n.s.	1.21
-2 Log likelihood	11023			
Cox & Snell R Square	0.13			
Nagelkerke R Square	0.21			
Model chi-square	67			
Degrees of freedom	67			

Base: children who use the internet and who have their own SNS profile.

Endnotes

[1] The Principles define as a social networking service that which offers: (1) an online platform that promotes online social interaction between two or more persons for friendship, meeting people or information exchange; (2) functionality to let users create personal profile pages with content of their own choosing, that may be accessed by other service users and that may include links to the profiles of others; (3) mechanisms to communicate with other users, such as a message board, electronic mail, or instant messenger; and (4) tools that allow users to search for other users according to the profile information they choose to make available to other users.

[2] This information was collected from the SNS sites as well as from the self report statements provided by the sites to the European Commission as part of the regulatory monitoring process; see http://ec.europa.eu/information_society/activities/social_networking/eu_action/selfreg/index_en.htm

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