Parental Mediation Of Children's Internet Use In Different European Countries

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Given that various childrearing cultures exist in Europe, as confirmed by analysis of the 1999/2000 European Values Survey (Halman, 2001), the present study aimed to identify and explain cross-cultural similarities and differences in strategies of parental mediation of children's Internet use. The study also sought to identify which parental mediation strategies may protect children against experiencing content risks online in general and in various childrearing cultures in particular. Parental mediation strategies and content online risk were indexed on the basis of data from 18 European countries from the Eurobarometer 2005. Findings show that all parents favor social mediation of the internet for children over strategies based on technical solutions. Favoring restrictive (by time or content) to non-restrictive mediation depends on a country's value orientation in childrearing. Analyses showed that each parental strategy has the potential to reduce the probability of children's experience of content risk online. However, the extent to which particular parental mediation strategies are protective differs across European childrearing cultures.

KEYWORDS   childrearing; European comparison; online risk; parental mediation; value orientation

Introduction

In the past two decades, with the rapid growth of children's Internet use, parents, educators and policy makers have become increasingly concerned about online risks that might negatively impact the social and emotional development of youth. Children experience online risks in various forms, among which content risk (encountering inappropriate content online), contact risk (especially offline contact with people met online), conduct risks (notably, cyberbullying) and violations of privacy attract most concern (Livingstone & Haddon, 2008). Neither young users nor their parents are fully able to predict and protect themselves from risks online and any individual or organization can create multiple websites containing risky content or enabling risky communication. As legal regulations in this sphere are difficult to formulate and enforce, policy makers rely substantially on increasing risk awareness among parents and delegating to them the responsibility for protecting children from online risks.

As yet, empirical findings on parental strategies for monitoring children's Internet use are inconsistent, with relatively little known regarding which strategies effectively reduce online risks for children (Livingstone, 2007; Livingstone & Helsper, 2008). This contrasts with the large body of knowledge concerning parental mediation of older media such as TV and video games (Borzekowski & Robinson, 2007; Lemish, 2008; Nikken & Jansz, 2006;

Valkenburg, Krcmar, Peeters, & Marseille, 1999). As regards the Internet, existing knowledge largely derives from American and Asian studies (Abelman, 2007; Eastin, Greenberg, & Hofschire, 2006a; Eastin, Yang, & Nathanson, 2006b; Lee & Chae, 2007; Liau, Khoo, & Ang, 2005; Lwin, Stanaland, & Miyazaki, 2008; Padilla-Walker & Thompson, 2005). Hence, there is a pressing need to study parental practices with children's Internet use as well as to generate practical guidelines in Europe and elsewhere.

Parental mediation of children's Internet use may be defined as the regulatory strategies that parents introduce to maximize benefits and minimize their children's risks from Internet use. Among theoretical approaches to parental mediation, the socialization approach contextualizes parental practices in relation to socialization cultures. This asserts that parents are concerned about agreement between the goals of family socialization and those of socialization through other socializing agents, including the Internet (Padilla-Walker & Thompson, 2005). Parental mediation of children's Internet use is supported by parental strategies, techniques and practices of childrearing and guided by parental values and attitudes. Values important for childrearing are, in turn, influenced by broad cultural dimensions in a given society such as those of individualism and collectivism (Schwartz, Schäfermeier, & Trommsdorff, 2005).

Two general strategies of parental mediation can be identified for children's interaction with the Internet: restrictive mediation and instructive mediation. Restrictive mediation refers to regulating children's media use through rule-making. Instructive mediation refers to parents' active efforts to interpret and translate media content and messages for their children. In rule-making, parents prohibit altogether or limit exposure to, for example, certain violent or sexual content or to online interaction with certain users and internet communities (Livingstone & Helsper, 2008). Depending on the type and level of parental mediation, researchers have proposed various typologies of parental mediation of children's Internet use. For instance, Lwin, Stanaland, and Miyazaki (2008) combine these two forms of mediation to propose four parental strategies: restrictive (regulated only), promotive (instructive only), selective (both types), and laissez faire (no mediation). Livingstone and Helsper (2008) have found four factors of parental mediation, an "active co-use" and three types of "restrictive mediation". Active co-use includes instructive interactions and sharing the experience of Internet use by sitting next to the child (social co-use). Restrictive mediation includes (1) use of technical filtering/monitoring tools, (2) rule-making (restricting social interactions online), and (3) parents' active monitoring of visited websites and checking of e-mails.

Previous studies (Abelman, 2007; Barkin, Ip, Richardson, Klinepeter, & Krcmar, 2006; Eastin et al., 2006a; Eastin et al., 2006b; Livingstone & Helsper, 2008; Lwin et al., 2008) suggest that parents favor social mediation, focused on the Internet user, over system-based regulation, which includes installing professional software protection on the computer. Parents' preferences are illustrated by Turow and Nir (2000), who found that although more than 75 per cent of parents of teenagers were concerned about privacy risk and exposure to sexual content risk, only one third used protective software restricting access to selected websites while 65 per cent set rules banning children's access to selected websites as well as restricting the time of a day for visiting them. Similarly, Livingstone and Helsper (2008) indicate that most UK parents mediate the Internet with co-use. Parents talk to children about the Internet (64 per cent) and supervise children's going online by watching the screen (46 per cent) or staying nearby (34 per cent). A smaller proportion of parents install filtering software (33 per cent) and monitoring software (23 per cent). For parents with sufficient Internet skills,

social mediation allows more insight and control over young Internet users. Parents with insufficient skills strive to learn by watching their children surf online. Therefore, it can be hypothesized that all parents favor social mediation of the Internet for children, that is, the social co-use strategy, over strategies based on technical solutions such as blocking or filtering software, independently of values orientation in childrearing (H1a).

Parents' selection of strategies depends on the importance of values that are threatened in the process of socialization. The more important the threatened values, the more restrictive the strategies parents select (Padilla-Walker & Thompson, 2005). Online content risks, such as sexual, pornographic, violent and racist materials, threaten important childrearing values for all parents. Thus, independently of socialization culture, parents should favor restrictive mediation (by time or content) over non-restrictive approaches (such as guiding children in how to behave when they encounter online risks) (H1b).

Parents' aspirations and goals may be determined by an individualistic-collectivistic values orientation, largely embedded in the broad culture, as hypothesized by individualism/collectivism theory (Giles-Sims, 2005; Inglehart & Baker, 2000; see also Thomas, Haddon, Giligan, Henzmann, & de Gournay, 2006). In individualistic cultures, people's social behavior is self-oriented, but they engage in open interpersonal emotional communication, striving for autonomy, independence, and individuality. In collectivistic cultures, group membership governs social behavior and "self" is only peripherally important. People in collectivistic cultures restrain their personal emotions, maintaining positive relationships through obedience and unselfishness. This would suggest that parents select their mediation either to protect a child from harmful experiences, conflicting values in online messages and social conflicts or to develop self-directedness, independence, the need for freedom and development of digital skills. Indeed, research shows that Internet users' behavior and attitudes toward the Internet vary across individualistic/collectivistic cultures (Lim, Leung, Sia, & Lee, 2004). In America and Europe's strongly individualistic societies, Internet users value more autonomy in interpersonal motivation and gravitate toward online communities that allow lower levels of anonymity, whereas Internet users in Asia's more collectivistic societies emphasize affiliation in interpersonal motivation and seek online communities that promote higher levels of anonymity (Morio & Buchholtz, 2009). Apparently, in Western societies people promote their "selves" online, while in Eastern societies, people protect their "selves" online.

On the basis of individualism/collectivism theory, one would expect parental mediation of children's Internet use to vary significantly by culture. In particular, it can be hypothesized that more parents in European countries with an individualistic orientation select social co-use and make non-restrictive rules, that is, they favor a strategy that allows children more autonomy and self-directedness online (H2a). Parents in European countries with a collectivistic values orientation in childrearing, by contrast, are predicted to use strategies that assume obedience and respect for parents' values and authority, such as setting restrictive rules on time and website access (H2b).

Even if parents mediate their children's Internet use, the effectiveness of their strategies is a separate matter. Some research shows that parents tend to react by restricting the child's online activity when the child encounters trouble online, which is intrusive for children rather than protective (Livingstone, 2007; Livingstone & Helsper, 2008). The three strategies of social co-use, making non-restrictive rules and technical blocking may seem less intrusive and more effective than other commonly used parental strategies, such as time restriction, restriction of social contacts online and

technical monitoring. Further, rules that parents set regarding Internet use may be more or less restrictive—limiting a child's online time may seem the most restrictive and, because it is direct and easy to implement, parents may overuse it. Restricting access to certain websites may seem less restrictive to children if they accept the rule, and this is common when children are less closely monitored and instead allowed to make their own decisions about Internet use. Setting a rule requiring a child to report online risks to parents voluntarily is an example of a non-restrictive, instructive rule that allows the child more autonomy and control; children using this rule may not inform parents of the risks they experience (Liau et al., 2005).

However, technical and interaction restrictions may reduce online risks but at the cost of decreasing children' online activity, hindering social contacts with their peers and even leading to rebellion by some. Empirical findings are mixed. Livingstone and Helsper (2008) found that restrictive rules banning UK children's online interactions were effective, reducing exposure to a range of content and contact risks, because they reduced activity in general; however, other restrictive mediation, active co-use, and monitoring appeared ineffective in protecting children against all kinds of online risks. Lwin et al. (2008) found that instructive mediation combined with restrictive mediation was most effective in protecting against online disclosure of personal information; however, restrictive mediation was effective for pre- and mid-adolescents but had a boomerang effect on late adolescents. Lee and Chae (2007) found that among 10–12 year-old Koreans, co-use was positively related to online activities undertaken for education and communication, but time and website restrictions were not associated with online gaming and did not impede Internet use for education and communication. Liau, Khoo, and Ang (2005) identify factors predictive of adolescents' engagement in risky online behaviors (such as meeting online contacts offline) in Singapore. They found that co-use of the Internet (sitting next to children or checking adolescents' activities while they are online), using filters and checking websites visited by children later were unrelated to contact risk. Statin and Kerr (2000) suggest that children's disclosure of information to parents is more effective protection than parental monitoring and control.

Given this inconsistent picture, the present study seeks to answer the question "Is any strategy of parental mediation effective in protecting children from experiencing content risk online?" (RQ). Assuming, further, that parental mediation varies across European childrearing cultures, such that the relationship in question may depend on cultural factors related to an individualistic/collectivistic values orientation, it seems worthwhile to establish whether relations between particular strategies of parental mediation and children's exposure to online content risk differ in countries that differ on individualistic/collectivistic values orientation in childrearing. It is assumed that a given strategy of parental mediation of children online is effective if the proportion of children encountering online risks is significantly lower in countries where this strategy prevails than in countries where it does not.

Method

Data Sets and Sample

The European Values Study (EVS)[1] provides data on parental values in childrearing, while the Eurobarometer 2005/2006[2] examines parental mediation of children's Internet use and parental estimates of online content risks experienced by children at home

(based on answers from 1,949 parents/guardians of children aged 6–17 years who use the Internet at home). Countries were selected based on the availability of all measures (parental values in childrearing, parents' mediation of children's Internet use, and online content risks experienced by children at home). From the Eurobarometer survey, the only large-scale pan-European survey containing data on parental mediation and online risks experienced by children, 18 countries were selected, resulting in a sample of parents (52.2 per cent mothers, 41.8 per cent fathers) from Austria, Belgium, Bulgaria, the Czech Republic, Denmark, Estonia, France, Germany, Greece, Ireland, Italy, the Netherlands, Poland, Portugal, Slovenia, Spain, Sweden and the UK. While girls (50.7 per cent) and boys (49.3 per cent) were equally well represented, parents of younger children were less well-represented (17.3 per cent aged 6–9 years, 16.5 per cent aged 10–11 years) than parents of adolescents (20.4 per cent aged 12–13 years, 22.5 per cent aged 14–15 years, and 23.3 per cent aged 16–17 years), because more older children use the Internet at home.

Variables

Parental Mediation of Children's Internet Use. Indices of parental mediation of children's Internet use were selected from the Eurobarometer 2005/2006. Parents' (or guardians') reports on how often they sit next to the child when he/she is online (social co-use mediation) were recoded into three categories. Binary answers to three questions about banning visits to some websites, limiting time online and blocking software on home computers were treated as indices of time restriction, website restriction and technical restriction, respectively. The child's reporting to parents when he/she felt uncomfortable about what he/she encountered online was taken to indicate a non-restrictive rule (voluntary reporting by child to parents). The indices of parental mediation are shown in Table 1.

TABLE 1
Parental mediation and online risk variables and their indices in the Eurobarometer 2005/2006 questionnaire

Variables	Index
Parental Mediation Strategies	
Technical restriction	Are filtering/blocking tools preventing access to certain Web sites applied when your child uses the Internet? (QC5.2: Yes, at home = 1, No, Yes, at home = 0)
Social co-use	Do you sit with the child when he/she is on the Internet? (QC.6: Always (6), Most of the time (5), Often (4), From time to time (3), Rarely (2), Never (1); recoded into: "never" (1); "rarely" (2 and 3), "often" (4, 5, and 6)
Time restriction	What rules have you set regarding how he/she uses the Internet? Rules regarding how much time he/she is allowed to spend online (QC9.12 = 1)
Website restriction	What rules have you set regarding how he/she uses the Internet? There are some Web sites that he/she is not allowed (QC9.2 = 1)
Non-restrictive rule making	What rules have you set regarding how he/she uses the Internet? He/she is to tell me/us if he/she finds something annoying (QC9.3 = 1)
Online Content Risk	
Child's experience of online content risk	Do you think your child has ever encountered harmful or illegal content on the Internet? (QC10.1: Yes, at home = 1)

Child's Experience of Online Content Risk.   The child's experience of online content risk was indicated by parent's (guardian's) positive answer to the question of whether their child had encountered illegal or harmful content online at home. No other studies exist in the literature that assess children's exposure to online risk on a reliably cross-national basis (although see Hasebrink, Livingstone, Haddon, & Olafsson, 2009).

Country's Individualistic/Collectivistic Values Orientation in Childrearing.   The European Values Survey provides a large-scale, cross-national and longitudinal survey on human values. Participants choose up to five out of 11 values that they consider especially important for children to learn at home: good manners, independence, hard work, responsibility, imagination, tolerance and respect, thrift and saving money, determination and perseverance, religious faith, unselfishness, and obedience. A confirmatory factor analysis of 11 parental values, computed across all countries in the study, revealed a two-factor structure of a country's values orientation in childrearing. The first factor represents an orientation toward materialistic and conformist values, in which the core values are obedience, thrift and saving money, and religious faith; determination and perseverance, unselfishness, good manners, imagination, and hard work also load on this factor. This was interpreted in terms of a collectivistic values orientation in childrearing. The core values in the second factor are those representing individualistic values, typical of developed post-materialistic cultures, namely, tolerance and respect, responsibility, independence, imagination, and lack of hard work. Although determination and perseverance, unselfishness, and good manners also load the second factor, it can be identified as indicating an individualistic values orientation in childrearing.

In the second step of the analysis, two mean factor scores were computed for each country (Individualistic Values Orientation and Collectivistic Values Orientation in childrearing) and these were used to group the 18 countries using "Quick Cluster". This revealed four clusters of countries which vary in the importance they ascribe to individualistic and collectivistic values in childrearing. It is assumed that the four clusters represent differing childrearing cultures in Europe. The first cluster accorded both individualistic and collectivistic values moderate importance and consists of Northern or English-speaking countries, IE, UK, and BE.[3] The second cluster, giving moderate importance to collectivistic values and very low importance to individualistic values, includes BG, CZ, EE, PL and PT, that is, post-communist Europe or countries with a recent history of experiencing a totalitarian regime. The third cluster is composed of countries that ascribe moderate importance to individualistic values and low importance to collectivistic values in childrearing: AT, FR, DE, GR, IT, SI, and ES; that is, historically Catholic Europe plus Orthodox Greece. The fourth cluster, with very high importance for individualistic values and very low importance for collectivistic values in childrearing, is historically Protestant Nordic Europe: DK, NL and SE.

Results

Prevalence of Parental Mediation in European Childrearing Cultures

According to H1a, parents will favor social mediation (social co-use) of the Internet for children over strategies based on technical solutions such as blocking or filtering, independently of their values orientation in childrearing. According to H1b, independently

of socialization culture, parents should favor restrictive mediation: time restriction and restricting access to certain websites to non-restrictive rules. In this section, support for hypotheses H1a and H1a will be shown. Table 2 shows, in support of H1a, that in all childrearing cultures (clusters) there are more parents who socially co-use the Internet than parents who use technical restrictions; in support of H1b, it shows that parents' restriction of websites and time online is more likely than their use of non-restrictive rules.

Further, as predicted, more parents in European countries with an individualistic orientation than in countries with collectivistic orientation in childrearing prefer social co-use and non-restrictive rules, thereby favoring a strategy that allows children more autonomy and self-directedness online. Hence, hypothesis H2a is supported. By contrast, more parents in countries with collectivistic orientation than in countries with individualistic orientation restrict time spent online. H2b is only partially supported because the difference between post-communist countries (and Portugal) and countries with individualistic orientation in the predicted direction has been found for time restriction only. The former ones are lower than the latter ones on website restrictions.

But the proportion of parents who mediate internet use differs in the four childrearing cultures. Website restriction, technical restriction, non-restrictive mediation, and social co-use are used more in English-speaking countries (and Belgium) than in post-communist Europe (and Portugal), while in the latter more parents use time restriction than in the former. Historically Catholic and Protestant countries vary little except in their use of technical restrictions that are more favored in Catholic countries. All three groups of countries in the 'individualistic' childrearing culture—Catholic (and Greece), English-speaking (and Belgium) and Protestant—show little variance in use of website restriction, time restriction, and non-restrictive rule making. However, more parents in individualistic childrearing cultures (83.5 per cent) than in collectivistic ones (63.1 per cent) mediate Internet use for their children. In summary, parents from countries with individualistic orientation to childrearing values, compared with parents from post-communist, "collectivist" countries, use more social co-use and non-restrictive rules, technical and website restrictions, whereas parents from collectivistic countries use more time restriction.

Relation between Parental Mediation and Child's Experience of Online Content Risk

It was hypothesized that in countries with more parental mediation, fewer children experience content risk online. Pearson correlations show that the more social co-use parents used, the fewer children experience online content risk in the total sample ($r = 0.12$, $p < 0.001$, $n = 1{,}949$). There is, therefore, little support for the claim that social co-use is an effective tool in protecting children against online risk. All other strategies bore little relation to children's online content risks. However, analyses repeated at the country level suggest that parental strategies are related to reduced experience of online content risk in children. Figure 1 shows that the more parents in a country restrict access to certain websites, the fewer children in this country experience online content risk.

To put the finding the other way around, children's experience of online content risk is greater if parental restrictions on access to certain websites are less. For instance, Estonian children experience more risk than Austrian, Bulgarian, German, Irish, and Italian children, all countries where more parents apply website restrictions. Also, children from Sweden and the Netherlands experience more risk than do children from the countries

TABLE 2

Percentage of parents who mediate children's Internet activities using various strategies in four European childrearing cultures (four clusters of countries)

Strategy of parental mediation	Parents who use the strategy in various European childrearing cultures (%)					
	English-speaking Europe & Belgium	Historically Catholic Europe & Greece	Historically Protestant Nordic Europe	Post-communist Europe & Portugal	N	Chi² (df = 3)
Technical restrictions	47.6[a]	28.7[b]	23.5[cd]	19.5[d]	1949	92.4***
Social co-use	68.7[ab]	65.2[a]	74.1[b]	46.4[c]	1939	77.9***
Time restriction	53.2[a]	58.6[ab]	54.5[ab]	61.2[b]	954	3.3
Website restriction	56.7[a]	54.5[ab]	49.7[abc]	42.2[c]	954	9.0*
Non-restrictive rule making	34.6[a]	33.1[a]	32.6[a]	17.0[b]	954	15.8***

[abcd] Values not having a common letter in index are significantly different by row:

***$p < 0.001$; **$p < 0.01$; *$p < 0.05$.

Note. Responses are based on parents whose 6–17 year-old child has access to and uses the internet at home. Source: Eurobarometer 2005/2006.
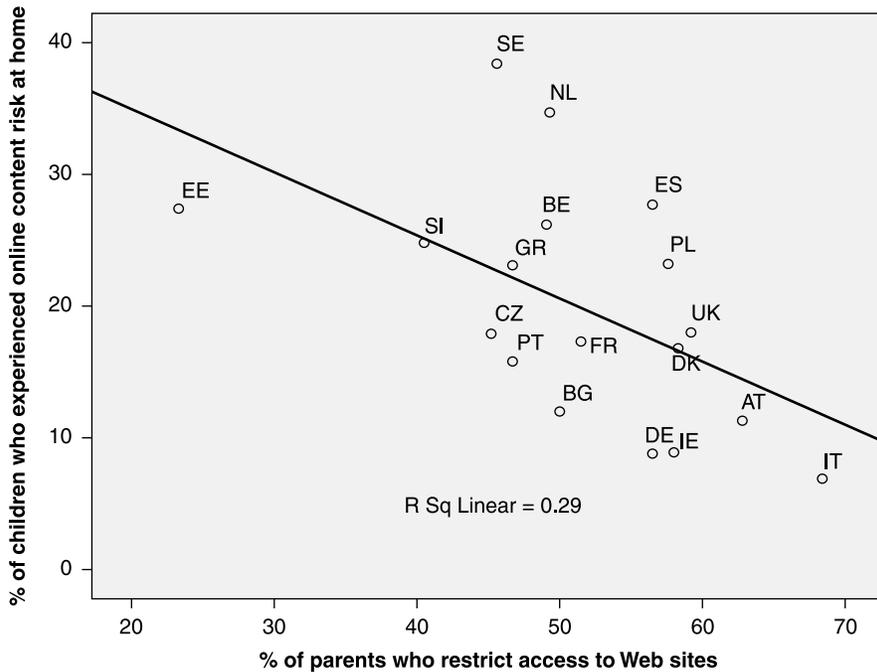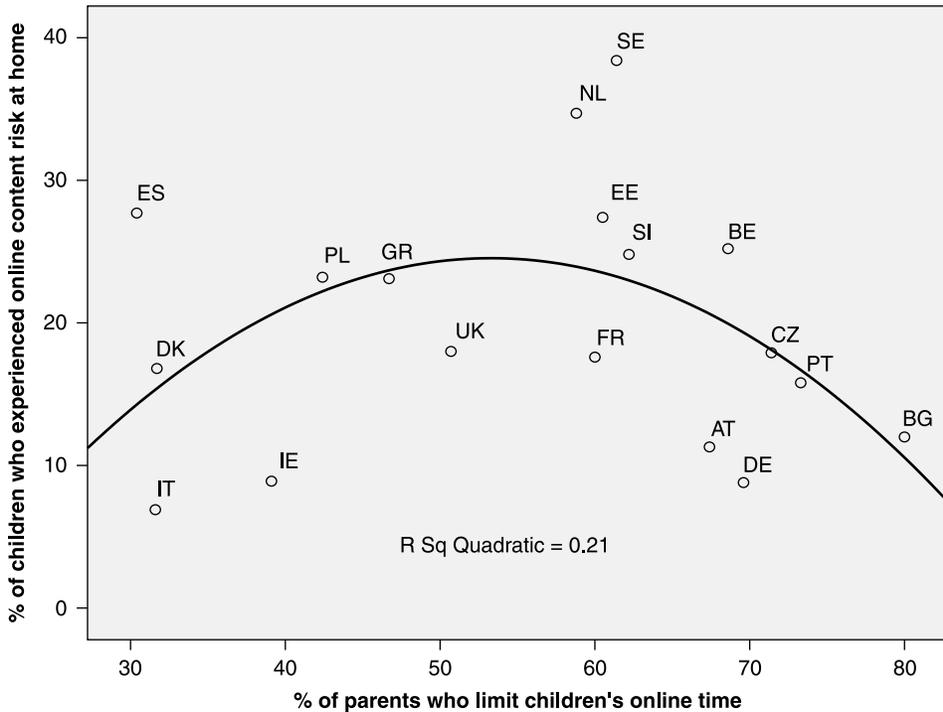
FIGURE 1

Fewer children experience online content risk at home in countries where more parents restrict access to websites

where parental mediation of the Internet use is more prevalent. This linear relationship explains 29 per cent of between-country differences in children's online risk experience with between-country differences in parental restrictions on websites. Although it does not explain the prevalence of online content risk to the same extent in various countries and for other parental strategies, findings were similar for social co-use and technical restrictions, indicating that each of these strategies was associated with a smaller number of children at risk from online content. The effectiveness of these strategies seemed to vary depending upon the country's childrearing culture. The relationship between parental time restriction and online content risk illustrates the mixed effects of parental mediation on child's experience with online risk (Figure 2).

This curvilinear relationship indicates that in Nordic Europe, mostly individualistic in childrearing orientation (Belgium, Denmark, Ireland, the Netherlands, Sweden, and the UK), the more parents limit children's time online, the more children experience online risk. In Catholic Europe, moderately individualistic in childrearing (Austria, France, Germany, Slovenia, and Spain), and post-communist/post-totalitarian-regime Europe, oriented in childrearing to collectivism (Bulgaria, Czech Republic, Estonia, Poland, and Portugal), the more parents use time restriction, the less children encounter online risk. This curvilinear relationship reveals that 21 per cent of between-country differences in children's online content risk experienced at home are explained by between-country differences in the number of parents who use time restriction. Thus, the role of time restriction in protecting children from online risks seems to vary depending on the country's individualistic/collectivistic orientation in childrearing and historical religious roots.

FIGURE 2

Curvilinear relationship between time restriction as parental mediation of children's Internet use and children's experience of online content risk at home

The figures for social mediation and technical restrictions were 26 per cent and 5 per cent, respectively. Most parents tend to use multiple strategies, though total between-country variance explained by total percentage of parental mediation strategies use might explain even more variance, but such analysis was beyond the scope of this paper.

Table 3 shows that using technical restrictions does not make a significant difference in the amount of children's experience of online risk. The table compares the proportions of children encountering online content risk at home among parents who practise a given parental mediation strategy and those who do not. In English-speaking countries (and Belgium), parental strategies do not appear to be related to reduced online risk to children. Parental mediation seems to be most effective, that is, related to lower experience of online content risk by children, in historically Catholic countries (and Greece). Both non-restrictive mediation and website restriction is associated with lower online risk in post-communist countries, while parents who practise the same strategies in Protestant Nordic Europe have children who experience increased risk; thus in these countries, parental mediation seems to have a boomerang effect.

It is concluded that, although parental mediation is associated with fewer number of children at risk from online content, the effectiveness of several strategies seems to depend on the country's socialization culture. In Europe, both restrictive and non-restrictive mediation may be effective in one childrearing culture, but ineffective in another one.

TABLE 3

Percentage of children who have experienced online content risk, dependent on whether their parents do or do not use various strategies of mediating the Internet (in four childrearing European cultures shown by clusters of countries)

| | Strategy of parental mediation | | | | | | | | | |
| European childrearing cultures | Social co-use | | Time restriction | | Website restriction | | Technical restrictions | | Non-restrictive rule making | |
	Not used	Used	Not used	Used	Not used	Used	Not used	Used	Not used	Used
All 18 countries	**26.9**	**20.3*****	**27.4**	**23.4+**	**24.2**	**26.0**	**22.6**	**22.3**	**25.9**	**23.5**
English-speaking Europe (& Belgium)	21.9	17.1	18.5	18.7	16.6	20.6	18.1	18.9	19.2	17.5
Historically Catholic (& Greece)	23.9	12.2***	26.4	16.0*	27.3	14.5**	15.9	17.3	24.2	12.5*
Historically Protestant Nordic Europe	41.2	30.3**	35.5	35.5	25.6	45.5***	32.0	36.6	32.5	41.6+
Post-communist Europe (& Portugal)	22.4	19.3	26.3	20.0	27.1	16.1+	21.8	16.9	25.4	8.0*

+$p < 0.10$; *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$ (one-tailed) for comparisons between families that use a given strategy and those that do not.
Note. Size of samples for social co-use and technical restrictions: English-speaking (& Belgium): $n = 409-412$; historically Catholic (& Greece): $n = 601-602$; historically Protestant North: $n = 571$; post-Communist (& Portugal): $n = 358-364$. Size of samples for other strategies: English-speaking (& Belgium): $n = 231$; historically Catholic (& Greece): $n = 266$; historically Protestant North: $n = 147$; all 18 countries: $n = 1,039-1,949$. Responses are based on parents whose 6–17 year-old child has access to and uses the Internet at home. Source: Eurobarometer 2005.

Discussion

This study examined the role of European childrearing cultures in parental mediation of children's Internet use so as to identify strategies that may protect children from online risks in various European childrearing cultures. In the present study, four such cultures were identified on the basis of country's orientation to individualistic or collectivistic values: a highly individualistic culture including Nordic, Protestant countries, a moderately individualistic culture including Catholic countries and Greece, a culture of mixed values including European English-speaking countries and Belgium, and a collectivistic culture including post-communist/post-totalitarian-regime countries. Validation for this clustering derives from their similarity to the cultural map of Europe by Inglehart and Baker (2000).

The obtained patterns of parental Internet mediation indicate that, independently of childrearing culture, parents favor social mediation of the Internet. This mediation strategy gives more opportunity for communication with children and for instructive mediation. In all childrearing European cultures, as in the United States (Barkin et al., 2006; Turow & Nir, 2000), parents prefer social co-using the Internet and making rules for children's online activity to installing blocking or filtering software on children's computers. The stability of preference for the strategy of social co-use across time, cultural contexts (Borzekowski & Robinson, 2007; Lemish, 2008), European childrearing cultures, and type of media used by children (Internet in this study; TV and video games in Borzekowski & Robinson, 2007; TV in Valkenburg et al., 1999) indicates that this strategy is the most useful for parents. Parents in all childrearing cultures also favor restrictive rule-making, primarily time restriction and restrictions on access to selected websites, to non-restrictive rule, for instance, instructing children about how to behave when they encounter risks. These findings suggest that most parents favor multiple strategies to single strategies in Internet mediation—as has been found for American parents (Barkin et al., 2006; Turow & Nir, 2000).

It is important for researchers, policy makers, and parents themselves to learn which strategies are effective in a given cultural context. In this study a strategy of parental mediation of children's online activity is considered effective when the proportion of children encountering online risks is significantly lower in countries where this strategy is commonly used in comparison with countries where it is not. The adoption of this approach revealed that, in general, the more parental mediation in use in the country, the fewer children in this country experienced content risk in their own home. There is an exception in the case of technical solutions used by parents. Online content risk is not associated with parents' use of technical restrictions, as shown by research on children's online activities in general (Lee & Chae, 2007), online content risk (Livingstone & Helsper, 2008) and online contact risk (Liau et al., 2005; Livingstone & Helsper, 2008) experienced by children at home. In addition to these findings indicating that parental mediation of children's Internet use is universal and unrelated to cultural differences, several interesting findings suggest that parental mediation and its effectiveness vary across different European childrearing cultures.

It is striking that more parents mediate Internet for their children in individualistic childrearing cultures. This suggests that parents in these cultures might be engaged in mediating the Internet for their children because—as revealed in cross-cultural studies on socialization—children themselves and their socialization is more important in individualistic than in collectivistic cultures (Schwartz et al., 2005).

Another noteworthy between-culture difference is that although parents in all European countries favor the social co-use strategy, parents from European individualistic childrearing cultures do so more often than those from more collectivistic childrearing cultures. Social co-use is favored by parents from individualistic cultures because it allows the child more autonomy and self-directedness online and is more consistent with values important for an individualistic childrearing culture. Supporting this interpretation is the more common selection of non-restrictive rule-making by parents in these countries.

The third difference indicates that parents in European countries with collectivistic values select restrictive rules on time online more often than parents in countries with individualistic values. Restrictive mediation assumes obedience and respect for parents' values and rules. It is therefore more consistent with values important in a collectivistic childrearing culture than with values in any of the other European socialization cultures identified in this study, that is, all individualistic ones.

Cultures vary on parental goals and values, parental styles in childrearing, and socializing techniques (Schwartz et al., 2005; Tulviste & Ahtonen, 2007). The findings of the present study support the statement that even though cultures do not differ on the idea that various strategies must be implemented by parents to mediate children's Internet use, they do differ on which strategy they prefer to use.

The most important general finding of the present study is that the type of European childrearing culture accounts for the effectiveness of parental mediation in protecting children from online risks. It is important in making recommendations for parents that several conclusions may be formulated about the effectiveness of parental mediation of the Internet as dependent on childrearing culture.

First, any strategy of parental mediation is related to online content risk in all socialization cultures in the same way. This finding questions the adequacy of attempts to find universal guidelines, unrelated to cultures, for parental Internet mediation. Second, only social co-use seems related to fewer online risks experienced by children in the same way in all childrearing cultures, although support for developing European collectivistic— post-communist—countries has not been obtained. Hence, a social co-use strategy may be recommended as a type of parental mediation that makes children's experience of online content risk less likely in individualistic European cultures: English-speaking countries, Nordic Europe and Catholic/Greek Europe. While this recommendation for social co-use provides information on its potential to be an effective way to protect children from Internet risks, its main role is to help parents learn how their children use the Internet and to help children learn from parents how to protect against or cope with online content risks, as is suggested by Eastin et al. (2006a). Social co-use becomes an effective parental Internet mediation strategy when accompanied by other types of mediation.

The findings suggest that whether it is restrictive or instructive, any strategy of parental mediation is meaningful and may reduce children's online risk experience, but its effectiveness depends on the given childrearing culture. For instance, making any rule about Internet use for children—restrictive (including online time and website restrictions) and non-restrictive—is associated with decreased risk in moderate individualistic cultures with Catholic religious roots and Orthodox Greece. In contrast, time restriction increases the probability of experiencing content risk online in extremely individualistic childrearing cultures, for example, in Nordic Europe. Hence, time limits in mediating the Internet for children can be recommended in Catholic (and Orthodox Greece) and post-communist Europe, but not in Protestant Nordic Europe.

Conclusions and recommendations on the role of restrictive and non-restrictive rules in protecting children against online risks must be made with an awareness of this study's limitations. Conclusions and recommendations made at this point assume that parents mediate the Internet proactively and that the strategy of parental mediation precedes a child's experience of online content risk. The "parental mediation–child's online risk" relationship can be significant for two reasons. Parents may mediate Internet for their children proactively: that is, to protect children from Internet risks, they often sit with them to discuss relevant problems, instruct them in ways to cope with these problems, or at least control how children surf online and organize their files. This kind of protection reduces children's risk potential in the long run, in that they feel supported by parents and learn to protect themselves from possible risks. Parents whose children have experienced online content risk may mediate the Internet for their children reactively. They may respond to the situation with more engagement, spend more time sitting next to the child, and strive more often toward the same goals as parents who mediate the Internet proactively. It is more likely that parental rule-making about the Internet is the result of their child's negative experience online, rather than the result of the child's making attempts to access "forbidden fruit" and then experiencing the risk.

Comments on the findings in broader terms and prospects for future research cannot fail to include the need for additional theoretical perspectives on parental mediation that also take into account the context of the socializing culture such as proactive vs. reactive styles of parental mediation as suggested by Padilla-Walker and Thompson (2005), or a theoretical perspective on a promoting vs. protective style of childrearing that might enrich theory on the effectiveness of parental mediation strategies for Internet in various European socializing cultures. To the author's knowledge, the present study is the first attempt to demonstrate that the theory of parental mediation of the Internet falls into a broader context of socialization theory and the role of cultural factors—namely, individualistic/collectivistic values orientation in childrearing—in choosing strategies and in the effectiveness of parental Internet mediation. The findings clearly suggest the need to consider the use of multiple strategies and the socialization culture in parents' mediation of the Internet.

NOTES

1. For the European Values Study, see Halman (2001); the data are available at http://intgen. wzb.eu/European_Value_Survey_EVS.pdf; http://www.europeanvalues.nl; http:// spitswww.uvt.nl/web/fsw/evs/documents/Surveys/Countries%20PDF/1999-2000/ EVS_Master_1999_1.pdf, CARD 49.
2. Source: Eurobarometer 64.4 – Special No. 250: Safer Internet, December 2005; basis: parents/guardians with children aged 6–17 years.
3. Country abbreviations: Austria = AT, Belgium = BE, Bulgaria = BG, the Czech Republic = CZ, Denmark = DK, Estonia = EE, France = FR, Germany = DE, Greece = GR, Ireland = IE,

Italy = IT, Netherlands = NL, Poland = PL, Portugal = PT, Slovenia = SI, Spain = ES, Sweden = SE, United Kingdom = UK.

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