Children’s Positive and Negative Experiences With the Internet
An Exploratory Survey

This survey among 194 Dutch children ages 8 to 13 who had home access to the Internet was designed to explore (a) children's motives for using the Internet, (b) their positive experiences with the Internet, and (c) their negative experiences with the Internet. Results showed that the most important motive for using the Internet was affinity with computers, followed by information and entertainment. Online social interaction and off-line social interaction were the least important motives. Children’s spontaneous descriptions of their positive experiences with the Internet most frequently included playing or downloading computer games (17%), watching video clips and songs (13%), visiting kids entertainment sites (12%), and seeking information about animals (7%). As a negative experience, children most frequently reported a virus or computer crash (10%), violence (4%), and pornography (4%). The authors found several significant age and/or gender differences in children’s motives for using the Internet and in their experiences with the Internet.

Although the emergence of the Internet as a leisure phenomenon poses many challenges to the academic research community, most research into children’s uses and opinions of the Internet has been conducted by market researchers. Market analysis groups (e.g., Datamonitor, Jupiter Communications, Zandl Group) have undeniably gathered a wealth of valuable information about how boys and girls in different age groups use the Internet. However, their research findings are often not available to the academic world. Some market research groups do give out a limited amount of information about their research to trigger the interest of potential clients, but the interested academic often has to pay thousands of dollars to receive insight into the complete reports, including their methodological justifications.1 In acad-
emic circles, little research attention has been paid to children’s uses and opinions of the Internet. The aim of this survey study is to gain some preliminary insights into children’s positive and negative experiences with the Internet.

This article describes an exploratory survey among Dutch children between age 8 and 13 conducted in the summer of 1999. At the time of data collection, 24% of the Dutch families with children had home access to the Internet. This percentage is lower than that in the United States, where in the same period 36% (Turow, 1999) to 45% (Roberts, Foehr, Rideout, & Brodie, 1999) of the households with children were online. Our survey had three aims. First, we were interested in investigating children’s motives for using the Internet in their home situation and the gratifications they obtain from going online. Second, we tried to gain insight into children’s positive experiences with the Internet. Finally, we investigated how often children encounter disturbing or harmful information on the Internet.

Children’s Motives for Using the Internet

Uses and gratifications theory, which has traditionally been used to explain people’s motives for using the media, has only been rarely applied to new media technologies, such as the Internet. Besides, the few studies that have investigated the motives for using the Internet focused on adult users (Ferguson & Perse, 2000; Papacharissi & Rubin, 2000; Perse & Dunn, 1998). These studies have yielded mixed results. Ferguson and Perse (2000) found that entertainment was the most salient motive for visiting the Web, followed by passing time, social information, and relaxation, respectively. Papacharissi and Rubin (2000) found that information seeking and entertainment were equally important motives for using the Internet. Convenience (e.g., it is easier to e-mail than tell people something), passing time, and interpersonal utility (e.g., to participate in discussions) were less salient reasons for going online. Finally, a study of Perse and Dunn (1998) revealed that adults’ motives for using their computer was related to their Internet access. The more people used their computer to go online, the more they used it for entertainment and to pass time.

Our study explored children’s motives for using the Internet. Whereas uses-and-gratifications research suggests that children use traditional media, such as television, often for entertainment (Condry, 1989) and relaxation purposes (Rubin, 1977), little is still known about what motivates children to use the Internet. The Internet may provide children with a wide range of gratifications. As a multifunctional medium, it combines the attributes of many media that are popular among children in middle childhood,
such as the television, telephone, book, radio, and the video game console. Children can use the Internet to seek information or entertainment, to relieve boredom, to play games, or for social interaction.

To our knowledge, children's motives for using the Internet have never been investigated. However, some studies have investigated children's motives for using the computer. These studies have demonstrated that the computer is most often used for playing games (Livingstone & Bovill, 1999; Roberts et al., 1999; van der Voort et al., 1998), word processing, drawing, and math/number work (Livingstone & Bovill, 1999; van der Voort et al., 1998). However, these activities usually do not occur online, and they are therefore not directly useful to our understanding of children's motives for using the Internet.

Today's children and adolescents are in many ways the defining users of the digital media, including the Internet (Montgomery, 2000). Recent survey research suggests that teenagers spend more time online than adults, and they more often use e-mail, a mobile phone, and instant text messaging than do adults (Kraut, Mukhopadhyay, Szczypula, Kiesler, & Scherlis, 1999; NOP Research Group, 2000a, 2000b). Now that the majority of American and European children and adolescents regularly go online (NOP Research Group, 2000a; Turow & Nir, 2000), the time is right to examine how and why children use the Internet.

In our survey, we explored several different motives for using the Internet (e.g., information, entertainment, and social interaction) and the relative importance of each of these motives. Because the existing research evidence on children's uses of and experiences with the Internet is too scarce to formulate specific hypotheses, our first research question asked the following:

*Research Question 1*: What are children's motives for using the Internet, and what is the relative importance of each of these motives?

**Age and gender differences in children's motives for using the Internet.** Uses-and-gratifications researchers acknowledge that children's developmental level and gender may interact with their motives for using media. Rubin (1977) found that for 9-year-olds, "viewing for arousal" was the most important reason to watch television, whereas for 13- and 17-year-olds, "viewing to pass time" was the most important reason. No significant gender differences in children's television viewing motives were found.

**Age and gender differences in children's motives for using the Internet have never been investigated.** Therefore, we can only speculate about possible differences on the basis of general theories on developmental and gender differences. As for age, it is likely that older children use the Internet more for
social interaction than do younger children. At the end of middle childhood, social identity, peer interactions, and relationships become increasingly important (Durkin, 1997). Thus, it is likely that children become more interested in the Internet for communication purposes, such as e-mail or chat. Likewise, it is possible that as children mature, they begin to use the Internet more for information purposes. During adolescence, several important needs emerge, such as the need to feel attractive, successful, and self-esteem (Klinger, 1969; Shaffer, 1996). This development may induce older children and adolescents to turn to the Internet to seek information, for example, about their hobbies, idols, or successful people.

Some speculations can also be made about the uses of the Internet by different genders. First, research has consistently shown that male children are more interested in playing video and computer games than are female children (e.g., Funk, 1993; Kubey & Larson, 1990; Roberts et al., 1999). Because the Internet provides many opportunities to play online games, it is conceivable that boys more often than girls use the Internet for entertainment purposes. Similarly, girls, who are generally more inquisitive (Lindsley, 1990) and more compliant to the requests of parents and teachers than boys are (Maccoby, 1990), would seem more likely to use the Internet to seek information, for example, for their homework. Finally, research has shown that girls more frequently than boys use the telephone to chat and keep in touch with friends (Livingstone & Bovill, 1999), so it seems possible that girls will turn to the Internet for social interaction in larger numbers than boys.

Although plausible, our speculations about age and gender differences in children’s motives for using the Internet do not allow us to formulate hypotheses. Our second research question therefore asked the following:

*Research Question 2*: How do children’s motives for using the Internet differ for boys versus girls and for younger versus older children?

Children’s Positive Experiences With the Internet

A fundamental assumption in uses-and-effects research is that any effect of media and their content on children is channeled by what the child user makes of it. A focus on the effects of the Internet on children may therefore be premature until we understand what children are actually doing with the Internet and what they like and dislike while going online.

According to a recent report on children’s patterns of Internet use (Turow & Nir, 2000), the most popular activities on the Internet among 10- to 17-year-olds were visiting Web sites and sending and receiving e-mail. For nearly all
children (91%), going online meant visiting Web sites, whereas for 83% going online meant sending and receiving e-mail. In addition, 43% of the children reported participating in chat rooms, whereas 32% of the children reported playing games with other children.

Although informative and helpful, Turow and Nir’s survey was not designed to cover the whole range of potential positive experiences of children while being online. By analyzing children’s open-ended responses, we tried to get a broader overview of children’s positive experiences with the Internet. Our third research question was as follows:

Research Question 3: What are children’s positive experiences on the Internet?

Age and gender differences in children’s positive experiences with the Internet. Turow and Nir’s (2000) survey on children’s Internet use revealed that 13- to 17-year-olds were more likely than 10- to 12-year-olds to send and receive e-mails and to participate in chat rooms and online game playing. Boys used the Internet more often to play online games than did girls. There were no significant differences between boys and girls in sending and receiving e-mails, visiting chat rooms, or visiting Web sites.

With the exception of Turow and Nir’s survey report, there is no academic research on age and gender differences in children’s positive experiences with the Internet. However, research on children’s preferences of television content may offer some points of departure. By the time children are 8 or 9 years old, they are increasingly interested in real-life phenomena (Mielke, 1983). At this age, they are mainly interested in programs designed for adults (Rosengren & Windahl, 1989). One of the reasons of children’s interest in such programs is their need to be taught social lessons, such as how to behave in social relationships (Gunter, McAleer, & Clifford, 1991). However, despite their interest in real life, children still value fast-paced action, dramatic conflict, and comic escape (Valkenburg & Cantor, 2000). Children in middle childhood are particularly interested in sports, music, and animals (Livingstone & Bovill, 1999; Mielke, 1983) as well as in admirable characters, such as sports heroes, movie stars, and real-life action heroes (Acuff & Reiher, 1997; Livingstone & Bovill, 1999). It is likely that children’s accounts of their positive experiences with the Internet will reflect these specific preferences of children in middle childhood.

Literature on children’s preferences of media content have revealed some distinct gender differences. One of the most clear-cut gender differences in media preferences is that male children and adolescents have a stronger preference for action-oriented and violent programs than do their female
counterparts (Cantor, 1998). Boys generally take more risks than girls (Christophersen, 1989), and they prefer more wicked and irreverent types of humor (Acuff & Reiher, 1997; McGhee, 1979). In comparison to boys, girls are less object oriented and more relation centered (Acuff & Reiher, 1997). They are less interested than boys in devices such as lasers and futuristic weapons (Valkenburg & Cantor, 2000). Liking real-life situations, they are interested in the development of relationships between characters. Girls are more eager to look for actors or actresses they recognize and invest more time searching for information about shows, characters, and idols (Heeter, 1988). To investigate age and gender differences with respect to the Internet, our fourth research question was the following:

Research Question 4: How do children’s positive experiences with the Internet differ for boys versus girls and younger versus older children?

Assessing Children’s Negative Experiences With the Internet

A final aim of our study was to explore whether and how frequently children experienced negative situations on the Internet. Potentially, the Internet has three risks for children (Magid, 1998). First, like traditional media such as the television, radio, books, and the VCR, children can be exposed to disturbing material on the Internet that is sexual or violent in nature. Second, due to the Internet’s ample opportunities for social interaction, children might receive e-mail or other messages that are embarrassing, upsetting, or hostile, so that they are susceptible to online harassment. Third, in the case that children give out personal information such as their address or arrange an encounter with a person who cannot be trusted, they are subject to the potential danger of being harassed off-line.

In this study, we explored whether and how often each of the three threats of the Internet—(a) exposure to inappropriate material, (b) online harassment, and (c) off-line harassment—occurred among our sample of children. Our fifth research question therefore was as follows:

Research Question 5: How often do children experience negative or disturbing situations on the Internet?

Age and gender differences in children’s negative experiences with the Internet. Research on developmental differences in children’s fear has shown that many media-produced fear reactions, such as fear of fantasy characters
and interpersonal violence, decline between 7 and 12 years of age (Valkenburg, Cantor, & Peeters, 2000). One would therefore expect that older children would report fewer unpleasant experiences with the Internet than would younger children. On the other hand, it is conceivable that older children report more instead of fewer unpleasant experiences. During middle childhood, the need for sensation rapidly increases, and it reaches a peak during adolescence (Zuckerman, 1979). So, early adolescence is a period during which children start to be interested in sensationalist media content. Teenagers are more likely than younger children to use the Internet for social interaction, such as online discussions about relationships and sexual activity (Magid, 1998). They might therefore more easily encounter sexual or violent material than would younger children. Due to their curiosity, older children might therefore be more susceptible than younger children to experience the latter two risks of the Internet: online and off-line harassment.

Some gender-related predictions may also be made. First, there is evidence that girls less often like violent entertainment and more often value the innocuousness of entertainment programs than boys (Valkenburg & Janssen, 1999). In addition, research shows that girls more often than boys report experiencing media-induced fright (Peck, 1999). These two factors could cause girls to report more negative experiences with the Internet than would boys. To investigate age and gender differences in children’s accounts of their negative experiences, our final research question was the following:

Research Question 6: How do children’s negative experiences with the Internet differ for younger versus older children and for boys versus girls?

Method

Sample

A total of 808 children between the ages of 8 and 13 years were approached for our survey study. The children were recruited from eight elementary schools located in the southern part of the Netherlands. By choosing these particular schools, our sample consisted of children with various socioeconomic backgrounds. Because it is impossible to study children’s uses of and experiences with the Internet at home if they have no home access to the Internet, we first asked all children whether they had home access to the Internet. Only the children (14% boys and 10% girls) who responded positively to this question were included in our study. Our final sample consisted.
of 194 children, 110 boys and 84 girls (21% third graders, 26% fourth graders, 29% fifth graders, and 24% sixth graders).

Procedure

The questionnaires were administered to groups of 4 to 6 children in an empty classroom in the schools. It contained questions about the children’s gender and age, the frequency of Internet use, their motives for using the Internet, and their enjoyable and disturbing experiences with the medium. Completing the questionnaire took about 15 minutes.

Measures

Children’s motives for using the Internet. Our measure of children’s motives for using the Internet was in large part based on earlier scales that measured children’s motives for watching television (Greenberg, 1974; Rubin, 1983). These scales had to be adjusted because the Internet has some particular characteristics that differ from television, such as its interactive nature and its possibilities to play games and to communicate with other individuals. Children were presented with 24 items that reflected the different possibilities of the Internet. They were asked to specify how much each of the statements was similar to their own reasons for using the Internet: 1 (never), 2 (almost never), 3 (sometimes), or 4 (often).

The items were entered into an exploratory principal components analysis with varimax rotation. An initial analysis yielded seven factors with an eigenvalue higher than 1.0. Four items failed to load exclusively on one factor and were subsequently removed. These items were “because it makes me feel less lonely,” “so I can get away from the rest of the family or others,” and “because it is something to do when friends come over.” A second principal components analysis, which explained 60.4% of the variance, yielded six interpretable factors with an eigenvalue higher than 1.0. Table 1 shows the 20 items and their individual factor loadings. The six factors were labeled boredom-avoidance (4 items, eigenvalue = 2.67), entertainment (5 items, eigenvalue = 2.10), information (3 items, eigenvalue = 2.03), affinity with computers (3 items, eigenvalue = 1.83), online social interaction (3 items, eigenvalue = 1.80), and off-line social interaction (2 items, eigenvalue = 1.67).

Scales were constructed for each of the six motives for using the Internet by averaging the unweighted scores on the items indexing each factor. Cronbach’s alpha values ranged from .61 for off-line social interaction to .77 for boredom-avoidance (see Table 1). The correlation between the six scales
Table 1  
Principal Components Solution of Children’s Motives for Using the Internet

<table>
<thead>
<tr>
<th>Factor 1: Boredom avoidance</th>
<th>Factor 2: Entertainment</th>
<th>Factor 3: Information</th>
<th>Factor 4: Affinity with computers</th>
<th>Factor 5: Online social interaction</th>
<th>Factor 6: Off-line social interaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>I use the Internet . . .</td>
<td></td>
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<tr>
<td>because it passes the time</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>away when I’m bored</td>
<td>.80</td>
<td>.18</td>
<td>−.14</td>
<td>.06</td>
<td>−.05</td>
</tr>
<tr>
<td>because it gives me something to do to occupy my time</td>
<td>.74</td>
<td>.11</td>
<td>−.04</td>
<td>.12</td>
<td>−.05</td>
</tr>
<tr>
<td>because there is no one else around to play with</td>
<td>.73</td>
<td>−.01</td>
<td>.04</td>
<td>.10</td>
<td>.26</td>
</tr>
<tr>
<td>because there is nothing else to do</td>
<td>.67</td>
<td>.19</td>
<td>−.05</td>
<td>.17</td>
<td>−.12</td>
</tr>
<tr>
<td>Factor 2: Entertainment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>because it’s enjoyable</td>
<td>−.09</td>
<td>.77</td>
<td>.04</td>
<td>.21</td>
<td>.10</td>
</tr>
<tr>
<td>because it’s a pleasant rest</td>
<td>.29</td>
<td>.60</td>
<td>.18</td>
<td>−.03</td>
<td>.05</td>
</tr>
<tr>
<td>because it relaxes me</td>
<td>.39</td>
<td>.57</td>
<td>.14</td>
<td>−.08</td>
<td>.14</td>
</tr>
<tr>
<td>to momentarily get away</td>
<td>−.09</td>
<td>.48</td>
<td>−.08</td>
<td>.29</td>
<td>.16</td>
</tr>
<tr>
<td>from other things</td>
<td>.25</td>
<td>.48</td>
<td>−.02</td>
<td>.44</td>
<td>.26</td>
</tr>
<tr>
<td>to find information about my idols</td>
<td>−.08</td>
<td>.24</td>
<td>.78</td>
<td>.05</td>
<td>.04</td>
</tr>
<tr>
<td>to find information about my hobbies</td>
<td>−.04</td>
<td>−.06</td>
<td>.77</td>
<td>.20</td>
<td>.13</td>
</tr>
<tr>
<td>to find information for homework.</td>
<td>−.07</td>
<td>−.02</td>
<td>.64</td>
<td>.21</td>
<td>.26</td>
</tr>
<tr>
<td>Factor 3: Information</td>
<td></td>
<td></td>
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<tr>
<td>to find information about my idols</td>
<td>−.08</td>
<td>.24</td>
<td>.78</td>
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<tr>
<td>to find information about my hobbies</td>
<td>−.04</td>
<td>−.06</td>
<td>.77</td>
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<tr>
<td>to find information for homework.</td>
<td>−.07</td>
<td>−.02</td>
<td>.64</td>
<td>.21</td>
<td>.26</td>
</tr>
<tr>
<td>Factor 4: Affinity with computers</td>
<td>.02</td>
<td>−.04</td>
<td>−.03</td>
<td>.72</td>
<td>.16</td>
</tr>
<tr>
<td>because I am curious to what you can find</td>
<td>.16</td>
<td>.19</td>
<td>.29</td>
<td>.67</td>
<td>−.06</td>
</tr>
<tr>
<td>because I like it</td>
<td>.28</td>
<td>.29</td>
<td>.21</td>
<td>.57</td>
<td>−.12</td>
</tr>
<tr>
<td>because I like to work with computers</td>
<td>.28</td>
<td>.29</td>
<td>.21</td>
<td>.57</td>
<td>−.12</td>
</tr>
<tr>
<td>Factor 5: Online social interaction</td>
<td>.07</td>
<td>.24</td>
<td>.05</td>
<td>.06</td>
<td>.78</td>
</tr>
<tr>
<td>to make new friends</td>
<td>.07</td>
<td>.24</td>
<td>.05</td>
<td>.06</td>
<td>.78</td>
</tr>
<tr>
<td>to get to know children in other countries</td>
<td>.08</td>
<td>−.03</td>
<td>.34</td>
<td>−.12</td>
<td>.66</td>
</tr>
<tr>
<td>to e-mail</td>
<td>−.09</td>
<td>.16</td>
<td>.17</td>
<td>.18</td>
<td>.62</td>
</tr>
<tr>
<td>Factor 6: Off-line social interaction</td>
<td>.02</td>
<td>.18</td>
<td>.14</td>
<td>.12</td>
<td>.06</td>
</tr>
<tr>
<td>to talk about it with friends</td>
<td>.02</td>
<td>.18</td>
<td>.14</td>
<td>.12</td>
<td>.06</td>
</tr>
<tr>
<td>because my friends also use the Internet</td>
<td>.23</td>
<td>−.03</td>
<td>−.19</td>
<td>.21</td>
<td>.17</td>
</tr>
<tr>
<td>Cronbach’s alpha</td>
<td>.77</td>
<td>.66</td>
<td>.67</td>
<td>.63</td>
<td>.61</td>
</tr>
</tbody>
</table>

ranged from $r = −.06$, n.s., between boredom-avoidance and information to $r = .47, p < .01$, between entertainment and affinity with computers.
Children’s positive experiences with the Internet. To develop an idea about children’s positive experiences with the Internet, we asked children to think of and write down something that they encountered on the Internet that they enjoyed. To analyze children’s open-ended responses about their positive experiences with the Internet, we set up a series of coding categories. The development of these categories was based on an overview of all children’s open-ended responses. Because many children described more than one positive experience, each category was coded as being present (1) or absent (0) in the child's open-ended response. Thus, the categories were not mutually exclusive. Coding was done by two independent judges. Intercoder reliabilities, as measured by Cohen’s kappa, were satisfactory (all kappas between .76 and 1.00). To analyze children’s positive experiences, the following 13 coding categories were identified:

1. Playing or downloading computer games.
2. Mentioning of kid’s entertainment site (examples include Kids Planet and Fox Kids).
3. Video (clips) and songs.
4. Codes or cheats (special codes in computer games to improve the playing conditions, for instance, by gaining more lives, energy, or levels); codes and cheats are used for online and offline games.
5. Sensationalist content (violence, sexuality, pornography).
6. Information related to movies/TV programs.
7. Information about idols.
8. Information about sports.
9. Information about animals.
10. Other information (responses too diverse to be coded into one of the other information categories).
11. E-mail.
12. Chatting.

On the basis of these coding categories, three subdivisions were composed. Coding Categories 1 to 5 were grouped into a subdivision called entertainment, Categories 6 to 10 were grouped into a subdivision called information, and Categories 11 to 13 were grouped into a subdivision called social interaction.

Children’s unpleasant experiences with the Internet. To investigate children’s negative experiences with the Internet, we asked children to think of and write down something that they experienced on the Internet that
disturbed them. Unlike children’s reports on their positive experiences with the Internet, which often included more than one experience, children’s reports on their negative experience often included only one experience, so children’s open-ended responses could be coded into mutually exclusive categories. The following seven categories were coded: 0 (never experienced anything disturbing), 1 (a virus or computer crash), 2 (violence), 3 (pornography), 4 (online sexual harassment), 5 (other online harassment), and 6 (other disturbing experience) (e.g., long waiting times, too much advertising, losing a game). Intercoder reliability as measured by Cohen’s kappa was .93.

Results

Children’s Motives for Using the Internet

To investigate differences in motives for using the Internet between boys and girls as well as younger and older children, we conducted a MANOVA on the means of children’s motives for using the Internet, with gender and age (8- to 10-year-olds vs. 11- to 13-year-olds) as between-subjects factors. The MANOVA did not show a multivariate main effect of gender, $F(6, 185) = .58$, $p = .74$, or a significant interaction between gender and age, $F(6, 185) = .89$, $p = .51$. This implied that boys and girls in both age groups did not significantly differ from each other with respect to the six motives for using the Internet.

The MANOVA did show a significant main effect of age, $F(6, 185) = 3.21$, $p < .01$, $\eta^2 = .10$. Table 2 presents the means and standard deviations for boys and girls and for younger and older children with respect to each of the six motives for using the Internet.

Univariate tests showed that most motives for using the Internet (i.e., affinity with computers, entertainment, online social interaction, and off-line social interaction) were about equal for younger and older children. In fact, the multivariate main effect of age could be attributed only to information and boredom avoidance. As Table 2 shows, older children more often reported using the Internet for information purposes than did younger children, $F(1, 190) = 13.90, p < .001, \eta^2 = .07$. Conversely, younger children reported using the Internet to avoid boredom more often than did older children, $F(1, 190) = 4.33, p < .05, \eta^2 = .02$.

A post hoc paired $t$ test showed that some motives for using the Internet were more important than others. The most important motive for using the Internet was affinity for computers, followed by information seeking. Entertainment and boredom avoidance were the third most important motives.
<table>
<thead>
<tr>
<th>Motive</th>
<th>Entire Sample</th>
<th>8- to 10-Year-Olds</th>
<th>11- to 13-Year-Olds</th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Affinity with computers</td>
<td>3.23&lt;sub&gt;c&lt;/sub&gt;</td>
<td>.69</td>
<td>3.26</td>
<td>.67</td>
<td>3.20</td>
</tr>
<tr>
<td>Information</td>
<td>2.67&lt;sub&gt;d&lt;/sub&gt;</td>
<td>.89</td>
<td>2.44&lt;sub&gt;x&lt;/sub&gt;</td>
<td>.86</td>
<td>2.45&lt;sub&gt;y&lt;/sub&gt;</td>
</tr>
<tr>
<td>Entertainment</td>
<td>2.32&lt;sub&gt;c&lt;/sub&gt;</td>
<td>.71</td>
<td>2.34</td>
<td>.63</td>
<td>2.29</td>
</tr>
<tr>
<td>Boredom avoidance</td>
<td>2.25&lt;sub&gt;c&lt;/sub&gt;</td>
<td>.81</td>
<td>2.38&lt;sub&gt;y&lt;/sub&gt;</td>
<td>.74</td>
<td>2.14&lt;sub&gt;a&lt;/sub&gt;</td>
</tr>
<tr>
<td>Online social interaction</td>
<td>1.89&lt;sub&gt;b&lt;/sub&gt;</td>
<td>.77</td>
<td>1.84</td>
<td>.74</td>
<td>1.93</td>
</tr>
<tr>
<td>Off-line social interaction</td>
<td>1.71&lt;sub&gt;a&lt;/sub&gt;</td>
<td>.81</td>
<td>1.80</td>
<td>.99</td>
<td>1.65</td>
</tr>
</tbody>
</table>

Note. Motives with different subscripts of a through e are significant from each other at least at $p < .05$. Differences between younger and older children noted by subscripts x and y are significant at least at $p < .05$. 
Online social interaction and off-line social interaction were the least important motives for using the Internet.

Although the MANOVA showed differences between younger and older children with respect to the information and boredom-avoidance motive, Table 2 shows that the hierarchy in children’s motives for using the Internet held for 8- to 10-year-olds and 11- to 13-year-olds as well as for boys and girls. The different subscripts in the left-hand column of Table 2 indicate which motives for using the Internet differed significantly from each other at the $p < .05$ level.

**Children’s Positive Experiences With the Internet**

To investigate differences in the positive experiences of younger and older children as well as boys and girls, we conducted a series of cross-tabulations on each of the 13 coding categories that we identified as well as on the overall subdivisions of entertainment, information, and social interaction. Table 3 presents the mean percentages of each of the coding categories for 8- to 10-year-olds and 11- to 13-year-olds as well as for boys and girls.

As Table 3 shows, most children (46.4%) mentioned a positive experience in the entertainment subdivision. Although older children and girls tended to report more frequently than younger children and boys an experience that fits into the entertainment subdivision, this difference just fell below significance ($p < .10$).

Within the entertainment subdivision, the cross-tabulation revealed two significant gender differences. Only boys (with the total exclusion of girls) reported that they liked to use the Web to find or download codes or cheats, $\chi^2 = 10.64, n = 194, df = 1, p < .001$. In addition, only boys mentioned sensationalist content as a positive experience, $\chi^2 = 6.37, n = 194, df = 1, p < .05$.

The cross-tabulation on the information subdivision revealed that 26.3% of the entire sample mentioned finding some kind of information on the Internet as a positive experience. The information subdivision did not yield a significant age difference. Nonetheless, it did reveal a significant gender difference: Girls more often mentioned finding information as a positive experience than boys did, $\chi^2 = 6.79, n = 194, df = 1, p < .01$.

Although there were no significant age differences in the information subdivision, there was a significant interaction of age for type of information in that older children more often than younger children mentioned finding information about sports and about idols as a positive experience, $\chi^2 = 4.72, n = 194, df = 1, p < .05; \chi^2 = 3.05, n = 194, df = 1, p < .05$. 

664
Within the information subdivision, one gender difference showed up. Girls more often than boys mentioned surfing for information about idols, $\chi^2 = 6.42, n = 194, df = 1, p < .05$, as a positive experience.

In the entire sample, 12.4% of the children mentioned some form of social interaction as a positive experience. Older children tended to mention e-mail as a positive experience more often than did younger children, and girls tended to report chatting and meeting other people more often as a positive experience, but these difference fell below significance, probably due to the low number of observations in each cell.

### Table 3

<table>
<thead>
<tr>
<th>Positive Experience</th>
<th>Entire Sample</th>
<th>8- to 10-Year-Olds</th>
<th>11- to 13-Year-Olds</th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Playing or downloading</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>computer games</td>
<td>16.5</td>
<td>14.8</td>
<td>17.2</td>
<td>15.5</td>
<td>17.9</td>
</tr>
<tr>
<td>Video (clips) and songs</td>
<td>12.9</td>
<td>11.1</td>
<td>14.4</td>
<td>10.0</td>
<td>16.7</td>
</tr>
<tr>
<td>Kids entertainment sites</td>
<td>12.4</td>
<td>12.2</td>
<td>12.5</td>
<td>11.8</td>
<td>13.1</td>
</tr>
<tr>
<td>Codes or cheats</td>
<td>6.7</td>
<td>3.3</td>
<td>9.6</td>
<td>11.8</td>
<td>0.0b</td>
</tr>
<tr>
<td>Sensational content</td>
<td>4.1</td>
<td>3.3</td>
<td>4.8</td>
<td>7.3b</td>
<td>0.0a</td>
</tr>
<tr>
<td>Entertainment total†</td>
<td>46.4</td>
<td>41.1</td>
<td>51.1</td>
<td>50.9</td>
<td>40.5</td>
</tr>
<tr>
<td>Information about</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Animals</td>
<td>7.2</td>
<td>8.9</td>
<td>5.8</td>
<td>4.5</td>
<td>10.7</td>
</tr>
<tr>
<td>Idols</td>
<td>6.7</td>
<td>3.3a</td>
<td>9.6y</td>
<td>2.7a</td>
<td>11.9b</td>
</tr>
<tr>
<td>Sports</td>
<td>4.6</td>
<td>1.1x</td>
<td>7.7y</td>
<td>5.5</td>
<td>3.6</td>
</tr>
<tr>
<td>Movies/TV programs</td>
<td>3.1</td>
<td>1.1</td>
<td>4.8</td>
<td>1.8</td>
<td>4.8</td>
</tr>
<tr>
<td>Other information</td>
<td>8.2</td>
<td>12.2y</td>
<td>4.8x</td>
<td>5.5</td>
<td>11.9</td>
</tr>
<tr>
<td>Information total†</td>
<td>26.3</td>
<td>22.2</td>
<td>29.8</td>
<td>19.1</td>
<td>35.7</td>
</tr>
<tr>
<td>E-mail</td>
<td>5.2</td>
<td>2.2</td>
<td>7.7</td>
<td>5.5</td>
<td>4.8</td>
</tr>
<tr>
<td>Chatting</td>
<td>4.6</td>
<td>3.3</td>
<td>5.8</td>
<td>2.7</td>
<td>7.1</td>
</tr>
<tr>
<td>Meeting children/people</td>
<td>6.7</td>
<td>5.6</td>
<td>7.7</td>
<td>4.4</td>
<td>9.5</td>
</tr>
<tr>
<td>Social interaction total†</td>
<td>12.4</td>
<td>10.0</td>
<td>15.5</td>
<td>10.0</td>
<td>14.4</td>
</tr>
</tbody>
</table>

Note. Differences between boys versus girls (items with subscripts a and b) and younger versus older children (subscripts x and y) are significant at least at $p < .05$.

† Totals are composed of the sum scores of the children who mentioned at least one of the subcategories of each of these overall categories. The percentages of the different subcategories are not mutually exclusive; therefore, they do not add up to the total scores.

### Children’s Negative Experiences With the Internet

To investigate children’s negative experiences with the Internet between younger and older children and between boys and girls, we again used a
series of cross-tabulations. As Table 4 shows, the majority of the children (75.3%) reported never having experienced something negative on the Internet.

Of the children who did report a negative experience, most children (10.3%) reported that a virus or computer crash had caused their negative experience. Both violence and pornography were mentioned as a negative experience by 4.1% of the children. Finally, 1.5% of the children reported online sexual harassment, and 1% mentioned another kind of harassment as the cause of their negative experience.

The cross-tabulations revealed some age and gender differences. Younger children and girls more often than older children and boys reported experiencing sites with violence as unpleasant. Similarly, girls more often than boys mentioned pornography as an unpleasant experience. Finally, online sexual harassment was reported more frequently among older children and girls than among younger children and boys. However, the percentages of sexual harassment did not reach statistical significance, probably due to the low number of cases per cell.

Discussion

The first aim of this study was to investigate children’s motives for using the Internet and the relative importance of each of these motives. Affinity with computers was children’s most important motive for using the Internet. Children liked to sit in front of the computer, and they were curious about what the Internet could offer them. Seeking information was the second most important motive. Children often reported using the Internet to find information about their hobbies and idols as well as to help with their homework. Entertainment was the third most important motive for using the Internet.

Off-line social interaction was the least important motive for using the Internet. Children did not frequently use the Internet to talk about its content with their friends, as they regularly do in the case of television programs (Gunter et al., 1991). A possible explanation for this finding is that, until now, the Internet does not provide children with a common experience like popular television programs do. It has been shown that from the age of 6, children increasingly use the content of popular television programs in verbal social interactions with other children (James & McCain, 1982). It might be that the Internet is still too individualistic and fragmented to provide children with the common experience necessary for social interactions related to its content. This might of course change rapidly in the coming years.

We found two age differences in children’s motives for using the Internet. First, older children reported using the Internet more for information
purposes than did the younger ones. This age difference is conceivable, because older children usually have more demands on them from schoolwork so that they might use the Internet more often to search for school-related information. It is also possible that older children, who are more sensitive to peer influences and have more money to spend than do younger children, use the Internet more often to gather information about products and services that they want to purchase.

Our findings showed that the importance of information seeking versus entertainment as a motive for using the Internet is moderated by age. For younger children, we found no significant difference in the frequency with which they used the Internet for entertainment and information seeking, whereas for older children, information seeking was obviously more important than entertainment. This finding confirms earlier uses-and-gratifications research with respect to television (Rubin, 1977), which demonstrated that age or developmental level interacts with children’s motives for using television. Future research should always include age or developmental level as a moderating variable. Without specifying children’s age, it is impossible to make meaningful generalizations concerning children and the Internet, because results that hold for one particular age group do not necessarily hold for another one.

We did not find any gender differences in children’s motives for using the Internet. In the introduction, we speculated that boys possibly use the Internet more for entertainment purposes and girls more for information and social interaction. This expectation was not confirmed. It must be noted,
however, that our lack of finding gender differences in children’s general motives for using the Internet does not necessarily mean that boys and girls attach the same value to different uses of the Internet. In other words, although boys and girls may use the Internet as often to seek information, entertainment, and social interaction, they might be using different kinds of information and entertainment, and they might differ in their liking of each of these uses. This latter assumption was investigated by means of our next research question.

Children’s Positive Experiences With the Internet

The second aim of our survey was to get insight into children’s positive experiences with the Internet. What do children enjoy while being online? Playing or downloading (computer) games was mentioned most frequently. Children also often mentioned listening to music clips and songs and visiting a kids entertainment Web site, such as Fox Kids and Kids Planet, as a positive experience. Kids entertainment sites usually offer a wide range of experiences, including games, chat rooms, contests, music clips, and means to contact idols and potential pen pals. Other entertainment categories that were often mentioned as a positive experience were the retrieval of codes or cheats as well as sensationalist content (violence, sexuality, or pornography). We found several age differences in children’s positive experiences with the Internet. First, older children described the retrieval of information as a positive experience more often than did younger children. Older children were especially interested in information about idols, sports, and television programs. Older children also more often mentioned the retrieval of codes or cheats as a positive experience. However, this might be due to the fact that younger children still lack the advanced Internet skills to retrieve codes or cheats. Finally, older children more often described e-mailing as a positive experience, which is plausible because children at the end of middle childhood are increasingly involved in peer interactions (Durkin, 1997) and are generally more interested in developing social relationships.

Gender represented a significant divide in the interests and preferences of the children in our sample. First, only boys were interested in sensationalist content on the Internet. This is consistent to the literature on sensation seeking, which shows that boys have, on average, a greater need for sensation than girls do (Zuckerman, 1979). High-sensation seekers look for arousing experiences in life, and their taste for violence and pornography in the media reflects this trait (Zuckerman, 1979).

Boys and girls did not differ in their interest to play or download computer games. This is a remarkable finding that contradicts the results of studies.
conducted in the early 1990s, which consistently demonstrated that boys are more interested in playing computer games than girls are (e.g., Funk, 1993; Kubey & Larson, 1990). A plausible explanation for our lack of finding gender differences is that during the past years, it has become common for kids entertainment sites to provide girl-friendly games. Contemporary kids sites (e.g., www.neopets.com) include games (e.g., adventures and riddles) that also appeal to girls. This shift toward girl-friendly games started in the second half of the 1990s with the successful *Barbie Fashion Designer* games, which contained features that corresponded with typical girls’ fantasies, such as dating, fashion, hairstyles, characters, and storytelling (Gilmour, 1999). Our finding that only boys and no girls described downloading codes or cheats as a positive experience does confirm that the two genders are still interested in different types of games, because codes and cheats are relatively often applied in action-oriented and violent games.

As anticipated in our introduction, girls more often than boys described the retrieval of information as a positive experience. Girls’ responses revealed that they especially like to find information about animals and their idols. This finding confirms earlier research on gender differences in media preferences, which has shown that girls more often than boys like to see programs featuring nature and animals (Livingstone & Bovill, 1999) and are more eager to invest time searching for information about television characters and idols (Heeter, 1988).

*Children’s Negative Experiences With the Internet*

Our final aim was to investigate how often children experience disturbing situations when online. Our findings showed that 24.7% of the children reported having experienced something disturbing on the Internet. This percentage seems very high at first sight, but analysis of the content of children’s responses showed that most children spontaneously mentioned a virus or computer crash as a disturbing experience. Of course, a virus or a computer crash can be highly unpleasant. However, they are inevitable technical malfunctions unrelated to the three risks of the Internet noted earlier: (a) exposure to inappropriate material, (b) online harassment, and (c) off-line harassment.

Children’s open-ended responses about their negative experiences showed a significant age interaction. Whereas violence on the Internet was more often mentioned by younger children, online harassment was slightly more often mentioned by older children. This result is in line with both theories on cognitive development and sensation seeking. Research has shown that media-produced fear of violence declines between 8 and 12 years,
probably because children are increasingly able to use cognitive reasoning to override their immediate fears (Valkenburg et al., 2000). On the other hand, at the end of middle childhood, children are more likely to use the Internet for social interactions about relationships and sexual activity, which might increase the chance of online harassment. As they enter adolescence, children start to be interested in sensationalist media content due to their increased need for sensation (Zuckerman, 1979). Although we included only young adolescents in our sample, which could mask prominent differences between younger and older children, our data do suggest that teenagers might be more vulnerable to online harassment than younger children.

None of the children in our sample spontaneously referred to off-line harassment. Although rare, off-line harassment imposes the most serious risk of the Internet. Due to teenagers' curiosity and interest in relationships and sexuality, they seem more likely to give out personal information, which may potentially make them vulnerable. Parents and educators should be well aware of this risk, which can be greatly minimized by some family rules about computer use. According to Magid (1998), parents should make it a family rule to (a) never give out personal information, such as home address, school name, or telephone number in chat rooms or via e-mail; (b) never allow a child to arrange a personal meeting with another computer user without parental permission; and (c) always remember that people online may not be who they seem to be (see Magid, 1998, for more safety rules).

Limitations of the Study and Suggestions for Further Research

Our study involved an exploratory study and was meant to gain some insights about children's uses of and their positive and negative experiences with the Internet. With respect to children's positive and negative experiences, we relied on children's open-ended answers. Although open-ended responses are useful in exploratory research phases, a disadvantage of such procedures is that they lack sensitivity, because the nominal content categories do not allow for parametric statistical tests, which are in general more powerful (Siegel & Castellan, 1998). Although our open-ended responses showed some clear age and gender differences, some of these trends did not reach significance. We could have solved this problem by choosing fewer content categories, but this would have resulted in an inevitable loss of valuable information. Future research should use and elaborate on our content categories to develop alternative methods, which allow for the use of parametric tests.
Because our survey focused on children's uses of and experiences with the Internet in their home environment, our sample included only children with home access to the Internet. Our findings can therefore only be generalized to children with home access to the Internet. Because home Internet access is related to family income both in the United States (Turow, 1999) and Europe (Livingstone & Bovill, 1999; van der Voort et al., 1998), our generalizations must be interpreted as such.

Our study has shown that although boys and girls did not differ in their general motives for using the Internet, their open-ended answers about their experiences with the Internet indicate that gender represents a major divide in children's preferences of the Internet. We also found some distinct differences between younger and older children. The 11- to 13-year olds in our sample responded in many respects as older adolescents would respond. This result is consistent with earlier research that showed that children from the age of 10 have tastes and preferences that are highly similar to those of adolescents (e.g., Buijzen & Valkenburg, 2000). Future research into children's preferences of the Internet should take into account that elementary school children are not at all a monolithic group of Internet users. Conclusions about children's Internet use should therefore always be interpreted in terms of the specific age and gender of children.

Because Internet use is evolving at such a fast pace, academic statistics on children's uses and opinions of the Internet are often out of date before the study is published. It is possible that children's uses and opinions of the Internet change as the medium further expands and unfolds. For example, it is possible that online and off-line social interaction, which were relatively unimportant motives in our study, will become increasingly important in the coming years. Despite this inherent drawback of investigating rapidly evolving technologies, there is a substantial need for theoretically based studies into the uses and effects of the Internet. Some research questions can directly be adopted from research into the use and effects of television and computer games. However, there are also many research questions that are unique to the Internet.

Research into the uses and effects of the Internet needs to explore the processes of selective exposure more systematically (Brown & Cantor, 2000). We cannot have an adequate understanding of the effects of the Internet without taking into account individual differences such as gender, developmental level, temperament, and prior experiences, because these variables have a significant impact on the media children select, the content that is attended to, and the extent to which their attitudes and behaviors are affected. Future research should address questions such as the following: What predisposes
children to avoid some content and spend endless time with other content? How do different children find the information and entertainment they are looking for on the Web? What characteristics of Internet messages make them attractive to different children and why? How do children respond to the potential information overload on the Web? What are the cognitive, affective, and social effects of the different styles of Internet use?

Future research should also take the social context of the Internet and its implications for adult mediation into account. Recent research has shown that newer media such as computer games and the Internet tend to invite more private exposure and a diminished level of involvement of adults than do traditional media such as television (Roberts, 2000). This tendency deserves further research attention in two respects. First, future research should investigate whether the Internet will result in greater individualization and privatization within the family. Do children become more alienated because the Internet functions as a substitute for personal communication? Or does the Internet provide children with stronger social ties to their peers because of its ample opportunities for online social interaction? Second, future research should acknowledge that the social context within which Internet exposure occurs affects how children respond to the media (Roberts, 2000). Literature on adult mediation has repeatedly shown that children’s learning from the media can be facilitated, channeled, or counteracted through an adult who offers comments and interpretations of content. There is a substantial need for adult mediation research of the Internet. How can parents modify the effects of advertising and violence on the Internet? How do children learn to evaluate the quality and reliability of information they find on the Internet? Now that the majority of children and teenagers are online and the Internet plays a major role in children’s lives, questions such as these deserve our full research attention.

Note

1. Datamonitor Market Analysis Experts (www.datamonitor.com) offers many reports that are highly important to the academic research community, such as “Online Education and Edutainment,” “Electronic Games in Europe and the US,” and “The Future of Wireless Gaming.” However, the price of these reports is $3,995 each.

References


