



## Developmental considerations for determining appropriate Internet use guidelines for children and adolescents

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### Abstract

A request from the National Academies to prepare a presentation for a Workshop on Non-Technical Strategies to Protect Youth from Inappropriate Material on the Internet occurred before much was known about children, youth, and the Internet. The author's strategy was to investigate websites that cater to children and adolescents. The developmental issue of consumer socialization was raised by a visit to the Disney website. In contrast, the developmental issues of sexuality, aggression, and intergroup relations were raised by visits to chat rooms hosted by two different Internet Web portals. Examination of existing research literature, in conjunction with visits to the websites, led to the following conclusions: (1) Many parents are aware of the problems of making children the targets of commerce; however, they are quite unaware of the kind of social and cultural worlds young people are creating online. (2) Children and adolescents are not simply the targets of adult Internet creations; they are active participants in creating their own cybercultures, for example, in teen chat rooms. (3) The nature and norms of these cultures can be very much influenced by adult rules, regulations, and participatory monitoring. (4) The important developmental issues raised by this new medium are not unique to the Internet. For example, each psychosocial phenomenon from consumerism to sexuality to aggression has important manifestations in the culture at large.

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## 1. Preliminary comments

A request to prepare a presentation for a Workshop on Non-Technical Strategies to Protect Youth from Inappropriate Material on the Internet stimulated me to find out what young people were actually exposed to on the Internet.<sup>2</sup> As a result, I made several forays into Internet sites frequented by children and youth.

The report that follows shows how policy needs can, at times, outrun available research. Yet, it also shows that publicly available information (here, information available on the Internet itself), in combination with extrapolations from established developmental science and the emerging field of Internet research, has value in raising policy questions and suggesting a research agenda to answer them. Indeed, two studies in this special issue—the study of sexuality and identity in a teen chat room (Subrahmanyam, Greenfield & Tynes, 2004) and the study of race and racism in monitored and unmonitored teen chat rooms (Tynes, Reynolds, & Greenfield, 2004)—actualized a part of the agenda suggested by my report. A third study of the language of teen chat (Greenfield & Subrahmanyam, 2003) was also inspired by these initial forays into Internet sites frequented by children and adolescents.

These three publications notwithstanding, many of the developmental questions for practice and policy that I raise in the pages that follow have still not been answered by systematic research in applied developmental psychology. For example: What are the effects of unbridled Internet commercialism on children's values and consumer practices? What is the effect of depersonalized or degrading chat about sex on adolescent sexuality? These areas continue to reflect socially sensitive issues in need of additional research.

## 2. Introduction

At the time of my presentation in December, 2000, little was known about the developmental effects of the Internet. Therefore, it was necessary to make inferences by triangulating between what was known about child development and socialization, what was known about the effects of earlier media, notably television, what was known about Internet content and its organization, and what was known about how children and adolescents act and interact with the Internet. It was necessary to consider not only what children and adolescents meet on the Internet, but also what they create there. It was also important, both for policy and practice, to consider how adults can affect the norms of children's online Internet communities.

In this article, I use the structure of a few key Internet sites to organize my ideas concerning developmental considerations for determining appropriate Internet use guidelines; I will bring up the

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<sup>2</sup> The request came from The Committee to Study Tools and Strategies for Protecting Kids from Pornography and Their Applicability to Other Inappropriate Internet Content. The committee was established by the Computer Science and Telecommunications Board (a project of the National Research Council) and the Board on Children, Youth, and Families (a joint effort of the National Research Council and the Institute of Medicine). The Committee ultimately issued three reports (Computer Science and Telecommunications Board, 2002; National Research Council and Institute of Medicine, 2001; Thornburgh & Lin, 2002). I have added and updated references to the literature for this publication version of my remarks to the Committee.

specific developmental issues that are raised at each site. Many of the developmental risks that I discuss are nothing more than an intensification of the risks of society at large and the media at large. Commercialism, with which I begin, is one such example.

### 3. Kids and commercialism

From the point of view of our economy, the Internet is training consumers early. But how early is too early? We know from research that children below age four or five cannot distinguish commercial from noncommercial content on television; before age seven or eight, they do not realize that the purpose of the commercial is to sell products (Kunkel, 2001). However, at least on television, commercials are separated in time from program content. Not so on the Internet, where ads are not even separated spatially, let alone temporally, from noncommercial content.

I went into the Disney website, one of the most popular websites for children, to see what children would find on a kids' website. I discovered developmental problems even at a site that is designed especially for children by an icon of children's entertainment. What I found on the Disney site were commercials everywhere, and they were intermingled with "content." This "integration" of content and advertising is a characteristic that Kathryn Montgomery (2001) has noted is all-pervasive in children's (and adults') virtual space on-line. Parents are clearly worried about the effects of Web commercialism on their children (Turow, 2002). My investigation indicated that these worries are more than justified.

On the Disney home page there were two ads at the top marked as such (with the word "ad"). However, most everything else was also selling something, often Disney products. For example, there was an ad (not marked as such) for *The Emperor's New Groove*, a Disney film, in the middle of the home page. The home page also featured ads for the Disney store and Disney vacations. Indeed, very few of the many clickable fields on this page were not selling something. Even, when a field did not lead to something to buy (e.g. the "games" category), it was generally indistinguishable from other "content" that was really advertising (e.g. the fields of Shopping and Entertainment). Let me quote from a former Disney executive:

"The purpose of the Disney website is to tell stories to sell product. The Disney policy is clearly to separate the characters and the story from the sale of the products. Even though there is a stated goal, it's very obvious when you visit the site that the whole purpose is to sell. Disney has perfected the art of turning stories and characters into sales."

Children below four or five have trouble distinguishing content from advertising on TV (and prior research with television indicates that trying to label ads as such makes little difference (Kunkel, 2001)). It is therefore easy to imagine how much more difficult the Web page format makes the discrimination; most likely, the Web format raises the age at which such a differentiation is made. This issue is ripe for research. Everyone is vulnerable to confusion between advertising and information, now that they are so intermixed. But, extrapolating from the TV research, young children are likely to be the most vulnerable of all.

Another developmental issue is the socialization of materialism; this is a likely developmental effect of this type of Internet environment, something that is long established for television (Kunkel, 2001). Consumer socialization keeps the economy going, but, from the point of view of human values, is this what we want for our children's development: to measure identity and success in terms of possessions and, particularly, "branded" possessions? Research has shown that TV

commercials are successful in persuading children to persuade their parents to buy (Kunkel, 2001). So is the Internet. For example, a 1999 market research survey found that 52% of children between the ages of 5 and 17 have asked their parents to purchase something they have seen on the Web (Montgomery, 2001; Thompson, 1999). Another survey found that 67% of on-line teens (13 to 18 years old) and 37% of on-line children (5 to 12 years old) indicated that they had researched or bought products on-line (Montgomery, 2001). Indeed, early research on the Internet indicates that children may be even more susceptible than adults to online advertising: one children's site, MaMaMedia notes that click-through rates (proportion of total visitors that click on Internet ads) are higher for children than for adults.

Yet for parents who try to fight children's desire to buy advertised products, TV commercials lead to parent-child conflict (Kunkel, 2001). Extrapolating from television, we should expect Internet use to also lead to parent-child conflict around the issue of consumer behavior. This is not a positive developmental experience for the child; nor is it an ideal condition of socialization when a parent has to fight such an all-persuasive socializing environment as the Internet.

But on top of all of these developmental issues around the practice of advertising to children, there is much misleading advertising, including links to other websites. I found a particularly insidious example on the Disney website. At the top left of the screen was an ad: "Get 2 Disney movies free." When you clicked on the ad, what you found was that, in order to get the two "free" movies, you had to agree to purchase at least 6 Disney movies over the course of the next year. Each movie cost, the fine print explained, US\$14.95 or 19.95 depending on format. This advertising was not technically misleading, but it was certainly psychologically misleading. Because young children have only limited capability for evaluating commercial persuasion, they are more likely to be drawn in by the ad.

I found that there was misleading advertising even for teenagers. In order to get into a free web portal's teen site in November, 2000, I had to provide personal information on a form. But the form was prechecked, providing permission for the portal service to give out my e-mail address for various commercial purposes. What was misleading or unfair was that the checks were there when I opened the page. If I did not want to receive e-mails from strangers, advertising from the Web portal service, or advertising from other companies, I had to take the initiative and uncheck the boxes. While the Children's Online Privacy Protection Act (which had gone into effect 7 months earlier), would prevent this procedure from taking place on a children's website, this type of power is hard to oppose, even for teenagers. One could very easily fail to read what it says next to the checks and therefore fail to uncheck—even if one did not in fact want to be contacted for various commercial purposes.

#### **4. Sexuality, intergroup relations, and aggression**

##### *4.1. Unsupervised teen chat*

I continued past the personal information form into this free web portal, clicked on "teens" and got into the portal's teen site. The site's motto was "Be seen, be heard, be you." I became quite shocked to see what was being seen and heard. First I clicked on "teen chat" and found a personal ad there. Clearly this ad would expose a teenager to a not-so-virtual sexual come-on, which the teen may not have been seeking and may not be developmentally or psychologically prepared for. This could be a rather scary experience for adolescents just starting to develop romantic and sexual relationships. The developmental

issue is, at what age are you able to cope with initiatives, especially sexual initiatives, taken by others, particularly strangers?

I was interested in teen chat because research had shown that a substantial percentage of young people frequent chat sites, whereas their parents do not (Subrahmanyam, Kraut, Greenfield, & Gross, 2001). Trying to get into the chat room proper, I ended up in a room called “night.” My report from “night” begins with sexuality.

Sexuality is clearly an important developmental issue in the teen years. But what kind of sexuality were teens both creating and being exposed to in this chat room? What follows are examples of what I found. While I start with my first exploration, note that this type of sexuality is specific to this particular type of Internet context. Later, I will describe something rather different in a monitored chat room. To round out the picture of teen sexuality online, Suzuki and Calzo (2004) describe the constructive use of a health bulletin board site to solve developmental problems of emerging sexuality. But here are some examples of what I encountered in the area of sex and intimate relationships in this first teen chat room:

#### 4.1.1. *Sex and infidelity*

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##### *Extract 1*

Person A: A proctologist, eh?

Person B: I’m a sexologist

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##### *Extract 2*

Person C: maybe he should pay more attention to his wife and baby than to me

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##### *Extract 3*

Person D: The assl. Harmless eat my cum and be happy

Harmless2: You started by calling me a whore which like wow was sooo MATURE

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Extract 1 has fairly mild sexual allusions. Extract 2 relates to infidelity. Extract 3 is pretty nasty, by my standards, especially when you consider that these are strangers; it involves both mechanical sex without a relationship and degradation of the female, Harmless2. Perhaps there are cultural reasons why young teenagers are increasingly seeing oral sex as not sex (to wit, the Bill Clinton/Monica Lewinsky scandal). But I would raise questions about the developmental appropriateness of oral sex for teenagers. It is important to note that this kind of material was not exceptional, but was extremely common in the chat that I witnessed.

In sum, the sexuality expressed in this chat room was public rather than private; it was linked to strangers; and it had nothing to do with relationships. It was very explicit and focused on physical acts rather than their emotional meaning. Often it was associated with the degradation of women. The developmental question is whether this is the view of sexuality that we want our adolescent children to develop.

#### 4.1.2. *Physical aggression*

I also found aggression in this chat room; aggression is an important developmental issue for adolescent boys, as in the following example:

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Redd3: Cyrius you killer her

Cyrius 2: ui had to  
she knew to much  
who’s next

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#### 4.1.3. *Intergroup relations: Racism and prejudice*

In the domain of intergroup relations, I found racism and prejudice. This was undoubtedly my most disturbing encounter. Here is an example of virulent racism in an extended transcript:

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Redd3: I am now  
 Gabe: A NIGGER  
 Redd3: Gabe  
     You shut the fuck up  
     You don't ever use that fucking word  
 Gabe: Man y all don't even take showers every day. Yah are dirty so dirty  
 (Other people come in, but this dialog between Redd3 and Gabe continues:  
 Redd3: DAMN  
 Gabe: AS IF  
 Redd3: PREJUDICED ASSHOLE MOTHER FUCKER  
 Gabe: YALL NEED AN EDUCATION  
 Redd3: DOOD GET THE FUCK ON OUT OF HERE YOU NEED ONE NASTY ASS  
 Gabe: I DONT KNOW WHY WE LET YOU ALL FREE  
 Redd3: PROLLY SOME FUCKING KKK SICK SUCKING BITCH MOMMA'S BOY  
     REDNECK ASSHOLE  
 Gabe: MARTIN LUTHER KING DID NOTHING FOR YALL LOSERS  
     YALL ARE LOSERS  
     YALL ARE MONKEYS  
 Redd3: GABE YOUR DISGUSTING  
     THIS IS EMBARRASSING  
     YOU MAKE WHITE PEOPLE ASHAMED  
 Gabe: YOU DOMB NIGGERS

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Note how Redd3 switches to caps (“DAMN”, above) as the argument heats up. It is unlikely that one would witness such a racist exchange off-line.

#### 4.1.4. *Private instant messages: Unsolicited sexual advances*

Then, although I had not participated in the chat, I started to get private instant messages; indeed I got six. The private instant messages ranged from an offer of technical assistance to a simple greeting to a crude sexual advance.

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1. mesohornyIII: A/S/L

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  2. Jewboy69: way up

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  3. Sweetwendy: Hi

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  4. SHOWME432: Let's have some fun hun

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  5. 2000 Allen: Hi Patricia—want to chat??

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  6. avs guy: Is your system running slow?  
     Press AH+F4 to unlagg the cache  
     therefore making your chatting a lot faster.

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The notable thing about this experience was that the authors of these messages took the initiative to contact me just by virtue of the fact that I was hanging out at the chat room, even though I had not participated at all. The unsolicited nature of these messages could be daunting for adolescents, particularly younger ones.

I was a bit scared to answer these instant messages, but finally did in a neutral manner to see what the writers had in mind, in order to increase the depth of my investigation. When I asked #1 what he wanted to talk about, the answer was:

MesohornyIII: nothing!!!!!!!!!!!! sex baby

The developmental question is at what age are you able to cope with initiatives taken by others, especially of a sexual nature? Note that I was not looking for unsolicited personal ads or messages, sexual or otherwise. However, once I decided to chat, I could not avoid being exposed. Second, note that I was pursued sexually on a personal level. Finally, the stimuli I met of a sexual, aggressive, or racial nature were outside the pale of accepted societal mores in all three areas. The implication is that the cultural norms and socialization in this chat room were basically antisocial in nature. And, finally, it may well be significant that the only positive instant message I received was on the subject of technology.

#### 4.2. *Likely developmental effects*

What would be the developmental effects of this kind of communication about sex, aggression, and intergroup relations? My reading of the developmental and media literature leads to the following list of likely developmental effects:

- (1) Disinhibition in all three areas: sexuality, aggression, and race relations.
- (2) Early sexual priming.
- (3) Models for racism, negative attitudes toward women, and even homophobia (found in other parts of the same transcript).

Some other important points emerged from this chat session:

- (1) Racism and hate are not limited to hate sites.
- (2) Anonymity can breed a lack of personal and social responsibility.
- (3) Some teens are as unwitting as I was. For them, it is accurate to speak of exposure to this kind of material. But equally important is the fact that many others are creating this culture. As adults, parents, and developmental psychologists, we need to question the values that have become normative in it.

We often consider the Internet to be a repository of information; my experience in the chat room led to the conclusion that we had better also think of the Internet in terms of the values that we wish to socialize. A second message of the chat room was that we cannot speak of the Internet as simply doing something to teens; teens are also constructing the Internet, as in the chat room that I had entered.

### 4.3. *A more controlled teen chat site*

I next visited teen and child chat sites at a popular paid Web service that had initiated certain nontechnological controls; the potential impact of these controls was of great interest. Upon entering this service's teen site, here is what I saw:

#### **What You Need to Know**

##### *Stay Safe*

- Don't give out your private info (your **full name**, address **or** school name) or your Internet service password to anyone.
- Remember that people online aren't always who they say they are.
- Don't accept e-mails, files or links from people you don't know.

##### *Have Respect*

- Respect other people's rights to their own opinions. Don't degrade, harass or discriminate them.
- Don't swear or use vulgar language.
- Don't post what you didn't write. Respect what belongs to others. (see *copyrighted material*)
- Please don't spam. Others find it as annoying as you would.

##### *Take Control*

- If someone's bothering you in Instant Messaging, block them. Go to My Internet Service, click on Preferences, and then on Privacy.
- Notify the service when there's a problem.

Note that the section on *Respect* would, if it were effective, eliminate what we saw in the prior chat transcripts from the free Web portal. But what difference could the rules make? A visit into a teen chat room hosted by this paid Internet service suggested some answers.

### 4.4. *Monitored teen chat*

On December 9, 2000, I went into one of the teen chat rooms hosted by the paid service. In addition to the rules, this service also had monitors, called hosts, in both their child and teen chat rooms. What I found in the arena of linguistic codes and conversational conventions has already been transcribed, analyzed, and published (Greenfield & Subrahmanyam, 2003). What I found in the arena of adolescent developmental issues has been replicated and expanded (Subrahmanyam, Greenfield, & Tynes, 2004).

The transcript of the session I witnessed (Greenfield & Subrahmanyam, 2003) shows that the chat is quite different from the excerpts in the unsupervised site. Sherry Turkle, with the consultation of young informants, analyzed the transcript. She concluded that aggression and sex have not disappeared, but they are now coded (Turkle, personal communication, December, 2000). According to Turkle's analysis, the participants in this teen chat room are talking about sex a lot of the time; they are referring to various



forms of sex, all in code and without using words about sex, eroticism, or emotion. Examples of coded sexual allusions from this monitored teen chat room follow. (Line numbers come from the published transcript; Greenfield & Subrahmanyam, 2003). Gaps between initiation and response indicate intervening conversation.)

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*Extract 1*

21 SuddenReaction: who is f\*\*\* dany

24 MORN8SUN: *fuckdany?*

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*Extract 2*

34 Brentlyd: any fine ladies want to chat press 69 or im me

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*Extract 3*

132 Rollerbabe904590: *who likes french in me*

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(For an analysis of other aspects of sexuality as a developmental issue in teen chat, see Subrahmanyam, Greenfield, & Tynes, 2004).

The codification of the allusions to sexuality made them not only about sex, according to Turkle, but also about ingroup–outgroup issues, which, she pointed out, is how teenagers use any medium. (For discussion of explicit reference to racial and ethnic ingroup formation in teen chat, see Tynes et al., 2004) Coded sexuality is all part of the co-construction of cultural norms that are utilized in this online community. Note, though that the coded sexual allusions are still devoid of feelings and relationships. This disjunction of feelings and relationships from sex may cause more subtle, but equally important damage to an emerging sense of sexuality.

#### 4.5. *A children's chat room*

In order to look at these same psychosocial issues developmentally, I went into the same paid service's "kids only" area. I found childish forms of some of the same phenomena, but with more active adult intervention. For example, while I was there, one participant called another "DOO-DOO FACE." This is a sort of childlike version of some of the sexually loaded aggression we saw earlier in teen chat, for example, in Extract 3, Section 4.1.1. The host or monitor responded almost instantly by suspending the perpetrator for 15 min and asking him to discuss the rules with his parents. This discipline seemed quite effective; there was no talking back.

Our research team later learned that free Internet services with unmonitored teen chat rooms did not include children's chat in their offerings. As a result, we did not find any unmonitored children's chat rooms on the Internet. In other words, children are more protected in the domain of Internet chat than are adolescents. Indeed, this is generally true; for example, the Children's Online Privacy Protection Act applies only to children under the age of 13 (Thornburgh & Lin, 2002).

## 5. Implications for practice

This was but a preliminary investigation into some aspects of the Internet designed for children and adolescents. As such it raised more questions than it answered. However, a number of practical points did emerge.

*5.1. Many parents are aware of the problems of making children the targets of commerce; however, they are quite unaware of the kind of social and cultural worlds young people are creating online*

One way to address both arenas is allow young children to use the Internet only under close parent or teacher supervision. Without supervision, my experiences, detailed here, would indicate that the risks far outweigh the potential benefits of unsupervised Internet use for young children. With respect to commercialism, parents can lead children to non-commercial subscription-based havens such as Juniornet (Montgomery, 2001). Many other developmental issues, pertinent to both children and adolescents, can also be addressed in this way. For example, overseeing Internet use can allow parents to assess if, when, and where their children are multitasking on the Internet and to evaluate whether multitasking is detracting from undivided attention to the homework screen (cf. Gross, 2004). The issue of monitoring is of course quite complex because children and, especially, teenagers value their privacy (Livingstone, in press); young people have even have developed a code—pos (parent over shoulder)—that they use in Internet communication to indicate when parents are looking at their computer screen (Subrahmanyam & Greenfield, 2003). Nonetheless, as with peer-to-peer file sharing networks (Greenfield, 2004), close parental interaction with adolescents about their Internet use is a potential mitigating force against the risks outlined here.

*5.2. Children and adolescents are not simply the targets of adult Internet creations; they are active participants in creating their own cybercultures, for example, in the chat room context*

While participants in a chat room can observe what others do and say, they are also, at times, creating the chat culture and stimuli through their linguistic interaction with each other. While participants are inadvertent observers to some stimuli, they are active creators of other stimuli. In the most popular Internet modality of instant messaging, an interactive peer culture is being expressed and created, mostly with friends (Gross, 2004).

*5.3. The nature and norms of these cultures can be very much influenced by adult rules, regulations, and participatory monitoring, as this preliminary comparison and the more extensive and systematic comparison of monitored and unmonitored teen chat rooms of Tynes et al. (2004) have shown*

It appears that potential damage in various domains of development can be prevented through rules and monitoring. Sexuality is of course a major developmental issue for teens; but adult rules and monitoring may prevent the crudest verbal manifestations of sex, even if they do not prevent the separation of feeling and relationship from sexuality. The benefits of rules and monitoring appear even stronger in the area of intergroup relations. Tynes et al. (2004) show a systematic effect of monitoring in reducing racist behaviors in teen chat.

*5.4. None of the developmental issues raised is unique to the Internet*

For example, each psychosocial phenomenon from consumerism to sexuality to aggression is found in a parallel form outside the Internet: for example, in hip-hop culture and rap music. Indeed, the developmental issues that this exploration raises are almost completely issues of our culture in general

and youth culture in specific. However, core developmental issues become amplified and transformed on the Internet.

## Acknowledgements

The original version of this report was presented at the National Academies, Washington, DC, December 13, 2000. It was abstracted into a publication of the National Academy Press ([National Research Council and Institute of Medicine, 2001](#)), thus serving its intended policy function. It also had the unanticipated effect of helping to shape a research program for Children's Digital Media Center, UCLA. I would like to recognize the important role of the late Rod Cocking in inspiring me to do policy-related work in the area of media and child development and also express my gratitude to Sandra Calvert, Georgetown Professor and lead PI of Children's Digital Media Center, for the opportunity to be part of the Center consortium and for her unfailing support. Thanks also to Sherry Turkle at MIT for helping me to understand the meanings of teen chat, to Kaveri Subrahmanyam for feedback on an earlier draft, and to Dale Kunkel and Zheng Yan for help with the legislative acts relating to children and the Internet. Last but not at all least, thanks to my talented collaborators at Children's Digital Media Center, UCLA—Elisheva Gross, Kaveri Subrahmanyam, and Brendesha Tynes—for their role in providing answers to the questions raised in this report.

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