# Connecting Developmental Constructions to the Internet: Identity Presentation and Sexual Exploration in Online Teen Chat Rooms

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The authors examined the online construction of identity and sexuality in a large sample of conversations from monitored and unmonitored teen chat rooms. More than half of the 583 participants (identified by a distinct screen name) communicated identity information, most frequently gender. In this way, participants compensated for the text-based chat environment by providing information about themselves that would be visible and obvious in face-to-face communication. Sexual themes constituted 5% of all utterances (1 sexual comment per minute); bad or obscene language constituted 3% of the sample (1 obscenity every 2 minutes). Participants who self-identified as female produced more implicit sexual communication, participants who self-identified as male produced more explicit sexual communication. The protected environment of monitored chat (hosts who enforce basic behavioral rules) contained an environment with less explicit sexuality and fewer obscenities than the freer environment of unmonitored chat. These differences were attributable both to the monitoring process itself and to the differing populations attracted to each type of chat room (monitored: more participants self-identified as younger and female; unmonitored: more participants self-identified as older and male).

Keywords: Internet, online chat rooms, adolescence, identity, sexual exploration

Much attention has been paid to the Internet as a learning environment. Much less is known about the Internet as a social environment. Yet, as communication becomes the primary function of the Internet for this age group the importance of the Internet as a social context for adolescent development is clear (Boneva, Quinn, Kraut, Kiesler, & Shklovski, 2006; Craig, 2003; Gross, 2004; Schiano et al., 2002). To what extent do adolescents use Internet communication for expressing developmental issues such as identity and sexuality? How do developmental processes relate to their offline embodiments? To what extent do they reflect the particular affordances of the medium? Can we as researchers use the Internet to make visible relevant processes of peer interaction that might not otherwise be accessible to us? Is there a relationship between self-presentation and sexually oriented behavior online? Do these constructions and expressions take on different forms in different Internet environments? These are the major questions that our research sought to address.

## The Many Faces of Internet Communication

Complicating the task for researchers is the rapidly changing nature of the Internet and the diversity of communication applications themselves—chat rooms, email, instant messaging, and more recently blogs. In contrast to the time lag that occurs when communicating via email, instant messaging and chat rooms allow for communication in real time. Except for private chat rooms, chat conversations mostly occur in public and typically involve multiple participants and simultaneous conversations in the public space (Greenfield & Subrahmanyam, 2003); participants in chat rooms may frequently be strangers to each other. Instant messaging involves private communication with another user and users may simultaneously be engaged in multiple instant messaging conversations in separate windows. Research suggests that adolescents

mostly use instant messaging to communicate with friends from school mostly about friends and gossip (Gross, 2004).

Thus it appears that the communication applications may vary in terms of the virtual socialization that occurs within them, and researchers studying adolescents and the Internet need to examine different online environments separately. Accordingly, we focus on chat rooms, a popular online venue among adolescents (Pastore, 2002; Pew Internet Project, 2001). Given the public nature of most chat rooms, teen chat offers researchers a rare window into adolescent peer culture, whose evanescent quality has posed challenges to researchers in the past (Brown, Feiring, & Furman, 1999). They constitute a unique research site as they allow researchers to examine naturally occurring peer interactions. The present research makes use of this forum to answer our research questions about the ways in which adolescents construct identity and sexuality through peer interaction.

## A Theoretical Framework for Conceptualizing Teen Chat

The most frequent type of theoretical model for conceptualizing the role of media in human development is an effects model, in which the content of media is believed to affect children's attitudes, thoughts, and behaviors (Anderson & Dill, 2000; Bandura, Ross, & Ross, 1961; Klapper, 1960). However, as the communication functions of the Internet become increasingly important for people in general and adolescents in particular, it is vital to think in terms of construction and co-construction processes. In teen chat, participants are co-constructing their own environment. With communication functions such as chat, adolescents are not at the mercy of an externally created environment; they are creating and, more to the point, co-creating their Internet environment through processes of social interaction. The theoretical question then becomes, what are they creating and what role does it have in their development? What we have found so far (Greenfield & Subrahmanyam, 2003; Subrahmanyam, Greenfield, & Tynes, 2004; Suzuki & Calzo, 2004) is that adolescents construct the same developmental issues online as they do off, with new affordances such as anonymity, opportunities to discuss sensitive issues, and lack of information about one's physical appearance (such as gender, physical attractiveness, etc.). We will use this co-construction model to explore how two adolescent issues—sexuality and identity—are played out in the cyberspace of teen chat.

## Sexuality and Identity in Adolescent Development

Both sexuality and personal identity are key adolescent issues (Weinstein & Rosen, 1991). Consequently we see that adolescents spend a lot of time talking about sex, exchanging sexual jokes and sex-oriented literature as well as using sex slang (Rice, 2001). They are also sexually active. In fact among 15- to 17-year-olds in the U.S., 36% of males and 39% of females have had vaginal intercourse (Mosher, Chandra, & Jones, 2005). During adolescence, the rate of sexual activity increases with age (Cubbin, Santelli, Brindis, & Braveman, 2005). The construction of a healthy sexuality is a major task facing adolescents. Another major task facing adolescents is that of developing stable and consistent identities, including gender, sexual, moral, political, and religious identities (Erikson, 1959; Kroger, 1995). A stable identity consists of one's self-definition, as well as the roles and relationships one

takes on, and one's personal values or moral beliefs (Calvert, 2002; Huffaker & Calvert, 2005).

Research suggests that peers and romantic partners play an important role in adolescents' construction of their sexuality and identity (Berndt & Savin-Williams, 1993; Connolly, Furman, & Konarksi, 2000). For instance, Ward (2004) has reported that peers along with media are important sources of sexual information for teens. Research with college students suggests that conversations with friends during the high school years was an important source of sex-related information (Kallen, Stephenson, & Doughty, 1983); conversations with best friends has been found to be related to sexual attitudes and behaviors (Lefkowitz, Boone, & Shearer, 2004). Other conversation topics with peers during the adolescent years include appearance (Giblin, 2004) and the self (Johnson & Aries, 1983), two important aspects of identity construction. Up until now, adolescents' peer conversations about sex and sexuality were hard to study. Teen chat, the location of this Internet study, has three main advantages for researchers: It makes peer conversations accessible for study; it provides the conversations in a written form without requiring transcription; and last, but perhaps most important, the conversations are recorded without the intrusive presence of the researcher-observer.

## Identity and the Internet

Research has found that adolescents make use of mass media, notably TV and magazines, to learn about two important aspects of identity development—sex and gender (Arnett, 1995; Brown, Childers, & Waszak, 1990; Steele & Brown, 1995; Ward, 2004). When considering the role of the Internet in identity development, it is important to remember that participants in online environments can be relatively anonymous and do not have information about each others' bodies such as age, gender, race, physical appearance (height, weight, etc.), and physical attractiveness (Greenfield & Subrahmanyam, 2003; McKenna & Bargh, 2000). Information about bodies is especially relevant to sexual conversations and pairing-off (Regan & Joshi, 2003), activities that are popular among adolescents (Furman & Shaffer, 2003) and that they engage in online (Subrahmanyam, Greenfield, & Tynes, 2004). How do participants, who are disembodied from each other, construct and present their virtual faces and bodies in online chat rooms?

In-depth analysis of a single chat conversation suggests that chat participants may be resorting to creative strategies such as the a/s/l (age/sex/location) chat code (Greenfield & Subrahmanyam, 2003) to share identity information. The a/s/l code is reported to be the most common question directed toward new entrants in a chat room according to online teens (Pew Report, 2001). Another strategy that participants may use to construct their virtual identity is that of gendered nicknames (Subrahmanyam, Greenfield, & Tynes, 2004). In fact, we found concordance between participants' declarations regarding their gender and the gender identity presented by their nicknames. However, this prior research utilized intensive qualitative discourse analysis of only one chat session per article (Greenfield & Subrahmanyam, 2003; Subrahmanyam, Greenfield, & Tynes, 2004). We therefore know nothing about the quantitative dimensions—the generalizability—of these phenomena. How often do they occur in the chat environment? What proportion of chatters utilize them? The present study answers

these quantitative questions. In addition, we can also ask whether self-presentation through different kinds of gendered and sexualized nicknames predicts sexually oriented behavior, the topic to which we turn next.

## Sexuality and the Internet

Adolescents have always turned to the mass media including TV, magazines, and movies for information about sex (Borzekowski & Ricket, 2001; Brown, 2002; Brown, Childers, & Waszak, 1990; Johnson Vickberg, Kohn, Franco, & Crinit, 2003; Steele, 1999; Ward, 2004) and it is becoming apparent that the Internet is no exception (see Fraiberg, 2004, for a discussion of sexuality on the Internet). Bremer and Rauch (1998) observed AOL Teen chat rooms for 321 weekend and after-school minutes and found that one sexual comment was made every four minutes in the chat spaces. Exploring teen health bulletin boards on the Internet, Suzuki and Calzo (2004) found that teens sought information about sexuality and relationships with great frequency; indeed, there was more than twice as much interest (measured by number of threads) in a sexual health bulletin board as in a general teen issues bulletin board hosted by the same service.

In a qualitative study of 15 experienced Czech Internet users between the ages of 12- and 22-years, five participants reported using the Internet for virtual dating and cybersex activities, which included communication about sexual topics and explorations of their sexuality (Smahel, 2003). For instance, five of the adolescent participants reported that the Internet (three in public chat rooms and two in the more private instant message environment) was the venue of their first sexual experience; others reported that it was the place where they tried to change their gender and explored their sexual identity. In a related questionnaire study on 692 Czech secondary school students between 12- and 20-years of age, Vybíral, Smahel and Divínová (2004) found that 16% of participants had tried "virtual sex" on the Internet; interestingly, there were no significant gender differences in the number of participants who had reported trying out virtual sex. Finally, a microanalysis of conversational threads in two sessions of teen chat revealed that participants used this context to discuss a broad range of sexual topics (Subrahmanyam, Greenfield, & Tynes, 2004). Although chat rooms are used for adolescent sexual exploration, little research has systematically examined the nature of these explorations. For instance, we do not know how much of the communication environment is devoted to sexualized content. Nor do we know what proportion of participants produce sexual content. Does the nature of sexual exploration vary across different chat room environments? How does self-described age and gender relate to the frequency and nature of sexual explorations? This study addresses all of these questions.

## Variability in Chat Room Ecologies

Just as it is important to consider different Internet environments when studying adolescents' online interactions, so it is important to consider variations in teen chat room ecologies when studying the construction of identity and sexuality in chat rooms. Some dimensions that teen chat rooms differ on include whether they are available for free or for a subscription fee, the age range they target (e.g., young teens vs. mature teens), and whether they are orga-

nized around a theme (e.g., Christian chat, general teen chat). Perhaps the most important dimension that chat rooms vary on is whether they are monitored or not.

Chat rooms can be monitored by having in the foreground adult monitors, who monitor the language, content, and behavior of participants, by having adult monitors in the background who silently observe the conversation, and by using word filtering software. It is impossible to say with any degree of certainty what proportion of online chat rooms are monitored. At the time the study was conducted in 2003, all the teen chat rooms on the most popular service (provided for a fee) among adolescents were monitored. At the same time unmonitored chat rooms were also available for free and they were also full of participants at all times of the day. Therefore we felt that it was important to consider both monitored and unmonitored chat rooms as two kinds of chat room ecologies when examining teen explorations of sexuality and identity construction in chat rooms.

## Monitoring of Chat Rooms

Monitoring of chat rooms addressed concerns regarding sexual harassment (Mitchell, Finkelhor, & Wolak, 2001) and reports that sexual predators often found their young victims in online chat rooms (e.g., Smith, 2004). They were also a consequence of the Children's Online Privacy Act (COPA), effective April 21, 2000, which required that Web site operators and Internet service providers obtain verifiable parental consent when personal information is collected online from children under 13 (COPA, 2005).

What exactly do monitors do? Ethnographic observations in numerous monitored teen chat rooms provided for a fee by one of the most popular Internet service providers revealed that monitors warned participants not to provide personal information about themselves, such as their cities of residence, school names, and ZIP codes. They were also reminded not to use screen names that revealed this information or to ask others for this information. Participants were also told not to provide Web links in the public space and were told not to ask, offer, or list pictures in the teen chat room. Although sexual references were permitted, use of crude sexual slang such as "fuck," were not. Drugs were another taboo topic and the monitors did not allow users to have discussions that implied that drug use was acceptable. Finally, participants were warned that hate speech was not allowed in the chat room; for instance a participant was warned about hate speech when he or she wrote that "Preps suck" (see also Tynes, Reynolds, & Greenfield, 2004).

Thus, the principal focus of adult monitors in the teen chat rooms provided by this service appeared to be ensuring the safety and privacy of participants online. One possible effect of making participants feel more secure might be more extended participation in a monitored room, and we were able to explore this possibility. But much more central to our research focus, the presence of monitors in chat rooms, and more importantly participants' awareness of their presence, might influence not only quantitative features but also the content of ongoing chat discourse. Indeed in a comparison of racial and ethnic discourse in rooms, Tynes et al., (2004) found that participants in monitored chat rooms had a 19% chance of encountering a negative comment about a particular racial or ethnic group during a half-hour session. The probability increased to 59% for participants in the unmonitored chat rooms.

Given the evidence that adolescents are reluctant to share their concerns (e.g., about pregnancy, drug abuse, etc.) with adults (such as parents, physicians, and school counselors; Cheng, Savageau, Sattler, & DeWitt, 1993), it is very likely that their sexuality- and identity-related discourse might also be constructed differently in the presence versus absence of an adult monitor. It is also possible that the presence or absence of a monitor might attract a different participant demographic.

### The Present Study

In sum, the goal of the present study was to examine adolescents' construction and presentation of their identity and sexuality in online chat rooms, to compare these processes with the literature on offline identity and sexuality in adolescence, and to assess how the construction of identity and sexuality might vary in different chat room ecologies, the nature of which we also explored. We started by examining the presentation of identity and exploration of sexuality in a large sample of chat conversations allowing for extensive quantitative analysis. Identity presentation was assessed by coding participants' description of any aspect of their self and by coding their nicknames for information about gender and sexual identity. Nicknames also enabled us to identify distinct participants in this anonymous environment. Self-presentation of age allowed us to learn how members of teen chat rooms construct age in relation to the developmental issues of identity, gender, and sexuality. Sexual explorations in the chat rooms were assessed by coding the sexual content of participants' utterances.

Based on our earlier discourse studies (Greenfield & Subrahmanyam, 2003; Subrahmanyam, Greenfield, & Tynes, 2004), our expectation was that identity and sexuality would both be frequent topics of teen chat, but that identity would be more frequent than sexuality. Our earlier discourse analyses (Greenfield & Subrahmanyam, 2003; Subrahmanyam, Greenfield, & Tynes, 2004) led us to expect that presentation of identity information would focus on age, sex, and location, basic information that is immediately available in face-to-face meetings but not in the text-based and anonymous environment of chat. We also expected that an important vehicle for presenting gendered and sexualized identities (as well as other kinds of identity information) would be nicknames, otherwise known as nicks or screen names, which could serve as virtual bodies and faces. Finally we expected to find stable gender identities in the sense that gendered nicknames (male or female) would match gender declarations.

We also considered identity and sexuality from a developmental perspective. Because identity construction is more important to early than to late adolescents (Erikson, 1958), we explored whether declarations of identity would be more frequent among those who declared that they were younger rather than older. At the same time, sexuality becomes increasingly mature as adolescents advance in age (Cubbin et al., 2005). We therefore had reason to expect that sexual themes would become more frequent with age. Developing sexuality is also reflected in the dynamics of male-female communication. Hence, we explored the relationship of declared gender to sexual communication, obscene language, and sexualized nicknames.

Ethnographic observation in December 2000 suggested that, although sexuality was always an important topic in teen chat, the type of sexuality was cruder and more explicit in an unmonitored versus a monitored chat room (Greenfield, 2004). Endeavoring to test out the generality of this difference with a quantitative analysis, we compared the expressions of sexuality in two popular teen chat services; one required a subscription fee and had adult monitors, the other was free and did not have adult monitors.

If we could replicate the qualitative difference between monitored and unmonitored chat room in our quantitative analysis, there would still be alternative explanations for the difference. One reason might lie in demographic differences between the participants themselves—that is, the makeup of the group that in turn provides the social environment for each individual participant. For instance, monitored chat rooms might draw teens who have more protective parents or are otherwise more vulnerable. Hence, part of our measurement of the two ecologies of teen chat rooms was to assess any possible differences in the demographic characteristics of the participants in the two kinds of rooms. Because monitoring may be more attractive to parents and younger teens are likely to have greater parental supervision, we thought that participants in the monitored rooms might be younger than those in the unmonitored rooms. Thus we predicted that participants in the monitored rooms would present themselves as younger than those in the unmonitored rooms. Because girls may be more vulnerable than boys in an anonymous but sexualized environment, we also expected that a higher proportion of participants would identify themselves as female in the monitored, compared with the unmonitored chat rooms.

Based on the qualitative analysis of sexuality (Greenfield, 2004) and the quantitative analysis of race (Tynes, Reynolds, & Greenfield, 2004), we expected to find more explicit sexuality and obscenity in the unmonitored environment, compared with more implicit sexuality and a lower rate of obscenity in the monitored environment. In parallel fashion, we expected that self-presentation would be more sexualized in the unmonitored chat room and that this difference would be reflected in a higher proportion of sexualized nicknames in unmonitored chat.

A primary goal was to assess the effect of monitoring per se, holding population characteristics constant. In order to accomplish this research goal, we compared monitor-present periods with monitor-absent periods in the chat rooms from the monitored service. In line with the earlier observed differences, we expected that there would be a higher rate of explicit sexuality and obscenity at times when the host was absent in the monitored chat room, compared to times when the host was present. It was also of interest to compare the effects of possible population differences, holding monitoring constant. In order to identify population effects, we compared monitored and unmonitored services during periods when the monitor was absent from a particular room in the monitored service. Lastly, we explored the ecological differences between monitored and unmonitored chat by testing whether the more secure environment of monitored chat would lead to more extended active involvement in the conversation on the part of individual participants and greater disclosure of information about the self.

### Methods

#### The Chat Rooms

One chat service (Service 1) required a monthly subscription fee and provided an adult monitor whereas the other was free and provided no adult

monitor (Service 2). Except for the subscription fee and the presence of a monitor, they were very similar to each other and to other chat rooms available at that time in terms of their appearance (e.g., chat window) and features (e.g., emoticons). Although both services had rooms dedicated to a topic (e.g., romance, sports, and music), we sampled only teen rooms that had no dedicated topic and that were described as a place for teens to hang out. We selected undifferentiated teen chat because we felt that a general purpose room would give us a more unbiased look at what adolescents choose to talk about in general.

## The Sample

A sample of 38 chat sessions was acquired during a 2-month period between April 14 and June 1, 2003. Although the unmonitored chat rooms were open 24 hours a day, conversations were recorded only from every hour that the monitored chat rooms were open (daily from 12–9 p.m. Pacific Standard Time) in order to ensure comparable samples. Furthermore, conversations were recorded on both weekday and weekends to capture any variability that may occur in the participants and their conversations that take place on school days versus weekends.

Once we had identified the days and times to record the conversation, a researcher entered the rooms at the scheduled time and remained there for one half-hour (or until 15 pages of transcript were collected) as a passive observer. Following Institutional Review Board (IRB) guidelines, the researcher remained silent and did not engage in any conversation either in the public space or in private messages. At the end of 30 minutes (or longer in order to obtain 15 pages of activity), she simply copied the log of the conversation and pasted it into a Word document. In accordance with IRB requirements, all nicknames reported in this paper have been changed; however in order to retain the flavor of the names, changes were made by either deleting or changing only a few characters (letters and numbers).

From this larger sample of 38 sessions (also used by Tynes, Reynolds, & Greenfield, 2004), we selected 10 sessions from each kind of chat service that were recorded on the same day of the week (specific week day vs. specific weekend day) and where the recording started at approximately the same time (e.g., started at 1:15 p.m. vs. 1:12 p.m. or 8:07 p.m. vs. 8:27 p.m.; on any given day, there was no more than a 20-minute difference in the time at which the recording was started from the two services) for a total of 20 chat sessions. Included in the database was the monitored chat session used for qualitative discourse analysis by Subrahmanyam, Greenfield, and Tynes (2004).

## Coding

All utterances and nicknames from the 20 chat sessions were coded by two undergraduate students, who were extensively trained on the coding scheme by the first and second authors. Coders were blind to the nicknames when coding their utterances, and were blind to the utterances when coding the nicknames. Only the transcripts from the monitored service were coded for the presence of the host. Details of the coding categories are provided below. Because each nickname represents a distinct participant, coding of nicknames enabled us to do analyses using individuals as the unit of analysis. In complementary relationship, analyses based on the utterance as the unit of analysis enabled us to assess the quantitative dimensions of the chat environment itself.

*Utterance coding.* The content of individual utterances from all transcripts was coded in order to assess the extent to which conversations in the two chat services centered around identity presentation and sexual exploration. Although the coding categories included a variety of adolescent developmental themes, only two categories—identity presentation and sexual exploration—are analyzed here.

First we coded whether or not an utterance contained basic identity information about the participant's self (*information about self*) such as his or her age, sex, or location. Next we coded the details of the identity information that was declared, including the specific age, gender, and location that was provided.

Utterances were also coded as to whether they were sexual (e.g., ANY HOT CHICKS WANNA CHAT PRESS 69) or nonsexual (e.g., *Wassup everybody*?) in content. Sexual utterances were further coded as to whether they were implicitly sexual (e.g., *eminem is hot, cause she was really hot*) or explicitly sexual (e.g., *whats up horny guys IM me 15/ohio/f or hit 528, a dork is a whale's dick*). Finally, utterances were coded for the presence of obscene or bad words (e.g., *my dick, what a fag*).

*Reliability coding.* Given the large number of utterances ($N = 12258$) that had to be coded, it was not possible for any one of the coders to code the entire sample. So we first trained the coders on the coding system using the 18 transcripts that were part of the larger corpus of 38 transcripts, but were not part of the sample of 20 transcripts selected for analysis in this study. The training took more than 30 hours and was spread over several weeks. Coders were trained on transcripts from both chat services; they first coded them in the presence of the first author and then coded them independently. Training continued until acceptable levels of reliability were obtained for all categories of the coding system.

Table 1 shows the excellent kappa coefficients that were obtained for the different coding categories for the final iteration of reliability coding that was done on two transcripts from the training sample of 18 transcripts; one was from Service 1 and contained 701 utterances, the other was from Service 2 and contained 432 utterances. Because the kappa coefficient for the "stated gender" category was less than .75 for the transcript from Service 1, the coders were trained further and then coded a different transcript from Service 1 (550 utterances). Once reliability was attained for all categories, each coder then coded 5 transcripts from Service 1 and 5 transcripts from Service 2.

*Nickname coding.* Nicknames were coded to assess whether they provided identity information in the key areas of gender and sexuality. When coding a nickname, coders were blind to the utterances contributed by the participant using that particular nickname. For information about gender identity, nicknames were coded as masculine if the nickname included commonly accepted male names (e.g., *RAYMONI8*, *BlazinJosh55*), conveyed masculine stereotypes or a masculine persona (e.g., *Vikingdude123*, *Hotguy12*), or contained terms that are commonly used to refer to males (e.g., *Teeman8*, *bluntman*). Nicknames were coded as feminine if they used commonly accepted female names (e.g., *MandiCS12*), conveyed feminine stereotypes or a feminine persona (e.g., *reblecious*, *Lilprincess72988*), or contained terms that are commonly used to refer to females (e.g., *American gal*, *Iabaskitballgirl*). Nicknames were coded as "gender-neutral" if they did not make any reference to gender and/or if they were ambiguous as to the owner's gender (e.g., *soccer lover*, *Spoiledbrat*). We used a Web site, www.babynamer.com, for information as to whether a name was typically a male or female one. If it was commonly used for both genders then we coded the nickname as "other." The nicknames presented here are slightly altered to preserve the anonymity of chat participants; coders utilized the exact name in the coding process.

Table 1

*Kappa Coefficients for the Coding of Utterances From Service 1 and Service 2*

| Coding Category | Service 1 | Service 2 |
|---|---|---|
| Information about self | .93 | .88 |
| Stated age | .98 | 1.00 |
| Stated gender | .94 | .94 |
| Stated location | 1.00 | 1.00 |
| Sexual utterances—Implicit, Explicit, and Nonsexual | .95 | .77 |
| Sexual utterances—Implicit and Explicit | .90 | 1.00 |
| Obscene/bad words | .89 | .88 |

For information about sexual identity, nicknames were coded for their sexual explicitness. If the nickname related to or involved any characteristic of sex or if it implied or symbolized erotic desires or activity, it was categorized as sexual. It was also categorized as sexual if any part of the nickname included a description of the self that made the individual seem more heterosexually attractive in a sexual way. A sexual nickname was further categorized as either explicit or implicit. A nickname was coded as sexually explicit if it was overtly sexual and/or if it included a term that was sexual in nature (e.g., *SexyDickHed, Da1pimp6sur*). A nickname was coded as sexually implicit if it was not overtly sexual, but yet made its owner more sexually attractive or appealing (e.g., *angel* or *prettygirl*). Finally a nickname was coded as "nonsexual" if it made no sexual reference and/or did not contain any phrase or description that seemed to make the individual appear more sexually attractive (e.g., *Bratiegurl2, Breethebrat*). There was no sign of homosexual identities or sexuality on our sites; an informant told us that there are other chat rooms dedicated to homosexual teens.

In order to establish interrater reliability, the two undergraduate coders coded 160 nicknames or 14% of the 1,150 nicknames obtained from all 20 transcripts. We obtained a Cohen's kappa of .80 for the coding of gender identity presentation and a kappa of .86 for sexual explicitness. Both kappa values are considered to indicate very good reliability (Bakeman & Gottman, 1986). The first coder then coded the entire list of nicknames; the disagreements in the reliability sample were resolved by discussion with the first two authors and the resolutions were included in the final data set.

*Host/no-host coding for Chat Service 1.* Because a single monitor (called a host) appears to supervise multiple chat rooms in Service 1, an adult monitor is not always present in a chat room on that Service. Often a monitor on this Service would inform the participants that he or she was going to be leaving to check on another room and reminded them to remember the rules for safe chatting. Tynes et al. (2004) suggest that this results in the chat rooms becoming functionally unmonitored in the temporary absence of the monitor. During these times, the functionally unmonitored chat rooms from Service 1 may actually be more similar to the chat rooms from Chat Service 2.

To identify portions of the transcripts from Chat Service 1 when the monitor was not present, each transcript was analyzed line by line by the two coders. The coders coded the lines when a host left and/or entered the room. Both coders coded all 10 transcripts from Service 1 for the presence versus absence of the host and an acceptable kappa of .87 was obtained. Disagreements between the coders were resolved in conjunction with the first two authors and the resolutions were included in the final data set.

## Analysis

The data were analyzed at two levels—at the level of the entire chat room environment and at the level of individual nicknames or participants. At the level of the chat room, the unit of analysis for the chi-square statistics is the utterance, regardless of which nickname (participant) uttered it; consequently all utterances have equal status. Such an analysis is informative about the kinds of utterances that a participant encounters within that chat room and enables us to compare different chat room ecologies (e.g., monitored vs. unmonitored, host present vs. absent). For the analysis at the level of individual participants, we coded whether or not a participant (identified by a particular nickname) contributed a particular kind of utterance (e.g., age declaration, implicit sexual utterance) at least once; regardless of whether a participant had made one, two, or multiple utterances of that kind, he or she was considered to have made that kind of utterance and contributed only one data point to the chi-square analysis.

## Results

Table 2 provides a snapshot of the communicative environment of the chat rooms in both services. There were 583 nicknames (corresponding to 583 participants) in the transcripts from Chat Service 1 (Monitored) and 567 nicknames (corresponding to 567 participants) in the transcripts from Chat Service 2 (Unmonitored). These participants produced a total of 6702 utterances in Chat Service 1 [$M$ (utterances) = 11.09] and 5556 utterances in Chat Service 2 [$M$ (utterances) = 8.66].

## How Frequently Is Identity Information Communicated in Teen Chat?

Table 3 provides the number of nicknames (participants) that contributed utterances containing age and gender information in the two Services. We see that the majority of participants (55%) made declarations of identity. Indeed, 12% of all utterances in the chat rooms contained identity declarations. As expected, more participants provided identity information (55%) about themselves than produced sexual utterances (28%), the topic of the next section.

## How Frequent Is Sexual Content and Obscenity in Teen Chat?

Sexualized nicknames amounted to 19% of total nicknames. Across the two services, 28% of participants produced utterances with sexual themes. Looking at sexual content from the perspective of the communication environment, rather than from the perspective of individual participants, we find that 3% of all utterances consisted of implicit sexual utterances (e.g., *all hott guys that wanna talk to a hott 13/f/nj im me or hit 5813; who wants to chat with a hot and sexy 13/f/ct press 12345*) and 3% of all utterances consisted of explicit sexual utterances (e.g., *don't get your penis caught in your zipper; any hot, horny or wet ladies wanna chat with a cute 18 m from canada pic on file if so pm me or press 123*). This amounts to about one sexual remark per minute (634 in about 600 minutes). Across the two services, 17% of the participants uttered at least one profanity or bad word. Overall, 3% of utterances in both services contained obscene language; this amounts to approximately a little more than 1 obscenity every 2 minutes (413 in about 600 minutes).

## How do Participants Express Their Identity?

In line with our prior expectations, most identity declarations fell into the categories of age, gender, and location, with gender being the most popular category (see Table 3). Gendered identities were also expressed through nicknames; 46% percent of the participants adopted gendered nicknames. We also explored concordance between participants' nicknames and the identity information presented in their utterances. For participants who stated that they were male, 32% of the nicknames were coded as masculine, 3% were coded as feminine, and 65% were coded as gender neutral. For participants who stated that they were females, 4% of the nicknames were coded as masculine, 48% were coded as feminine, and 49% were coded as gender neutral, $\chi^2(2, N = 524) = 154.55$, $p = .00$, $\phi = 0.54$. Thus, identities were stable in that there was almost no discordance between gendered names and gendered identity statements, although many participants coded gender in their statements but not in their nicknames.

Table 2
*Number of Utterances, Nicknames, and Nicknames That Contributed Utterances Containing Age and Gender Information as a Function of Room and Chat Service*

| Service | Chat room | Number of utterances | Number of nicknames of participants | Number of nicknames of participants who contributed an utterance with information about age | Number of nicknames of participants who contributed an utterance with information about gender |
|---|---|---|---|---|---|
| Service 1 (monitored) | Chat 1 | 592 | 44 | 22 | 18 |
| | Chat 2 | 683 | 55 | 23 | 32 |
| | Chat 3 | 763 | 58 | 27 | 31 |
| | Chat 4 | 813 | 55 | 22 | 34 |
| | Chat 5 | 654 | 69 | 34 | 40 |
| | Chat 6 | 1008 | 63 | 30 | 28 |
| | Chat 7 | 694 | 77 | 35 | 42 |
| | Chat 8 | 509 | 63 | 33 | 37 |
| | Chat 9 | 287 | 46 | 20 | 31 |
| | Chat 10 | 699 | 53 | 27 | 33 |
| All Rooms | | 6702 | 583 | 273 | 326 |
| Service 2 (not monitored) | Chat 1 | 450 | 55 | 6 | 16 |
| | Chat 2 | 467 | 59 | 19 | 26 |
| | Chat 3 | 785 | 49 | 9 | 13 |
| | Chat 4 | 522 | 69 | 18 | 24 |
| | Chat 5 | 498 | 66 | 15 | 22 |
| | Chat 6 | 581 | 44 | 12 | 17 |
| | Chat 7 | 722 | 41 | 3 | 6 |
| | Chat 8 | 572 | 64 | 18 | 22 |
| | Chat 9 | 519 | 52 | 17 | 22 |
| | Chat 10 | 440 | 68 | 17 | 30 |
| All rooms | | 5556 | 567 | 134 | 198 |
| Both services | 20 chats | 12258 | 1150 | 407 | 524 |

## Are There Age Differences in the Expression of Identity and Sexuality in Teen Chat?

To assess whether there were differences in participants' tendency to provide identity information depending on their stated age, we conducted separate chi-square analyses for each service. We found a significant association between age (10–13 years, 14–15 years, 16–17 years, and 18–24 years) and the tendency to provide identity information for both services (Service 1: $\chi^2(3, N = 4081) = 27.97, p = .00, \phi = 0.08$; Service 2: $\chi^2(3, N = 1586) = 21.27, p = .00, \phi = 0.12$). Participants who described themselves as younger were more self-disclosing. Participants who presented themselves as male described themselves as significantly older ($M = 15.73$ years) than participants who presented themselves as female ($M = 14.77$ years) across both chat rooms, $F(1, 383) = 85.27, p = .00, \eta^2 = 0.05$. In terms of self-presentation, teen chat tended to attract boys who were about a year older than the girls.

Looking at the expression of sexuality from a developmental perspective, we found that participants who described themselves as older produced significantly more explicit sexual themes; the major jump was between those who described themselves as 16–17 years of age (13% of participants produced at least one explicit sexual utterance) and those who were between 18 and 24

(40% of participants produced at least one explicit sexual utterance), $\chi^2(3, N = 406) = 20.26, p = .00, \phi = 0.22$. Note that participants are identifying themselves as being above the age of "teens" in the chat rooms—this fact is relevant to the truthfulness of the majority of age declarations. There was, however, no linear association between declared age and the production of implicit sexual themes. Participants whose utterances contained bad/obscene words described themselves as significantly older ($M = 15.7$ years) than participants who did not ($M = 14.8$ years), $F(1, 5665) = 22.95, p = .00, \eta^2 = 0.004$. There was, however, no association between declared age and the use of sexualized nicknames.

## What Are the Gender Dynamics of Sexual Communication?

We explored gender differences in modes of sexual expression. We found that 14% of participants with nicknames that conveyed a masculine identity contributed least one implicitly sexual utterance, whereas 19% of participants with nicknames that conveyed feminine identity contributed at least one implicitly sexual utterance, $\chi^2(1, N = 524) = 2.00, p = .10, \phi = -0.06$. In contrast, 18% of participants with nicknames that conveyed a masculine identity contributed at least one explicitly sexual utterance whereas

Table 3
*Distribution of the Different Utterance Types in Monitored and Unmonitored Chat Rooms*

| Coding category | % of total utterances in monitored chat rooms ($N$ = 6,702 utterances) | % of total utterances in unmonitored chat rooms ($N$ = 5,556 utterances) | % of total utterances In total sample ($N$ = 12,258 utterances) | Number and percentage of nicknames of participants who used each utterance type in monitored chat rooms ($N$ = 583 participants) | Number and percentage of nicknames of participants who used each utterance type in unmonitored chat rooms ($N$ = 567 participants) | Number and percentage of nicknames of participants who used each utterance type in total sample ($N$ = 1150 participants) |
|---|---|---|---|---|---|---|
| Information about self (age, gender, location, or other information) | 16% | 8.0% | 12% | 381 (65%) | 251 (44%) | 632 (55%) |
| Stated age | 8% | 3% | 6% | 273 (47%) | 134 (24%) | 407 (35%) |
| Stated gender | 11% | 5% | 8% | 326 (56%) | 198 (35%) | 524 (46%) |
| Stated location | 7% | 3% | 5% | 254 (44%) | 118 (21%) | 372 (32%) |
| Obscene/bad words | 2% | 5% | 3% | 65 (11%) | 125 (22%) | 190 (17%) |
| Sexual utterance/theme | 4% | 6% | 5% | 152 (26%) | 165 (29%) | 317 (28%) |

only 12% of participants with nicknames that presented a feminine identity contributed at least one explicitly sexual utterance, $\chi^2(1, N = 524) = 4.16, p = .03, \phi = 0.09$. In addition, participants describing themselves as male produced 25% more obscenities than participants describing themselves as female, $\chi^2(1, N = 7021) = 4.30, p = .02, \phi = 0.03$.

Gender identity in the form of gendered nicknames was also more frequent among self-described females (e.g., *Erikaa*; *Gummybearangel41*) than males (*Mr. Crazy76*; *Netboy21*). The former conveyed their feminine identity through nicknames (48%) significantly more often than self-described males used nicknames to convey their masculine identity (32%), $\chi^2(2, N = 524) = 154.55, p = .00, \phi = 0.54$.

Implicit sexualized nicknames (e.g., *RomancBab4U*, *Snowbunny2740*, *innocent_angel*) offer a mode of attracting sexual attention that is both passive and implicit and were created significantly more frequently by participants who described themselves as female (26%) than by participants who described themselves as male (10%), $\chi^2(1, N = 524) = 21.64, p = .00, \phi = 0.20$. All of these gender comparisons point to the fact that female identity is more associated with implicit sexual communication, whereas male identity is more associated with explicit sexual communication.

## How and Why Do the Ecologies of Chat Differ in Monitored and Unmonitored Rooms?

*Potential population differences.* We start by exploring possible population differences between the two kinds of chat rooms because these will become relevant to understanding some of the behavioral differences that follow. A one-way ANOVA comparing monitored with unmonitored chat rooms yielded a reliable difference in age, $F(1, 405) = 192.15, p = .00, \eta^2 = 0.32$. In the monitored site, the mean declared age was 14.27 years; in the unmonitored site, the mean declared age was 16.82 years. That is, participants described themselves as older in unmonitored than in monitored chat rooms.

When only participants who provided gender information were considered, 63% presented themselves as females and 37% as males in the monitored chat rooms and 56% presented themselves as females and 44% as males in the unmonitored chat rooms, $\chi^2(1, N = 524) = 2.76, p = .10, \phi = -0.07$. Although not significant there was a trend toward a greater proportion of participants presenting themselves as female in the more protected environment of monitored chat; similarly there was a trend toward a greater proportion of participants explicitly presenting themselves as male in the freer environment of unmonitored chat.

*Obscenity.* As expected, obscene utterances and bad language were significantly more frequent in the environment of unmonitored chat (see Table 3), $\chi^2(1, N = 12258) = 102.75, p = .00, \phi = -0.09$. The host's presence reduced obscenity to a significant degree, $\chi^2(1, N = 6702) = 12.72, p = .00, \phi = -0.04$; in the presence of a host, 1% of utterances contained bad/obscene words and in the absence of a host in the monitored service, 2% of utterances contained such words. In other words, the monitor had a direct effect in reducing obscenity. But unmonitored chat had an even higher frequency of obscene language and bad words (5%) than monitored chat in the absence of the host (2%), $\chi^2(1, N = 9387) = 46.15, p = .00, \phi = -0.07$. In addition to the direct influence of the host in reducing obscenity, this pattern of results suggests either a generalized effect of monitoring (a transfer of inhibition from host present to host-temporarily absent conditions) and/or an effect of population difference (more participants describing themselves as older and male in unmonitored chat).

*Sexual themes.* The two types of chat sites also differed in the way sexuality was expressed. Monitored and unmonitored chat did not differ in the overall frequency of implicit sexual utterances. In contrast, the frequency of explicit sexual utterances was twice as great in unmonitored compared with monitored chat (2% in monitored rooms vs. 4% in unmonitored rooms), $\chi^2(2, N = 9387) = 30.41, p = .00, \phi = 0.06$. The host had a direct effect in that significantly more explicit sexuality was communicated within the monitored chat rooms when the host was absent (73 utterances or

2%), versus when the host was present (39 utterances or 1%), $\chi^2(1, N = 6702) = 2.99, p = .05, \phi = -0.02$. In addition, more implicit than explicit sexual content was produced in the monitored versus unmonitored chat rooms, even with the host absent, $\chi^2(2, N = 9387) = 30.41, p = .00, \phi = 0.06$. In sum, there is a small but significant direct effect of the monitor in decreasing the frequency of explicit sexuality, and there is a larger effect of population factors (e.g., more participants who identify themselves as older and male) that contribute to the construction of more explicit sexuality in unmonitored chat rooms.

### Extent of Participation

A one-way ANOVA on the number of contributions made by a participant (nickname) with Chat Service as the between-subjects factor yielded a reliable effect, $F(1, 1137) = 5.70, p = .02, \eta^2 = 0.01$, suggesting that participants in the monitored rooms made more contributions on average than those in the unmonitored rooms. Thus, there is more extended participation by individuals in monitored chat.

### Self-information

We found a significant difference between the two types of chat rooms in the frequency of identity declarations. Significantly more participants (65%) in the monitored chat room provided some information about themselves, compared with participants (44%) in the unmonitored chat room, $\chi^2(1, N = 1150) = 51.62, p = .00, \phi = 0.21$. The principal individual components of self-information—age, sex, and location—showed the same pattern of difference (location: $\chi^2[1, N = 1150] = 68.02, p = .00, \phi = 0.24$; age: $\chi^2[1, N = 1150] = 67.62, p = .00, \phi = 0.24$; gender: $\chi^2[1, N = 1150] = 51.09, p = .00, \phi = 0.21$).

Was this difference in extent of self-presentation a matter of the monitoring process or of other differences between the two chat ecologies? Within Service 1 (Monitored), a chi-square analysis revealed no reliable difference in participants' tendency to provide information about the self in the presence versus absence of the host. On the other hand, compared with unmonitored chat rooms, we found more personal information provided by participants in monitored chat rooms, even when there was no host actually present at a particular time, $\chi^2(1, N = 9387) = 154.94, p = .00, \phi = 0.13$. This pattern of results indicates that differences in the two populations and general social environment, rather than the monitor per se, were driving the more frequent expression of identity information in the monitored chat room

## Discussion

### Construction of Identity: Similarities and Differences Between the Real World and the Cyber World

According to Erikson (1958), identity is the main developmental task of adolescence. In line with this theory and with supporting empirical research (e.g., Johnson & Aries, 1983), identity information was rife in teen chat, being provided by more than half the participants. We see that participants utilize teen chat as a tool to express identity through a dialogic process of co-construction. However, the particular kind of identity information most often provided in the anonymous environment of chat—notably age,

sex, and location—was information that would be taken for granted in face-to-face relationships and therefore would not generally be expressed in offline interaction. The expression of these particular identity categories thus show the mark of cyberspace, confirming our earlier qualitative studies (Greenfield & Subrahmanyam, 2003; Subrahmanyam, Greenfield, & Tynes, 2004). Age, sex, and location seem to be pervasive adaptations to the nature of the anonymous, text-based chat environment. In a certain sense, the pervasiveness of a/s/l in teen chat illuminates a foundational interactional process that is invisible offline. We cannot realize how necessary age, sex, and location information is to adolescent peer interaction until this information is missing and we see how often it becomes an explicit part of the conversation (cf., Brewer & Lui, 1989).

Participants' stated gender was often aligned with gendered nicknames. This pattern adds quantitative evidence to prior qualitative findings that, within chat rooms, nicknames are an important vehicle for sharing identity information (Subrahmanyam, Greenfield, & Tynes, 2004). Like age, sex, and location information, nicknames, a modality specific to the screen, have been appropriated to convey important identity information that would be more readily available in a less anonymous, face-to-face setting. From a developmental perspective, identity information was provided more often by participants who described themselves as younger. Erikson (1959) theorizes that younger teens are more concerned with individual identity than are older teens, who have resolved some of the most pressing identity issues and are now more concerned with sexual identity and sexuality, a topic to which we now turn.

### Construction of Sexuality: Similarities and Differences Between the Real World and the Cyber World

Theory and data in the real world have pointed to greater sexual concerns and sexual involvement with increasing age (e.g., Erikson, 1958; Cubbin et al., 2005). We found evidence for a parallel trend online; participants who declared themselves to be between 18 and 24 years of age made explicit sexual comments and used obscene language at a much higher rate than those who described themselves to be between 10 and 17. Such comments in the context of teen chat illustrate how sexuality is part and parcel of adolescent peer relations, in the virtual as in the real world (Rice, 2001).

Although sexual themes appeared to develop later than identity statements and were less frequent, they were still produced by more than one-quarter of the chat participants. Indeed, the overall rate was about four times that found on teen chat by Bremer and Rauch (1998), who estimated a rate of one sexual comment every four minutes. Our results show a rate of approximately one sexual comment every minute (637 sexual comments in approximately 600 minutes of transcripts). Although three-quarters of chat participants do not produce sexual themes, all are likely to be exposed to them because of the high frequency with which they will appear in the public space of the chat window that is visible to all chat participants. The relative frequency of sexual exploration agrees with Suzuki and Calzo's (2004) finding that sexual discussion was rampant in two teen health bulletin boards.

With frequent sexual connotations or denotations, obscenity and bad words were produced by 17% of chat participants. However, with an overall rate of 3% of all utterances, this amounts to less

than one obscene utterance per minute. Based on these results alone, it is impossible to know whether these high rates of sexual themes and obscenity result from a disinhibiting effect of chat anonymity or instead constitute a glimpse into a critical aspect of the adolescent world that does not normally get shared with researchers or other adults.

Also in accord with Eriksonian theory, developing sexual identity found expression in the form of sexualized nicknames, which accounted for close to 20% of participant nicknames (Erikson, 1959). However, these names are a cyber-specific form of expressing sexual identity. That is, in the real world, names are normally gendered but not sexualized. These sexualized nicknames can be thought of as the face and body of an adolescent who wishes to convey a sexual identity in cyberspace. They are an adaptive substitute for dressing in a sexy manner or wearing makeup in the real world.

### Gendered Sexual Dynamics

In the domain of sexuality, we have learned something unexpected about the hidden dynamics of peer interaction. Self-described males liked to communicate more explicitly about sex, whereas self-described females liked to communicate on a more implicit level. This implicit level included not only more utterances with sexual themes but also the use of sexualized nicknames, known to attract males in cyberspace (Ali Lexa, personal communication, December, 2002). In addition, a higher proportion of self-described females used nicknames with (female) gendered identities than self-described males selected nicknames with (male) gendered identity. This finding may be another rather indirect means of attracting male attention.

Hence, in all of these ways, there were statistically significant tendencies for self-described males and females to adopt complementary but traditional roles in sexualized interaction: Self-described males were more active (more frequent use of explicit sexual themes), self-described females were more passive (more frequent use of implicit sexual themes, sexualized nicknames, gendered nicknames). In a sense, self-described females used strategies that could attract a partner, whereas males more often used strategies that were consonant with actively seeking a partner. This pattern may be a reflection of social norms wherein girls are expected to be more indirect in their sexual expression than boys. Whatever their cause, these gender differences are extremely revealing about the dynamics of sexual communication as adolescents begin to pair up. They reveal dynamics of adolescent peer interaction that have generally not been accessible to researchers studying offline contexts (Brown, Feiring, & Furman, 1999).

### How Should We Understand the Meaning of Self-Described Age and Gender?

Throughout we have been careful to treat our age and gender variables as a social construction rather than as a matter of fact. However, here we must point to the fact that all the "age-related" shifts correspond to age differences found in offline research (Cubbin et al., 2005; Erikson, 1959). In addition, our sample includes 410 participants who made age declarations; with a sample this large, even if a significant minority lied about their age, it would not disturb the findings in the way it would for a smaller

sample. Second, if the tendency among teenagers is to declare oneself as older than one is (Gross, 2004), this tendency would run across age groups and would therefore not disturb relative age differences, which is what we are concerned with here. Finally, a number of participants declared themselves as older than teenage, indicating a willingness to declare an age that is not in the stated range for the "teen chat room." Thus, declared age may be a truly useful tool to group subjects by age and assess developmental change in anonymous online settings.

With regards to gender, all gender differences we found online (explicit/active/male vs. implicit/passive/female sexual communication) correspond to offline differences between males and females in sexual interest that have been researched (Juhasz, Kaufman, & Meyer, 1986; Useche, Villegas, & Alzate, 1990) or are part of everyday life. For instance, Juhasz et al., (1986) report that in a sample of 451 high school students, 61% of the girls but 84% of the boys thought about sex "often" or "fairly often." This consonance is an indication that differences between declared males and declared females may well correspond to differences between actual boys and actual girls in teen chat. Furthermore, in a survey of 687 12–20-year-old adolescents (Smahel, 2005), only 8.6% reported that they sometimes presented themselves as a member of the opposite sex on the Internet. The probability of this happening on any one occasion would be even less. In general, such pretending would at worst create random noise militating against statistically significant gender differences. Thus, on a group level, declared gender may also be a useful tool to understand actual gender differences and actual gender roles in adolescent sexuality.

### Two Ecologies of Chat

We compared conversations in chat rooms that differed on two important dimensions, subscription fee and presence of an adult monitor. We expected that chat rooms that were available for free and that had no adult monitor would have a different virtual ecology than chat rooms that required a subscription fee and had an adult monitor. This turned out to be the case: we found that participants in the monitored rooms presented themselves as younger than participants in the unmonitored rooms. We speculate that one reason for this trend is that monitoring may be more attractive to parents of younger rather than older adolescents, and they may be willing to pay for this service. We also found that a greater percent of adolescents in the monitored chat rooms provided information about gender and location. We suggest that the monitored environment may create the perception of safety leading participants to provide more information about themselves. Of course, it may also be because the participants are younger and therefore at an earlier stage in their identity explorations.

Analysis of participants' declarations about their age and gender suggested that participants who presented themselves as younger and female gravitated toward the monitored chat rooms, whereas participants who presented themselves as older and male gravitated toward the unmonitored chat rooms. From these results it is impossible to tell to what extent participants who construct themselves as younger (especially younger and female) are seeking supervision, to what extent participants who construct themselves as older (especially older and male) are avoiding it.

In the unmonitored chat rooms, nicknames were more sexualized, chatters made more sexually explicit comments, and they

produced more obscene/bad words. Recall, of course, that bad words and degrading sexuality violated the rules of the monitored rooms and were cause for temporary suspension from the service. Indeed, much of the explicit sexuality was degrading (e.g., *big balls??? tickle my dickle like its a pickle*; *Hey sluts*; *I laugh when virgins think they know*). All of these differences between the two environments could have also scared young girls away from the unmonitored chat rooms. This finding can be related to the results of Smahel (2005), who found that 8% of Czech adolescents had experienced sexual harassment in general on the Internet. Interestingly, girls were more often sexually harassed (11% of the girls vs. 4% of the boys) and young girls between 12–14 years reported sexual harassment the least. Of relevance to us is his finding that there was a significant positive correlation between sexual harassment experiences and hours spent in chat rooms. Also Mitchell, Finkelhor, and Wolak (2001) report that youth who participate in chat rooms are at a greater risk for unwanted sexual solicitation.

Some of the aforementioned differences between the two chat environments appear to be related to the fact that rooms on Service 1 have a monitor, who enforces the rules of the service provider. Thus, within Service 1, the presence of the host did not influence identity presentation (which was not addressed by the rules), but deterred the use of obscene/bad words and degrading sexuality (which were an explicit part of the rules).

In terms of social implications, monitoring appeared effective when the monitors were enforcing explicit rules—notably in the case of bad language. Monitoring had a smaller direct effect on the expression of explicit sexuality. However, the difference between monitored and unmonitored chat rooms did have important indirect effect that seems relevant to healthy development. Monitored chat rooms provided a relatively safe haven for participants who present themselves as younger and female—an environment with less explicit sexuality and crude language than unmonitored chat rooms. Unmonitored chat, in contrast, seemed to attract an older crowd, who might be readier to participate in a more highly sexualized communication environment. With monitoring, there may be a certain security in exploring sexuality in cyberspace, under the cover of anonymity and safe from physical action.

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