

Places of Risk, Places of Help
Internet Exploitation:
An Overview of Existing Technology

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INTRODUCTION

The development and rapid adoption of the Internet is making many changes in our communities and culture. One distressing change is the increased opportunities for predators and pedophiles to sexually exploit children in new and unexpected ways. This aspect of the Internet is the topic of examination for this report.

In hopes of including everyone in this dialogue, this report will start with a historic summary of how the Internet was developed and why. Then two different kinds of online environments will be outlined; Synchronous, or environments that work in "real-time", and Asynchronous, or environments that operate independent of real time.

After these environments are summarized, this report will examine the kinds of risks to children and youth present in these environments, as well as the opportunities to use these environments for positive, therapeutic purposes.

Concluding remarks in this report will focus on the underlying principles of the Internet that make it such a unique environment, both for abuse and therapy, and will offer some observations and possible considerations for the safe use of these Internet environments by young people.

OVERVIEW OF EXISTING TECHNOLOGY

Background

Understanding how and why the Internet was designed may help to understand the various environments that exist within it.

The US Defense Department's Advanced Research Projects Agency (ARPA) initially designed the Internet's predecessor in the 1960's. Their intention was to create a means of communication that would still function even in the case of a wide-scale war. They created ARPANET, a network of information-exchanging computers that communicated over existing infrastructures such as telephone lines, cable, satellite feeds and trans-Atlantic data cables. This network had no central point of transmission or reception, meaning that the network would remain functional even if large parts of it were destroyed.

"ARPANET was the first wide-scale network using packet-switched protocol that allowed discreet units of data to be routed through other computers on the network, by what ever path was available, to their final destination where the packets were reassembled to form the complete message."¹

The Internet is a network of both sending and receiving computers commonly called servers. Information in the form of messages or data is routed through the quickest available path in the network of servers. These servers may even be in another town or country. If a large group of servers were destroyed

the network would still function because information would be routed through the remaining available servers in the rest of the network. This is the Internet.

There are many levels or environments within the Internet. The World Wide Web (WWW) is a network of linked websites offering information and services. Other levels, or environments, include electronic mail messaging, newsgroups, bulletin boards systems, Internet relay chat, and instant messaging. Even phone networks are starting to interact with the Internet, offering for example, ways to send text from a web page to the screen of a cell phone. Many modes of information exchange exist on the Internet and their numbers are increasing and constantly converging.

The various kinds of communication on the Internet that use some kind of network and computer intervention in the communication process are referred to as computer-mediated communications, or CMCs.

Computer-mediated communications can happen in real time – known as synchronously - or over broken periods of time – asynchronously.

Synchronous CMC

The varieties of synchronous CMCs as a group are generally referred to as 'chats'. This encompasses Internet relay chat (IRC), web-based chats, instant messaging (IM) and audio-video conferencing.

"A chat room is software that allows a group of people to type in messages that are seen by everyone in the "room," while instant messages are basically a chat room for just two people.²

The largest identifiable area of synchronous CMC is Internet relay chat or IRC.

Internet Relay Chat (IRC)

Internet relay chat was developed in Finland by Jarkko Oikari in 1988 and has grown to be a globally accessible way to text-chat with others.

"IRC is a multi-user chat system where users meet on "channels" (rooms, virtual places, usually with a certain topic of conversation) to talk in groups or privately"³

Users use a dial-up connection and a 'client' or program that will connect them to a server and an IRC network.

There are hundreds of different IRC networks in existence. On each network there are up to 2,000 channels and there are no limits to the number of users per channel. This means that IRC has a very elastic quality to it. The number of networks is set but has grown from one network in 1988 to hundreds of networks as of 2001. The number of channels is also dynamic and can range

from 2,000 on EFnet ⁴ to lesser amounts on the smaller networks. The number of users in each channel also varies greatly.

Like the Internet itself, IRC is a multi-layered, multi-source and multi-transmission network. It is a web, and like a web it is anchored and connected at many points.

IRC Networks

Currently there are 4 major IRC networks; EFnet, DALnet, Undernet, and IRCnet,⁵ which have up to 15,000 people participating in each of them at any given time.⁶ They are large networks that have experienced all the power struggles one would expect in a large anarchic milieu.

“This has led to stricter, sometimes draconian abuse, control and access policies on behalf of the network’s administration.” ⁷

Alongside the large networks are many other networks of various sizes that are subject-specific and without geographical boundaries. At least 300 of the multitude of networks are available for public use. It is impossible to estimate the number of private networks in use.

Each network has a group of servers that act as connection points for that IRC network. Servers hold information about the channels or ‘rooms’ available to chat in, as well as some user information on the people using the IRC. The servers are responsible for routing messages from user to user. Lists of servers for each of the networks are available at the network’s homepage.⁸

IRC Channels

Channels on IRC are like virtual rooms; like a room, they may have people in them discussing sports, pop culture or sex. People in the same room can see each other’s chat names on a ‘user list’ and can send a message to a selected person either publicly or privately. Channels may be open to the public, invitation-only, or be more secret and invisible. Though usually open, some communications occurring on IRC channels cannot be viewed or detected by others at all.

Chatting using IRC channels is a simple matter of getting the necessary software and learning the code or commands.

The IRC Culture

Internet relay chat is for the most part unregulated. Different networks do set different server access policies and have different cultures and histories: IRCnet lays claim to being the oldest network and has the largest Japanese presence; DALnet has the reputation of being conservative.

Web-based Chats

Web-based chats are similar to Internet relay chats in function but differ in that web-based chats are conducted through web sites and with browsers instead of IRC software clients. A search of the Internet using the Google search engine reveals 83 general listings for places to go and chat online. Most of these 83 are web-based chat sites. These sites offer small computer programs called 'applets' through which the exchange of text is facilitated. These web-based chats are often seen as 'trainer' areas with novice users usually moving on to IRC once they become more proficient with the web-based commands. Web-based chats usually require that a user register with them and are for the most part unmoderated.⁹

There do exist some web-based chats that offer moderated environments. In these sites, moderators hired by the web-site operators, invisibly lurk and remove offensive material or ban users who do not comply with previously agreed-to codes of conduct. Cyberangels¹⁰ is an organization that has long been involved in Internet safety concerns. They host a moderated site that in addition to having 'cybermoms' moderate the rooms, also have a strict registration requirement. Users who want to register to use the Cyberangel chat rooms must send a letter from a school or police agency via ground mail, verifying their age. This procedure and level of security-consciousness is rare on the Internet and represents the most conservative end of the range. Some of the other moderated chat sites are user-fee based and require parents to sign their children up. These measures will obviously make young users safer but are the minority of web-based chat sites, and require fairly precise searching skills to find them on the Internet. Much easier to find are the regular, unmoderated sites.

Instant Messaging (IM)

Instant messaging (IM) is a popular form of communicating that allows users to privately converse with others over the computer while engaging in other online activities.

"Instant messaging is something of a cross between chat and e-mail. It allows you to maintain a list of people that you wish to interact with. You can send messages to any of the people in your list, as long as that person is online. Sending a message opens up a small window where you and your friend can type in messages that each of you can see." ¹¹

Instant messaging is available through IM client software. Internet service companies such as America On Line, Microsoft Service Network, Mirabilis and Yahoo! all offer their own version of IM software. Instant messenger clients operate on a variety of different Internet protocols and are not necessarily interchangeable with each other. Currently this is an industry issue that the Internet Engineering Task Force (IETF) is attempting to resolve by developing a

standard protocol for instant messaging called Instant Messaging Presence Protocol.¹²

Most of the popular IM programs provide a variety of features:

- Instant messages - send notes back and forth with a friend who is online
- Chat - create your own custom chat room with friends or co-workers
- Web links - share links to your favorite web sites
- Images - look at an image on your friend's computer
- Sounds - play sounds for your friends
- Files - share files by sending them directly to your friends
- Talk - use the Internet as a phone to actually talk with others
- Streaming content - real-time or near real-time stock quotes and news¹³

Instant messaging is used in many ways, from groups of teens using it as an alternative to the telephone, to business groups using instant messaging to hold conferences with geographically diverse members.

Audio-Video Conferencing

Audio-Video Conferencing technologies allow the Internet to be used as a means to communicate with full sound and picture. Users must have the appropriate hardware in order to access these technologies, but these hardware requirements are becoming more and more affordable. This technology makes possible real time broadcast from one computer to others. 'Web cams', small digital video cameras that hook directly to personal computers, gather video images and transmit them to others over the Internet. Users take advantage of the faster connections available, such as cable or Digital Subscriber Lines (DSL), in conjunction with a web cam to communicate by way of video. Audio-Video communication is not common yet, but will increase in popularity as the number of users with high-speed connections increases.¹⁴

Most personal computers have built-in microphones and speakers and audio-only transmissions are also possible with only minimal hardware requirements.

Internet Protocol (IP) Telephony or Internet Telephony

Another emerging communications technology on the Internet is IP telephony, which allows a computer to use the Internet similar to the way a telephone uses a phone line. IP telephony software requires that each person who wishes to talk have a computer and Internet connection, but some companies, such as Net2Phone, provide software that allows you to call someone directly over the Internet and connect to that person's regular phone.¹⁵

Asynchronous CMCs

Computer-mediated communications can also occur over unsynchronized periods of time. The most widely used mode of asynchronous CMC is electronic mail, or email. Though this mode of communication is mostly text-based, it is increasingly allowing for the exchange of large graphic and audio files.

Email

Email is one of the primary forms of networked communications. The first email was sent in 1971 and has since become the most widely used aspect of the Internet. Primarily text-based, email exchange is the most common online activity.¹⁶

Email is classified as a point-to-point data exchange system. Email messages travel from one computer directly to another through individual server systems.

"A surprising aspect of the message service is the unplanned, unanticipated, and unsupported nature of its birth and early growth," reads a report on email written for ARPA in 1976. "It just happened, and its early history has seemed more like the discovery of a natural phenomenon than the deliberate development of a new technology."¹⁷

Like email, newsgroups are another example of early Internet technology becoming widely used.

Newsgroups and Usenet

A newsgroup is a discussion group devoted to a particular subject. Usenet is a worldwide collection of newsgroups. All require specific software, (clients) to access. This layer of the web is one of the oldest environments on the Internet and started without many of the bells and whistles of more recent environments. Indexes of newsgroups are available by searching on Usenet. Often topics of newsgroups are very specific making them useful for hobbyists and specialists seeking others with the same interests.

While the environment of Usenet is mostly text-based, it can be used to post graphic files and make them available for public download and distribution.¹⁸

"Newsgroups are a continuous public discussion on a specific topic. Newsgroups are decentralized, which means that the messages are not maintained on a single server, but are replicated to hundreds of servers around the world".¹⁹

Bulletin Board Systems

Bulletin boards systems (BBS) are single sites accessible using a modem and a software 'client' or program. You can only connect to one board at a time²⁰. Each BBS displays a series of menus that allows access to the system's contents. Bulletin Boards are not as widely used now that the World Wide Web and other Internet environments are gaining in popularity.

The basic ability to share files and post information on servers so others can access it has recently taken another turn in a road with the introduction of peer-to-peer file transfer. These changes continue to raise ethical questions surround the distribution and transfer of information, copy writes and intellectual property.

Peer-to-Peer (P2P) File Transfer

Napster, written by a high school student Shawn Fanning, was introduced in 1999. Fanning created a software client that distributed music files, known as MP3s, which are single-song data files. What was different about the Napster way of sharing files is that instead of sharing the songs from a central computer the files can be shared from each user's home computer. This is called peer-to-peer sharing or P2P. While peer-to-peer file sharing has created much controversy, especially over copyright, it is doubtful that the technology is going to go away. Other similar clients have appeared since Napster and these new clients are not limited to P2P distribution of MP3 files. Programs such as Gnutella, Scour and other file-sharing clients have now appeared. These clients not only share and distribute MP3 files, but virtually any kind of digital file such as graphics files, audio files or small video files. Additionally, these P2P clients work without the need for a central server and as a result are virtually impossible to shut down.

The decentralized nature of the Internet has been taken one step further.

"Since there is no central server maintaining the index of users, there is no easy way to target and stop the use of the program."²¹

PLACES OF RISK

"New communication technologies are invented with rather limited purposes in mind, but they are quite often adopted by masses of users in unexpected ways."²²

The emergence of this pantheon of CMCs and technological communications innovations has certainly lent itself to unforeseen results. Some results have been an increased risk to children and youth while some results have been innovative health and therapeutic care practices previously unimagined. Quite simply, the Internet has become like a great public movie screen and all aspects of human imagination and intention can be projected on to it.

It is no surprise then that the Internet is being used for criminal purposes of varying types. The sexual exploitation of children is one example of these criminal activities.

Before going any further however, it seems prudent to point out that the activities that we are talking about are not the majority of what happens on the Internet. Objective perspectives about the harm posed by the Internet are hard to come by, as are firm statistics about the incidences of exploitation, or amount of child pornography, and number of children negatively impacted. Parry Aftab creates some perspective stating,

“I always use the 90 percent /10 percent rule..... I always tell them that 90 percent of the Internet is terrific, educational, creative and safe. The remaining 10 percent isn't. But that 10 percent often gets more traffic and attention than the rest of the Internet combined.”²³

This does not imply that children and youth are not being exploited on the Internet but gives the issue perspective and is a good starting point when discussing risk. The tendency to demonize the Internet because of the perceived pervasiveness of exploitation is no more sustainable than the belief that buying a child a computer and allowing them Internet access unsupervised in their bedrooms is harmless.

Keeping in mind the 90/10 percent perspective, we ask “What are the risks that youth face through CMC and what are the opportunities to mitigate that risk by offering therapeutic interventions through those same avenues?”

Indirect Risks

The Internet poses indirect risks to youth because it facilitates the production and distribution of pornography and allows for the creation of communities of individuals sexually interested in children. The Copine Project out of University College Cork in Ireland has been actively researching the complexities of pedophile activity on the Internet since the mid-1990's. Their studies indicate that Internet technologies facilitate adult sexual interest in children in a variety of ways:

- Through the creation of trans-national networks of individuals with sexual interests in children which support pedophilic values;
- Through the mass distribution of child pornography in digital formats independent of hard copy publishing through a mostly unregulated milieu, that crosses international boundaries,
- Through 'legitimizing' influences and making the detection and confiscation of child pornography difficult

“Copine Project (1998) research findings indicate that child sex related newsgroups provide a passive, supportive, virtual environment that facilitates the discussion of fantasies and alleged experiences of sexual offences against children in a context that routinizes, sanitizes and normalizes sexual contact with children.”²⁴

Internet relay chat (IRC) is another milieu used by pedophiles for this purpose.

“Copine Research has found that adults with a sexual interest in children engage in child sex related chat rooms in IRC, (and) typically engage in a number of activities as follows;

- Trading child erotica and child pornographic pictures
- Recounting alleged experiences and fantasies
- Role-playing fantasies for the purposes of masturbation
- Swapping pictures for fantasies
- Exchanging information about how to avoid social sanction.”²⁵

An individual may download images from newsgroups and web sites, or they may engage more actively in the exchange of pictures through IRC and ICQ, and video conferencing protocols such as CU-Seeme.”²⁶

The activities of pedophiles online are indirect risks to children and youth because they reinforce a community of pedophiles who are supported and validated by each other in their predatory intentions.

Other activities of indirect threat may include the incidences of child sex tourism where children are offered as sexual objects to tourists via the Internet, or the advertising of ‘child brides’ and the distribution of ‘kiddie-stroll’ maps on the Internet that show predators how to find vulnerable street children in other cities and countries.

Direct Risks

Direct risks to children include all forms of information abuse. The inappropriate release of information about the child and their families can lead to loss of privacy, financial fraud and a form of ‘cyber-stalking’. Information that reinforces anti-social values can be harmful to youth who are offered no avenue of alternate value development. For instance, following the shooting at Columbine High in Denver, Colorado, a web site was established that glorified the actions and death of the two boys who wielded the guns.²⁷ An additional concern is “children may be exposed to inappropriate material that is sexual, hateful, or violent in nature or encourages activities that are dangerous or illegal.”²⁸

Besides risks of information abuse, there are direct risks of a sexual and emotional nature. The Internet can be hazardous to young people because they may be exposed to pornography or emotionally manipulated by online ‘buddies’ that exploit a child’s trust and the child’s desire to establish friendships. In extreme situations children may be recruited and lured out of their homes by people whose purpose is to engage them in sexual activity.

“Chat rooms have opened up our homes to virtual strangers who can pretend to be anyone, any age and either sex. They can talk to children in complete secrecy. They can prey on a child as their

parents sit in the next room... Pedophiles who used to be isolated can now find victims without leaving the security of their own homes, at little expense and little risk of being caught.”²⁹

The emotional manipulating of children takes place over time and with skilled practice on the part of predators.

“They (children) may not feel any threat by “talking” to someone online and after a few weeks or months of communicating, they are not strangers anymore.”³⁰.

That ‘buddy’ can then use the information they have gathered about the child to manipulate them. If the child has sent a photo of themselves, the predator may alter, or ‘morph’ it to put the child in a sexually explicit position and then use it to blackmail the child.³¹ Additionally, exposing children to progressively more explicit child pornography also serves to normalize the images and desensitizes children to the violation these images represent.

Risks Through Synchronous CMC

According to North American market and public opinion research firm Angus Reid, the risks to young people in chat rooms is considerable. A report, “Faces of the Web”, was released in February 2001 and states that youth are heavy users of chat rooms. Nearly three-quarters of the youth surveyed reported that they had tried chat rooms. If viewed according to gender, girls were the most likely to engage in chat room usage with 77% aged 12-17, reporting participation. Of boys, 72% reported having used chat rooms. The female youth also reported the highest incidents of feeling frightened or uneasy in chats; 20% in the 12-17 age group and 25% in the 18-24 age group. Additionally about 65% of all females surveyed reported receiving comments about their bodies or about sex while in chat rooms.³²

These usage patterns and experiences are disquieting and are compounded by evidence of young people’s willingness to meet their chat room acquaintances. Of youth surveyed, 25% reported meeting someone in person that they had met online. This statistic is consistent with the statistics specific to Canadian youth; 23% of Canadian youth reported face-to-face meetings with people they met in chat rooms.³³

One of the factors particular to chat rooms that increase risk is anonymity,

“Child abusers sometimes enter chat rooms and pretend to be children in order to elicit information from real children and to gain their confidence, often with the intention of trying to meet a child in real life in order to abuse them”³⁴

The Orchid Club

The use of conferencing technologies is just beginning to be accessible to the majority of the public but unfortunately, pedophilic individuals have been aware of its potential for a long time. In 1996, an international group called the Orchid Club was identified and members were arrested following the online rape of a child. It was alleged that in April of 1996, two California men used a digital camera to photograph a ten-year-old girl in sexually explicit poses. The images were broadcast to other members of the Club in a chat room. The viewers of the images then sent instructions to the California man, suggesting poses and requesting specific images. This represents the first time an online assault of a child has been documented resulting in criminal proceedings, and where others remotely participated in the assault.

PLACES OF HELP

There are unexpected ways that communication technologies have been adopted and fortunately this also includes new and dynamic ways of offering therapeutic interventions.

“Almost as soon as the Internet was invented, its potential for psychotherapeutic communication was apparent.”³⁵

Using the Internet as a way to deliver mental health and counseling services may seem strange at first considering the traditional visual, and non-verbal interactions associated with face-to-face therapy. These considerations are mitigated however, in several surprising and revolutionary ways. Several encouraging aspects of CMC enhance the use of the Internet to deliver therapeutic interventions.

The Three Effects

Hyperpersonal Effect

The hyperpersonal effect of computer mediated communications was outlined in a paper by Joseph Walther. Walther suggested that CMCs create a mutually reinforcing “intensification loop” which is fostered by “selective self-presentation, idealization and reciprocation.” Walther suggests there is a strong appeal to having an idealized self confirmed rather than challenged, and outlined the potential of this type of interaction in strengthening ego function thus having a beneficial effect on individuals.³⁶

Accessible Effect

The accessible effect comes from the ability of CMCs to make services available to people who can't access traditional services.

“Online therapy reaches out to the majority of people who would never seek professional mental health services...Online therapy offers a valuable new modality to reach out to a larger group of people concerned about issues of confidentiality and privacy.”³⁷

Disinhibition Effect

The disinhibition effect of CMCs has been documented in reports that have observed a therapeutic value in asynchronous messaging (such as email messaging), and indicates that the use of CMCs by individuals, disinhibits unconscious defense mechanisms.

“This not only allows for more clear communication, but also allows for greater disclosure and the processing of “soul” issues needing to be addressed.”³⁸

This disinhibition is double-edged; individuals may be quicker to both self-disclose as well as to engage in conflict.

Emergence of E-therapy

The three effects discussed here have contributed to the rapid development of therapy using computer-mediated communications. The possible applications of online therapy include:

- Information resources on psychological concepts and issues;
- Self-help guides;
- Psychological testing and assessment;
- Help in deciding to undergo therapy;
- Information about specific psychological services;
- Single-session psychological advice through e-mail or e-bulletin boards;
- Ongoing personal counseling and therapy through e-mail;
- Real-time counseling through IRC, IT telephony, and audio-video conferencing;
- Synchronous and asynchronous support groups, discussion groups, and group counseling;³⁹
- Psychological and social research.⁴⁰

These activities related to mental health and therapies are occurring in many settings.

“E-therapists are exploring all modes of Internet communication for their work with e-patients. Services are currently available using e-mail (regular or encrypted with PGP or S/MIME), real-time chat, secure web-based messaging, videoconferencing, and voice-over-IP (Internet phone)... As broadband Internet connections become

available to more consumers, videoconferencing and voice-over-IP are increasingly available. Even so, many consumers continue to prefer the non-visual, non-voice, low-tech environment of e-mail and chat, finding it easier to communicate about sensitive issues without visual or voice connection.”⁴¹

Another example of therapeutic services being offered over the Internet is the Samaritans. The Samaritans are trained volunteers who have been offering online email support to suicidal people since 1994. In 1999 they responded to emails from over 25,000 people. Originally situated in the United Kingdom, Samaritans now have 21 branches world wide, including China and Australia.⁴²

Therapy can be offered over the Internet in a medical or clinical CMC setting that mimics traditional therapy. Currently there is great interest in finding ways to use video conferencing to deliver psychiatric services to patients in remote settings. This movement, referred to as Tele-Health, is being seen as a way to provide health and medical model services to patients that would not otherwise receive support. Remote assessment and treatment can occur without either the doctor or patient even being in the same geographical area. The development of hospital and clinic-based telemedicine and the use of sophisticated videoconferencing hookups allow physicians to work with patients in remote locations. This is another example of the Internet offering assistance and help to individuals.

CONCLUSION

The world of computer-mediated communications is varied, diverse and becoming more so all the time. CMC environments - email, IRC, ICQ, and conferencing - can be compared to electricity; they can be used to help or used to harm. As the technological movement progresses it is advisable that people become more familiar with the qualities of the Internet that will continue to impact how we electronically communicate.

The three elements of effect - the inclusive, approachable nature of CMC, the disinhibiting effect of online therapy, and the hyperpersonal effect as stipulated by Walther - are aspects of CMC that facilitate both abuses, and therapeutic opportunities in cyberspace. Media-generated hysteria notwithstanding, sexual exploitation of children on the Internet is a real occurrence that affects everyone and puts children at risk. Up to this point it appears that criminal elements have been better able to use the Internet for corrupt purposes. However, by educating civil society, public servants, parents, youth and those who care for youth about these aspects of the Internet, and encouraging creative uses of the medium, it is possible to minimize the negative impact of online exploitation. Such a rich environment of communication offers unexplored potential for human interaction and must not be lost to technically sophisticated predators seeking ever more explicit experiences. Involving youth,

and those sectors of society that are respectful of youth, in designing creative solutions to these problems will be imperative to the future culture of cyberspace. Solutions based on creating youth-friendly environments - not censorship - must be addressed and supported by all sectors of society.

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