



Cyberstalking and the technologies of interpersonal terrorism

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Abstract

Despite extensive popular press coverage of the dark side of the internet, apparently no social scientific research has yet been published on the topic of cyberstalking. This report summarizes three pilot studies conducted in the process of developing a satisfactory factorially complex measure of cyberstalking victimization, and then investigates the incidence of such victimization, and its interrelationships to obsessive relational intrusion. Findings indicate that cyberstalking is experienced by a nontrivial proportion of the sample, and that there are small but generally consistent relationships between facets of cyberstalking and spatially based stalking. In addition, the results suggested that only interactional forms of coping were related consistently with forms of cyberstalking.

Key words

cyberstalking • harassment • obsession • stalking • unwanted pursuit

In the short span of a decade beginning in 1990, the federal government and 50 US states passed legislation to criminalize a threat called stalking (US Department of Justice, 1998). Originally, the legislative fervor

was motivated by sensationalized crimes committed against celebrities (Best, 1999; Cadiz and Spitzberg, 2001; Lowney and Best, 1995; Way, 1994). The prospect of a starstruck and crazed predator secretly spying upon and stalking a celebrity for the ultimate purpose of sexual assault or murder struck a resonant chord in the public at large. However, in the process of investigating the crime more carefully, it was discovered that most stalking is perpetrated against 'normal' citizens, and is most often the vestige of a formerly intimate relationship ended or gone awry (Cupach and Spitzberg, 1998; Spitzberg and Cupach, in press a, in press b; Tjaden and Thoennes, 1998, 2000).

As stalking has become better recognized as a significant and meaningful crime, parallel social developments have expanded the arsenal of the stalker. Specifically, the information revolution has vastly increased the scope of technologies of intrusion. In addition, as history reveals, each new communication technology alters the fabric of everyday social discourse and interaction (e.g. Cairncross, 1997; Inose and Pierce, 1984; Kedzie, 1997; Kraut et al., 1998; Mattelart, 1996; Silverstone, 1995), and thereby pathologies (Cooper et al., 2000) as well as types of crimes (Case, 2000; Drucker and Gumpert, 2000). The digital and information revolution has merged into a 'communications revolution'. A large part of this revolution consists of new communication technology (e.g. personal data assistants, world wide web), whereas other aspects of the revolution consist of significant refinements and extensions of previous technologies (e.g. wireless telephony, laptop computers, fax, email, etc.). Correspondent with strictly communication-based technology are technologies permitting greater surveillance both within the media of communication (e.g. the FBI Carnivore program),¹ as well as technologies of surveillance in 'real space' (e.g. thermal imaging and night vision).² One of the obvious trends of this revolution has been the increasing accessibility of people to the technologies of communication, and thus, the technologies of interpersonal contact.

With increased access to interpersonal contact comes increased potential for interpersonal intrusion. Thus, while stalkers obtain new technological tools of intrusion and surveillance, at the same time society may be inexorably making itself more vulnerable to these avenues of privacy invasion. Unless the nature of this crime is better understood, there will be little hope of reasoned response to the phenomenon. Therefore, the proposed study will be the first social scientific investigation of cyberstalking victimization. The review that follows will contextualize cyberstalking by framing it within the current state of knowledge on stalking in general.

STALKING AND OBSESSIVE RELATIONAL INTRUSION

Stalking only entered the social scientific lexicon in the mid-1990s. Since that time, over 60 empirical studies have appeared to illuminate the

phenomenon. Historically, stalking is likely to be an old activity that has only recently been recognized socially and rhetorically as a significant public threat (McAnaney et al., 1993). If stalking itself is still barely understood, it is not surprising that almost nothing is known about cyberstalking.

Stalking refers to 'a constellation of behaviours in which one individual inflicts on another repeated unwanted intrusions and communications' (Pathé and Mullen, 1997: 12). 'Stalking is generally defined as an ongoing course of conduct in which a person behaviorally intrudes upon another's life in a manner perceived to be threatening' (Nicastro et al., 2000). Different states require different legal standards, but examination of modal statutes suggests the following characteristics. First, stalking involves a course of conduct, with repeated actions over time, it is not an isolated event. Second, stalking involves an invasion of a person's relative right to personal privacy. Thus, although much stalking occurs in relatively public places and 'spaces' (including cyberspace), constitutional rights to free speech are balanced against other constitutional rights to individual privacy. This tension between fundamental individual rights is currently at the base of numerous constitutional challenges to stalking legislation (US Department of Justice, 1998). Third, stalking typically requires evidence of threat and/or fear. Mere harassment in the form of frequent telephone calls, letters, or emails are unlikely to constitute stalking unless the content, form, or nature of those communications are sufficient to elicit fear or a sense of dread from any 'reasonable person'. Fourth, stalking can occur even if the threat or fear evoked concerns a person's family, friends, pets, or property. In other words, the threat does not have to be directed specifically at the target of the communications, but may instead imply threat against members of the target's larger network of associations.

Stalking is closely related to a phenomenon referred to as obsessive relational intrusion (ORI) (Cupach and Spitzberg, 1998, 2001; Cupach et al., 2000; Spitzberg et al., 1998, 2001; Spitzberg and Cupach, in press a, in press b; Spitzberg and Rhea, 1999). ORI is the unwanted pursuit of intimacy through the repeated invasion of a person's sense of physical or symbolic privacy. Most stalking is a form of ORI, but the two phenomena are not isomorphic. Some stalking, for example, is purely for the sake of terrorism or destruction, as with political or underworld assassinations. In contrast, ORI does not have to be threatening, as in a socially unskilled paramour simply annoying or pestering an object of affection. Despite these differences, research shows that even relatively mild efforts at such courtship often cross the threshold of threat and fear by virtue of their repetition, inappropriateness, timing, and/or oddity (Cupach and Spitzberg, 2001; Sinclair and Frieze, 2000). Furthermore, most stalking cases evolve from prior relationships in which one party is pursuing efforts to re-establish intimacy, or exacting revenge for having the intimacy removed from their

lives (see Spitzberg and Cupach, in press a, in press b, for review). Thus, although stalking and ORI are conceptually distinct phenomena, their domains overlap extensively.

Stalking and ORI are also extensively experienced in society. Employing strict criteria, approximately 2 percent of men and 8 percent of women have been stalked in their lifetime (Tjaden and Thoennes, 1998, 2000). By the same criteria, approximately 13 percent of college women have been stalked, 2 percent since their school year began (Fisher et al., 2000). Using somewhat more liberal criteria, as many as 4 percent of men and 12 percent of women have been stalked (Tjaden et al., 2000). These were surveys employing behavioral criteria designed specifically to tap into the concept of stalking. When the operationalization is expanded to include ORI, studies reveal that much larger percentages of men and women have been obsessively pursued, and that there are few meaningful sex differences in being the target of such pursuit (Cupach and Spitzberg, 2001, in press; Langhinrichsen-Rohling et al., 2000; Logan et al., 2000; McFarlane et al., 2000; Spitzberg et al., 1998).

Stalking and ORI have potentially devastating effects on the targets of pursuit. Pursuers often harass and intrude over years, with the average amount of time of such relationships being four months to a year and a half (Spitzberg and Cupach, in press a, in press b). During this time, the pursuer can psychologically torture the object of affection through incessant calls at all hours, notes and unwanted gifts appearing in surprising places, showing up at work, school, places of recreation and socializing, and at home. Furthermore, pursuers find ingenious ways of involving themselves in their object's life, including insinuating themselves into the friendships and family of the object, joining recreational groups to which the object belongs, and even signing the object up for services, mail lists, or groups without the object's knowledge. Finally, the pursuer often turns to more threatening activities, such as following, breaking and entering, implying harm will come to the object or object's loved ones if intimacy is not reciprocated, leaving images or objects with threatening implications in private places, kidnapping, restraining, and physically or sexually assaulting the object of affection (for review of the tactical breadth of stalking and ORI, see Cupach and Spitzberg, 1998; Spitzberg and Cupach, in press b). It is small wonder, therefore, that given the opportunity to pursue their prey in the convenient, highly adaptable, and relatively anonymous realm of cyberspace, pursuers indulge themselves in the new technological opportunities for intrusion.

In addition, given that pursuers avail themselves of such manifold tactics of intrusion and invasion for such enduring periods of time, it follows that such intrusion will have significant impacts on its victims. The research to date evidences that the objects of obsessive pursuit suffer elevated levels of fear, anxiety, insomnia, post-traumatic stress syndrome, depression, distrust,

paranoia, frustration, helplessness, and physical injury (see Spitzberg and Cupach, in press a, in press b). In addition, many victims suffer significant economic and social costs, as they must change phone numbers, addresses, jobs, schools, hobbies, invest in protective technologies (e.g. home security) and services (e.g. bodyguards), and restrict their social activities and public life (Brewster, 1998; Pathé and Mullen, 1997; Tjaden and Thoennes, 1998).

CYBERSTALKING AS A VARIANT OF STALKING AND ORI

Stalking is a problem that affects millions of people and causes them great stress and diminishment of quality of life. Stalkers and obsessive pursuers clearly incorporate any means that facilitate their pursuit, and one of the increasingly available means of intrusion is the advent of cyberspace technologies. Taken broadly, cyberstalking is 'the use of the internet, email, or other electronic communications³ devices to stalk another person' (US Attorney General, 1999: 2). The CyberAngels (2000), an internet safety organization, suggests that the defining characteristics of cyberstalking include some or all of the following characteristics: malice, premeditation, repetition, distress, obsession, vendetta, or if it is threatening, harassing, distressing, lacks legitimate purpose, persists despite warnings to stop, or is personally directed. Although cyberstalking may be viewed as quite distinct from spatial stalking, 'electronic stalking often leads to, or is accompanied by, physical stalking, and explicitly or implicitly threatens physical stalking' (Lee, 1998: 407).

At present, no known social scientific research has been reported on cyberstalking per se. However, there are numerous anecdotal cases and expert opinions to suggest that it 'is a serious problem that will grow in scope and complexity as more people take advantage of the Internet and other telecommunications technologies' (US Attorney General, 1999: 1). CyberAngels (2000) extrapolates figures from stalking research to estimate the prevalence of cyberstalking:

If these ratios were reflected on the internet (and no one actually knows these figures), then out of the estimated online population of 79 million people worldwide, we would find 63,000 internet stalkers cruising the information superhighway, stalking an estimated 474,000 targets. (2000: 1)

Both the Los Angeles District Attorney's Office Threat Assessment Unit and Manhattan Sex Crimes Unit estimate that approximately 20 percent of their cases involve email or electronic communications, whereas the Computer Investigations and Technology Unit of the New York City Police Department estimate that about 40 percent of their cases involve electronic harassment and/or threats (US Attorney General, 1999). Similarly, Fisher, Cullen, and Turner (1999) found that about 25 percent of their stalking victims reported email incidents, although less than 5 percent of cases of

unwanted pursuit reported using email in other studies (Meloy et al., 2000; Sinclair and Frieze, 2000). Importantly, however, these estimates represent little more than guesswork and extrapolation.

A study of online victimization of youth provides dramatic evidence of the potential for stalking predation in this medium. The study consisted of a representative telephone survey of over 1500 youths, aged 10–17, who regularly use the internet (Finkelhor et al., 2000). According to this study, about one-fifth of youths have received an online sexual solicitation in the past year, about a quarter of which induced fear or distress. Girls (66%) were targeted about twice as often as boys (34%). Approximately 24 percent of the sexual solicitations were reported to be by adults, about two-thirds of solicitations were attributed to males, about one-fifth to females, with the remainder unknown. In all, less than 10 percent of youths receiving sexual solicitations notified any official party (e.g. law enforcement, internet service provider, etc.), although almost a quarter of youths reported the solicitation to a parent.

There is every reason to expect that the problem will get worse before it gets better. First, the adoption curve on communications technologies is steep. Currently 50 percent of America's schools and 80 percent of their classrooms are estimated to be wired for the internet (Times Wire Services, 2000). The gender gap is closing in terms of access and utilization (Kraut et al., 1998; Shiver, 2000). As access increases, opportunities for manifesting the dark side of human relations in a new medium also increase. Malicious attacks utilizing the internet on organizations are experienced by some 25 percent of large organizations, and preliminary evidence indicates such attacks are increasing (Piller, 2000). In other words, a technology that permits relative anonymity appears to facilitate its abuse, and one of these abuses is to harass and intrude upon various targets.

Second, available evidence indicates that internet 'addiction' and compulsive online activity are problematic for at least small proportions of the population (Griffiths, 1999; Pratarelli et al., 1999), and the more obsessed an internet user is with the technology, the more likely the person is to be socially withdrawn (Kraut et al., 1998; Nie and Erbring, 1999), and have antisocial or narcissistic borderline personality disorders (Black et al., 1999). Weiss (Edelson, 2000: 1) estimates that half of the clients of the Sexual Recovery Institute in Los Angeles present with 'an internet component to their sexual behavior'. Furthermore, people are turning increasingly to the internet to pursue romance (Merkle and Richardson, 2000) and sexual gratification (e.g. Cooper et al., 1999; Cooper and Sportolari, 1997; Lamb, 1998; Schwartz and Southern, 2000) in ways that may be as serviceable as face-to-face interaction (Walther, 1995). Cooper et al. (2000), in a study of over 9000 MSNBC users, estimated that 4.6 percent were sexual compulsives, and one percent were 'cybersex

compulsives'. While these may represent a relatively small percentage of users, in this study cybersex compulsives 'reported spending an estimated average of 35–45 total hours per week online overall' (2000: 13), suggesting a very committed and perseverant population. Such compulsions continue despite significant interference in the compulsive's personal and relational life (Schneider, 2000). Still there are an estimated 1,200 dating sites available on the world wide web, and perhaps as many as '7% of the estimated 50 million to 60 million adults who go online' use these dating services (Avin, 2000). Such technological access to romance suits the current prototype of the cyberstalker as an 'emotionally disturbed loner who seeks attention and companionship in cyberspace and often becomes obsessed with someone he met in a chat room' (Deirmenjian, 1999: 410). In this brave new world, the problem of cyberstalking is almost certain to be both an extensive and increasing form of victimization in society.

EXTENDING CURRENT RESEARCH

The present study is an extension of three pilot studies conducted to develop and refine a measure of cyberstalking victimization. These pilot studies are summarized below.

Pilot study 1

Initially, in 1999 a 16-item measure of cyber-obsessional pursuit (COP) was developed on the basis of literature review. Given the nascent nature of cyberstalking, the legal, psychological, and popular press literatures were examined to identify the types of intrusion reported, and these exemplars were translated into cluster items. The cluster style of item was formatted parallel with the ORI measure developed by Spitzberg and colleagues (Spitzberg et al., 1998, 2001; Spitzberg and Rhea, 1999). This 16-item version was presented to college students in paper-and-pencil form.

This measure was distributed to 116 undergraduate communication students at a large southwestern public university. Despite the relatively small sample size, the Kaiser–Meyer–Olkin (KMO) test was .73, indicating exploratory principal components analysis was acceptable. Five components produced eigenvalues greater than unity, but the scree plot indicated significant leveling after the third component. Extraction and oblique rotation began with three factors, which revealed a viable solution accounting for 59 percent of the common variance. The first component loaded five items (e.g. excessively disclosive messages, excessively needy messages, exaggerated messages of affection, etc., ($\alpha = .90$), suggesting a *hyperintimacy* factor. The second component loaded four items (e.g. bugging car/home/office, exposing private information, sabotaging reputation, etc., ($\alpha = .85$), indicating an *intrusion* factor. Finally, three items loaded on the final factor (i.e. threatening written messages, altering your identity/persona,

attempting to disable your computer, ($\alpha = .75$), suggesting an *aggression* factor. Given an interpretable factor structure and satisfactory reliabilities, it was decided to pursue measurement refinement. Open-ended comments from the first pilot study were examined, more case studies in the press were reviewed, and the 16-item measure was expanded to an 18-item measure (an item on directing others to you based on a Los Angeles cyberstalking case was added, as was an item on meeting online and then subsequently being stalked in physical space, based on a San Diego case).

Pilot study 2

The 18-item version of the COP measure was distributed to 91 undergraduate communication students at a large southwestern public university. The KMO measure was .68, which indicated marginal acceptability for principal components analysis. The scree plot indicated leveling between two and four factors, and extraction began at four factors and proceeded until a satisfactory solution emerged. While the three-component solution appeared intuitive, the three to four items on the third component could not achieve reliability above .55, so the two-factor solution was retained, which was still marginal. The first factor was defined by nine items (e.g. exaggerated messages of affection, excessively disclosive messages, tokens of affection, indicating a *hyperintimacy* factor ($\alpha = .84$). The second factor loaded five items (e.g. sabotage reputation, exposing private information, pretending to be someone else, getting private information on you, etc.), which suggested *privacy invasion* ($\alpha = .69$). In this sample, a short form measure of social desirability (Hays et al., 1989) was included, and revealed a nonsignificant relationship with hyperintimacy ($r = -.19$, NS), and a small to moderate relationship with privacy invasion ($r = -.31$, $p < .003$). Thus, people adhering to a strong inclination to appear socially desirable were slightly more prone to indicate they were unlikely to be cyberstalked, but the effect does not appear to be a substantial confound of the measure.

Pilot study 3

Subjects were 223 students enrolled in communication courses at a large southwestern public university. Instructors of individual courses had the option of offering extra credit to students in exchange for participation. The total sample consisted of 142 females (64.1%) and 79 males (35.4%). The ethnic composition of subjects was self-reported as 62.8 percent white/European-American, 15.2 percent Mexican-American/Hispanic, 9 percent Asian-American, 3.1 percent African-American/black, and 9.3 percent other, none, or not reported. Subjects ranged from 17–43 years of age, with a mean of 18.48 ($SD = 1.95$).

The 18-item version of the COP (Spitzberg and Cupach, 1999) was distributed to respondents. Sample size was once again acceptable ($KMO = .79$). Four eigenvalues were greater than unity, and the scree revealed leveling after the fourth factor. Extraction and oblique rotation began with four components. An acceptable four-factor solution resulted. The *hyperintimacy* factor ($\alpha = .85$) was represented by seven items that were all related to sending unwanted tokens of affection or interest. The second component, *sabotage* ($\alpha = .83$) was designated by two items regarding the exposure of information about or identity of the victim. *Invasion* ($\alpha = .74$) was a factor defined by five items pertaining to the theft of information or surveillance. The final component, *threat* ($\alpha = .88$) was identified as by two items that reflected behaviors that are related to stalking.

These factors were converted into summed subscales of cyber-ORI victimization, and related to measures of loneliness, shyness, and amount of computer- and internet-based activity, anticipating that cyber-ORI would be positively related to each (Hoobler and Spitzberg, 2000). Loneliness revealed small correlations with the invasion ($r = .14, p < .05$) and sabotage ($r = .14, p < .05$) factors, and internet-activity correlated with hyperintimacy ($r = .15, p < .05$), and invasion ($r = .39, p < .01$).

Main study

One of the least explored aspects of stalking and ORI is the extent to which tactics employed in 'real life' (i.e. RL) are translated back and forth into the electronic world. While anecdotal evidence reviewed above suggests that email is an important component of stalking and ORI, at present there is no data on the transference and permeability between the two realms of communication. The main study was undertaken to examine this issue.

A questionnaire was distributed to 235 undergraduate communication college students at a large southwestern public university. There were 130 females and 102 males (three respondents did not respond). Age ranged from 20 to 64 ($M = 22.28, MD = 22$). The 'current relationship status' of respondents was reported as not dating (19%), occasionally dating (32%), dating exclusively (41%), engaged (3%), married (3%), and other (2%). The ethnic composition of the sample was predominantly white/European-American (75%), followed by Hispanic-Americans (9%), Asian-Americans (7%), other (9%), black/African-Americans (1%), and Pacific islanders (1%).

Cyber-obsessional pursuit

Based on feedback from the three pilot studies and rapidly emerging literature on the topic, the COP was expanded to 24 items (based mainly on items indicating a transference from 'cyberia' and digital communications

• Table 1 Exploratory oblique-rotation principle components analysis of cyber-obsessional pursuit victimization items (N = 235)
 All items preceded by the following preface: in your lifetime, how often, if at all, has anyone ever obsessively pursued you through electronic means (computer, email, chat room, etc.), over a period of time for the purpose of establishing an intimate relationship that you did NOT want? That is, ... Has anyone ever undesirably and obsessively communicated with or pursued you through computer or other electronic means, by ...

ITEM ROOTS	HYPER- INTIMACY ¹	RL TRANSFER	THREAT
Sending exaggerated messages of affection	.87*		
Sending tokens of affection	.86*		
Sending excessively needy or demanding messages	.84*		
Sending excessively disclosive messages	.82*		
Sending sexually harassing messages	.68*		
Pretending to be someone she or he wasn't	.54*		
Directing others to you in threatening ways			
Meeting first online and then threatening you		.88*	
Meeting first online and then following you		.80*	
Attempting to disable your computer		.63*	
Taking over your electronic identity or persona		.55*	
Meeting first online and then intruding in your life		.48	
'Bugging' your car, home, or office			
Sending threatening written messages			.65*
Sending threatening pictures or images			.64*
'Sabotaging' your private reputation	.34		.55*
First meeting you online and then stalking you			.52*
Exposing private information about you to others	.34		.50*
Obtaining private information without permission			.49*
'Sabotaging' work/school reputation	.31		.45*
Sending pronographic/obscene images or messages	.32		.32
Altering your electronic identity or persona			.30
Meeting first online and then harming you			
Using your computer to get information on others			
Correlations			
I		.15*	.52**
II			.11
II			
α	.88	.74	.77

¹ Loadings less than .30 are deleted to assist interpretation.

technology into 'real life', a phenomenon increasingly reported by subjects and press, see Table 1).⁴

The KMO was .70, indicating acceptable intercorrelation and sample to conduct principal components analysis. Eight components produced eigenvalues over one, but the scree plot revealed leveling between two and five components. Extraction and oblique rotation began with five factors, and proceeded until a three-component solution emerged.

The three components were tentatively labeled as follows: *hyperintimacy* ($\alpha = .88$; e.g. excessively disclosive messages, sending tokens of affection, exaggerated messages of affection, pornographic/obscene messages or images, etc.), *RL-transference* ($\alpha = .74$; e.g. meeting first online and then threatening you, meeting first online and then following you, attempting to disable your computer, etc.), and *threat*, which is somewhat similar to privacy invasion in the previous analyses ($\alpha = .77$; e.g. sending threatening written messages, sending threatening pictures or images, ‘sabotaging’ your private reputation, etc.). These factors appear intuitive and viable for further research. All three factors revealed small but statistically significant correlations with measures of online activity and exposure. Both the borderline messages and the threat factors showed significant associations with ORI victimization by unmediated means.

Obsessive relational intrusion

The 24-item measure of ORI was included (Spitzberg et al., 1998, 2001; Spitzberg and Rhea, 1999). The KMO was .89. There were five components with eigenvalues greater than unity, with a precipitous leveling after the third factor. Extraction with oblique rotation began at four components, and a three-component solution, accounting for 52 percent of the common variance, achieved satisfactory factor definition and reliabilities. Analogous to previous research, the first factor loaded nine items was labeled *intrusion* (e.g. monitoring behavior, sending unwanted messages, intruding on one’s network, intruding in one’s interactions, etc., $\alpha = .87$). The second factor, labeled *endangerment*, was defined by five items (e.g. kidnap, endanger life, display threatening objects, stealing or damaging valued possessions, etc., $\alpha = .79$). The final factor loaded six items, defined by activities such as physical hurting, physically threatening, verbally threatening, and physically restraining. This factor was labeled *threat* ($\alpha = .84$). The factors were intercorrelated at moderate levels (i.e. r .33 to -.43).

ORI coping

‘Coping’ here refers to ways in which objects of pursuit elect to manage, deal with, ignore, or otherwise respond to being obsessively pursued. The measure employed here is a synthesis of coping responses identified by Nicastro et al. (2000), translated into a format to parallel the other obsessive pursuit measures reported herein. It consists of nine cluster items. KMO was .79. There were four components with eigenvalues over one, and the scree plot revealed leveling between the second and third components. A three-component oblique solution emerged, accounting for 58 percent of the common variance. The first factor, labeled *unilateral protection* was defined by four items (i.e. do things to protect yourself, use technology for protection,

avoid pursuit in active ways – changing residence – check up on pursuer's actions – etc., avoid pursuit in passive ways – ignore – avoid common places – etc., $\alpha = .74$). The second factor was defined by two items (i.e. seek formal or legal forms of protection, set traps for your pursuer, $\alpha = .69$), and was labeled *aggressive protection*. The final factor was labeled *interaction*, and was defined by three items (i.e. talk or communicate harshly with pursuer, talk or communicate reasonably with pursuer, retaliate against pursuer, $\alpha = .71$). The factors revealed small to moderate intercorrelations ($r_s = .17$ to $.35$).

Cyber-risk

Finally, it was anticipated, based on routine activities theory (Mustaine and Tewksbury, 1999) that the more a person subjects himself or herself to daily activities that increase accessibility to anonymous and potentially amorous others in a given domain, the greater risk that person is likely to face in regard to cyberstalking and pursuit. Consequently, a series of 17 items were developed (e.g. how easy would it be for just anyone to locate your electronic address? Very difficult–Very easy; How frequently do you read chat room discussions? Never–Very Frequently; Approximately how many hours, on average, do you spend on a networked computer in a week for: Work? Enjoyment? etc.). The interval and ordinal types of items ($n = 15$) were analyzed to investigate if interpretable composites could be constructed. Although the KMO was only $.62$, given the large number and purely exploratory aspect of these items, principal components analysis was employed for the purpose of data reduction. Five components produced eigenvalues greater than one, and the scree plot portrayed a leveling between three and four components. The only oblique solution to achieve satisfactory reliabilities was a two-factor solution. The first component was labeled *exposure*, and loaded items such as 'How frequently do you read chat room discussions?', 'How frequently do you participate actively in chat room discussions?', 'How often do you read or place ads in computer dating services?', and 'How frequently do you participate in MUDS (multi-user domains)? Computer-based fantasy games? etc.?', $\alpha = .75$). The second component, labeled *social efficacy*, loaded only three items: 'In general, how easy or difficult do you believe it is for you to meet someone new and initiate a dating relationship through means other than the computer? In general, how easy or difficult is it for you to get people to do what you want them to in social relationships? In general, how easy or difficult is it for you to get people to do like you when you want them to?', $\alpha = .76$).

RESULTS

When asked: 'During some period of my life I have experienced being followed and/or harassed and/or obsessively pursued by someone', a

• Table 2 Frequencies of subjects indicating any response other than 'never' (i.e. only once, 2–3 times, 4–5 times, or over 5 times; $N = 235$)

	PERCENTAGE EXPERIENCED AT LEAST ONCE
HAS ANYONE EVER UNDESIRABLY AND OBSESSIVELY COMMUNICATED WITH OR PURSUED YOU THROUGH COMPUTER OR OTHER ELECTRONIC MEANS, BY . . .	
1. SENDING TOKENS OF AFFECTION (e.g. poetry, songs, electronic greeting cards, praise, etc.)	31
2. SENDING EXAGGERATED MESSAGES OF AFFECTION (e.g. expressions of affections implying a more intimate relationship than you actually have, etc.)	31
3. SENDING EXCESSIVELY DISCLOSIVE MESSAGES (e.g. inappropriately giving private information about his/her life, body, family, hobbies, sexual experiences, etc.)	26
4. SENDING EXCESSIVELY 'NEEDY' OR DEMANDING MESSAGES (e.g. pressuring to see you, assertively requesting you go out on date, arguing with you to give him/her 'another chance', etc.)	25
5. SENDING PORNOGRAPHIC/OBSCENE IMAGES OR MESSAGES (e.g. photographs or cartoons of nude people, or people or animals engaging in sexual acts, etc.)	19
6. SENDING THREATENING WRITTEN MESSAGES (e.g. suggesting harming you, your property, family, friends, etc.)	9
7. SENDING SEXUALLY HARASSING MESSAGES (e.g. describing hypothetical sexual acts between you, making sexually demeaning remarks, etc.)	18
8. SENDING THREATENING PICTURES OR IMAGES (e.g. images of actual or implied mutilation, blood, dismemberment, property destruction, weapons, etc.)	5
9. EXPOSING PRIVATE INFORMATION ABOUT YOU TO OTHERS (e.g. sending mail out to others regarding your secrets, embarrassing information, unlisted numbers, etc.)	17
10. PRETENDING TO BE SOMEONE SHE OR HE WASN'T (e.g. falsely representing him – or herself as a different person or gender, claiming a false identity, status or position, pretending to be you, etc.)	20
11. 'SABOTAGING' YOUR PRIVATE REPUTATION (e.g. spreading rumors about you, your relationships or activities to friends, family, partner, etc.)	12
12. 'SABOTAGING' YOUR WORK/SCHOOL REPUTATION (e.g. spreading rumors about you, your relationships or activities in organizational networks, electronic bulletin boards, etc.)	9
13. ATTEMPTING TO DISABLE YOUR COMPUTER (e.g. downloading a virus, sending too many messages for your system to handle, etc.)	3
14. OBTAINING PRIVATE INFORMATION WITHOUT PERMISSION (e.g. covertly entering your computer files, voicemail, or the files of co-workers, friends, or family members etc.)	10

• Table 2 Continued

	PERCENTAGE EXPERIENCED AT LEAST ONCE
15. USING YOUR COMPUTER TO GET INFORMATION ON OTHERS (e.g., stealing information about your friends, family, co-workers, etc.)	7
16. 'BUGGING' YOUR CAR, HOME, OR OFFICE (e.g. planting a hidden listening or recording device, etc.)	7
17. ALTERING YOUR ELECTRONIC IDENTITY OR PERSONA (e.g. breaking into your system and changing your signature, personal information, or how you portray yourself electronically, etc.)	1
18. TAKING OVER YOUR ELECTRONIC IDENTITY OR PERSONA (e.g. representing him or herself to others as you in chatrooms, bulletin boards, pronography or singles sites, etc.)	3
19. DIRECTING OTHERS TO YOU IN THREATENING WAYS (e.g. pretending to be you on chat lines and requesting risky sex acts, kidnapping fantasies, etc.)	2
20. MEETING FIRST ONLINE AND THEN FOLLOWING YOU (e.g. following you in while driving, around campus or work, to or from the gym or social activities, etc.)	1
21. MEETING FIRST ONLINE AND THEN INTRUDING IN YOUR LIFE (e.g. showing up unexpectedly at work, front door, in parking lot, intruding in your conversations, etc.)	3
22. MEETING FIRST ONLINE AND THEN THREATENING YOU (e.g. threatening to engage in sexual coercion, rape, physical restraint, or to harm him or herself, your possessions, pets, family, or friends)	3
23. MEETING FIRST ONLINE AND THEN HARMING YOU (e.g. corresponding with you through an on-line dating service and then following, harassing, or otherwise stalking you)	1
24. FIRST MEETING YOU ONLINE AND THEN STALKING YOU (e.g. corresponding through an on-line dating service or as acquaintances and then following, harassing, or otherwise stalking you)	1

surprising 59 percent responded affirmatively. When asked 'If yes [to the previous item], did it occur in a manner you personally found threatening to, or placed you in fear of, your own safety, or the safety and security of your family, friends, or possessions?', 19.6 percent said 'yes'. To reduce ambiguities, respondents were then asked: 'If yes, would you consider what you experienced as a form of stalking?' In total, 14.5 percent responded 'yes'. The average duration of this pursuit was reported to be 4.24 months ($MD = 2$ months, range = 0–132 months).

The frequencies with which college students were able to report having been the object of unwanted harassment and pursuit via computer and other

• Table 3 Correlation matrix of major constructed variables

	1	2	3	4	5	6	7	8	9	10
1. Cyber ORI: Hyperintimacy										
2. Cyber ORI: RL Transference	.15*									
3. Cyber ORI: Threat	.52**	.11								
4. ORI Intrusion	.37**	.12	.32**							
5. ORI Endangerment	.25**	.29**	.46**	.48**						
6. ORI Threat	.28**	.09	.43**	.64**	.65**					
7. Coping: Passive Protection	.27**	-.03	.10	.46**	.21**	.34**				
8. Coping: Aggressive Protection	.18**	.03	.11	.17**	.26**	.23**	.34**			
9. Coping: Interaction	.35**	.01	.14*	.33**	.09	.30**	.59**	.29**		
10. Exposure	.21**	.25**	.18**	.10	.21**	.20**	.09	.01	.14*	
11. Efficacy	.14*	.05	.08	.33**	.17**	.14*	.17*	.09	.06	-.14*

* $p < .05$; ** $p < .01$.

electronic means are reported in Table 2. Results indicate that very few students are victimized by some of the more devious types of cyber-pursuit (e.g. stealing persona, directing others to threaten, etc.). However, almost a third indicate some degree of computer-based harassment and obsessive pursuit.

Zero-order correlations are reported in Table 3. Several patterns emerge. First, there are at this point in time only small to moderate relationships between spatial ORI and cyber-ORI. Relationships range between .09 to .46. Most of the relationships are positive and statistically significant, but few indicate substantial overlap. The exceptions are that ORI endangerment ($r = .46, p < .01$) and ORI threat ($r = .43, p < .01$) shows relatively large relationships with cyberthreat. It appears that the tendency to resort to threatening actions crosses over media, such that computers simply become another means in the arsenal of intimidation and coercion. Second, there are few relationships between coping responses and cyber-ORI, with the exception that cyber-based hyperintimacy is positively related to all types of coping. It may be that the types of pursuer who resorts to more extreme forms of cyber-pursuit are also the people who can circumvent most typical coping responses. In other words, people who simply send messages that plead for greater intimacy may be merely as computer-savvy as the object of the affections, permitting a range of coping responses to apply. In contrast, the more extreme pursuer, who resorts to threat and spatial pursuit, may be able to work around the more mundane coping response so as to render such responses relatively moot, and thus, foregone as behavioral options. Third, exposure in cyberia and to the various media of digital communications clearly bears a small but consistently significant relationship to cyber-ORI. The more everyday mundane activities a person is exposed to on the world wide web, internet, and cyber-based world of electronic communications, the more at risk is the person for experiencing unwanted pursuit through those very same media.

DISCUSSION

Up to one-third of the main study's respondents reported some form of cyber-based unwanted pursuit, albeit most of which was relatively harassing but benign. However, this relatively benign type of hyperintimacy displayed over the internet, in the form of excessive and redundant messages of affection and disclosure, may elicit a range of relatively obvious coping responses. It is the more severe and deviant forms of cyber-pursuit that showed little or no relationship to coping responses, suggesting that the objects of such threatening cyber-based activities and of the transference of pursuit from the cyber to the spatial world may nonplus or immobilize victims of pursuit. It may be that such saturation of pursuit disables the

victim, creating a feeling that every means of communication and contact is contaminated by the possibility of further unwanted pursuit. Some of the very means of coping at victims' disposal (e.g. <http://www.CyberAngels.org>; <http://www.StalkingAssistance.com>) may seem ill-advised, given that these services are delivered through the very medium that has become the contested territory of intrusion in their lives. Indeed, a tantalizing warning emerges from research on 'cyber-ostracism', or 'the act of ignoring and exclusion' of others through computer-based communication (Williams et al., 2000: 748). Findings suggest that cyber-ostracism threatens fundamental needs of belonging and self-worth (Williams et al., 2000). Such threats could both stimulate accelerated pressure for contact and persistence, as well as potential rage at the source of rejection. Future research needs to expand the coping responses measure (e.g. Spitzberg and Cupach, in press b) to elaborate the topography of coping and explore which coping responses provide specific deterrence or protection from, and which may perpetuate or facilitate, given forms of obsessive pursuit.

1984 has come and gone, but the *Brave New World* may yet be on the horizon. The fear that the common person may need to be most concerned about may not be 'Big Brother' so much as each other. The technologies of intrusion have created numerous opportunities for invasion of privacy and bureaucratic invasion into everyday life (Banks, 1997; Bogard, 1996; Ronfeldt, 1992; Staples, 1997). Most of these concerns are focused upon the more macrostructural sources of surveillance in our society, such as the government and industry (Peters, 1999; Sykes, 1999). Eventually, however, the greater risk to personal safety may be from individuals stalking others initially through cyberspace. Indeed, it may be ironic that to combat the risks of cyberstalking, law enforcement may need the very tools of electronic surveillance and intrusion that are currently the source of many citizens' fundamental fears of privacy invasion – whether the protection of individuals from another individual can be balanced adequately with the protection of individuals from the government. Many of the technological 'fixes' that are evolving (e.g. passwords, firewalls, encryption, etc.) may or may not be acceptable if they so effectively protect personal privacy at the expense of law enforcement's ability to protect personal safety. Whether or not the public at-large is fully aware of these trade-offs, or willing to make them, remains to be seen.

A hallmark of the revolution in communications is the extent to which the common person increasingly has access to, and is accessible by, virtually anyone else. 'People seem to be integrating computer communication into their daily repertoire of communication tools and using computer-based technologies to fulfill a variety of needs just as they use more traditional media' (Flanagin and Metzger, 2001: 171). It stands to reason that if there

are classes of people who elect, or are driven obsessively, to pursue intimacy with others that these pursuers will seek whatever means are available that might increase their access to the objects of their pursuit, and that people's increasing exposure on and through the computer will make them more accessible as victims. Some research indicates that people are very concerned about their personal privacy on the world wide web and internet (e.g. Fox et al., 2000; Hoffman et al., 1999; Kirsh et al., 1996; Sheehan and Hoy, 1999; cf. Witmer, 1997). However, to date most of this research has referred to issues of privacy in relation to organizations, government, and industry. Relatively little research has addressed people's concern over privacy from specific individuals who might attempt to intrude into their lives, both in cyberspace and 'real' space.

In the pilot studies and main study reported here, COP has been defined and operationalized, apparently for the first time in a social scientific manner. In an age when internet addiction (Cooper et al., 1999, 2000; Griffiths, 1999; Pratarelli et al., 1999) may become a legitimate psychological disorder, and in which increasing use of the internet has been demonstrated to lead to increased and unintended undesirable outcomes (Markus, 1994), including loneliness and depression (Kraut et al., 1998; Nie and Erbring, 1999), the ironies abound. The very technology that facilitates contact may diminish the *sense* of contact, but increase the risks of unwanted contacts. Clearly more research is necessary to investigate not only the techniques, effects, and predictors of cyber-pursuit, but also the means of coping and protection that may permit people to take control of their means of communication.

Notes

- 1 Kerr (2000), Assistant Director of the Laboratory Division of the FBI, provides a law enforcement perspective on the Carnivore surveillance technology.
- 2 At the time of writing, the Fourth Amendment constitutionality of law enforcement use of thermal imaging is being argued before the US Supreme Court (see Barnard, 2001).
- 3 The California Penal Code s.646.9(h) defines electronic communications as including but not limited to 'telephones, cellular phones, computers, video recorders, fax machines, or pagers'. This is specified as equivalent to ss.12, s.2510, Title 18 of the United States Code. Thanks to Wayne Maxey, Criminal Investigator, Special Investigations Division, District Attorney's Office, County of San Diego, for this notification.
- 4 References to 'cyberia' and 'electronic means of communication' are intentionally vague at this stage of investigation. Stalkers may make use of any number or variety of media to intrude into a victim's privacy, including 'bugging', 'night-vision goggles', tapping into a person's email, and so forth. Currently, a broad definition is probably preferable in studying cyberstalking, and what constitutes the 'cyber' domain will be operationally defined by the measurement instrument reported in Table 2.

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