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## **“The more things change...?”: Technologically-Mediated Abuse of Intimate Partner Violence Victims**

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At least 90% of American adults use the Internet and cellular phones (Fox & Rainie, 2014). Since the 1990s, when widespread use of technologically-mediated communication commenced, it has been increasingly embedded in relationships (Pew, 2014). Such widespread use holds potential for treating and researching those who use technology for “darker” purposes – particularly in cases of relational violence. According to Black et al. (2011), nearly half of all men and women in the U.S. have been psychologically abused by a partner; physical abuse is experienced by 35.6% of women and 28.5% of men. With increasing frequency (and varying effectiveness), intimate partner violence (IPV) victims are able to utilize electronic aid resources and social support. However, technology is also harnessed by perpetrators.

Previously limited to in-person, third-party, and telephone or mail contact with victims, today’s media abet perpetrators via email, text messaging, social network sites, and/or tracking tools to harass, stalk, violate, and even assault their victims (Southworth, Dawson, Fraser, & Tucker, 2005). Research on IPV should now include not only the ways technology is used, but must examine the currently-unknown consequences of mediated violence. In the current study, I take an initial step in researching technologically-mediated abuse (TMA) as experienced by IPV victims. To situate this study, I begin by applying a foundation based on the limited

technological-abuse literature. I integrate results of a retrospective, self-report, mixed-methods study of victims' experiences with TMA and discuss research on abuse and technology.

## **Laying Foundations**

### **Technological IPV**

Intimate partner violence (IPV) not only affects victims and their social networks, but also society, costing over \$4 billion dollars in health care and roughly \$1.8 billion in lost worker productivity (Kruse, Sorensen, Bronnum-Hansen, & Helweg-Larsen, 2011). IPV involves intentional physical (i.e., implementing objects or body to corporally injure), emotional (i.e., targeting identity to hurt or control), and/or verbal (i.e., using profanity or offending to attack) tactics used to harm a romantic relational partner (Straus & Gelles, 1990). One theory of IPV relationships considers relational differences in terms of *coercive control*, or the extent to which abuse tactics arise from desires to dominate or manipulate a partner (Robertson & Murachver, 2011). According to this model of classification, coercive control-based relationships in which violence is uni-directional possess ongoing, patterned abuse and, in heterosexual relationships, more often involve female victims of male perpetrators (Johnson, 2008).

Another theoretical framework (in some ways overlapping with coercive control perspectives) discusses these relationships in functional terms, using a model of power as a goal-driven behavior. Functionally, some IPV relationships can be seen as possessing *proactive aggression*, or occurring with no external provoking situation from perpetrators, who are driven by internal motivations to achieve (i.e., *instrumental*) a goal (Dodge & Coie, 1987). In contrast to coercion-based relationships, conflict-based relationships in which violence may be bi- or uni-directional typically arise from disagreements and, in heterosexual relationships, involve as many (if not more) male as female victims (Johnson, 2008). Functionally, these relationships

appear to involve more *reactive aggression*, or are maladaptive (e.g., hostile, angry, abusive) “retaliation” responses to real or imagined threats or frustrations (Dodge & Coie, 1987). Both the psychological explanation of coercively controlling perpetrators and the theory of goal-directed behavior in IPV contexts suggest unique applications in a technologically-mediated environment. For example, cyberbullying among adolescents has been distinguished by instrumental-proactive versus reactive aggression abuse (Ang, Huan, & Florell, 2014), which suggests IPV researchers may be able to tailor the study of TMA to different types of physical and psychological aggression, depending on the presence/absence of coercive control and/or power as goal-driven behavior.

Due to a current lack of research on the topic in romantic relational contexts, it is unknown to what extent diverse types of IPV differ in terms of TMA. On the one hand, technologies’ immediacy allows people to voice instantaneous reactions privately (e.g., email) and publicly (e.g., social media forums) following disagreements, suggesting that particular media may be used by perpetrators of conflict-based IPV relationships in goal-directed situations. On the other hand, media amplify the means through which abusers can control, intrude, monitor, and otherwise attack victims of coercive control-based relationships. Sheridan and Grant (2007) found that the most common targets of cyberstalkers are ex-intimates, but the extent to which intimates in IPV contexts are stalked (or abused) remains unknown.

Once attributed to the “tech-savvy” and equated with youth (Becker, 2005), mediated technology now occupies a dominant presence in the lives of most Americans. As a result, research on mediated abuse, such as “cyberbullying” (e.g., Ang et al., 2014), cyberstalking (e.g., Finn, 2004; Fisher, Cullen, & Turner, 2000), and cybersafety (e.g., Holden & Millett, 2005), must extend beyond young adults. Most individuals from childhood into old-aged adulthood now

have comfort with and mastery over emerging technologies. If anything, it is only IPV research that has failed to stay on top of new trends in mediated relationships – a fact with serious implications for counseling victims, training practitioners, and educating the public and policyholders in terms up-to-date with perpetrators’ tactics. Although helpful for victims, much information online focuses on “lay” advice (e.g., health care, discussion lists) rather than nuanced, research-supported findings (Westbrook, 2007). As such, before commencing with predictive and/or large-scale analyses, descriptive and associative foundations of TMA in IPV relationships must be examined. In order to examine these relationships, the following research question was posed:

RQ1: What personal and relational IPV victim-characteristics are associated with TMA?

### **TMA: Amplifying Control and Intrusion**

Coercive control, theorized to distinguish IPV relationship types, may be a form of abuse particularly practiced with new technologies. Operationalized by Lehmann, Simmons, and Pillai (2012) as “multidimensional” and “repetitive” behaviors functioning because of victims’ beliefs in abusers’ reward-punishment potential, *coercive control* is distinctly comprised of two simultaneous processes (p. 916). Coercion, whereby implications or embodiments of menace drive compliance, is achieved through “routine barriers” already established structurally in society. This coercive aspect is a factor that rarely requires actual force to be performed, because the threat of it (e.g., “setting the stage” per Raven, 1993) is the primary facilitator (Dutton & Goodman, 2005). Control, or resulting obedience, is guaranteed because the abuser is “monopolizing vital resources, dictating preferred choices, micro-regulating a partner’s behavior, limiting...options and supports needed to exercise independent judgment” (Stark, 2007, p. 229).

IPV victims experience coercive control largely through surveillance methods (Lehmann et al., 2012) – today, almost entirely technologically-facilitated.

Another key consideration for IPV victims, because of technological immediacy, is *intrusion*, or “external control or interference that demands attention, diverts energy...and limits choices” (Wuest, Ford-Gilboe, Merritt-Gray, & Berman, 2003, p. 600). Intrusion involves direct abuse and control (during and after IPV relationships), indirect health issues from abuse, treatment costs, and/or ongoing lifestyle adjustments due an abuser’s invasion. As observed even 15 years ago, “The information revolution has vastly increased the scope of technologies of intrusion” (Spitzberg & Hoobler, 2002, p. 72).

The technological boons of speed, expanse, and usability serve as ultimate banes for IPV victims. Past research used to contextualize current TMA experiences can be helpful. Separating knowledge of pre-technology IPV may be especially problematic, because it would preclude what many years of IPV research have already shown about victims’ experiences – the overlapping of abuse types in controlling relationships (Romero, 1985), and now the overlap of technologies used to perpetrate them. Often, because policy (often based on research – in this case, lacking) has not yet caught up with actual practice, perpetrators are abetted in their use of TMA through the simple lack of laws against their actions (Nicol, 2003); media are not yet subject to the same restrictions or consequences as written or in-person communication.

IPV perpetrators have long employed written (e.g., letters, faxes) and telephonic (e.g., phone calls, voice messages) means of attacking, monitoring, and controlling victims, but new tools available on almost all cellular phones allow for more invasive intrusion (Spitzberg & Hoobler, 2002). Basic cellphones possess GPS locators and mapping-tracking tools; texting abilities; automatic recording of call- and text-histories; caller-identification blocking; and

photograph and film functions, timers, alarms and other sound-effects of varying annoyance (see Southworth et al., 2005 for anecdotal TMA exemplars). Smart phones amplify abuse capabilities to include internet and specialized smartphone applications.

The following are just some of the TMA tools (most available for free) currently available to anyone with a basic internet connection: browsing histories and IP addresses of users' search- and site-histories; software blocking incoming source-IPs (e.g., preventing victim-control); email messages including photo, video, and audio attachments auto-stored and shareable worldwide; "denial of service attacks" against victims' websites; blogs, vlogs, chatrooms, social media posts and status-changes; easy spamming form sign-ups; readily available pornography – legal or otherwise; concealable (or "off-appearing") webcams; photo- and film- reality-altering software; "shared" calendars; searchable life histories and live status updates; locational earth-views (e.g., GoogleMaps); instant messaging (most logging chats despite "off the record" settings) and Skype; password and identity keylogging programs or desktop spyware (e.g., Big Brother, WinGuardian); file syncing and pirating capabilities; wireless audio surveillance or "eavesdropping" on unsecured or public wifi hotspots (e.g., at Starbucks); online account access stolen or readily available to banking, dating, working, shopping, childcare, cybersex, government transactions, and Craigslist-type "special" interactions (used criminally to "leave a trail" and legally to affect/control); teledildonics; and viruses capable of tracking, creating, and destroying data.

Clearly, IPV victims experience intrusion in ways never-before documented. The internet provides abusers with decreased inhibitions (i.e., lack of repercussions and reduced interpersonal constraint), absence of guilt-inducing nonverbals, increased deception methods, and false-reality reinforcements (i.e., absence of actual cues/feedback) not possible in-person (Meloy, 1998).

Initial TMA researchers, Southworth and colleagues (2005) detailed technologies available to IPV abusers (“stalkers” in their article) through anecdotes and macro-national statistics. Being able to identify the many possibilities of TMA – beyond potential tools – is an important step in addressing abusers’ tactics. Thus, to initiate some of these yet-to-be-studied variables, I proposed the following:

RQ2: What are the ways in which IPV victims report experiencing TMA?

### **Method**

Participants recruited for this IRB-approved study via social network emailing and diverse (i.e., both violence and non-violence related) web forums included anyone having experienced physically and/or psychologically abusive behavior from a former romantic partner. Completed surveys comprised a final sample of 495 (157 men and 338 women) self-identified victims. Differently-sexed (94.1%,  $n = 466$ ) and similarly-sexed (5.9%,  $n = 29$ ) couples included 160 female- (32.3%) and 335 male- (67.7%) perpetrators. Previous research suggests very few, if any, orientation differences in IPV experiences (Frankland & Brown, 2014), with hetero-/homo-sexual victims differing primarily on available social support and victim resources and societal stigma received – not on particulars of IPV experiences (Hardesty, Oswald, Khaw, & Fonseca, 2011; Oringher & Samuelson, 2011). Therefore, as no significant sexuality-differences were found on any variables in this study, all victims were collapsed in the final sample. Participants were aged 18 to 74 years ( $M = 36.68$ ,  $SD = 13.61$ ) and primarily White (85.9%).

After accessing the survey via direct web-link to a SSL-encrypted site erasing IP addresses, people indicated informed consent before completing measures assessing IPV for a larger research project. Participants who responded to an open-ended question indicating ways their partner “used technology to threaten, accuse, or hurt” them during their relationship are

hereby denoted as the TMA subsample ( $n = 187$ ). Within the TMA subsample were 67 men and 120 women in 182 differently-sexed (97.3%) and five same-sexed (2.7%) IPV relationships [i.e., 64 female (34.2%) and 123 male (65.8%) perpetrators].

Quantitative measures included demographic questions and the following victimization scales: (a) Conflict Tactics Scales 2 physical abuse subscale (CTS2; Straus, Hamby, & Warren, 2003) supplemented with the Partner Abuse Scale-Physical (PASPH; Hudson, 1997) – 19 items ( $\alpha = .94$ ) of tactic frequency (0 = *Never* to 6 = *Always*, Total sample  $M = 2.13$ ,  $SD = 1.10$ ; TMA subsample  $M = 2.23$ ,  $SD = 1.15$ ); (b) sex-neutrally modified Index of Psychological Abuse (IPA; Sullivan, Parisian, & Davidson, 1991) – 25 items ( $\alpha = .94$ ) of perceived frequency (1 = *Never* to 7 = *Always*, Total sample  $M = 4.15$ ,  $SD = 1.24$ ; TMA subsample  $M = 4.29$ ,  $SD = 1.23$ ); (c) coercive control, from the IPA's control-relevant (and non-overlapping) items (Total sample  $M = 4.21$ ,  $SD = 1.34$ ; TMA subsample  $M = 4.32$ ,  $SD = 1.30$ ); and (d) technological abuse scale, created to measure how “forms of technology were used” to abuse – 10 items ( $\alpha = .92$ ) of overall relational frequency (1 = *Never* to 7 = *Always*, Total sample  $M = 2.53$ ,  $SD = 1.58$ ; TMA subsample  $M = 2.57$ ,  $SD = 1.59$ ) including threats, emotional abuse, and coercively controlling behaviors perpetrated via media (e.g., phone, computer, web programs). No significant differences were found between the Total and TMA groups on any victimization variables.

### **Findings**

To address the research questions, analyses of both quantitative and qualitative data were integrated. In the following section, I directly integrate both methods' data with an implications-discussion.

#### **TMA-Associated Variables**

RQ1 queried the role of personal and relationship factors in victims' TMA. Because all victims reported on a previous romantic IPV relationship, currently intrusive practices from the former abuser were first assessed. Descriptive data showed 53.5% of participants never interacted with the former partner. For victims still in contact, voluntarily or otherwise, with their abuser, the primary method of communication reported (52.3%) was via phone (e.g., call, voice message, text message) and/or computer (30.8%, e.g., instant message, email, social networking site). In light of findings (from over a decade ago, when cell phones were hardly as ubiquitous) that more than 90% of former-partner stalking cases occurred via phone (Brewster, 2003), a lack of differences in former-partner communication between the TMA subsample and the total sample suggest that "contact" actually served as a form of surveillance for some current victims.

To further examine RQ1, bivariate correlations were analyzed among relationship variables and abuse experiences for the total sample and the TMA subsample (see Table 1). All three types of abuse and the coercive control subscale positively correlated with one another for both groups. Overlapping victimization findings also found in prior research on risk factors for ongoing technological victimization (Korchmaros, Mitchell, & Ybarra, 2014) speak to the importance of screening for multiple abuse types in the presence of new technologies.

For all victims, physical abuse was positively related to time spent out of the abusive relationship, such that higher physical victimization was reported by those out of their IPV relationship for longer. For the total sample (but not the TMA subsample), higher former physical victimization was found among those currently in more-developed relationships with new partners and among those in less contact with former abusers. In both the total sample and TMA subsample, men reported significantly less physical abuse than did women, a finding typical in most IPV studies (Langhinrichsen-Rohling, 2009).

Psychological abuse was positively correlated with longer IPV relationships, amount of time victims stayed after abuse first began, and more developed relationships with current romantic partners. Higher coercive control was found in relationships where the initial onset of abuse began sooner and among victims who were currently in more developed relationships with new partners. Men and women did not significantly differ in psychological victimization or coercive control. Again, these findings are typical in sex-comparisons of psychological victimization in general population samples (e.g., Straus et al., 2003).

Technological abuse was negatively associated with multiple relationship variables; more technological abuse corresponded to shorter duration of former IPV relationships, quicker initial onset of abuse in those relationships, less time stayed after abuse began, less time since the IPV relationship had ended, lower levels of new relationship commitments, and younger victim age overall. In the total sample, men reported significantly less technological victimization than did women, but this sex-difference was not found in the TMA subsample.

Taken together, bivariate analyses indicated that technological abuse was associated with shorter IPV relationships, in which abuse began earlier and victims left the abusive situation faster. These and the subsequently discussed findings on TMA content show technological abuse as a primary way psychological abuse and coercive control are perpetrated both during and after IPV relationships. Technology's potential to reduce relational control (Stafford & Hillyer, 2012) and to "force" connection (i.e., reduce autonomy) with a partner (Duran et al., 2011) have been discussed in non-abusive contexts; current findings suggest abusers particularly harness these technology aspects for intrusion and control purposes.

Technological abuse was associated with a lower likelihood of being in a new relationship as well as with younger ages. It may be that younger victims experience more TMA.

In this study, age was associated only with TMA – not with any other abuse types. If, as previous studies have found, young adults are less likely to view technological communication as harassment than in-person methods of the same behavior (Short & McMurray, 2009), TMA may be even more common than perceived by younger victims in this study. The actual content of perceived-TMA is thus important for victim-response measures if used to identify all specific items possible in technological contexts.

### **TMA Content**

To explore the ways TMA is used (RQ2), qualitative free-response reports were thematically analyzed for typological variety of technology used by former abusive partners. These categories not only provide a foundation for future work on TMA, but also form the basis for future modification of a Technologically-Mediated Abuse scale. Using an open-coding process of thematic analysis, 12 categories of TMA emerged from the 187 responses volunteered by the TMA subsample. Additionally, phi-coefficient analyses show likelihood of co-use among categories, and chi-square analyses show sex-differences in reported category use. Finally, analyses were conducted to see if reporting a particular category of TMA was related to differences among physical, psychological, and technological abuse reported via the quantitative measures.

Categories that emerged were grouped into three larger themes, based on perceived abusers' goals and technological methods used: Emotional-psychological, Structural-systemic, and Tangible-physical. Unedited exemplars are presented for each category, with each participant's randomly assigned identification number. Most technologically-abused participants reported more than one TMA category (see Table 2). Men and women significantly differed in

reports of only four categories; women were more likely to report TMA as emotional attacks and stalking, whereas men were more likely to report TMA via identity theft and slander.

**Emotional-psychological TMA.** Although all TMA categories potentially overlap, emotional or psychological abuse was the primary goal of many TMA types. After thematic classifications were completed (and all responses coded independently), it was found that the emotional-psychological themed categories of obsessive relational intrusion, emotional attacks, stalking, and intrusion to others were all significantly positively intercorrelated. Further, emotional control also positively related to slander/libel, suggesting a high degree of co-use of emotional-psychological tactics.

**Stalking.** In this study, typical examples of this TMA form included behaviors classified as “surveillance” such as “Record[ing] my phone calls on our home phone without me knowing it” (#242) or “Monitored my computer use, web access, and read my email w/o my knowledge” (#277). However, it could also entail more obtrusive e-monitoring. For example, one victim was “required to get online with AIM when [her partner was] home” so that she was not allowed to “get on [the] computer without him knowing” (#53); their joint-AIM account allowed her partner to monitor her from any location.

Another form of explicit tracking emphasizing control was noticed by victims when they could not be immediately reached by their partners: “If I didn’t have my phone on me then it would always be assumed I was cheating on him or just out with another guy” (#229). Consistent with general population stalking statistics, women in this subsample were significantly more likely than men to report technological stalking behaviors (see Table 2), a finding that may be attributed to women’s typically higher fear (Spitzberg, Cupach, & Ciceraro, 2010) and threat-perceptions (McFarlane, Wilson, Malecha, & Lemmey, 2000) of stalking behavior when

compared to men's. In non-technological contexts, even when their victimization experiences fit legal definitions of stalking behaviors, it is typical for men (when compared to women) to not define themselves as "victims" of stalking (Tjaden, Thoennes, & Allison, 2000).

The fact that victims knew – often soon – that their partner was using typically unobtrusive means to monitor their behavior (usually because the abuser would themselves raise the issue) lends support to victims' perceptions that stalking-TMA was used more to control and/or psychologically intrude on their lives than it was to merely monitor (e.g., for abuser's self-knowledge) (see Spitzberg & Cupach, 2014). Stalking as a form of emotional harassment, rather than merely as a tool to stay up-to-date on others' whereabouts, works only if the victim becomes aware of the invasiveness of the method used via technology (Salter & Bryden, 2009).

***Slander/libel.*** Another form of TMA used to clearly psychologically harass victims was that of *slander* (i.e., spoken defamation) or *libel* (i.e., written defamation), which was used to spoil the reputation of the victim, either directly where he/she would observe it (e.g., "My wife posted all over the internet that I was hiding money, cheating on her, and abusing her when I wasn't," #98) or indirectly via notification from third-parties. For example, one woman noted her abuser "would blind copied [*sic*] certain emails to the kids that would make me look bad and also court documents to involve them in the action and stress them out so that they would turn against me as they wanted to live with me (their stepmother) and not their father" (#4). Another victim noted his wife had, after their relationship was over, "just recently hacked into my yahoo account and was emailing my church sister telling them I am a liar" (#408).

Reputational damage also occurred through indirect implication of wrongdoing by the victim, such as the case where a man's partner "inflicted injuries on herself of which she took digital photos, and accused me of causing them" (#250) or "Hacked my MySpace account,

sending herself an email to violate a restraining order. MySpace deleted the account when she stated I'd violated the restraining order and won't give ANY evidence of what happened, because the account was deleted, per policy" (#285). Interestingly, those who reported slander were significantly less likely to co-report experiences with ORI and stalking. This finding could be attributed to sex differences, as males reported significantly more slander than did female victims, who reported significantly more stalking (see Table 2). In some ways, this aligns with previous findings where abused men were more bothered by victimization from the "system" or outside sources used to emotionally affect them than by wives' direct emotional attacks (Eckstein, 2010).

**ORI.** TMA for *obsessive relational intrusion* (e.g., Menard & Pincus, 2012) was reported by pursued victims or when privacy was invaded, often after initiating an actual or perceived relational break from abusers. For example, one woman described an ex-boyfriend who would "instant message me numerous times in a day, even if I had an away message up, and write mean things saying that I'm a bitch for not answering him...One time he threw rocks at my dorm window screaming my name and when I didn't respond, he messaged me 15 times in a row; my roommate and I sat there counting" (#153). Another woman's ex-partner "created new screen names and email addresses to try to contact me (I've blocked everything I know how to block), as well as tried to find out info about where I lived. When we broke up, I cut off all contact with him so this is bothersome. The last time it happened was about 3 years ago though so I think I'm in the clear" (#216). After moving away and changing her phone number, one woman's ex-partner tracked her down and resorted to relational interaction alternatives, using "Facebook and MySpace as ways to send me emails about our fights" (#170).

Certainly, most research suggests it is usually the rejected partner who will perform intrusive behaviors post-breakup and in cases of IPV, this is even a predictor of future risk/danger from abusive partners (Fleming, Newton, Fernandez-Botran, Miller, & Burns, 2012; Tyson, Herting, & Randell, 2007). There were no significant differences between male and female victims reporting victimization via this TMA category.

***Intrusion to others.*** TMA also occurred when an abuser attempted to irk and/or manipulate the victim by invading the privacy of or pursuing a relationship with people in the victim's life. Referenced in a stalking context by Spitzberg and Cupach (2014), targets of intrusion could be *victim affiliates* directly valued in the victim's life or others merely social network members. Targets close to a victim were typically family members, as "when I left him he called my sister's house phone and threatened to cause harm to my sister and her children, so I went back" (#57) or "He would call my home late at night, disrupting my entire family while they slept because I wouldn't answer my cell phone after telling him that I no longer wanted to argue with him that night" (#151). Others demonstrated the role social networks could play, as one man noted his girlfriend "Used my cell phone to send demeaning and inappropriate messages to random people in my address book" (#169).

These tactics *to others* indirectly affected victims by directly harming valued people in their lives, as in the example of an abuser who "texted my best friend who he thought was responsible for the downfall of our relationship and said the cruelest thing: 'Hey asshole, I hear your dad likes to drink antifreeze, why don't you go kill yourself too, you fat sack of shit.' (Her father killed himself by drinking antifreeze when she was 5)" (#173). In some cases, intrusion to others was intended to directly hurt those involved with the victim, as in one extreme of alienation-attempts from an abuser who (never intending her victim to find out) used technology

to “tell people I WAS DEAD so her friends and classmates wouldn’t try to find out about me; as well as to make up an excuse for visiting me (she told them she was ‘going to my funeral’ when really she was just spending vacation with me)” (#231).

***Emotional attack.*** When TMA involved intentionally inflicted affective pain based on intimate, personal knowledge, it constituted an emotional attack. Emotional attack TMA was reported significantly more by women than by men (see Table 2). For example, as one woman reported, “He knew I despised porn, so he would leave it up as a screen saver or wallpaper” (#365). Stored films or images were used to disturb victims, as in the case of one woman whose partner “would videotape violent sex acts and send them” (#17) to her; a separate instance involved a woman whose abuser put “*Happy Tree Friends* [an extremely graphically violent cartoon] on my computer...library of them under my name on family computer” (#335).

Harnessing both the verbal attack- and public-potential of social media, another victim reported “comments via facebook making fun of me or telling me i should go kill myself” (#91). Another victim reported ongoing insults from her partner supplemented by “giv[ing] me a website to go to that would tell me about a new weight loss product or exercise. Constantly was telling me I was fat, he’d look up web info to tell me what I should do” (#198). In some cases, abusers substituted public-embarrassment with mere frequency of tactics, such as in the case of an onslaught of verbal assault: “At one point, I hung up on him and turned off my phone so I could sleep. He called back every minute and left belittling messages every minute stating the time until my voice mail was full. He then proceeded to text message me insults until my texts were at their limit” (#214). In non-technological IPV contexts, it is relatively easy to distinguish between verbal assault tactics and intrusiveness (and between verbal versus emotional abuse), as

the former is limited to in-person exchanges. In the presence of technology, verbal assaults can be compounded by and with intrusiveness and thus, coercive control.

***Emotional control.*** For current purposes, this TMA was categorized similarly to “coercive control” (e.g., Robertson & Murachver, 2011) in that an abuser’s goal was to manipulate and exert power-over using affective personalized knowledge (as opposed to *emotional attack*, where emotional hurt is the primary goal). A typical example from victims resembled the following occurrence: “[He] lied about his relationship status on Facebook (i.e., saying he was single if we were still dating but fighting or saying he was in a relationship if we were on a break), turned off his phone when he knew i needed his help” (#65). Using his boyfriend’s personal contacts against him, another perpetrator “would flirt with other guys and have cyber sex with them to get back at me when he was upset” (#161). Other abusers used threats of technology to control (e.g., “threaten to make calls to my family, if i ever left him” #311), to physically threaten (e.g., “After his pedo pals would take torture pictures of their victims he would threaten me with them that would happen to my kids ‘if I made trouble’” #421), or to blackmail (e.g., “Threatened to put up nude pictures of me in embarrassing [*sic*] situations on the internet” #325).

Confirming the thematic coding of this category as similar to coercive control was supported in that victims’ independent quantitative scores on the coercive control scale were higher if they reported using this TMA form ( $M = 4.54, SD = 1.35$ , compared to those who did not:  $M = 4.10, SD = 1.21$ ),  $t(185) = 2.39, p < .05$  or  $F(1, 185) = 5.69, p < .05$ . Men and women did not differ in their reports of emotional control, a category more likely co-reported by victims with intrusion *by* others, a category in the structural-systemic theme.

**Structural-systemic TMA.** A second theme involved TMA by using cultural, social, and/or government entities to implement legal or psychological intrusions. This theme aligns with tactics utilizing *proxies* who may be “co-opted pursuers” and/or knowingly or unknowingly “professionalized” human or instrumental tools of the abuser (Spitzberg & Cupach, 2014, p. 122). Post-coding analyses of this theme demonstrated intrusion by others, identity theft, and economic control were all positively related in co-occurrence as reported by victims.

**Identity theft.** Abusers also used TMA by stealing or using previously-shared personal information to interact *as* the victim (e.g., “[He] used my computer while i was at class, got on my chat messenger and tried to get a friend to say innapropriate [*sic*] things to him so he could ‘bust’ me” #16) or to enact transactions/decisions in the *role of* the victim: (e.g., “[He}used my identity and his girlfriend used my identity...closed bank accounts, saying they were me, canceled credit cards, changed address for bills, canceled health insurance, auto insurance...by fax or electronic would cancel or change my accounts” #82). Men were significantly more likely to report this TMA category than were women.

Overall, those reporting identity theft ( $M = 3.19, SD = 1.63$ ) were more likely to be technologically abused (as measured by the quantitative TMA scale) than those who did not use this category ( $M = 2.48, SD = 1.57$ ),  $t(183) = 2.06, p < .05$  or  $F(1, 183) = 4.24, p < .05$ . Victims reporting identity theft were less likely to co-use the category of emotional attacks, although higher levels of psychological abuse were experienced by victims who reported TMA in the form of identity theft ( $M = 4.89, SD = 1.09$ , compared to those who did not:  $M = 4.21, SD = 1.22$ ),  $t(185) = 2.66, p < .01$  or  $F(1, 185) = 7.06, p < .01$ . Coercive control was higher among those using the identity theft category ( $M = 4.95, SD = 1.04$ , compared to those who did not:  $M = 4.23, SD = 1.31$ ),  $t(185) = 2.62, p < .01$  or  $F(1, 185) = 6.85, p < .01$ . Perhaps due to the financial

implications as well as life-controlling aspects of identity theft, those who reported this category were also more likely to report their abuser's co-use of economic control (see Table 2).

**Economic control.** Whenever technology was used to impair financial resources (e.g., “He had my disability & child support checks direct deposited into his acct. w/o my permission” #17) or to limit the earning power of the victim, it was classified as economic control. For example, one woman reported her boyfriend “would manipulate [phone] conversations where I would ask that we end them so I did not hang up on him, and he would not allow me to... start arguments on the phone late night when I needed to sleep for long work hours the following day” (#214). Not surprisingly, economic control was a primary tool of coercive control; those reporting this TMA category scored higher on the quantitative measure of coercive control ( $M = 4.54$ ,  $SD = 1.35$ , compared to those who did not:  $M = 4.10$ ,  $SD = 1.20$ ),  $t(185) = 2.39$ ,  $p < .05$ .

Others reported abusers would “mess with” or otherwise prevent technology use in order to “keep me from performing my job” (#297). Not surprisingly, then, economic control was also significantly related to co-use of the category of technological destruction. Both identity theft and economic control would not be possible without the use of proxies, in this case largely technological (or institutional/organizational, via technology).

**Intrusion by others.** Abusers are often aided by third-party participation. In some cases, they were members of a shared social network: “his friends are harassing me...prank calls!” (#6); “having other girls that he would cheat on me with call/text me and harass me” (#88). When these proxy parties harass or abuse on behalf of the perpetrator, they may or may not be aware of their abusive role. “System” members are frequently used by abusers (Leone, Lape, & Xu, 2014), such as one perpetrator's utilization of a business to put a victim's “personal info on the Internet, specifically mortgage refi sites, to get them to call me or my family a lot” (#438).

Intrusion by third-party proxies was more likely to be reported by those who scored higher on quantitative assessments of technological abuse ( $M = 3.04$ ,  $SD = 1.86$ , compared to those who did not:  $M = 2.46$ ,  $SD = 1.50$ ),  $t(183) = 1.99$ ,  $p < .05$  or  $F(1, 183) = 3.96$ ,  $p < .05$ .

**Tangible-physical TMA.** In a third theme, tangible technology objects directly or indirectly harmed victims' physiological and psychological well-being. TMA categories in this theme were accomplished via technology as a physical instrument, to effect negative health outcomes, or to harness others to perform physical acts. Post-hoc analyses showed technological destruction more likely to be reported in co-occurrence with isolation tactics and physical attacks.

**Technology destruction.** The intentional demolition of machinery was largely used to limit access to it. For example, abusers "cut off computer wires" (#31) or "would always break the house phone so that I couldn't use it to call for help. We went through about 18 in one year" (#128). In addition to limiting outside access to aid or social networks, this category also included technology destroyed to financially or emotionally damage the victim, as in the case of one man who reported his partner "completely smashed my entire computer system to provoke & upset me (since my computer was and still is central to how I earn a living)" (#418). Because simply removing access would accomplish the goal of physical/social isolation, it is notable abusers chose to destroy/damage the technology – a clear co-motive also being the threat of physical violence to the victim. Thus, it is not surprising that this category overlapped significantly in reported co-use of the physical attack category. Those reporting this TMA also scored quantitatively higher on technological abuse ( $M = 3.68$ ,  $SD = 2.07$ , compared to those who did not:  $M = 2.46$ ,  $SD = 1.50$ ),  $t(17.74) = 2.36$ ,  $p < .05$  or  $F(1, 183) = 9.44$ ,  $p < .01$ .

**Physical attack.** As any object can be used to perpetrate violence, it is not surprising that the proximal ubiquity of technologies (e.g., cell phones) increases the likelihood they are employed for physical violence. Technological objects used to physically assault or to affect victims' health were coded in this category. For example, one victim reported her abuser would use nightly instant messaging talks to "threaten to break up with me if I signed off to go to bed, knowing very well that I have a medical condition that makes sleep a necessity" (#39). Although victims questioned the extent to which this counted as technological abuse, the most common type of physical assault involved use of a cell phone as a weapon, with many reporting, "He would throw the cell phone at me all the time" (#47) or "She threw a phone at my head" (#263).

Confirming the independent coding-accuracy of this category was the finding that those who reported TMA physical attacks also scored higher on the separate quantitative scale measuring physical victimization. Physical abuse was experienced more by those who reported TMA in the form of Physical Attack ( $M = 3.22$ ,  $SD = 1.28$ , compared to those who did not:  $M = 2.16$ ,  $SD = 1.11$ ),  $t(185) = 3.29$ ,  $p < .01$  or  $F(1, 185) = 10.84$ ,  $p < .01$ .

**Isolation.** Finally, *isolation* was accomplished largely by preventing access to technology that would provide necessary outside-communication: "If I got a call on the house phone, he would change the number" (#17); "[I] wasn't allowed to have a Facebook or MySpace even though she had both. [I] wasn't allowed to communicate to female friends over the phone via txt or online" (#152); "[My abuser] didn't pay the phone bill so I could not have contact with others. We lived in the country, no neighbors for about a mile" (#428). Another woman reported, "No technology [was] available in the home. [I had] isolation away from people except for a regular phone line at home. He was very sophisticated and would frequently send messages via pager

like ‘I love you.’ These were very twisted in meanings on the surface they meant one thing to ordinary people, but to him it meant a forced assault” (#355).

Higher levels of psychological abuse were experienced by victims who reported TMA in the form of isolation ( $M = 4.86$ ,  $SD = 1.13$ , compared to those who did not:  $M = 4.21$ ,  $SD = 1.22$ ),  $t(185) = 2.47$ ,  $p < .05$  or  $F(1, 185) = 6.11$ ,  $p < .05$ . It may be that this was merely co-occurring, in that isolated victims were those more likely to be psychologically abused. More likely, however, is that technological isolation served as a facilitator of further types of psychological victimization involving coercive control – or at least the elimination of counterbalancing support-networks; those reporting the isolation category experienced higher coercive control as measured by the quantitative scale ( $M = 4.82$ ,  $SD = 0.96$ , compared to those who did not:  $M = 4.25$ ,  $SD = 1.32$ ),  $t(36.76) = 2.54$ ,  $p < .05$  or  $F(1, 185) = 4.13$ ,  $p < .05$ .

**Older parallels.** A subset of individuals ( $n = 29$ , 15.5% of TMA subsample) voluntarily indicated that although absent technology, they were certain their partner would have used anything available. These victims then described tactics identical to those victimized during technological advances: “My relationship was 13 years ago, email, texting and even cell phones weren’t as prevalent...However, he did rack up a \$1000 regular phone bill one month checking in on me when he was out of town” (#77). Even in cases where technology was clearly used, some victims compared their experiences to today’s advances and did not view their experiences as TMA: “My abuse was prior to most of today’s technology. I’ve no doubt that all of the above would apply if technology had been available then. He did use hidden cameras, remote listening devices on the home phone (bugged the phone) & monitored the car’s odometer” (#330).

Certainly, in non-intimate contexts, abusive tactics and personal characteristics of cyber-abusers are similar to those who abuse/bully in-person (Ybarra & Mitchell, 2004). For example,

although some differences between online and in-person stalking have been found for perpetrators (Alexy, Burgess, Baker, & Smoyak, 2005), research on victim-outcomes has largely found no between-group differences among those harassed solely online, solely in-person, or with both methods (Sheridan & Grant, 2007). For IPV in particular, where abuse types are used in overlapping conjunction, the societal boon of technology is clearly a bane for IPV victims.

### **Conclusions**

The quantitative results from this study demonstrated both personal and relational characteristics associated with TMA (RQ1). Victim differences (e.g., sex and age) were found among various types of abuse reported, and technological abuse was negatively associated with multiple relationship variables (i.e., former IPV relationship duration, initial onset of abuse in those relationships, time stayed after abuse began, time since IPV relationship ended, new relationship commitment levels, and victim age). Technological abuse was a primary facilitator of psychological abuse and coercive control experienced both during and after IPV relationships. These findings reinforce the negative-potential of using technology to reduce relational control and to “force” partner-connection.

Qualitative results revealed additional nuance in the ways (compared to means) technology is used to victimize. Thematic analyses of free-response reports found here both (a) informed a future Technologically-Mediated Abuse Scale and (b) revealed IPV victims’ *ways of experiencing* TMA (RQ2). Emerging categories were grouped into three larger themes based on perceived abuser-goals and technologies used: Emotional-Psychological ( $n = 6$  categories), Structural-Systemic ( $n = 3$  categories), and Tangible-Physical ( $n = 3$  categories). Sex differences existed in only four categories and reported category co-use overlapped, which served to confirm thematic distinctions based on theories of coercive control and goal-directed behaviors.

To gain a more complete picture of TMA, future studies would benefit from using a comprehensive checklist instead of asking participants to self-identify what they believe constitutes this form of abuse. It is encouraging that independent coding of the open-ended data, and subsequent categorization into goal- and outcome-directed themes, showed category co-use overlapping in a way that largely confirmed this study's thematic distinctions based on theories of coercive control and goal-directed behaviors. A mixed-methods approach should be incorporated in future TMA research, as evolving technologies are impossible to comprehensively anticipate in solely checklist-based measures.

An open-ended, grounded theory framework building off the information found in this study can also harness the different ways victims perceive their TMA victimization. This would allow both researchers and practitioners to move beyond studies of prevalence and description to discover the ways TMA affects victims. For example, what forms of TMA are most "successful" at controlling versus harming versus stalking versus discrediting or isolating a victim? Answers to these questions can aid not only victims seeking treatment, but could also inform policies surrounding e-privacy, invasiveness, and the ways it is monitored (or not) by larger structures.

To date, TMA research has focused primarily on media, leaving largely unexamined the *extent* to and *ways* in which technologies are used by abusers. For example, what is a voice-call – as opposed to a text-message or email, for example – used to *do* in IPV contexts? What are stolen passwords and identities used to accomplish? Is technology largely another tool of intrusion or does it serve other functions? When does technology become capable of physical abuse? Findings from this study provide an initial step in answering some of these questions. Ultimately, although this study was largely exploratory in nature, it does lend support to the

notion that abusers use technology in ways that not only supplement, but *increase* the invasive ubiquity – particularly in intrusiveness and coercive control – of already existing abusive means.

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Table 1

Total sample and TMA subsample associations among victimization, personal, and relational characteristics with sex differences

Bivariate Correlations		Men		Women									
1. Physical Abuse													
<i>Total Sample</i>	---										1.86 (0.90)	2.25 (1.16)	4.09 (384.49) ***
<i>TMA Subsample</i>	---										1.85 (0.83)	2.45 (1.24)	3.95 (178.76) ***
2. Psychological Abuse													
<i>Total Sample</i>	.55 ***	---									4.02 (1.23)	4.22 (1.25)	1.69 (492)
<i>TMA Subsample</i>	.56 ***	---									4.06 (1.20)	4.42 (1.22)	1.93 (185)
3. Coercive Control													
<i>Total Sample</i>	.44 ***	.89 ***	---								4.08 (1.33)	4.27 (1.34)	1.43 (492)
<i>TMA Subsample</i>	.47 ***	.88 ***	---								4.20 (1.36)	4.40 (1.26)	1.02 (185)
4. Technological Abuse													
<i>Total Sample</i>	.36 ***	.55 ***	.58 ***	---							2.18 (1.29)	2.70 (1.68)	3.76 (381.80) ***
<i>TMA Subsample</i>	.26 ***	.45 ***	.51 ***	---							2.32 (1.35)	2.71 (1.70)	1.57 (183)
5. IPV Relat. Duration													
<i>Total Sample</i>	.02	.16 ***	.06	-.12 **	---						8.35 (7.43)	5.71 (6.42)	3.83 (268.11) ***
<i>TMA Subsample</i>	.04	.16 *	.03	-.16 *	---						7.72 (6.66)	6.42 (6.84)	1.26 (185)
6. Time Before Onset													
<i>Total Sample</i>	-.07	-.08	-.10 *	-.11 *	.44 ***	---					1.88 (3.08)	0.97 (1.73)	3.46 (201.46) **
<i>TMA Subsample</i>	-.04	-.02	-.04	-.10	.46 ***	---					2.13 (3.48)	0.92 (1.48)	2.71 (79.63) **
7. Time Stayed After Onset													
<i>Total Sample</i>	.04	.19 ***	.08	-.11 *	.93 ***	.12 **	---				6.14 (6.13)	4.52 (5.67)	2.81 (284.57) **
<i>TMA Subsample</i>	.08	.19 *	.05	-.13	.92 ***	.10	---				5.30 (4.88)	5.43 (6.46)	0.15 (184)
8. Time Since IPV Relat.													
<i>Total Sample</i>	.11 *	.01	-.02	-.33 ***	.12 **	.10 *	.11 *	---			6.39 (6.21)	5.97 (7.00)	0.64 (491)
<i>TMA Subsample</i>	.16 *	-.02	-.06	-.43 ***	.14 *	.08	.12	---			6.45 (6.43)	7.52 (7.46)	0.99 (185)
9. New Relat. Commitment													
<i>Total Sample</i>	.10 *	.12 *	.11 *	-.09 *	.00	-.00	.01	.45 ***	---		2.05 (1.19)	2.16 (1.16)	0.98 (486)
<i>TMA Subsample</i>	.08	.04	.06	-.15 *	-.05	.00	-.06	.48 ***	---		1.98 (1.17)	2.30 (1.26)	1.69 (140.58)
10. Current Abuser-Interaction													
<i>Total Sample</i>	-.09 *	-.00	-.02	.02	.16 ***	.11 *	.13 **	-.25 ***	-.19 ***	---	2.38 (1.61)	2.12 (1.59)	1.69 (491)
<i>TMA Subsample</i>	-.09	.00	.01	.04	.20 **	.09	.18 *	-.24 **	-.19 *	---	2.30 (1.54)	2.17 (1.62)	0.54 (184)
11. Current Age													
<i>Total Sample</i>	-.02	.08	-.04	-.33 ***	.60 ***	.27 ***	.57 ***	.54 ***	.19 ***	-.01	43.45 (13.39)	33.50 (12.53)	8.03 (490) ***
<i>TMA Subsample</i>	.01	.04	-.10	-.41 ***	.55 ***	.27 ***	.50 ***	.56 ***	.16 *	-.02	43.43 (13.44)	37.16 (12.50)	3.20 (184) **
Variable	1	2	3	4	5	6	7	8	9	10	<i>M (SD)</i>	<i>M (SD)</i>	<i>t (df)</i>

*Note.* Means and standard deviations for men versus women are provided for both the Total Sample ( $N = 495$ ;  $n = 157$  men, 338 women) and the TMA Subsample ( $N = 187$ ;  $n = 67$  men, 120 women), with independent samples  $t$ -tests for each group and variable provided in the final column. \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Table 2  
Technologically-Mediated Abuse Open-Ended Categories

TMA Category	Sex differences <sup>a</sup>			Phi ( $\phi$ ) score likelihood associations of dual category co-use										
	Men	Women	$\chi^2$	ORI	Emot. Attack	Stalking	Intrus.By Others	Slander	Econ. Control	ID Theft	Intrus.To Others	Isolation	Phys. Attack	Tech. Destruct.
Emotional Control ( <i>N</i> = 96, 58.9%)	35 56.5%	61 60.4%	.25	.10	-.05	.03	.17 *	.17 *	-.06	.08	.14	-.01	-.17 *	-.14
Obsess. Rel. Intrus. ( <i>N</i> = 60, 36.8%)	19 30.6%	41 40.6%	1.64	---	.23 **	.20 *	-.01	-.17 *	-.03	-.01	.19 *	-.10	-.18 *	-.19 *
Emotional Attack ( <i>N</i> = 56, 34.4%)	15 24.2%	41 40.6%	4.58 *	---	---	-.12	-.04	.06	-.01	-.17 *	.17 *	-.05	-.02	-.13
Stalking ( <i>N</i> = 44, 27.0%)	11 17.7%	33 32.7%	4.35 *	---	---	---	-.09	-.22 **	-.05	.09	-.10	-.02	-.08	-.17 *
Intrusion By Others ( <i>N</i> = 36, 22.1%)	18 29.0%	18 17.8%	2.81	---	---	---	---	.21 **	.20 *	.23 **	.20 *	-.14	-.05	-.05
Slander ( <i>N</i> = 30, 18.4%)	20 32.3%	10 9.9%	12.79 ***	---	---	---	---	---	.00	.19 *	.29 ***	-.06	-.08	-.12
Economic Control ( <i>N</i> = 27, 16.6%)	14 22.6%	13 12.9%	2.62	---	---	---	---	---	---	.18 *	.05	.00	-.01	.21 **
Identity Theft ( <i>N</i> = 25, 15.3%)	16 25.8%	9 8.9%	8.45 **	---	---	---	---	---	---	---	.16 *	-.03	-.06	-.04
Intrusion To Others ( <i>N</i> = 24, 14.7%)	11 17.7%	13 12.9%	.73	---	---	---	---	---	---	---	---	-.03	-.06	-.04
Isolation ( <i>N</i> = 24, 14.7%)	5 8.1%	19 18.8%	3.53	---	---	---	---	---	---	---	---	---	-.06	.19 *
Physical Attack ( <i>N</i> = 23, 1.2%)	3 4.8%	10 9.9%	1.34	---	---	---	---	---	---	---	---	---	---	.26 **
Technol. Destruct. ( <i>N</i> = 18, 11.0%)	6 9.7%	12 11.9%	.19	---	---	---	---	---	---	---	---	---	---	---

Notes. *N* = 187 participants (*n* = 120 women, *n* = 67 men).

<sup>a</sup>Delineations show sexes reporting each TMA category and “within sex” percentages.

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

