Digital stress: Adolescents’ personal accounts

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Abstract
Based on a thematic content analysis of 2000 anonymous posts to the website AThinLine.org, this article explores adolescents’ personal accounts of digital stress. Six kinds of digital stressors that engender two distinctive types of digital stress are identified. Type 1 stressors—“mean and harassing personal attacks,” “public shaming and humiliation,” and “impersonation”—reflect the migration of common forms of relational hostility onto the online space and echo discussions of harassment, drama, and bullying. Type 2 stressors stem from adolescents’ use of digital technologies in the service of seeking relational connection. These lesser-discussed Type 2 stressors—“feeling smothered,” “pressure to comply with requests for access,” and “breaking and entering into digital accounts and devices”—transpire in the context of adolescents’ attempts to form and maintain intimacy or close connections with others.

Keywords
Adolescence, A Thin Line, digital media, digital stress, digital stressors, intimacy, MTV, relational hostility, social networking sites

my friend started talking to me on FB & I started talking to her & she started being mean to me so i logged off. The next day she said it was her cousin so i let it slide. A few months later she said she made up a cousin so she could trash talk.

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My boyfriend reads all my text messages when I’m not looking. Sometimes it feels like he doesn’t trust me. Do you think that’s over the line?

These two stories were posted to the “Over the Line?” platform, part of MTV’s website AThinLine.org, which was launched in 2010. The concerns echo common challenges of social relationships that indisputably predate digital technologies: conflict between friends and issues of trust in romantic relationships. Yet, they also reflect unique challenges of navigating relationships in a networked age, including the ease of deception and genuine confusion about evolving relationship norms.

Far from neglecting the digital lives of youth, researchers have employed a range of methods in the service of exploring adolescents’ general experiences online and their involvement in troubling issues, such as sexting and cyberbullying. However, the causes and meanings of more common issues of relational digital stress, such as the case of a boyfriend reading his girlfriend’s text messages, are neither sufficiently understood through the rigorous lens of empirical methods nor are their dynamics well portrayed theoretically. The current article describes an investigation of adolescents’ experiences of stress related to their digital social lives. We draw from authentic accounts shared on the “Over the Line?” platform to study what types of socio-digital stressors do adolescents describe and which of these stressors are motivated by malicious versus non-malicious acts and intentions?

**Adolescent relationship development in the contemporary context**

Adolescence is a heightened time for the emergence of desires for deep and long-lasting friendships (Youniss, 1987), strong acceptance into a desirable peer group (Brown, 2004), passionate hope for sexual if not romantic connections (Collins and Madsen, 2006), and the construction of a coherent psychological, social, and cultural identity (Shweder, 1999). All of these quintessentially adolescent desires occur in the context of lifespan universal human needs for agency and self-efficacy, power, connection, and safety as proposed by evolutionary (Pinker, 2002; Tomasello, 2008), cultural (Greenfield et al., 2006), developmental (Allen, 2008), social (Deci and Ryan, 2000), and personality (Baumeister and Leary, 1995) theorists.

Long before digital devices pervaded adolescents’ daily lives, youth negotiated the attainment of intimacy and romance, inclusion into identity groups, and interpersonal negotiation, including managing feelings of hostility in their social relationships (Buhrmester, 1990). However, in the contemporary context of networked publics, relational exchanges are transacted in much more open, networked environments (boyd, 2014). The technical properties of online environments—searchability, persistence, replicability, and scalability (boyd, 2007)—alter the context in which emergent relational interactions of adolescence, including navigating intimacy and identity, occur (Gardner and Davis, 2013). When exchanges previously confined to offline interactions between relational partners migrate online, they take place in more open, public, immediate, and lasting forums.
Adolescents online: methods

A relatively large number of empirical studies exploring adolescents’ use of and experiences with digital media unequivocally document the increasing pervasiveness of digital technologies in youth’s lives (see, for example, Madden et al., 2013; Rideout et al., 2010). The methods employed in these studies range across the spectrum of the social sciences, including ethnography (Marwick and boyd, 2011), in-depth interviews concerning personal experiences (boyd, 2014; Livingstone, 2008) and hypothetical scenarios (Davis, 2012), surveys and questionnaires about online activities and friends (Juvonen and Gross, 2008; Reich et al., 2012), media diaries and detailed activity logs (Gross, 2004; Rideout et al., 2010), and direct observation of online profiles, shared content, and posts to message boards (Krämer and Winter, 2008; Suzuki and Calzo, 2004; Zhao et al., 2008).

Adolescents online: empirical evidence

A place for intimacy and connection

Given the intersection of the fundamental human need for affiliation in conjunction with the affordances of digital technologies, it is not surprising studies find that the digital space is a place where teenagers “hang out” to find kindness and connection with close peers. Research repeatedly indicates contemporary teens use digital technologies in the service of social support and intimacy with their offline friends and romantic partners (boyd, 2007, 2014; Davis, 2012; Gross, 2004; Ito et al., 2009). Studies also demonstrate that the use of digital tools tends to reinforce these relationships with close peers (Livingstone, 2008; Subrahmanyam and Smahel, 2011, Valkenburg and Peter, 2009) through opportunities for both casual exchanges and more intimate self-disclosures (Davis, 2012).

A place for stress in the context of aggression and hostility

Although adolescents’ use of digital technologies may be driven by authentic desires for connection and intimacy, research also underscores that isolating experiences of social conflict similarly transpire online. Akin to traditional bullying (e.g. Olweus, 2003), cyberbullying is characterized by repetition, intent to harm, and power imbalance (Levy et al., 2012). Now a well-documented phenomenon in both research (Patchin and Hinduja, 2006; Smith et al., 2008; Ybarra et al., 2012) and popular press (Alvarez, 2013), cyberbullying has been called bullying that “follow[s] you home from school” (Tokunaga, 2010: 277). Marwick and boyd (2011) propose the adolescent-coined concept of “drama” to connote reciprocal relational conflict between friends, using the term in juxtaposition with cyberbullying. Wolak et al. (2007) use the term “online harassment” to capture conflict that may also occur between peers and offline friends, but which is contained in the online context. In an effort to capture a broad range of these online issues, Lenhart et al. (2011) refer more simply and broadly to teen experiences of “meanness” and “cruelty.” Although these terms capture different nuances or components of the spectrum of challenges, they all exemplify issues of relational hostility playing out on an online stage.
A place for stress in the service of connection? Uncharted territory

In the study of offline relationships, researchers have for decades been well-aware of stress related to forming and maintaining close relationships—stress that stems not necessarily from hostility and aggression, but in the quest for closeness and intimacy. For example, challenges of managing self-disclosure (Cozby, 1973) and feelings of jealousy in close relationships (Berndt, 1982; Salovey and Rodin, 1988), attracting others (Reisman, 1979), gaining acceptance and fitting in (Crockett et al., 1984) and keeping in touch (Waite and Harrison, 1992) are far from new.

Life online, like life offline, involves opportunities for enhancing relational closeness and enacting relational hostility. Indeed, most teens report both positive outcomes (e.g. feeling closer to others) and negative experiences (e.g. witnessing meanness; negative relational outcomes) in their online lives (Lenhart et al., 2011). However, while the stress of hostile conflict among youth in the digital world is well-documented, not all social stress stems from hostility. Furthermore, although it is established that relational closeness occurs online, there remains a dearth of systematic empirical research on the kinds of stress related to maintaining such closeness in a digital space. We designed this study in order to explore the breadth of stressful digital experiences, both destructive and supportive in intent, as described in the context of adolescents’ personal accounts.

The research context

In 2009, MTV launched “A Thin Line,” an initiative aimed at the reduction of digital abuse issues, such as cyberbullying and sexting. MTV and The Associated Press also sponsored a large-scale, nationally representative survey in order to explore youth’s experiences with digital abuse (AP-MTV, 2009). Their results indicated 50% of 14- to 24-year-olds had been the target of some form of digital abuse, 30% had sent or received nude photos, and 12% of those who had sexted also contemplated suicide.

In 2010, MTV also launched the “Over the Line?” platform on AThinLine.org for youth to share experiences with digital abuse and receive peer feedback and support. The website’s prompt reads,

Ever typed something you wouldn’t say in person? Ever had someone trash you online, then later claim they were “just joking?” Think your digital drama might be over the line? Submit your story, rate others’ stories, and help define the line between innocent and inappropriate.

Users can post personal accounts on the website relaying their own relational challenges or similar concerns on behalf of others (friends, siblings). For example,

My boyfriend over 8 months hates that i have guy friends & went through my phone the other day, deleting every single guys number from my phone & said he was going to break up with me! But he has nothing BUT girl friends. Over the line? I think so.

Users have the option to report first name, age, and gender alongside their posts or to post completely anonymously.

Other users can then respond to stories with two types of feedback. Anyone who enters the website can provide the first type of feedback, an “over/under/on the
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line” rating of a story’s seriousness. These ratings allow the site to gather relatively large samples of normative public opinion data on social issues. Users also have the option to comment publicly on stories, with up to 200 characters. Unlike raters, whose feedback is submitted simply by clicking the corresponding rating, commenters are additionally prompted for their zip code, first name, and the option to “log in” with flux or Facebook before their comment is posted (only a zip code is actually required to submit a comment). Although there is no process by which users’ contributions to the site can be verified, there is little motivation for posters to provide false information since all communications can remain anonymous.

Method

The data corpus used in the current investigation comprises 7146 stories posted to the “Over the Line?” platform between March 2010 and July 2013, as well as the corresponding feedback (normative ratings and comments). We obtained this secondary data set through a licensing agreement with Viacom, the for-profit parent company of MTV, in July 2013. These data include non-personally identifiable numerical story codes, personal accounts (stories), self-reported information about age and gender, and normative ratings and comments from other users.

We decided that any identifiable personal information in a text, such as the specific name of a school or a person’s first and last names, would merit elimination of that text from the analytic sample. However, none of the stories in our final sample included this kind of personally identifiable data.

The 7146 stories collectively received 370,740 normative ratings (over/under/on the line votes) and 24,409 comments (Table 1); 4,951 stories (69%) were rated “over the line” by more than 50% of raters. The current analysis focuses on a systematic random sample of 2000 personal account stories and their corresponding normative ratings.

Of the 7146 personal accounts posted to the site, 4417 (61.8%) include the poster’s age (mean age = 16.3 years; standard deviation [SD] = 5.2),1 and 4466 (62.5%) include the poster’s gender (86.2% reported they are female). The modal user, according to self-reports of age and gender, is 15 years old and female.

Research question

Contemporary youth spend unprecedented amounts of time online (Madden et al., 2013; Rideout et al., 2010). Effectively supporting teens in the breadth of challenges they face is predicated on understanding their experiences. Accordingly, we sought to answer the

Table 1. Votes and comments for all 7146 stories.

<table>
<thead>
<tr>
<th></th>
<th>Range</th>
<th>Mean</th>
<th>SD</th>
<th>Mode</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Words in story</td>
<td>3–71</td>
<td>43.53</td>
<td>11.84</td>
<td>52</td>
<td>n/a</td>
</tr>
<tr>
<td>Votes per story</td>
<td>0–3675</td>
<td>52</td>
<td>87</td>
<td>28</td>
<td>370,704</td>
</tr>
<tr>
<td>Comments per story</td>
<td>0–312</td>
<td>3.4</td>
<td>6</td>
<td>1</td>
<td>24,409</td>
</tr>
</tbody>
</table>

SD: standard deviation.
following question: What stressors (issues) do youth posting on “Over the Line?” report experiencing in their digital social lives?

Data analysis

Our investigation involved four distinct analytic steps:

**Step 1.** We organized personal accounts into “buckets” based on responders’ normative ratings. We sorted stories according to which of the classifications (over, under, or on the line) a simple majority of users assigned to the stories, using a criterion of over 50%. Stories with no consensus majority were grouped in a fourth “split ratings” bucket.²

**Step 2.** We began an emic thematic content analysis by drawing a systematic random sample of approximately 200 stories proportionally selected from each of the buckets. Although our primary interest was in digital stressors, we wanted to first understand the breadth and prevalence of all issues posted to the site. The codes therefore focused on topical issues in the stories.

We used the emic thematic content approach to develop 27 separate topic codes, designed to characterize the issue(s) in each story (see Table 2). We developed a preliminary coding manual with the codes, inclusion and exclusion criteria, and anchor examples.

We then engaged in a multi-step, inter-rater reliability process with a new sample of 100 cases, again proportionally selected across the buckets. This process included an initial round of reliability coding by two coders, a consensus inter-rater discussion to clarify the definition of 12 codes that initially generated low agreement, and a second round of reliability testing. We achieved scientifically respectable levels of agreement for all codes (kappa statistics ranging from 0.74 to 1.0) (Mayring, 2000) in the course of two rounds of reliability testing.

**Step 3.** We obtained a final analytic sample of 2000 stories through a systematic sampling of every third text of stories with at least 18 ratings. To ensure the sample proportionally represented the spectrum of severity both within and across each bucket, we sorted stories by normative rating within each bucket. That is, stories were listed in order of the seriousness of ratings within each bucket, such that 100% rater agreement that a story was “over the line” was at the top of bucket 1.

The first author (E.C.W.) coded the 2000 story sub-sample using the thematic content codes (Table 2); a second coder subsequently shadow-coded 50% of the stories in order to monitor for definitional drift in coding (Gibbs, 2008).

**Step 4.** Although the website’s intended function was to elicit stories of digital abuse or drama, our thematic content analysis revealed that 1352 (67.6%) of the stories did not explicitly refer to digital issues. Instead, the most common issues pertained to romantic relationships with no specific reference to online aspects, even if they existed (Table 2). For example,
So I’ve been talking to this guy for 2 months and we finally had our first kiss together, but he said he can’t commit to a relationship and we both really like each other. I don’t know what to do.

The frequency and nature of teens’ posts about romantic issues to online message boards has been documented in other studies (Suzuki and Calzo, 2004). As the intention of the current investigation was to shed light on challenges youth experience in their digital lives, we purposefully decided to focus our analysis on the stories that unambiguously implicated digital technologies as related to relational stress (i.e. cases originally coded as digital privacy issues, cellphone issues, social media issues, and nude photographs, or sexting). Of the 2000 stories, 648 distinct cases were originally coded with

### Table 2. Thematic content analysis codes and prevalence.

<table>
<thead>
<tr>
<th>Issue</th>
<th>Total no. of stories</th>
<th>% of sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnancy</td>
<td>64</td>
<td>3.2</td>
</tr>
<tr>
<td>Sexual behavior</td>
<td>279</td>
<td>14.0</td>
</tr>
<tr>
<td>STIs/STDs</td>
<td>11</td>
<td>0.6</td>
</tr>
<tr>
<td>Significant others&lt;sup&gt;c&lt;/sup&gt;</td>
<td>31</td>
<td>1.6</td>
</tr>
<tr>
<td>Controlling</td>
<td>96</td>
<td>4.8</td>
</tr>
<tr>
<td>Break-ups</td>
<td>198</td>
<td>9.9</td>
</tr>
<tr>
<td>Abusive</td>
<td>36</td>
<td>1.8</td>
</tr>
<tr>
<td>Confusion</td>
<td>514</td>
<td>25.7</td>
</tr>
<tr>
<td>Cheating, jealousy</td>
<td>298</td>
<td>14.9</td>
</tr>
<tr>
<td>Age</td>
<td>193</td>
<td>9.7</td>
</tr>
<tr>
<td>Sexual identity and orientation</td>
<td>85</td>
<td>4.3</td>
</tr>
<tr>
<td>Body image</td>
<td>94</td>
<td>4.7</td>
</tr>
<tr>
<td>School climate</td>
<td>118</td>
<td>5.9</td>
</tr>
<tr>
<td>Psychological suffering&lt;sup&gt;c&lt;/sup&gt;</td>
<td>88</td>
<td>4.4</td>
</tr>
<tr>
<td>Suicide</td>
<td>19</td>
<td>1.0</td>
</tr>
<tr>
<td>Friendship</td>
<td>273</td>
<td>13.7</td>
</tr>
<tr>
<td>Family</td>
<td>132</td>
<td>6.6</td>
</tr>
<tr>
<td>Harassment, teasing</td>
<td>232</td>
<td>11.6</td>
</tr>
<tr>
<td>Slander, reputation</td>
<td>217</td>
<td>10.9</td>
</tr>
<tr>
<td>Digital harassment, general&lt;sup&gt;c,d&lt;/sup&gt;</td>
<td>30</td>
<td>1.5</td>
</tr>
<tr>
<td>Social media issues&lt;sup&gt;d&lt;/sup&gt;</td>
<td>159</td>
<td>8.0</td>
</tr>
<tr>
<td>Cellphone issues&lt;sup&gt;d&lt;/sup&gt;</td>
<td>69</td>
<td>3.5</td>
</tr>
<tr>
<td>Digital privacy&lt;sup&gt;d&lt;/sup&gt;</td>
<td>108</td>
<td>5.4</td>
</tr>
<tr>
<td>Nude photographs, sexting&lt;sup&gt;d&lt;/sup&gt;</td>
<td>200</td>
<td>10.0</td>
</tr>
<tr>
<td>Taken without permission</td>
<td>16</td>
<td>0.8</td>
</tr>
<tr>
<td>Forwarded without permission</td>
<td>84</td>
<td>4.2</td>
</tr>
<tr>
<td>Other</td>
<td>164</td>
<td>8.2</td>
</tr>
</tbody>
</table>

STD: sexually transmitted disease; STI: sexually transmitted infection.
<sup>a</sup>Codes not mutually exclusive.
<sup>b</sup>Sample = 2000 personal accounts.
<sup>c</sup>Does not include sub-code counts.
<sup>d</sup>Digitally based issue.
one or more of the four aforementioned digitally oriented thematic codes. These four codes capture the breadth of explicit accounts of socio-digital stress stories posted to the website.¹³

In order to more systematically explore these 648 cases, we began a second phase of code construction. Repeating a more fine-grained version of our emic thematic content analysis, we developed six superordinate categories of digital stressors, which cross-cut the original four digital issues thematic codes. For example, initially distinct issues, such as receiving harassing communications via text message (cellphone issues) and receiving cruel messages via Facebook (social media issues), could be collapsed into the superordinate code “Receiving Mean and Harassing Personal Attacks” (see “Findings” section for a detailed explanation of the six code categories). We repeated our reliability process with a random sample of 120 cases. Over two rounds of reliability testing, we obtained kappa statistics ranging from 0.71 to 1.0 for each of the six digital stressor codes. In this instance, the full set of 648 cases was coded by the E.C.W. author and shadow-coded by a secondary coder; five cases of disagreement were reconciled through discussion between coders.

Findings

Identifying and unpacking the six digital stressors

We examined the relational challenges young people face online to explore salient socio-digital stressors. Across 648 stories involving digital issues, we identified six specific stressors: “impersonation,” “receiving mean and harassing personal attacks,” “public shaming and humiliation,” “breaking and entering into accounts and devices,” “feeling pressure to comply,” and “feeling smothered.”

Impersonation. Impersonation involves using the affordances of the digital world to mask an individual’s own identity and pretend to be someone else. The purpose of impersonation is generally to slander, mock, or embarrass the impersonated. In our data set, impersonation happens in two ways: through hacking and through fake accounts.

Impersonation through hacking entails logging into another person’s account. One user describes a practice, repeated across our sample, of hacking into another person’s account in order to try and damage relational ties. “A girl decided that she didn’t like me so she hacked my old AIM account and started trash talking everyone who was my buddy on there. She made so many people hate me.” Another user describes having her account hacked by a peer who was seeking revenge and consequently posted unwanted personal information on her behalf:

I was 14 & there was this boy I really thought liked me I told him a lot of personal stuff about me that no one knows. We were really close to, & then one day he asked me out & I told him no, so he hacked my fb and posted a lot of mean stuff.

Whereas impersonation through hacking requires access to an individual’s personal account, a second kind of impersonation is enacted by creating a new account under a
false identity. Perpetrators can then wreak havoc on the impersonated person’s reputation or social ties, as in the following two cases: “so someone created a fake fb and twitter account saying they were me now almost everyone hates me for wat they wrote” and “Last night Someone made a fake fb profile about me and i cried over it thats how harsh it was Over the Line? what do I do?” Another post describes a less clearly hostile fake account, but relates uncertainty about how to manage the situation:

Someone on formspring made a fake one with my pic. info and everything i msgs my fake one and told them that i know bout it i think that it is this one girl because she knows i dont like her nd she tried to follow me on my formspring what shld i do?

Users submitted 38 stories of impersonation, all of which were rated as being over the line by a majority of other users.

Receiving mean and harassing personal attacks. Through both social media platforms and cellphone-based text messaging, youth report receiving unwanted messages and personal attacks. A collection of examples illustrates the nature of these messages. One user reports,

I got a lot of tumblr anonymous hatemails saying things like “You need to start cutting yourself again. But this time, you need to cut really deep so you bleed out and die” Usually I’m not offended. But I think that was really unnecessary …

Another user describes extreme and hurtful name calling on a chat-based service:

There this girl from tinychat i know she been she been mean to me she call me crossed eye, go die and calling me ugly told her to stop she pushing me so hard she hurting my feelings everything she said its hurt my feelings, ive been cry for 3 days.

Another trend repeated across the data set involves receiving harassing, accusatory messages on Facebook from a peer, only to later be told the sender was joking:

I was on facebook and a girl name—just started to curse me out, saying that i was talking about her. so we going back and forth and when we got to school she said She was joking about the whole thing but i really dent like that at all.

The opening case of this article is yet another instance of this phenomenon. The sample includes 124 cases that detail personal attacks, of which 108 cases are voted over the line, 1 under the line and 15 cases “split.”

Public shaming and humiliation. Whereas personal attacks are messaged directly and privately to the targeted individual, public shaming involves humiliating, broadcasted messages. Users describe two types of public shaming: slander posted on social media and forwarding of nude pictures to unintended audiences. One user describes a form of social media slander enacted by two of her “friends”: 
I had these two friends. I didn’t do anything to them or say anything about them, but then out of nowhere they start to hate me and tell people all my secrets and post **** on Facebook directed towards me and they made a list of 100 of my flaws.

Another poster details a slanderous practice among middle school students explaining, “latley middle school have been starting ‘burn pages’ mostly on facebook, posting pictures of ppl they don’t like and trash talking them it hurts to see my friends are there & ppl say there ***** and ******.” Public shaming and humiliation by definition involves an audience. However, there are two salient dimensions by which slander stories differ: whether or not the identity of the perpetrator is known to the slandered individual and whether or not the content is fabricated.

A second type of public shaming involves forwarding an individual’s compromising photographs to other recipients not intended by the sender. One poster explains the lasting impact of having her nude pictures forwarded:

after my 8th grade year. i had gotten very close with this guy. he was my “best friend” and we shared everything. he asked me to send him nude pics and i kept saying no. but then i finally did. they were sent to every school around. my life has changed.

Another poster describes the public shaming and name calling that ensued after pictures she sent to a crush were widely distributed,

I wasa sexting and sending pictures to a guy older than me because he told me he loved me and i believed him and he showed everyone my picture and i had everyone asking me for photos and making fun of me and calling me a slut.

Finally, other posters suggest the distribution of nude pictures can be a form of revenge, “im 16 my girlfriend broke up with me in a text message so i posted some nude pictures she sent me all over town and on the internet was this over the line?”

Of 230 cases of public shaming and humiliation, 221 are rated by others over the line and 9 are split.

**Breaking and entering.** Breaking and entering involves logging into another person’s online accounts or looking through their digital devices without permission. Breaking and entering takes two forms: curating contact lists and reading messages. Curating contact lists is the practice of searching through another person’s digital address book or contacts and editing or deleting information. For example, “My boyfriend goes onto my facebook and deletes people and Im’s who he wants to and he even subscribed to my messages so when i get a new message it sends to his phone too. Is this too much?”

A second kind of breaking and entering involves reading another person’s messages. One user describes a paradigmatic case:

One time i let my friend borow my phone and i left here in the room to go get some snacks and i came back and she was going through my phone like me texts and notes and photos and videos and even went through my contacts i got really mad at her 4 it.

Another user describes a similar scenario, but with her boyfriend:
I’d left the room for a moment … to go to the bathroom and when I got back my BF was
zooming through all my texts and pics like it was nothing. I watched him do it for a minute
until he realized I was standing there. I felt so mad.

Reading messages is not generally intended to do harm, but rather to gain access to the
private communications of close others. Nevertheless, many posters still report feeling
angry about the invasion of their digital privacy.

A total of 74 stories involve breaking and entering. A total of 63 of these stories are
rated by a majority of other users as over the line, 2 under the line, and 1 on the line, and
8 have split ratings.

Pressure to comply. Two stressors above—impersonation through hacking and forward-
ing nude pictures—raise questions about why an individual would share their account
passwords or nude photographs with others. “Pressure to comply” refers specifically to
the stress of managing requests for access to accounts or nude photographs when these
requests come from close others ostensibly asking in the service of intimacy or connec-
tion. Pressure to grant access to accounts transpires in both romantic relationships and
close friendships. For example,

I have a bff who constantly asks me for my facebook password. I always ask why and she
always says “because you have mine.” I never asked her for her password, she just gave it to
me. What do I do?

In this case, trading passwords with a best friend is seen as an opportunity for mutual
disclosure. Another poster indicates uncertainty about whether granting access is appro-
priate in the context of a romantic relationship:

I’ve been with my b.f. for 6 months now and he is constantly txtin me and if I dont txt back he
gets mad. He also wants my passwords for facebook and myspace is this ok.? P.s he gets mad
if i go anywhere and hes not there.

In the case of nude photographs, it is usually—though not exclusively—females who
are under pressure to comply. This pressure often stems from liking or wanting to attract
and impress a crush or boyfriend. The posters of these accounts are not necessarily oblivi-
ous to the negative potential consequences of sharing a nude photograph, but must
weigh the possibility of unwanted outcomes against a perceived opportunity for intimacy
and connection. One such user explains,

My ex and i broke up a week ago. The other day he told me that he’d get back together w/ me
if i sent him a nude. I love him with all my heart and soul and i want to be with him. But if i
send him the pic who knows where it will end up. Should i?

Another describes,

me n my girlfriend have been datin a year an almost 2 months, she has sent me naked pics of
her and she asked me to send her some of me naked, but i dont want too and i dont want to lose
her either.
Pressure to comply also involves cases in which the poster previously experienced pressure and already complied, as in the following examples:

i was talkin 2 this kid & i started 2 like him & he said 2 send him a pic of me naked & i wanted him to like me & i told him na cus hes only talkin to me fer the pic & he said no i will always talk 2 u so i sent it & now he NEVER talks to me anymore

and

I sexted with this one guy I really like. He only seems to talk to me just for pictures and i say yes everytime because I really like him, and maybe if I do send them he will like me more. Should I just get over him, or just quit sending pictures??

Across the sample, 112 cases encompass pressure to comply. In all, 107 of these cases are rated by other users over the line, 1 on the line, and 4 split.

Feeling smothered. Constant access to others—even close others with whom an individual may generally want connection—leads to yet another digital stressor: feeling smothered. Feeling smothered is particularly pronounced via cell phones and text messaging in the context of romantic relationships. For example, one user explains, “So my boyfriend is constantly txting me every minute of everyday. he’s not demanding to know every little thing but he’s becoming really clingy with it. what should i do???” Another user asks,

My girlfriend will text me good morning, if i dont respond right away she will send a question mark with a question, then a few more question marks, then call me. If i don’t respind she gets really upset and angry. is this abuse? what do i do?

There are 35 reports of feeling smothered, of which 26 are rated over the line, 3 under the line, and 6 split.

Six stressors, in summary. Table 3 outlines the aforementioned six stressors, the dominant forms they take, and the frequency of each major stressor across the sample of socio-digital stories.

The “long tail” of digital stressors. The six digital stressors capture 519 of 648 distinct cases. The 129 other posts represent the “long tail” of digital stress. These cases include, for example, questions about the appropriateness of talking to exes online, stories of being asked for nude pictures by random or unknown others, and concerns about issues like friends texting while driving.

Digital stress: what do raters think? Beyond the personal accounts of digital stress posted by youth, we also considered other users’ normative ratings in response to these stories. The mean percentage “over the line” ratings for each digital stressor, presented in Table 4, indicate that digital stress stories are consistently rated as serious by others. This suggests that regardless of their pervasiveness, the commenters do not view these issues as normative, casual, or acceptable.
An analysis of variance indicates statistically significant differences in the mean percentages across the six types of stories, $F(5, 607) = 11.22, p < .001$. A series of pair-wise contrasts of the means indicates that there are three overall levels in the severity ratings. Stories of “public shaming,” “pressure to comply,” and “impersonation” are rated most severely, with each receiving a mean rating of just over 80%. These means are all significantly higher than the next-level stories about “mean personal attacks” and “breaking and entering,” both of which received mean ratings in the low 70s (73.2). These second-level stressors ratings are also significantly higher than the mean rating for stories about “feeling smothered,” which received the lowest mean rating of 65.2%.

### Discussion

In this study, we investigated adolescents’ self-reports of stress experienced in their socio-digital lives. Based on our analysis of 648 personal accounts, we identified six predominant digital stressors: “impersonation,” “receiving mean and harassing personal attacks,” “public shaming and humiliation,” “breaking and entering into accounts and devices,” “pressure to comply with requests for access,” and “feeling smothered.” Raters did not treat these six stressors equally, as evinced by the rating variations in Table 4. Nevertheless, the ratings indicate that stories of all six digital stressors tend to be rated over the line, thus providing some validation that the digital stressors are viewed as stressful and problematic by other teens.

We propose that the six stressors documented in the current analysis constitute two types of digital stress. One set of the digital stressors—“impersonation,” “personal attacks,” and “public shaming and humiliation”—is fundamentally the product of meanness and cruelty (Lenhart et al., 2011) moving into the digital space. Whether it be the types of reciprocal relational conflict described by Marwick and boyd (2011) or the more explicit incidents of cyberbullying that are additionally characterized by repetition, power, and imbalance (Levy et al., 2012; Patchin and Hinduja, 2006), Type 1 digital stress is fundamentally an expression of relational hostility.
The other set of the stressors, however, encapsulates stress that stems from efforts to negotiate relationship closeness (rather than hostility) in a digital world. For instance, “breaking and entering” is more often reported as driven by insecurities about close others, desires to “know everything” and to manage a friend or significant other’s social ties, rather than hostile or mischievous troublemaking. Although “breaking and entering” can certainly be a source of conflict, since it may be interpreted as a sign of mistrust or as an invasive breach of privacy, it is not generally driven by a conflict-based desire for revenge or harm, but instead to safeguard (or control) closeness.

In our data set, challenges related to feeling the “pressure to comply” are also more often rooted in desires for intimacy and closeness than in efforts to extort or intimidate. Password sharing functions as a modern-day currency of self-revealing trust (Lenhart et al., 2011). As with “breaking and entering,” stories of password sharing (an example of “pressure to comply”) indicate the practice can certainly lead to conflict. Formerly close others who feel slighted report seeking revenge by using passwords to hack and impersonate. At times, “feeling pressure to comply” also leads to hostility if one person is reluctant to share. But reports of pressure stemming from others’ requests to grant digital access tend to be interpreted as opportunities for intimacy, rather than as linked to hostile intentions. Likewise, pressure to send nude pictures in order to impress or to signal trust is often reported as intimacy-seeking. Many youth in the sample are well-aware of the risks of sharing their nude photographs, yet this seems to only amplify the power of sharing “nudies” as a signal of complete trust.

Smothering, although experienced as controlling, seems too to be understood as a desire for closeness: cases of smothering are stressful not because the content of the messages is upsetting, nor because the recipient does not want to communicate with the sender. Rather, the sheer quantity of the messages is itself described as a burden. The opportunity for unrelenting, constant messaging with close others can generate ambivalence, since youth indeed often describe wanting closeness but simultaneously feeling overwhelmed by the frequency of communication.

<table>
<thead>
<tr>
<th>Stressor</th>
<th>Bucket 1 (over)</th>
<th>Bucket 2 (on)</th>
<th>Bucket 3 (under)</th>
<th>Bucket 4 (split)</th>
<th>Total</th>
<th>Percentage stories rated “over” by majority</th>
<th>Mean percentage rating “over”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shaming</td>
<td>221</td>
<td>0</td>
<td>0</td>
<td>9</td>
<td>230</td>
<td>96.1</td>
<td>82.5</td>
</tr>
<tr>
<td>Pressure to comply</td>
<td>107</td>
<td>1</td>
<td>0</td>
<td>4</td>
<td>112</td>
<td>95.5</td>
<td>81.0</td>
</tr>
<tr>
<td>Impersonation</td>
<td>38</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>38</td>
<td>100</td>
<td>80.3</td>
</tr>
<tr>
<td>Personal attacks</td>
<td>108</td>
<td>0</td>
<td>1</td>
<td>15</td>
<td>124</td>
<td>87.1</td>
<td>73.2</td>
</tr>
<tr>
<td>Breaking and entering</td>
<td>63</td>
<td>1</td>
<td>2</td>
<td>8</td>
<td>74</td>
<td>85.1</td>
<td>73.2</td>
</tr>
<tr>
<td>Feeling smothered</td>
<td>26</td>
<td>0</td>
<td>3</td>
<td>6</td>
<td>35</td>
<td>74.3</td>
<td>65.2</td>
</tr>
</tbody>
</table>

Pair-wise contrasts within each band are not statistically significant; differences across the bands are statistically significant.

Table 4. Normative ratings of six digital stressors.
We propose that these three stressors engender a second type of digital stress, distinct from stress that stems from a digitized relational hostility. In a networked age, Type 2 digital stress flows naturally from the reality that teens’ use of digital technologies is principally driven by desires to communicate with close, offline peers (boyd, 2014; Davis, 2012; Gross, 2004; Ito et al., 2009; Subrahmanym and Greenfield, 2008; Subrahmanym and Smahel, 2011; Valkenburg and Peter, 2009). That is, Type 2 stress stems from the challenges of navigating closeness, connection, and intimacy in the digital world.

This is not to say that initial attempts to seek or maintain positive connections via digital technologies cannot or do not veer into acts of hostility. For example, the following account from a 20-year-old female suggests previously sharing a password voluntarily with a boyfriend, which is then secured post-break-up by a former friend, only to be used for impersonation:

A girl I used to be friends with and I had an argument. She got someone to threaten me; then she got my facebook password from my ex and hacked into it, telling my friends I was going to kill myself.

Nor is this initial classification into two types of stress intended to essentialize the complex dynamics teens experience online as dichotomous. Moreover, the emphasis on Type 2 digital stress is not an attempt to distract from or minimize the often painful and sometimes tragic Type 1 cases. Rather, Type 2 stressors can be challenging in their own right and may even lead to other problematic outcomes in youth’s development if neglected.

**Limitations**

Our approach can be considered a modified version of digital ethnography (Murthy, 2008) that offers nuanced insights about digital stress. However, the posts lack the rich contextualization that typically abounds in ethnographic research, and which would enable both verification and more psychological (or cultural) interpretation. The demand characteristics of the site also lead to limitations. Some salient concerns may be under-reported if youth do not think they constitute “over the line” stress, thus preventing our documentation of potentially important, but normalized, issues. In addition, the paucity of demographic data constrains our ability to identify group differences. Self-selection of posters and commenters into the sample could also be considered a limitation; however, our primary purpose in this study is an initial identification and description of salient digital stressors, rather than generalization.

A last limitation pertains to our purposeful focus on accounts that explicitly implicate digital technologies. A lack of evidence that technologies played a role in a particular story does not indicate their absence. That is, a story about being called fat by friends could certainly have taken place online or offline. Without a referent to the digital, however, we would not include this story in our sample. Its potentially erroneous exclusion would not impact our findings about the types of digital stress (the story would fit into “mean and harassing personal attacks” if digital), but only the prevalence, about which we do not make interpretative claims.
A key strength of our investigation, however, is the authenticity of the context in which teens shared their experiences. In reading the personal accounts, it is clear that the public yet anonymous nature of the platform facilitated a type of sensitive self-disclosure that can be difficult to access in research.

Conclusion: new media, adolescence, and society

Whether or not one prescribes to the notion that adolescence is a time of heightened “storm and stress” (see Arnett, 1999, for discussion), we should not underestimate the particular vulnerabilities of this period. Adolescents are focused on the mastery of increasingly complex, mutual friendships, and romantic relationships (Brown, 2004; Collins and Madsen, 2006). Does living in the digital ecology mean the challenge of these developmental tasks is now fraught with heightened stress?

When individuals feel wronged or betrayed, it is already well-known (e.g. Levy et al., 2012) that digital tools offer powerful and potentially irreparably damaging ways to respond and communicate with hostility (Type 1). Our findings suggest that youth may also become vulnerable as they utilize digital tools in the service of connection and intimacy (Type 2). Our analysis of the raters’ evaluations of each stressor, while preliminary, also points to ways to explore the relative severity and normative judgments of these digital stressors.

Our findings point to additional directions for future research, particularly related to better understanding the nature of digital stress in the context of existing theories of stress and human development. Are the stressors we describe best understood as daily hassles, chronic strains, or life events (Thoits, 1995)? Why might some types of stressors, such as those classified as “shaming” or “pressure to comply” be more consistently rated as “over the line,” while others, such as “smothering,” draw less clear-cut severity judgments? Do stressors differ in the amount of distress they evoke? Moreover, up to what point might digital stress be adaptive? Exposure to certain stressors in youth can equip adolescents to manage stress later in life (Bonanno, 2005). When and how do digital stressors promote resilience for life in a digital world versus cross “a thin line” into more damaging or toxic experiences?

Practically speaking, the prominence of new media in the lives of contemporary adolescents is unprecedented and incontrovertible. Along with longtime policy concerns about regulating youth on the road and at unsupervised venues with access to alcohol (Steinberg, 2007), there is now understandable cause for concern about the digital space. Yet, digital access certainly has the potential to support and satisfy the need for connection (see, for example, boyd, 2014; Matsuda, 2005). Our findings are not intended to catalyze restrictions that detract from opportunities for connection, nor to enable approaches that dis-empower young people from developing the capacity to make important personal choices. Instead, they represent an effort to increase scientific knowledge of digital stress in order to inform efforts to support digital youth.

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**Notes**

1. The range of reported ages is 5–99 years, with eight self-reported above 90-year-olds and two self-reported 69-year-olds. However, the median and modal age are both 15, and these ostensibly prankful posts represent a present but uncommon phenomenon.

2. In an effort to capture stories whose ratings were truly crowd-sourced rather than the opinions of only a few individuals, we excluded stories with fewer than 18 ratings.

3. The four codes capture the breadth of digital issues, but they are not mutually exclusive, which is why their sum exceeds 648. For example, a case about finding upsetting content while reading someone else’s text messages would be coded as a digital privacy issue and as a cellphone issue in this round of coding.

4. Personal accounts are presented verbatim.

5. Type 2 stressors are by definition in the service of connection; hostile stories, or those additionally including Type 1 stressors, are double-coded.

**References**


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