Smartphone and social media addiction: Exploring the perceptions and experiences of Canadian teenagers

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ABSTRACT

'Addiction' to internet-connected technology continues to dominate media discourses of young people. Researchers have identified negative outcomes, including decreased mental health, resulting from anxieties related not to technology *per se*, but a fear of missing out and social connectivity related to online technologies. Not enough is known, however, regarding young people's own responses to these ideas. This paper highlights discussions with teenagers around the idea of internet addiction, exploring their experiences and perceptions regarding the idea that 'kids today' are addicted to their devices, especially smartphones and the social network sites they often access from them. 35 focus group discussions with 115 Canadian teenagers (aged 13-19 years old) center on their use of information communication technologies, especially contemporary social network sites such as Snapchat, Instagram and Facebook. Our discussions reveal 1) that teens are actively embracing the label of addiction; 2) their ironic positioning occurs despite a felt sense of debased agency in relation to the power of the algorithms and affordances of the technologies mediating their use; and 3) rather than a stark divide between adults as 'digital immigrants' vs. young people as 'digital natives', our teens positioned themselves in contrast to both their parents and younger siblings, both of whom are criticized as addicted themselves. A consistent theme is the influence of peer groups who socially compel addictive behaviours, including the fear of missing out, rather than the technologies *per se*. Wider implications for thinking beyond solely young people as suffering from online addiction are considered.

KEY WORDS

Internet addiction; teenagers; social media; fear of missing out; technological affordances

INTRODUCTION

The popular sentiment remains that kids today are addicted to technology. The sentiment, an arguably central concern among many parents, is often amplified by media headlines pointing to widespread societal malaise. Take for instance *The Atlantic*'s (Twenge, September 2017) headline: "Have Smartphones Destroyed a Generation?", drawing from psychologist Jean Twenge's book underscoring the mental health impacts of social media and other forms of online connectivity (Twenge, 2017; see also Livingstone, 2017). Terms denoting pejorative assessments of youth such as 'screenagers' (Rushkoff, 2006) are popular and have normative effects that include reinforcing stereotypes regarding teens and technology that can result in disproportionate and ineffective responses by parents and educators to help curb the perceived problem.

We dub *cyber-risk* those risks linked to the (over-)active (mis-)use of technology by teens and young adults. Cyber-risks are "moving targets", encompassing but never fully defined by the plethora of ever-changing forms of online aggression and harm (e.g., cyberbullying, hacking, etc.) within the networked public [authors, 2019a]. Despite media and research attention directed to issues such as cyberbullying, sexting and other forms of online harassment and stalking, a number of studies point to more mundane, everyday risks to young person's mental health tied to cyber-risk, including those of depression, anxiety, sleep deprivation, and poor academic performance (Chang et al., 2013; Lewis, Heath, Michal, and Duggan, 2012; Ybarra and Mitchell, 2004). Fear of new digital information communications technologies (ICTs) in particular – linked to the more fundamental fear of the unknown – takes a particular shape in relation to 21st century 'web 2.0' online social network sites (SNS), given the features impacting how they are

able to be used (Beer, 2009, 2017). Specifically, SNS are characterized by persistence of what is posted to them, anonymity of users and searchability of content (boyd, 2008).

Young people are simultaneously represented as vulnerable to risk and harm, and agentic, creative 'digital natives', whose use of ICTs, often today through their smartphones, helps them engage politically and socially (Hasebrink, Livingstone, Haddon, and Olafsson, 2009; Livingstone, 2009). While media accounts engender moral panics over "zombified social media addicts" who are unable to take control of their lives (boyd, 2014: 78), sociologists have actively critiqued the *discourse* of addiction, frequently arguing it leads to media-fueled moral panics (Cohen, 2002 [1972]). dana boyd (2014), for instance, argues that "the language of addiction sensationalizes teens' engagement with technology and suggests that mere participation leads to pathology. This language also suggests that technologies alone will determine social outcomes" (p. 78). Coined in 1995 by psychiatrist Ivan Goldberg, the term 'internet addiction disorder' was originally a satirical essay parodying the concept itself (see boyd, 2014, p. 81). Goldberg's arguably catchy phrase, however, caught on and was quickly taken up in media and debated by academics alike. Drawing from her research with teens in the U.S., boyd (2014) concludes "most teens aren't addicted to social media; if anything, they're addicted to each other" (p. 80). To understand teens' own lived experiences with technology and 'technological addiction', considering the context of its use, often related to peer connectivity and interpersonal communication, is essential (boyd, 2014; authors, 2019a).

Of course, research has developed since Goldberg's time regarding youth and 'technology addiction'. However, in the current article we treat 'online addiction' as a *sensitizing concept*,

providing analysts with "a general sense of reference and guidance in approaching empirical instances" (Blumer, 1954: 7). The notion of sensitizing concepts is methodologically and theoretically relevant as our intention here is not to verify previous researchers' findings about the extent and severity of online addiction, nor the validity of the concept, but to explore how teens' lived experiences inform their understandings of addiction as a form of cyber-risk. To this end, we analyzed transcripts from 35 focus group with teens (aged 13-19), using a discussion-based method geared to unpack interpretations of addiction online within the context of youth face-to-face interaction. Thus, we reflect on what teens are collectively discussing to understand their embrace of 'online addiction' as well as their interpretations of the impacts of technology on other youth, including their peers, parents, and younger siblings.

THE GOOD, THE BAD, AND THE CONTESTED NATURE OF INTERNET 'CONSTANT' CONNECTIVITY AMONG TEENS

A number of scholars examining childhood and youth in relation to ICTs hail positive attributes linked to the 'millennial' generation: youth today are more accepting of differences, less likely to alienate their peers, and accepting of peers who are not heterosexual (boyd, 2014). dana boyd (2014) also found young people in the United States reporting benefits such as strengthened relationships, feeling more included in communities and being able to seek help when needed (boyd, 2014). Livingstone (2009) also highlights the opportunities teens embrace online, including educational resources, political participation and social activism, access to resources related to health, sexuality, employment, and entertainment and leisure. Others hail the capacity of young people immersed in ICTs to appropriate the saturation of information in productive ways, leading to effective political and social movement coordination, educational achievement,

among other aspects (Palfrey and Gasser, 2011; Tapscott, 2009). However, opportunities and risks associated with young people's use of ICTs exist alongside each other (Hasebrink et al., 2009; Livingstone, 2008). A number of researchers find addiction to internet connectivity to be a "major factor" underpinning cyberbullying, sexting, and educational difficulties linked to a lack of attention being received in the classroom (Fisk, 2016: 141). The ubiquitous access to smartphones and SNS has been found to detrimentally affect cognitive functioning and personal relationships, ultimately negatively impacting wellbeing (Sbarra, Briskin, and Slatcher, 2019).

Since Goldberg's early conceptualization, research has pushed for more nuanced (i.e., more clearly operationalized) studies of particular online behaviours and behavioural addictions. Moreover, researchers argue that the term 'Internet addiction' has little utility for the purposes of diagnosis and is likely comorbid with other categorizations (Starcevic, 2013; Van Rooij, Ferguson, Van de Mheen, and Schoenmakers, 2017). An increasing body of research conceptualizes certain online behaviors as types of behavioral addictions, such as 'gaming disorder', which has been included in the International Classification of Diseases version 11 and is proposed to be included in the DSM-5 (APA, 2013; see also https://icd.who.int/en). Our focus in the current article is largely centered on smartphone use (frequency, underlying reasons for) and social media access among teens. There are no overarching research findings pointing, whole cloth, to smartphone and online social media use being positive or negative for youth.

A 2015 Pew Research Center report by Lenhart and her colleagues (2015) examining teens and friendships online found only 23 percent of U.S.-residing teens spent time daily with friends on social media. Although surveyed youth expressed productive benefits more than negative

experiences, some (23 percent frequently) did witness "drama" online, and others experienced 'oversharing', 70 percent indicated they felt "better connected to their friends' feelings" online, with 68 percent having "had people on the platforms supporting them through tough or challenging times" (Lenhart et al., 2015, p. 6). In a more recent Pew study, Anderson and Jiang (2018) found that the vast majority of teens in the U.S. have access to, or own a smartphone (95 percent), with 45 percent indicating that they go online "near-constant[ly]" (p. 2). Teens, asked about their own views on the effect of social media on youth today, reported mixed feelings. Relative minorities of respondents found social media mostly positive (31 percent) or mostly negative (24 percent); 45 percent indicating neither overarching positive nor negative effects (Anderson and Jiang, 2018).

Other scholars document more decidedly negative outcomes. For instance, in a large online survey of almost 3500 eight to 12-year-old girls in North America, Pea et al., (2012) found statistically significant results indicating positive social well-being associated with face-to-face communication and negative well-being associated with online multitasking and uses of online technologies for communication, as well as going online to watch videos. Although the researchers stress that their study, as with similar findings by others, cannot demonstrate causality (Pea et al., 2012), they note that negative impacts seem to depend much on factors beyond the quantification of frequency of use. In a study of 467 Scottish adolescents, those who use social media frequently *and* who are *more emotionally invested* were found to experience lower self-esteem, degraded sleep quality, and higher levels of anxiety and depression (Woods and Scott, 2016). Authors of another nationally representative sample of over 500 emerging adults in the U.S., ages 18-22, found "higher social media use …associated with greater

dispositional anxiety symptoms and an increased likelihood of having a probable anxiety disorder"; findings that in part may relate to "the internaliz[ation of] pressure to maintain social network updates" (Vannucci, Flannery, and Ohannessian, 2017: 165). Vannucci and colleagues also raise the possibility that those with existing "elevated anxiety symptomology and more severe impairment" may "tend to engage in more social media use" (2017: 166). Such findings suggest that social media and ICTs do not *produce* depression; rather the opposite – those predisposed to depression and other mental health problems may end up being more at risk for negative impacts from their social media use.

Another large, nationally representative sample of over 1000 teens in the U.S., found decidedly more positive outcomes of their social media use (Rideout and Robb, 2018). "Only very few" of their surveyed teens indicated social media has a negative effect; moreover, they found that "more-vulnerable teens are also more likely to say that social media has a *positive* rather than a *negative* effect on them" (Rideout and Robb, 2018: 11, original emphasis). Specifically, 29 percent of their sample stated social media makes them feel less depressed, 11 percent stated it makes them feel more depressed and the rest indicated social media has no impact either way (Rideout and Robb, 2018). Regarding loneliness, only three percent of teens indicated social media makes them feel lonelier, with 25 percent saying less so; the others being ambivalent. The greatest divide comes from comparisons of teens measured as high or low in social-emotional well-being (SEWB), where 70 percent of surveyed teens who are low in SEWB versus only 29 percent of those high in SEWB indicate they sometimes feel left out or excluded when using social media (Rideout and Robb, 2018). As Alt and Boniel-Nissim (2018: 31) argue, "Internet

use is not necessarily indicative of problematic use. It may become problematic only for those who are unable to control their online activities."

Canadian surveys similarly indicate that youth remain reliant, even dependent, on their phones and thus social media. For instance, in Canada, the prominent Canadian MediaSmarts national survey of over 5,000 students (grades 4 through 11) found that "thirty-nine percent of students who have cell phones sleep with them in case they get calls or messages during the night" (Steeves, 2014: 6). The report also highlighted how social networking online has become an "integral component" for young people (p. 3); although one third of students worry they spend too much time online, nearly half would be upset or unhappy if they had to unplug for anything other than school work for a week (Steeves, 2014). Qualitative studies in Canada explicating the perceptions and experiences of teens' (mis)use of technology is emerging (e.g., Bailey and Steeves, 2015)(Authors, 2019).

Current Study

The research we present in the current article centers on views and experiences related to what 'misuse' of internet-connected technology means in the context of teens' lives. We explore not only teens' perceptions of how technology impacts themselves, but also their siblings and even parents. A central theme explaining ostensible 'addiction' to going online among our participants is that of social comparison and social approval. Social comparison, concern for one's reputation and identity formation are all longstanding hallmarks of adolescence (Lerner and Steinberg, 2009), as is the need for social approval and acceptance, influenced by the (perceived (Cooley, 1902)) judgement of one's peers (Harter, Stocker, and Robinson, 1996). Contemporary ICTs,

however, amplify the negative potential of addictive behaviour, primarily through the arguable amplification of anxiety (Authors, 2019a). Comparisons between oneself and others online may become more frequent and exacerbate relative deprivation, thus lowering self-esteem and detrimentally impacting mental health.

Relatedly, a factor explaining ostensible teen addiction to their smartphones and SNS is anxiety tied to a fear of missing out (FOMO) (Perrone, 2016; Przybylski, Murayama, DeHaan, and Gladwell, 2013), which emerged as another, related theme from our interviews. While there are some variations regarding definition, we draw on Przybylski and colleagues' (2013: 1841) definition of FOMO as "a pervasive apprehension that others might be having rewarding experiences from which one is absent" and "a desire to stay continually connected with what others are doing." Recently, scholars have positively associated FOMO with boredom, loneliness, depression and feelings of inadequacy and anxiety, as well as diminished well-being, overall mood and life satisfaction (see Przybylski et al., 2013). In addition, FOMO is statistically significantly related with social media use that exacerbate mental health outcomes, including problematic internet use (Przybylski et al., 2013; Reyes et al., 2018). Our focus group discussions on smartphone use and 'addiction' often led to related anxieties about social connection and FOMO.

A third theme we highlight in this article is how affordances of technology are steering behaviour and underlying the impetus for constant connectivity. Media scholars have drawn increasing attention to the affordances (technical features) of particular ICTs, and how these operate to mediate online activities. Narrow corporate ownership of SNS platforms, for instance,

acts to "monetiz[e] connectivity", with users arguably ignorant to how these platforms collect their behavioral data for profit (Van Dijck, 2013: 202). Corporate control over technological algorithms which direct the content users are exposed to, as well as communication patterns are also applied to ICTs where users themselves become the products (Beer, 2009, 2017; Lupton, 2016). While we did not ask questions directly about this theme, reference to the affordances of technology figured prominently in our discussions, undergirding the motivation for constant connectivity.

Most of our knowledge of problematic internet use, addiction and its effects comes from survey-based research, leaving a gap in knowledge regarding how teens themselves interpret and respond to the charge of their online addictions and anxieties (though see Authors, 2019; Bailey and Steeves, 2015; boyd, 2014; Livingstone and Sefton-Green, 2016). There is a need to further contextualize the seemingly inconsistent findings highlighted above; not to demonstrate that one is 'more correct' than the other, but to help shed light on the perspectives of teens and their lived experiences which may help better contextualize instances where social media connectivity may be beneficial and where it may be detrimental. To this end, we use the voices of youth to reveal the extent to which teens have come to embrace the label of addiction; how some teens *self-impose pressure* to 'keep in the loop' online, and how technological affordances mediate how users are able to communicate and may be a driving factor influencing FOMO and constant connectivity. Our objective is to investigate the attitudes and experiences of youth online, here underscoring what is addictive and potentially detrimental regarding SNS and ICTs, and how these – more often than not – act to amplify anxieties.

METHOD

The interviews highlighted here are part of a broader study of how teens use ICTs, especially social media, and their perceptions of both 'pros' and 'cons' of ICTs, including parental and educational responses to online aggression and other problems such as cyberbullying and sexting (e.g., beyond our scope here, teens often discussed parental and educator practices in relation to technological regulation (see authors, 2019a)). We conducted 35 focus groups with youth between the ages of 13 and 19, average age of 15 years old. A total of 115 respondents participated in focus groups; each group was composed of two to five participants, with an average of 3.3 youth in each group. We aimed for focus groups of between 4 to 6 teens when feasible, with discussions lasting between 30 to 120 minutes. In comparison to the plethora of quantitative studies through which researchers examine online risk among youth, focus groups are much less common (Allen, 2012; Lenhart, 2009; Vandebosch and Cleemput, 2008). Focus groups fostered a communicative, offline group environment where young people could actively reflect on their use of technology as well as societal responses to technology.

We used a purposive snowball sampling design, where, after making initial contact with school principals at diverse junior and high schools, we worked with our contacts to network to meet more potential participants and to plan for focus groups with students. Some focus groups were also conducted with university undergraduate students. Group discussions were conducted by both authors, and select trained graduate level research assistants. The focus groups were conducted in both an urban area of western Canada and in a rural Atlantic province in Canada. In each province, school boards provided permissions and approval and ethical approval was awarded through both authors' institutional ethics review boards. In our article, we refer to data

from focus groups conducted in the western, urban location as that of Cyber City, and data from the rural, Atlantic location as Cyberville. We refer to data as such to protect the anonymity of respondents; specifically collapsing the data from multiple locations (i.e., multiple rural regions versus multiple urban areas) into two pseudo-regions confirms participants are anonymous during thematic analyses. In Cyberville 20 focus groups were conducted while 15 were conducted in Cyber City. The focus groups consisted of 67 self-identifying females and 48 self-identifying males. Participants largely self-identified as white in ethnicity. Though we did not ask about sexual orientation, some participants voluntarily disclosed being either lesbian or gay. Efforts were made to ensure that focus groups were conducted with youth who were all in the same grade (or same age) and who self-identified as the same gender. Stratification was intended to have teens interact with other teens with whom they would feel more at ease or have similar experiences, rather than those they may interpret as threatening (Morgan, 1997).

Focus group data was transcribed verbatim, then an inductive, comparative approach to analyzing the data was employed (Strauss and Corbin, 1990). The analysis of the interactions of respondents, as they talked about their experiences of being online, generated emergent theories and concepts. Importing each transcript into NVivo, a qualitative analysis software, we coded each emergent theme or topic (i.e., a "node") within each transcript. Such coding practices provide a means to compare emergent themes across focus groups and to identify centralized prominent emergent themes (Morgan, 1997). To ensure consistency, reliability, and validity in coding as well as consensus around thematic development, the investigative team met regularly to discuss the data, key themes, and topics (Twinn, 1998).

RESULTS

Addiction related to being online quickly became a salient theme during our group discussions with teens, with 22 groups making 82 references to addiction. References were often in response to questions about their own views of addiction to technology, or to questions about what overall concerns they held about technology and going online. In addition, references were evenly distributed across participants of diverse ages, suggesting that addiction is a salient issue for both younger and older teens. As a theme addiction emerged during conversations organically, most often when discussing experiences with social media. Respondents were asked about their views of teens' online actions in general, their putative addictive behaviours with smart phones, and if they agreed with popular assessments that youth are 'hooked' excessively to their technologies. Most references of addiction, though, were from female groups (55) with only 5 references made by male groups. Coed groups made 22 references. Despite slightly more focus groups held in Atlantic Canada, it is also notable that the vast majority of references came from participants in Cyber City (66 as opposed to 16 from those in Cyberville).

Embracing Addiction

Teens, in both Cyberville and Cyber City, were rather eager to discuss their 'addiction' to technology. They often presented as embracing the label of online addiction and readily agreeing that smartphones and other internet-connected devices are addictive. "My phone's never not in my hand; I sleep with it in my hand!" admits Mia, 17 from Cyber City. From a different group, Denise and Anna, 18-year-old undergraduate students, admit to using "Snapchat all day every day" (Denise); Anna discloses using Snapchat and Facebook most frequently, admitting she checks these sites "seriously like every two or three hours, when I'm awake." When asked what

social media platforms they use (most frequently Instagram, Snapchat and to a lesser, engaged

extent, Facebook), our participants made remarks that suggested they embrace their addiction. "I

have an unhealthy addiction to Instagram," offers Kathy, age 13 from Cyber City. She

elaborates:

> I am on that so much, and I don't …really do anything negative, and I'll stalk my friends, a
>
> lot …in a good way, but sometimes I'll come across an account and there'll be a fight
>
> going on, and I don't join into the fight, but I read it because it's interesting.

Kathy alludes to the voyeuristic draw of drama online (Calvert, 2000). Asked what particularly

makes Instagram so addictive, she responds "I don't know it's like, people can post what they're

doing on their story so you can watch it and …what the people are doing throughout their day,

it's kind of cool!"

When asked if they still use Facebook (a general question about social media rather than one

specifically about social media addiction), a group of three undergraduate students all admitted

to doing so, though Christine responds "I'm addicted to social media. …I cannot go a day

without checking, or even an hour, I feel I always have to check, even if it's nothing important,

it's just, it's a bad addiction." In a different group Jasmine, age 13 from Cyber City, described

herself as "pretty addicted to my phone." Asked why, she explains "'cuz I talk to a lot of people,

well …some people, about stuff." Sixteen-year-old Janelle adds "honestly [I'm] on mine cuz I'm

always kind of bored, I'm like 'ok, whatever, let's see what's happening' and sometimes I'll get

all these messages and I'm doing something so I have to stop and message them all back, like

'ok, I'm doing this and that.'" Similarly, Cassidy, age 17 from Cyber City, admits to getting

"anxious if she cannot "check social media" or "talk to people" and get "updates" from her

peers, "just to check to make sure nothing's happening." Others in Cassidy's group agree, referring to checking if they are being 'tagged' and talked about; clearly evidencing the value youth place on relationships with peers.

Some participants raised physiological factors related to phone addiction, describing phones as, in essence, a more sophisticated fidget spinner. In one coed group of 14- and 15-year-olds, Logan highlighted how having a phone helped with boredom, to which Isabella agreed. Logan responded that if one forgets their phone "you're probably going to panic". Isabella, in agreement with the discussion, adds that many teens "worry about how often they post"; Aiden confirms "same time, same time every day … it's been exactly 24 hours, I need to post." The dialogue between these coed youth demonstrate that it is the mind and body that plays into addiction—a seemingly physiological and psychological response to phones and social media youth describe.

Disclosures of addiction quickly shifted to referencing the often peer-based influences that undergird and propel the need for constant connectivity. After Holly, from a group of 14- and 15-year-old female teens from Cyber City, admits she dislikes to "go anywhere without my phone", Nancy adds that her normal after-school routine includes checking social media: "I come home, first thing I do, I pull out my phone and scroll through all social media before I do anything else." Ashima elaborates on Nancy's remark, explaining: "'cuz, you want to know what's happening, because …it's like watching the news, only it's just kind of there, it's like 'ok, what do I want to know'." Nancy agrees: "it's the news, but for your school or something." The focus

group participants continued, recalling how technology impacts their time spent physically 'hanging out' with peers:

> Nancy: All of us we just went over to our friend's house to hang out and the first hour everybody was just on their phone. ...Scrolling through their phones. I don't think anybody said a word until somebody said we should play a game and then a game was played, but still people were on their phones half of the time.
>
> …
>
> Ashima: Yeah and then it kind of gets frustrating, 'cuz... the whole reason you went there was to socialize.

The experience of having a group of peers spend physically co-present time on their phones was reflected on in both younger and older groups. In a group of three 13-year-old females from Cyberville, Kimberly recalled being with a group of friends after school who, given the draw of their phones, were opposed to doing anything else:

> At school and if you're out with your friends, like 'hey guys do you wanna hang out', 'yeah sure, ok, sure let's hang out'; [I go] over to someone's house to do something and everyone just ends up on their phones.

Kimberly specifies that "it's always talking over instant message or over social media, it's never face-to-face anymore. …like relationships it's all on the phone." Valerie, agrees, observing "like relationships, it's like all in the phone." Kimberly adds that the phone is her "best friend." Probing the group about how relationships are impacted by being online, given that it is no longer, primarily, face-to-face interactions that have the most meaning for teens, the group responded in agreement with Kimberly: "yeah, it's bad when you're face-to-face; it gets a little worse when you're on the internet; there's so many anonymous things where you just go on there

and you post." Julia adds "when someone says something about you, you usually overthink it and you just can't stop, and you're..."; Kimberly continues: "..thinking and thinking and thinking."

Such "overthink[ing]" demonstrated the amplification of anxiety youth experience online (Authors, 2019a), where they are 'checking' social media to stay informed about their (usually school-based) social networks but also are consistently worried about any negative perceptions their peers express about them online. Unlike face-to-face interactions, online interactions leave a digital footprint and are 'out-there' for anyone to witness. Most tellingly, after asking a group if they could live without social media for a full week, Cecilia, age 14 from Cyber City, replied "maybe if everyone did it." Her response suggests that the addiction is not primarily from the technology *but rather* the social connections reinforced online and the associated anxiety around peer perceptions, judgements, and one's reputation within their peer groups; often those at school.

While participants placed an emphasis on social factors driving addictive behaviours online, our discussions also revealed important connections linking FOMO anxieties to technological affordances themselves. For instance, Emily, a 19-year-old undergraduate student in Cyber City, expressed her ability to stay off social media "for as long as possible" and, while she is able to abstain from watching much TV, she admits that YouTube is a particular lure for her. She says:

> I watch YouTube all the time so I am addicted to that, but I can refrain myself because of *the amount of people I subscribe to*, they don't post all the time, so then I can stop watching, and they stop posting, so it's ok. [added emphasis]

Emily's ostensible confidence ("it's ok") in her (rather strained) ability to not watch YouTube is admittedly beyond her own sense of control; it happens when those she follows (i.e., subscribes to) on YouTube are not posting. Implied in her statement is that she would be unable to control her impulse to watch videos on YouTube when she knows users she subscribes to have posted new content. YouTube remains one of the most popular social media platforms among teens in the U.S. (Anderson and Jiang, 2018), and in a recent Canadian survey, 75 percent of teens responded that YouTube is the 'top site' of choice (Steeves, 2014). In another group, during a discussion of general social media use, Lucy discusses the way Snapchat notifications reinforces the draw to check up on it. She says

> for Snapchat, if you get a Snapchat, you'll have a notification …I usually check that if I get a notification, and then with Facebook and Instagram and stuff, if I'm really bored then I'll go and look and see if anybody's posted stuff, 'cuz if someone's posted something it doesn't tell you, so then I'll go on and see if anybody's posted stuff and like their photos and all that stuff.

In a similar manner, another group referred to 'snap streaks' on Snapchat. The 'streak' is a feature where at least two users posting content (i.e., pictures or videos) are rewarded by a 'streak score' which is maintained when at least one user responds within 24 hours. This voluntary action is experienced as addictive among our participants. Emily explains that Snapchat use is about maintaining "streaks" (e.g., two persons 'snapping' back and forth daily) as a way of gaging popularity. While some in the group dismissed the Snapchat streak feature as silly, like Eleanor who said "it means nothing …I don't know why we do them", the addictive quality is borne of the affordances of Snapchat itself, including the visual features of the streak (e.g., the fire emoji) and its wider mediation on a smart phone with its accompanying push

notifications. Reid, also 19, agrees with other group members about the addictive quality of the snap streak feature of Snapchat, adding "I think it's about popularity. It seems like a popularity contest on Snapchat; people have to make their stories all the time." In a different group, Serena, age 19 from Cyber City, also feels reticence using the snap streak feature, but feels compelled nevertheless: "you're like obligated to reply to people because you don't want to lose your streak, it's *so annoying but you just do it anyways just to keep up with it*" [added emphasis].

As these respondents' words reveal, they live at the intersection of technological affordances and social pressures – often self-imposed – regarding FOMO and broader anxieties germane to adolescence. As such, being 'seen' using Snapchat is often enough to signal one's popularity. Beyond maintaining streaks, teens also use social media to create a 'highlight reel' of all their most engaging experiences—the front stage projection of their life, often symbolizing prosperity, happiness and excitement, which may not necessarily reflect one's everyday life, thoughts and emotions (Goffman, 1963; 1978). As such, there may be some solace in the findings of Lenhart et al., (2015) who found that only a relative minority of teens in their study, 21 percent, reported "feeling worse about their own life because of what they see from other friends on social media" (p. 7). Still, while not a central theme in our discussions, the impact of social media affordances upon teens' engagement online, including their FOMO and related anxieties, is apparent.

More broadly, our discussions revealed a general embracing by teens of the idea of their addiction to ICTs alongside a subtle criticism of the significance of communication defaulting online – even when applied to one's own behaviors. This suggests teens may be more reflexive in their attitudes towards ICTs than popular conceptions that draw more on stereotypical visions

of teens unable to control their impulses. Despite their reflexive criticisms, teens also appear to feel a lack of agency in extricating themselves from social contexts which provide as many, if not more positive benefits then negative ones. Teens are much more aware of, and actively critical of, the role technology plays, not just for themselves, but as we examine next, also their parents and other young people, especially younger siblings.

Teens Reflect on 'Kids Today'

Many of our participants, especially the older teens, grew up often receiving their first phone at a relatively later age; phones that would be considered 'retro' by today's standards (i.e., 'flip' phones and other pre-smartphone devices). Some groups compared their own experiences growing up to their perception of younger children today, including witnessing their parents' practices with younger siblings and other relatives' children. One group of three female teens, ages 16 and 17 from Cyber City, recalled a childhood where they were not voluntarily confined to indoor spaces and addicted to devices. Mya recalls receiving her first 'flip' phone at age 13,

> and I was fine with it, I still made plans with friends, I still did a lot of stuff, and I was better for it because, since I didn't have electronics as kid, kind of forced to me do something with my life …I'd go outside more because I'm not sitting on my phone.

Helen replies: "and kids don't really do that now, oh it's snowing outside, ok I'm going to watch this", to which Lucy adds: "it's like 'oh I'm going to stay inside 'cuz its cold'". In another group of four female teens, age 15 from Cyber City, Amber reflects on her younger brother getting

> really unhappy when he doesn't have his computer, or iPad, and our punishment for him is that we tell him, we're going to take the iPad for a week, and he gets really unhappy, throws tantrums and fits, but …I don't think that the younger kids, younger generation

should be so dependent on it, because technology can really affect people in a lot of

different ways…

Amber's use of "our" in describing her brother's punishment suggests a strong affinity with her parents and embracing a quasi-parental role as an older sister herself. Denise, an 18-year-old undergraduate student, during a discussion over how younger siblings are receiving much more sophisticated smartphones than the participants themselves, revealed that her 11-year-old brother recently "got a PS4 [video game console], a better Samsung [phone] than I have, and a TV in his room, it's like 'oh my god!'" In another group from Cyberville Greta, relatively young herself at age 13, remarked that her younger "sister, she's only 3 and she takes my brother's tablet and goes at the end of the hallway and watch[es] random movies, like she pushes the home [button], goes to Netflix, like…". In the same group Irene responds "it's scary though, two-year-olds are getting phones now… it's not right." Others in the group agree. "It's too addicting," continues Irene, "you can't stop, like people are on it late at night, and then it makes your brain more active so you can't go to sleep and people come to school like zombies; who knows, [like] me yesterday." Greta: "Me last week!" Amelie: "Like me right now!" Another example of older siblings situating themselves as less addicted than younger siblings is Serena, a 19-year-old undergraduate student from Cyber City, who reflected on her younger 12-year-old sister, whom she characterizes as "obsessed with social media". She most frequently uses an iPad or her mother's smartphone to go on "Snapchat all day." Serena laments:

…and I'm like 'bro, I don't even use this as much as you're using this'. It's crazy, at that

age most kids are playing outside, going to the park, but for her; 'let me Snapchat this

park', 'let me post this park', 'oh I went to the park today', but I'm like 'you're literally

going to the park to take a photo of it, you're not even going to the park to play at the

park'! That's what it's come to for her at least.

Serena's criticism of her younger sister's 'addiction' to social media is based on her view that

she is unable to enjoy being in a physical place, like a park, without needing to document the

experience through social media and, presumably, share it with her peers. Despite being

relatively young, these teens still feel more mature and critical regarding younger teens and

children receiving technology too early. Notably, Rideout and Robb (2018) also found that

despite largely positive or neutral views of social media, teens felt social media overall was

detrimental for *other* young people. 68 percent of their sampled teens, irrespective of whether or

not they are active on social media, agreed that "social media has a negative impact on many

people my age" (Rideout and Robb, 2018: 15). These findings suggest that more nuanced

treatments of the 'digital divide' and generational gaps regarding technology adoption and use

are needed. However another related theme which emerged during these discussions – teens'

reflections on their parents' own (mis)use of ICTs, revealed in surprising ways habits in the

wider context of participants' families at large (cf. Livingstone, 2009)

Teens Reflect on Their Own Parents' Addiction to Technology

Some of the older teens in our study not only expressed criticism of younger teens and children,

they also openly criticized their own parents for their technological habits. Groups were critical

of parents who enabled addiction to technology by relying on devices to help in parenting tasks.

For instance, one group of four 15-year-old females from Cyber City warned parents about

relying on technology to keep their children distracted and calm. Amber says:

When I'm out, and I always see parents, they try to calm their children down by just giving them their phone, or giving them an iPad … in my opinion I don't feel like that's a good way of parenting 'cuz you're essentially spoiling their kid and you're not allowing them to develop. You're letting them be dependent on an electronic device, and they throw fits and stuff if they don't have that certain device, that's very disastrous.

Fatima responds with a measure of sympathy for such parents: "there's a lot of convenience for parents to do that." Amber agrees but offers a qualification: "yeah, it's fine if you do it once in a while, but every time your kid cries, you just [give] them an iPad just to make them calm down, I think that's too much."

Some participants also expressed concern over *parental addiction*, especially given the potential of parents modeling addictive behaviours to younger children. Mya, for instance, recalls seeing her mother "texting her friend" and desiring the convenience of a cell phone: "that was the main reason I wanted it as a kid." Participants were also critical of their parents' own seeming addictions to technology. Lexi, age 15 from Cyber City, spoke of her father, who "would go over data every single month." She recalls:

My dad went through a phase where he used Facebook so much that we had to limit him. He went over his data …we made sure he wasn't on in any restaurants, because he was on it so much right, and it wasn't even to talk to people, he usually was just watching Korean videos or whatever, but like when we were all eating he'd still be on it.

Kimberly expressed a similar story: "My mom locks herself in her room on her phone, I'm just like 'ok, I'll make cake!'" In the former excerpt, Lexi makes it clear that her father's time on Facebook is taking away time with the family; in the latter excerpt, Kimberly appears resentful

of her mother who "locks herself in her room" for spending time on social media and not with the family. Such findings are consistent with those of Rideout and Robb (2018) who found that 33 percent of their surveyed sample expressed a desire that "their parents spend less time on their devices," a finding "up from 21 percent" in a comparable survey conducted in 2012 (2018: 15). Like in the U.S., addiction appears to be a family experience in Canada as Sidney, a 14-year-old private school student living in Cyber City explains when reflecting on the fact that technological addiction applies to her whole family, not just herself and her siblings:

> yeah, it's not only me, [it's] the whole family; they all have those problems I guess, me and my sister with TV shows, my dad with like online stuff like politics, my mom with Facebook and texting, my mom also texting her family; it's all the family, we all like technology like that …so you know, it's not only me, *it can't only be the teen that's affected*. [added emphasis]

We may add, of course, that teens *are* affected (and in complex ways), but not just from their peers; parents play a role in modeling behaviour in relation to use of ICTs. The teens in our sample reflecting on their parents and younger siblings are most frequently not those close to entering adulthood – they are in their mid-teens, about 14 to 16. Even our younger 13-year-old participants, however, sometimes compared themselves with very young toddler siblings; a comparison that no doubt helped set them apart in terms of their maturity and experience in relation to technology.

DISCUSSION

dana boyd, drawing from many years of experience researching young people and their views and practices in relation to technology, suggests an alternative way to make sense of teen

'obsession' with their devices: that of 'flow', or colloquially, being 'in the zone'; i.e., "the state of complete and utter absorption" (boyd, 2014: 80). Such insight is necessary for understanding and shaping appropriate responses to the problem of 'online addiction' among youth. Being in the 'zone' can be a productive space; an opportunity for socialization, social connection and building a sense of identity which are all elements of adolescence. We also agree with boyd's (2014) observation that it is not the technologies *per se* that teens are 'obsessed' with, but the social connections – often with offline, school-based peers – that are enabled through networked publics (Authors, 2019a). Teens' SNS preferences often reflect what offline peers are using themselves (Valkenburg and Peter, 2007; Valkenburg, Peter, and Schouten, 2006). boyd's observations and arguments give perspective to how teen behaviors online help offset media-propelled moral panics, often ignited by the intersections of (impenetrable) technology, young people, and sexuality (e.g., in the case of moral panics over heterosexual female teen sexting (Cassell and Cramer, 2008; Marker, 2011)). These are presumably panics felt by adults, or 'digital immigrants' (Prensky, 2001) whose fears of unknown technologies, coupled with longstanding fears of teens and teen impulsivity, lead to calls for solutions such as depriving teens from technology altogether, or justifying the use of 'spyware' and other surveillance technologies under the auspices of protection and 'tough love' (Authors, 2019a)(Fisk, 2016; Steeves, 2010).

While we acknowledge boyd's concerns regarding societal responses and exaggerated discourses of teens and cyber-risk, our findings also suggest that teens are embroiled with technologies to the extent that many self-consciously embrace the label of addiction, and moreover, feel a debased sense of control over how they are able to use technologies in a positive and productive

sense. Our discussions illuminate teens' active reflection and actions related to their understandings of the risks, and draws, of these technologies. Teens in our sample reflexively considered the ways affordances of technologies create both enticements to participate (e.g., the 'snap streak' feature of Snapchat) and simultaneously increased risks associated with the FOMO. Some research findings indicate older teens experience, on average, less FOMO in relation to their SNS activities (Perrone, 2016). Such a finding accords with the generally accepted view of 'aging out' of cyber-risk as teens mature (Authors, 2019). Our findings suggest that, perhaps related to the rapidly evolving technologies themselves, younger teens present themselves as increasingly critical when compared with their elders (especially parents) as 'digital immigrants' who are *themselves* as much, if not more addicted to technologies as they are. Distinctions were also underscored through comparisons with younger 'more addicted' siblings. We think it likely that young people around their mid-teenage years are able to draw such distinctions given not only parenting patterns in accord with birth order (i.e., parents' greater leniency towards technological governance of a second or third child (Nikken and Schols, 2015)), but the vast gap between the technologies they had access to only a few years before in comparison with their siblings (i.e., 'flip' phones versus smartphones).

While we had a few more focus groups with females, reference to technological addiction were made overwhelmingly within female groups. Also, while slightly more groups were held in Cyberville, many more references to addiction were made in Cyber City. An emerging area of research addresses differences in SNS use among young people between urban and rural areas. One study reports that Canadian teens in rural areas have less access to high speed internet connections, but home internet access is increasing in both rural and urban regions (Burkell and

Saginur, 2015). Moreover, location of residence does not predict specific SNS usage (Burkell and Saginur, 2015). Our own focus groups also revealed concerns teens in Cyberville have regarding a lack of data access (e.g., 3G or 4G networks) in rural areas (see Authors, 2019a). The concentration of references to addiction may be simply explained by this issue of access – required for use of the most popular sites such as YouTube, Snapchat and Instagram – which is on average higher in urban areas. It may also be that messages of cyber-safety and responsibility online, often targeting female teens more than male teens (especially in relation to digital sexual expression), are creating a context where male teens are not identifying themselves as readily as being addicted to technologies (see Authors, 2019). We did find most male teens expressing a preference for video games over other SNS, but when asked video games were not frequently cited as a large concern regarding technological addiction. As we have argued elsewhere (Authors, 2019c), gendered discourses of risk may be obfuscating, for male teens, a recognition of online activities that may be causing emotional, behavioral harm and negatively affecting their mental health (Ybarra and Mitchell, 2004).

It is important here to highlight that *perceived digital overuse*, which captures individual's *subjective wellbeing* regarding their over-reliance on ICTs, has also recently been found among various adult populations, suggesting that a characterization of 'digital addiction' salient among the current 'iGen' is insufficient (Büchi, Festic, and Latzer, 2019; Livingstone, 2017). A survey of over 2000 internet users over 16 years old and surveyed in the UK found: 15 percent agreed with being "completely hooked" and 23 percent with being "very hooked" on the device most likely used to go online; 34 percent agreed with it being "difficult to disconnect from the internet" (Ofcom, 2016). Notably, in this survey emerging adults 16-24 more frequently agreed

to spending too much time online (59 percent) than younger teens (37 percent). These findings suggest that 'youth addiction' to ICTs must be considered in the wider context of shifts in technological access and use among adults, without the emphasis on the current generation of teens being uniquely and solely affected by wider societal shifts. Consideration of the nuances between children, younger and older teens are crucial to explicate and would further problematize any sweeping aspersions on 'kids today', that often provide fuel for moral panics and wider campaigns of moral regulation.

Further research is required in a number of interrelated areas. As noted, we do not yet know enough about urban and rural differences regarding teens and technology. In addition, greater *theoretical* attention needs to be given to the *affordances of ICTs* to help understand how digital technologies mediate, and control, communications. Advice directed to teens to 'just turn off your phone' or efforts to subdue the effects of the FOMO are greatly hindered by various affordances linked to technology, which some argue forces users to adjust and 'reduce' themselves to fit the online mediums they communicate through (Lanier, 2010). We acknowledge that people are often active in how they use technology, appropriating or even subverting the uses intended by the people and organizations who develop the software (boyd, 2008). Surveillance scholars remain at the forefront of studies demonstrating how young people actively resist technological governance (e.g., Hope, 2010). Recognizing this, theoretical priority on ICTs which act to commodify dissent and agentic, idiosyncratic use, are needed to help identity appropriate societal responses to issues such as technological addiction.

We have been careful in this paper not to argue that 'internet addiction' is solely a moral panic; nor to argue that teens are mindlessly, and mostly harmfully, adjusting to the onslaught of new technologies marketed directly to them (cf. Steeves, 2006). Recognizing teens have come to embrace the label of addiction, often with a hint of humor, but also without much careful reflection on potential negative effects, we present data that suggests acute awareness of the negative lure of technology, admission of excessive use at times, and a reflexive resistance. This resistance is, perhaps ironically, propelled by rapid advances in these technologies themselves. We are critical of any binary, polarized treatment of technology as either wholly positive or negative, but also wish to draw attention to the wider societal convergence of communications on ICTs which affects teens and adults alike.

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