

**FCSSBC October 17, 2018**

## **Technology and Mental Wellness**

**A Tech Talk (in three acts)**

**By Merlyn Horton**

### **Technology and Mental Wellness**

- Act 1 - The Pros 11:00am - 11:20am
- **Act 2 - The Cons 2:00pm - 2:30pm**
- Act 3 - The Future 4:00pm - 4:30pm

### **Act 2 - The Cons**

- Issues created by Technology
- **Cons of Mental Health Apps**



### **Digital Addiction by Design**



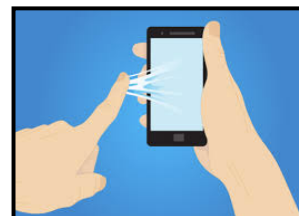
## No longer an attention economy, but an addiction economy.

- Marketing, research and information companies want our eyes and our time devoted to what they create



## Apps are designed by experts

- People designing games include behavioural psychologists and neuroscientists
- Focus on manipulating behaviour not therapeutic or social good



## “Stickiness” of digital apps and games

- Zuckerberg - 2002 “How do we consume as much of your time and conscious attention as possible?”



## “Stickiness” of digital apps and games

- Software engineers then layer each new pop-up, message or notification with positive reinforcement
- Also called ‘clickbait’ or ‘juice’ - something ‘novel’
- Our reptilian brains are wired so we HAVE to look!
- Then a quick reward! A ‘Like’, sexual image, buy a new thing, get gossip or funny video
- Dopamine is released, reward centres of the brain light up.



## Susceptible Brains



- Rewards delivered at carefully chosen intervals encouraging engagement

## Tristan Harris at TED 2017

How a handful of tech companies control billions of minds every day



Tristan Harris [Follow](#)

Co-founder, Center for Humane Technology // Ex-Google Design Ethicist // CEO of Apture (acquired by Google) // Philosopher // Entrepreneur // Friend // Human.  
May 18, 2016 · 16 min read

### How Technology is Hijacking Your Mind— from a Magician and Google Design Ethicist

- Tristan Harris, three years as a Design Ethicist at Google, now primary at HumanTech
- product designers play your psychological vulnerabilities (consciously and unconsciously) against you in the race to grab your attention

### Hijack #2: Put a Slot Machine In a Billion Pockets

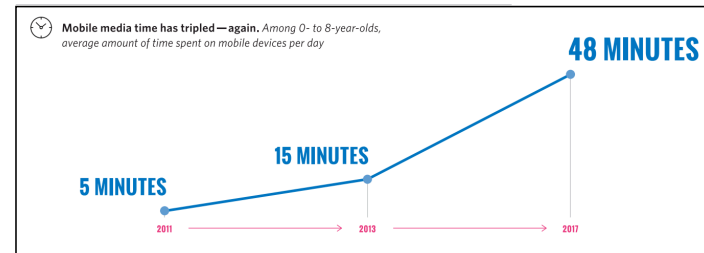
- The average person checks their phone 150 times a day. Why do we do this? Are we making 150 conscious choices?
- intermittent variable rewards.
- Addictiveness is maximized when the rate of reward is most variable.

## Hijack #2: Put a Slot Machine In a Billion Pockets

- But here's the unfortunate truth—several billion people have a slot machine their pocket:
- When we pull our phone out of our pocket, we're playing a slot machine to see what notifications we got.
- When we pull to refresh our email, to see what new email we got.
- When we swipe down our finger to scroll the Instagram feed, to see what photo comes next.
- When we swipe faces left/right on dating apps like Tinder, to see if we got a match.
- When we tap the # of notifications, to what's underneath.

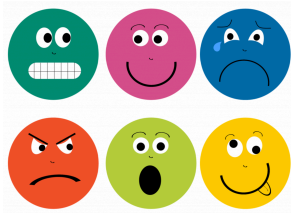
## 0-8 year olds average amount of time on mobile devices per day

### EVOLUTION OF MEDIA USE BY KIDS AGE 8 AND UNDER 2011-2017



## Social-emotional Development

- Socio-emotional development is the development of a child's experience, expression, management of emotions, and ability to create relationships.



## Social-emotional development

- “There are over two hundred peer reviewed studies that correlate excessive screen usage to everything from ADD/ADHD effects, anxiety, depression and even psychotic like symptoms,”
- Other problems include trouble building social skills, problem solving and mood swings





## Screen Dependency Disorder Is Real, And It Damages Your Child's Brain

- A new study shows that young children got **less sleep** and were **less focussed** if they spent an excessive time with smart devices.
- The study has shown that for **every quarter of an hour the child uses a smart device, they lose an hour of sleep.** Definitely, not good returns on investment.”



## Focus and Concentration

- Continuous partial attention is not effective for learning or for life
- Diffused focus means shallow focus
- Analogue time cultivates concentration skills and brain development



## The ‘deconstruction’ of ‘truth’

**Facebook's Canadian 'fake news' fact-checker says up to 2,000 posts are flagged daily**



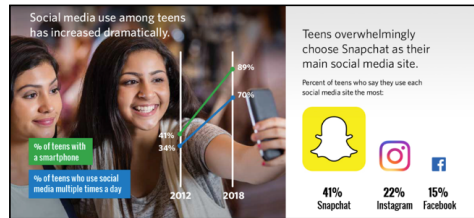
Political news, medical information, clickbait most often up for debunking, says AFP's Louis Baudoin-Laarman

CBC News - Posted: Oct 10, 2018 2:16 PM ET | Last Updated: October 10

## Snakes Have Legs

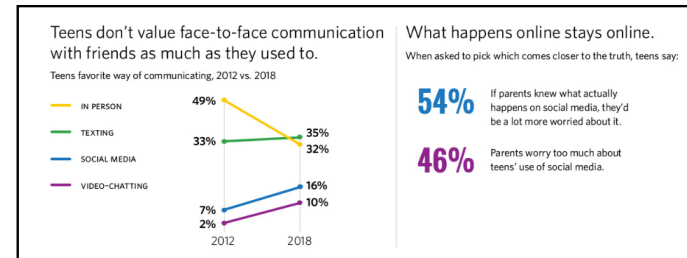


## Social Media, Social Life: Teens Reveal Their Experiences (2018)



- Teens with smart phones 41% (2012) vs 89% (2018)
- Teens who use social media multiple times per day 34% (2012) vs 70% (2018)

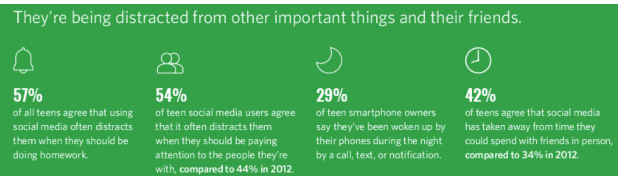
## Increased Communicating Online



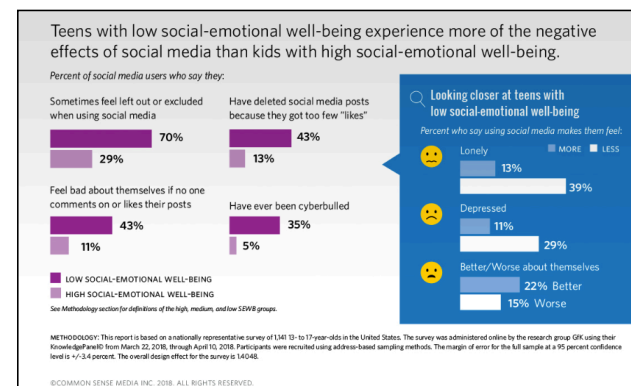
- In person communicating 49% (2012) vs 32% (2018)
- Social media use 7% (2012) vs 16% (2018)
- Video chatting use 2% (2012) vs 10% (2018)

## Media Interruptions

- 57% agree social media interrupts homework
- 54% agree social media interrupts f-2-f time (42% in 2012)
- 29% of teen smartphone users woken up at night by call, text or notification
- 42% agree social media reduces f-2-f time (34% in 2012)



## Struggling Teens....

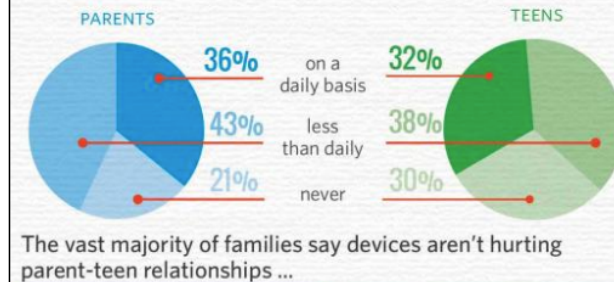


## CSM - Social Media, Social Life; SOCIAL MEDIA AND MENTAL HEALTH: RISKS AND REWARDS

- When we look at how social media behaviors correlate to mental health symptoms, we see that more time spent using social media is tied to an increase in mental health symptoms.
- Eighth-graders who spend 10 or more hours a week on social media are 56% more likely to report being unhappy than those who spend less time.
- We also see that higher emotional investment in social media is strongly correlated with higher levels of anxiety.
- It remains unclear whether social media is causing negative outcomes or whether children with mental health issues are turning to social media to soothe their symptoms.
- It is troubling that youth at the highest risk are the ones who care the most about social networking and online communities. These are the children who can be the most negatively affected by cyberbullying and who can become distraught over the expectations built into curating their online selves.
- But they are also the kids who benefit from finding communities to embrace them, from being able to interact freely and practice social skills in a safe space online.



Teens and parents say they argue about device use:



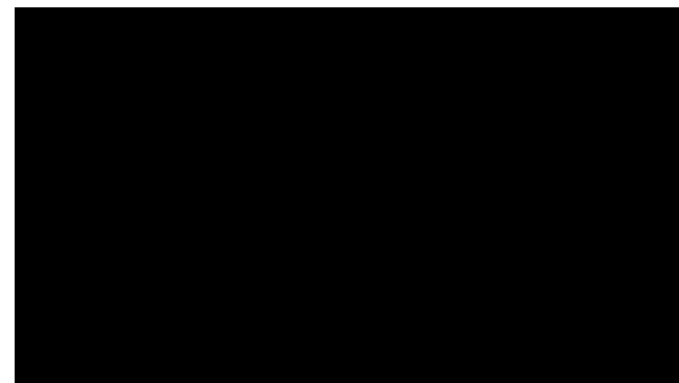
- Technology Addiction; concern, controversy, and finding balance; Common Sense Media, MAY 2016

## Gaming Disorder - WHO

- Gaming addiction classified as disorder by WHO - BBC News



## WHO - Gaming Disorder



1:21 mins

## Is Gaming Taking Over Your Life?

Take a short quiz and find out.

I'M A GAMER

I'M A PARENT

- Game Quitters is the largest support community for video game addiction. If you're ready to quit playing video games, you're in the right place. Join today!

a. Does the individual spend a lot of time thinking about games even when they are not playing, or planning when they can play next? \*

Internet gaming becomes the dominant activity in daily life.

☒ Yes

☐ No

0% completed

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## Video Game Addiction Quiz for Parents

Are you concerned about your son or daughter's gaming?

Take our short quiz below (nine questions) to learn if they meet criteria for addiction:

### Real Stories

Excessive Gaming Caused Panic Attacks. I Quit 111 Days Ago.

From Gaming Addict to Front-End Developer Traveling the World

Addicted to Gaming: I'm 30 Years Old and Still Living with My Parents.

SEE MORE INSPIRING STORIES >

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## Great Porn Experiment - Gary Wilson



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4:08 mins

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## A Heartbreaking Look Inside A UK Porn Recovery Center With Patients Younger Than 10

JULY 27, 2018

- The fact is, a struggle with porn can affect anyone of any age. According to one expert, porn addiction is even affecting children as young as eight.

**An escalating and isolating habit**

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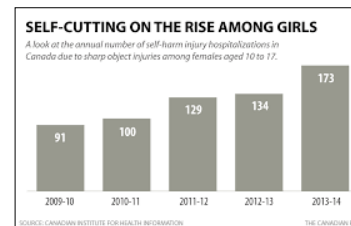
## Hooked On Male Enhancement Drugs & Porn At 13: Meet Britain's Youngest Viagra Addict

JUNE 12, 2015

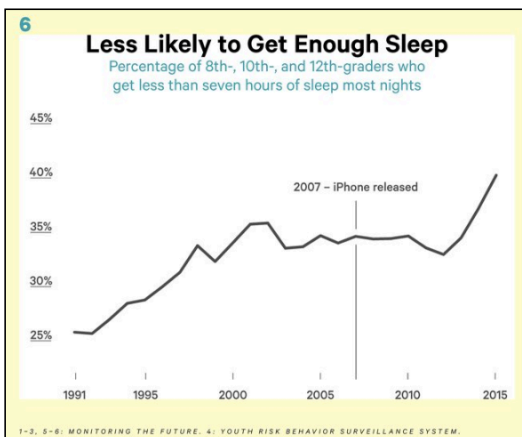
- The teen only admitted to his problem when he found out he could not get aroused without Viagra, after stealing hundreds of dollars from his parents to fund his prescriptions. In the interview, he said:
- "I feel I have no childhood now. It is ruined... Most people think Viagra's for middle-aged men, but you can easily get it in schools now. Parents and kids really need to know what's going on. I wish I had never tried it."

## Cognitive Displacement

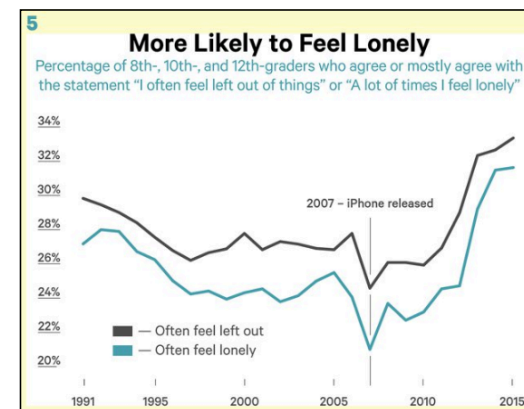
- Smartphones displaces developing IRL skills like driving, working, and experimenting with social groups
- Self harming behaviours, like cutting have increased.



## Increasing Teen Concerns



## Increasing Teen Concerns



## Excessive screen time linked to suicide risk

Date: November 30, 2017

Source: Florida State University

Summary: Excessive time on electronic devices is linked to a higher risk of depression and suicide among teenagers, especially girls, new research has found.

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- Screen time should be considered a modern-day risk factor for depression and suicide.
- "There is a concerning relationship between excessive screen time and risk for death by suicide, depression, suicidal ideation and suicidal attempts,"
- Depression and suicide rates for teens between the ages of 13 and 18 increased dramatically since 2010, especially among girls, according to the U.S. Centers for Disease Control and Prevention.
- The study identifies excessive use of electronic devices as a likely culprit.

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## Digital Self Harm

- Def: Digital self-harm is a form of self-aggression that involves anonymously posting hurtful and sometimes verbally abusive remarks about one's self online.
- Some of the online platforms used include forums as well as social media websites. By creating entirely separate personas online, **teenagers are able to then post on their self-identified account different types of hate-filled comments targeted at themselves from themselves.**
- About 6% of students have anonymously posted something online about themselves that was mean. **Males were significantly more likely to report participation (7.1% compared to 5.3%).**



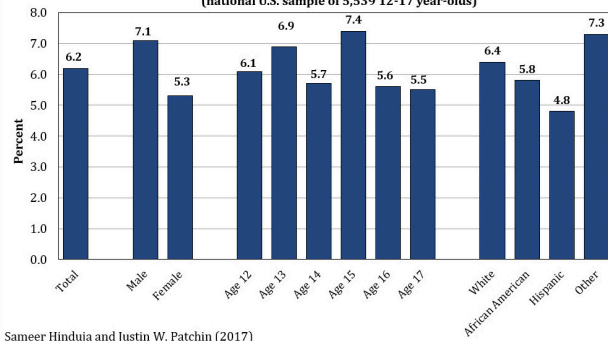
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## Digital Self Harm

Cyberbullying Research Center  
www.cyberbullying.org

**Digital Self-Harm Among  
Middle and High School Students**  
(national U.S. sample of 5,539 12-17 year-olds)



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## Cons of Mental Health Apps

- Effectiveness?
- For whom and for what
- Privacy
- Guidance
- Regulation
- Overselling

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## The Cons of Mental Health Apps

- Effectiveness - Need for scientific evidence

## Current Trends in App Development

- Data Collection - data collection apps can gather data without any help from the user. Receiving information from a large number of individuals at the same time can increase researchers' understanding of mental health and help them develop better interventions.

Technology and the Future of  
Mental Health Treatment



Transforming the understanding  
and treatment of mental illnesses.

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## Research on Mental Health and Technology

Recruiting	<a href="#">Evaluating a Mobile App for Students Seeking Care for Depression and Anxiety at Harvard University Health Services</a>	• Depression, Anxiety
Not yet recruiting	<a href="#">The Efficacy of Using a Smartphone App to Support Shared Decision Making in People With a Diagnosis of Schizophrenia</a>	• Schizophrenia, Schizotypal and Delusional Disorders
Completed	<a href="#">CopeSmart: Using Mobile Technology to Promote Positive Mental Health in Young People</a>	• General Mental Health and Well-Being
Not yet recruiting	<a href="#">MYPLAN - Effectiveness of a Safety Plan App to Manage Crisis of Persons at Risk of Suicide</a>	• Suicide Prevention • Suicidal Thoughts • Suicide Attempts

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## Cons of Mental Health Apps

- For whom?
- And for what? - understanding if apps work for all people and for all mental health conditions.
- Privacy and security - Apps deal with very sensitive personal information so app makers need to be able to guarantee privacy for app users.



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## The Cons of Mental Health Apps

- Guidance - There are no industry-wide standards to help consumers know if an app or other mobile technology is proven effective
- Regulation - The question of who will or should regulate mental health technology and the data it generates needs to be answered



Technology and the Future of  
Mental Health Treatment



Transforming the understanding  
and treatment of mental illnesses.

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## The Cons of Mental Health Apps

- Overselling - There is some concern that if an app or program promises more than it delivers, consumers may turn away from other, more effective therapies



Technology and the Future of  
Mental Health Treatment



Transforming the understanding  
and treatment of mental illnesses.

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## Technology and Mental Wellness

- I'll be back for Act 3
  - The Future
  - 4:00pm - 4:30pm

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