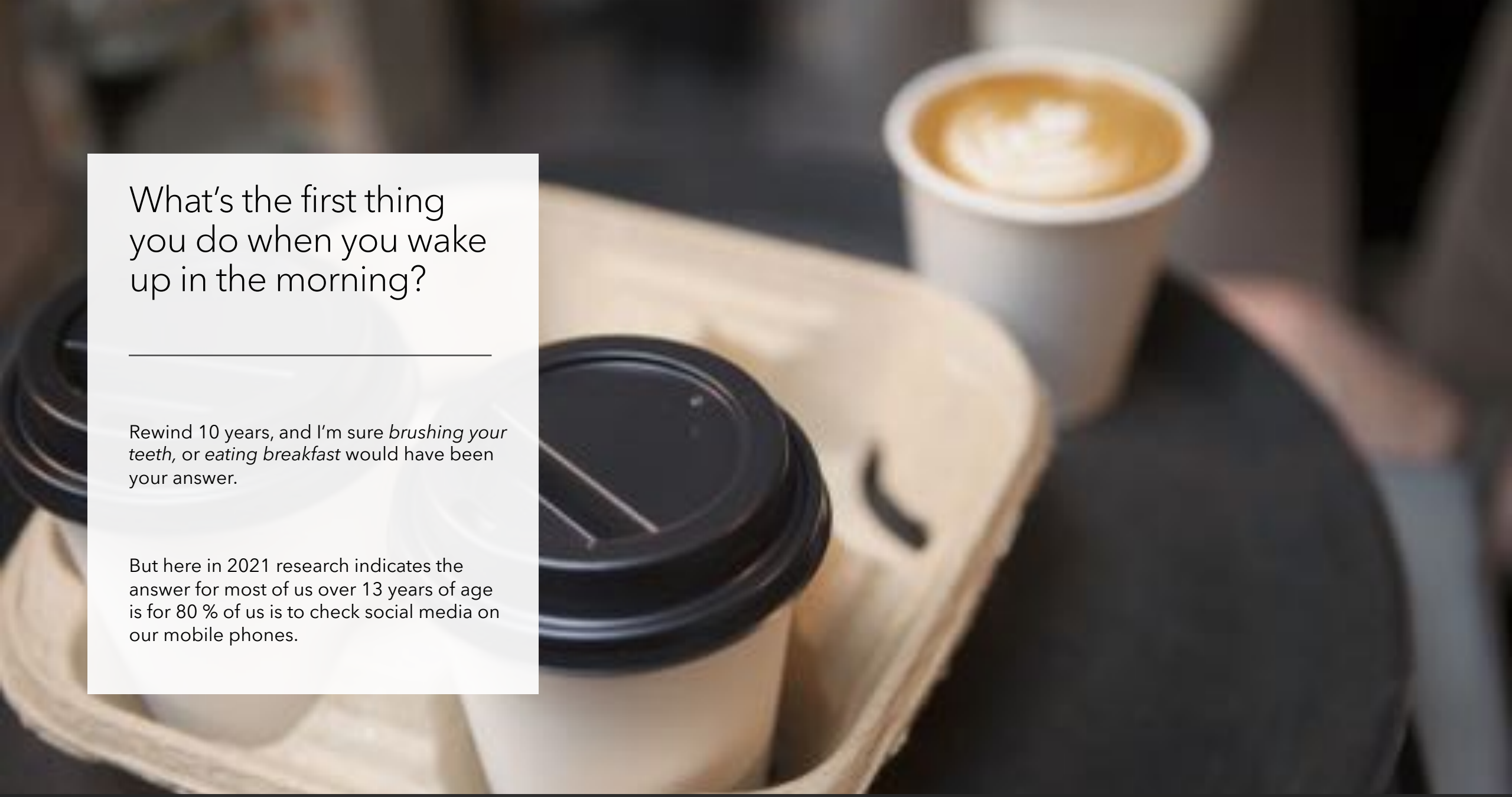
TECHNOLOGY, ADOLESCENT DEVELOPMENT AND SLEEP



What's the first thing you do when you wake up in the morning?

Rewind 10 years, and I'm sure *brushing your teeth,* or *eating breakfast* would have been your answer.

But here in 2021 research indicates the answer for most of us over 13 years of age is for 80 % of us is to check social media on our mobile phones.

CHAT

Connect

5.5 hours

¾ of adolescents report sleeping less than 8 hours per night.

Adolescence

Adolescence is a critical period of biological and social changes characterized by dramatic changes in functioning across multiple domains;

- Cognitive
- Behavioral
- Emotional

As expected, there are also significant changes in the sleep-wake pattern.

Adolescent Vulnerablity for Sleep Deficit.

The “Perfect Storm”, illustrating the detrimental and the cumulative effects of …

- biological,
- psychological, and
- social factors on sleep.

	Age Range	Recommended Hours of Sleep
Newborn	0-3 months old	14-17 hours
Infant	4-11 months old	12-15 hours
Toddler	1-2 years old	11-14 hours
Preschool	3-5 years old	10-13 hours
School-age	6-13 years old	9-11 hours
Teen	14-17 years old	8-10 hours
Young Adult	18-25 years old	7-9 hours
Adult	26-64 years old	7-9 hours
Older Adult	65 or more years old	7-8 hours

Sleep Guidelines

9.5 hours average for optimal health & functioning

The Function of sleep

Refreshing **mind and body.**

Consolidating memory.

Sleep is a highly complex and vital process which is **essential for the biological balance.**

Accordingly, **sleep deprivation** can more lethal than food deprivation.

Why We Sleep Matthew Walker

"Within the space of a mere hundred years, human beings have abandoned their biologically mandated need for adequate sleep—one that evolution spent 3,400,000 years perfecting in service of life-support functions."

What is the impact of this?

3 main areas of daytime functioning are affected by chronic sleep restriction

Mental and physical health

- Increase in body weight /obesity
- Metabolic dysregulation
- Cardiovascular and blood pressures issues
- Somatic issues (headaches, persistent fatigue, abdominal issues)
- Psychiatric disorders such as depression or anxiety
- Elevated rate of suicidal ideation

Cognitive Factors

- Worsening of several neurocognitive functions, such as memory, attention, and executive functions, as a consequence of sleep loss.

- In particular, the major impediment referred to circumstances requiring multi-tasking skills frequently faced by young people.

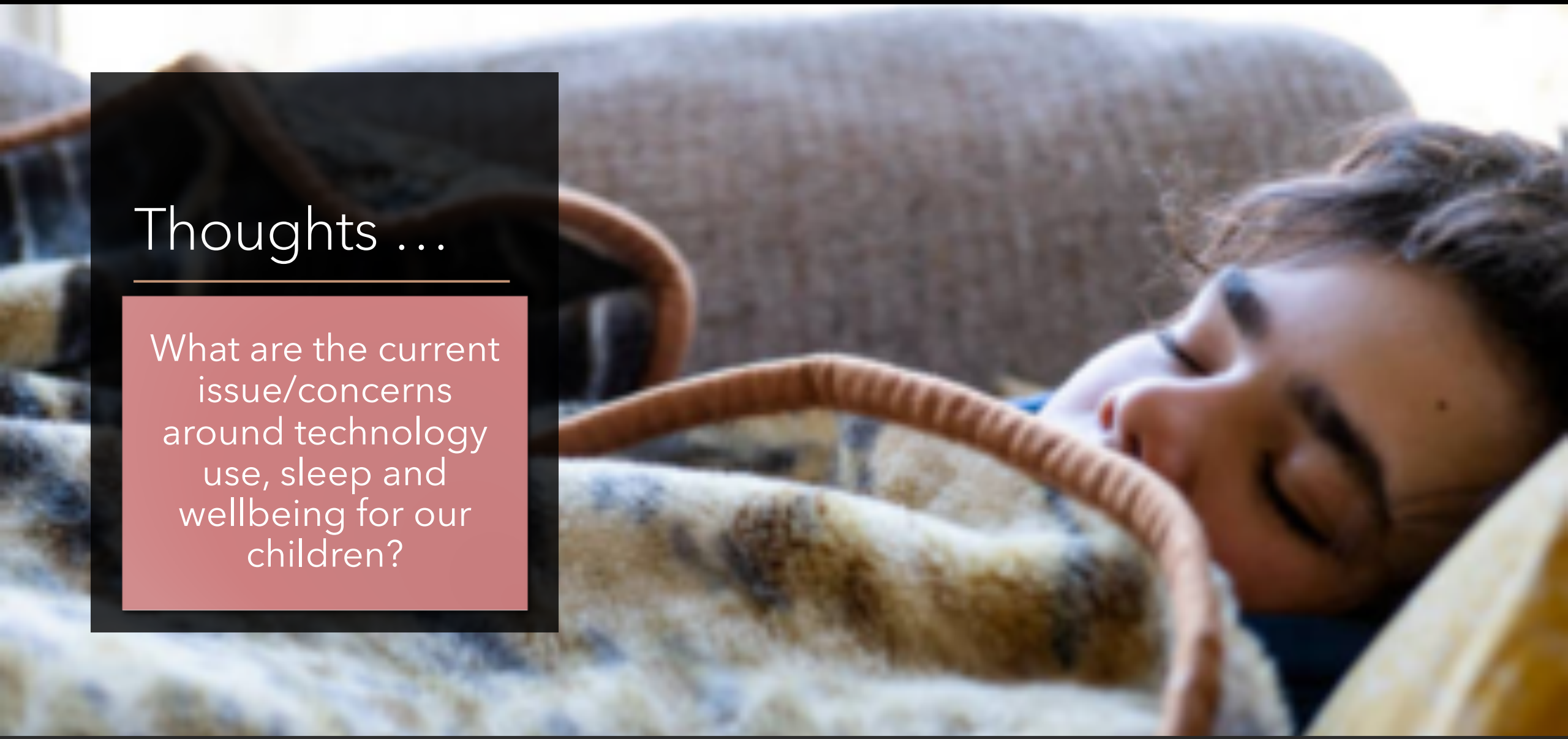
Risk taking

Insufficient sleep linked to increased risk of …

- Tobacco smoking, vaping and marijuana
- Unhealthy behavior, bullying violence, unsafe sex
- Motor vehicle accidents

The nature of the relation between health, cognition, behavior, and sleep is often bidirectional.

Therefore, intervening on sleep patterns could engender a cascade of positive outcomes on other areas of functioning.



Thoughts …

What are the current issue/concerns around technology use, sleep and wellbeing for our children?

Changes in sleep during adolescence

Melatonin is the hormone associated with sleep onset (greater sensitivity to evening light than morning light in adolescents)

Adolescents have a higher tolerance to stay awake at the end of the day - lower sleep pressure.

Chronotype

- Shifts from morning chronotype (up to 10 years of age)
- To eveningness in adolescence (earlier in females 17 versus 21)
- Return to morning chronotype in advanced age

Vision & the brain

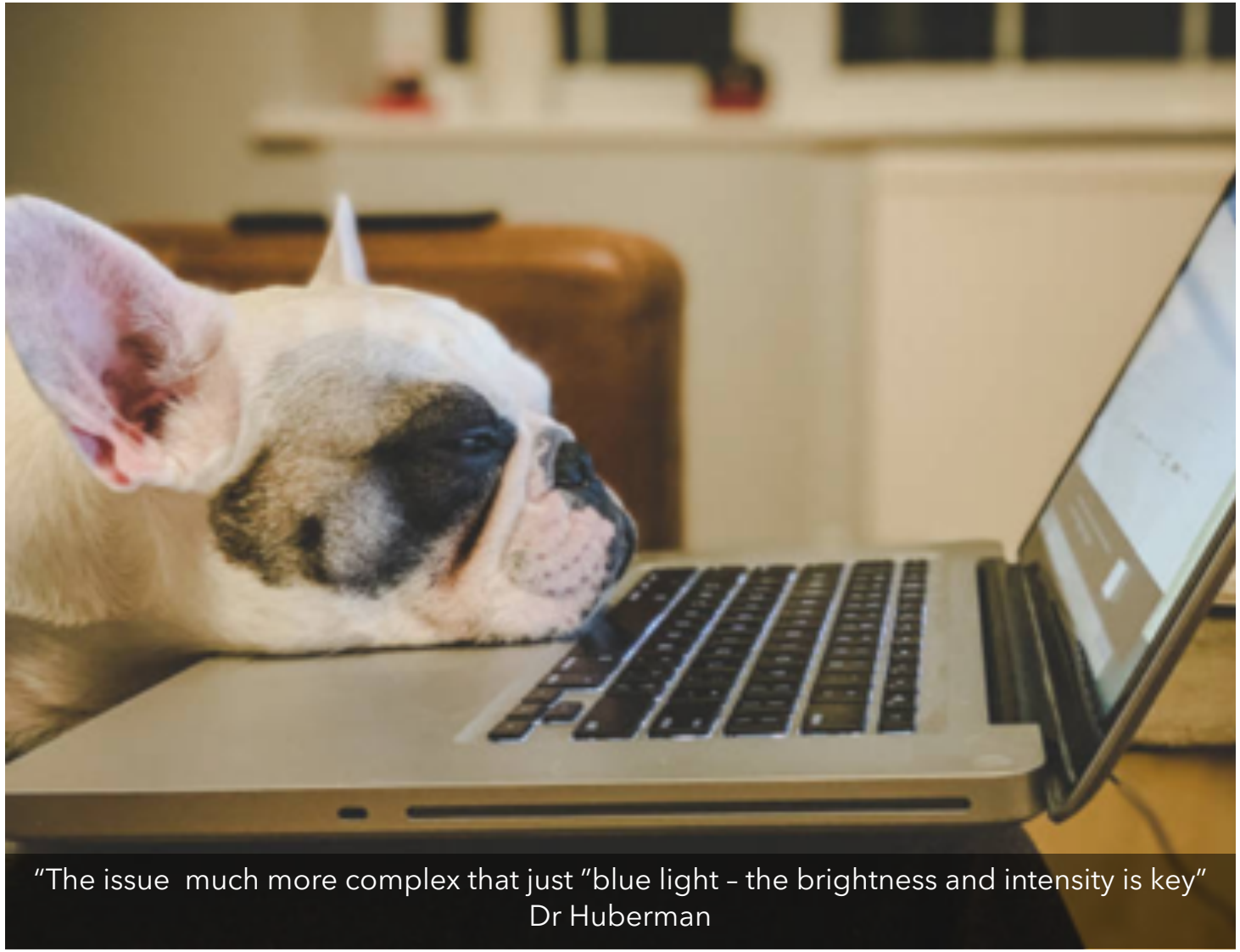
Viewing morning and evening sunlight anchors the rest of the NS and tells us when to be asleep and when to be active.

Exposure to light in the middle of the night disrupts pro depressive circuits.

Light during 11 – 4 activates the "disappointment nucleus" – suppresses dopamine and inhibits learning.

Habenula and Sleep

The bottom line: appropriately timed viewing of light is a powerful driver of neural, endocrine, immune and metabolic health.



"The issue much more complex that just "blue light – the brightness and intensity is key"
Dr Huberman

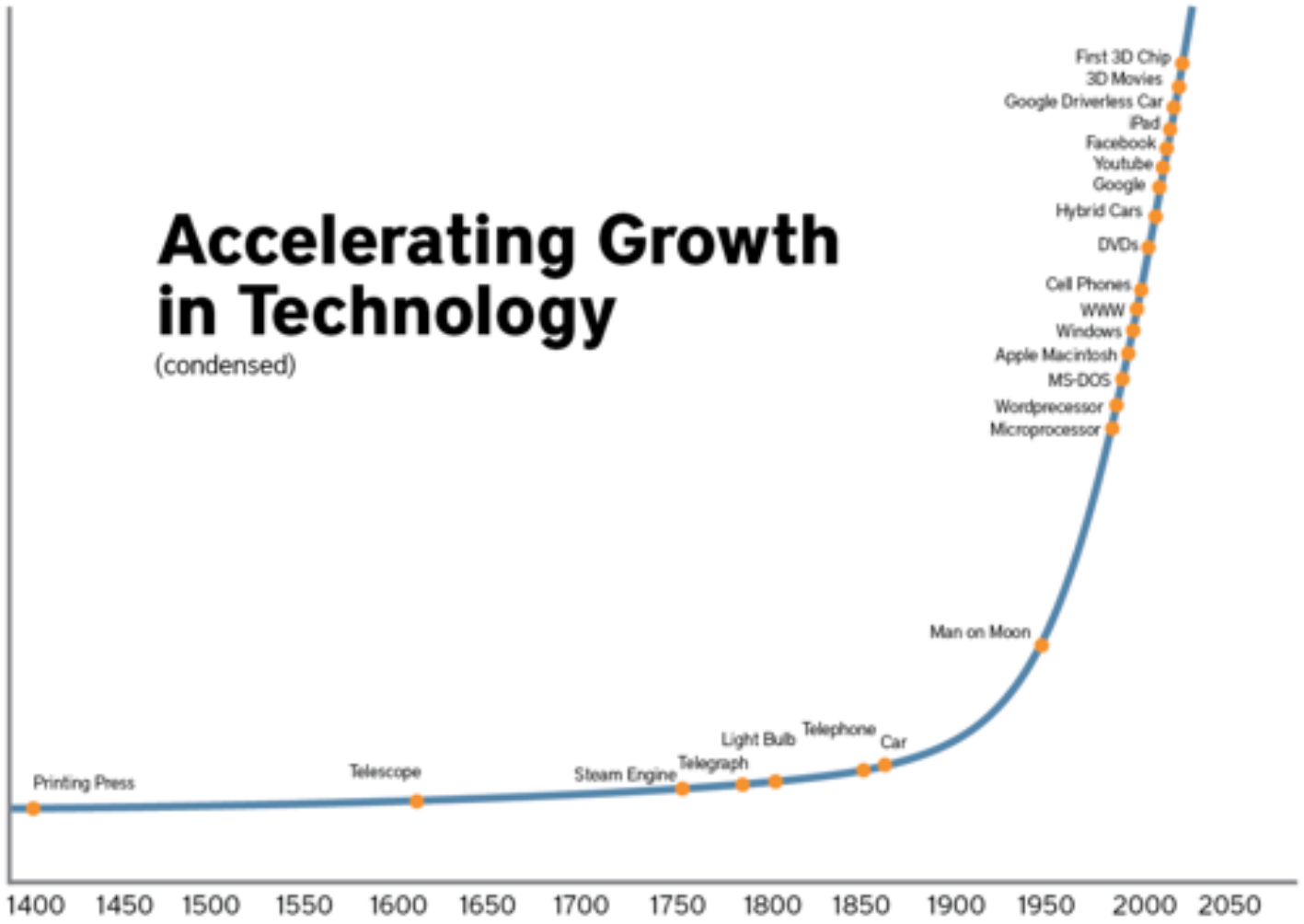
Tips for healthy sleep

- Stick to a sleep schedule.
- Exercise is great but not too late in the day.
- Avoid caffeine after lunch time - blocks adenosine receptors .
- Avoid alcoholic drinks before bed.
- Avoid large meals and beverages before bed.
- Avoid naps after 3 pm.
- Avoid light 11 pm - 4 am.
- Dark, cool bedroom, gadget-free.
- Prioritize sun light exposure.
- Don’t lie in bed awake.

TECHNOLOGY
HYGIENE

Thoughts …

What are our biggest challenges managing and educating our children about tech. use?


Accelerating Growth in Technology
(condensed)
First 3D Chip
3D Movies
Google Driverless Car
iPad
Facebook
Youtube
Google
Hybrid Cars
DVDs
Cell Phones
WWW
Windows
Apple Macintosh
MS-DOS
Wordprecessor
Microprocessor
Man on Moon
Printing Press
Telescope
Steam Engine
Telegraph
Light Bulb
Telephone
Car
1400
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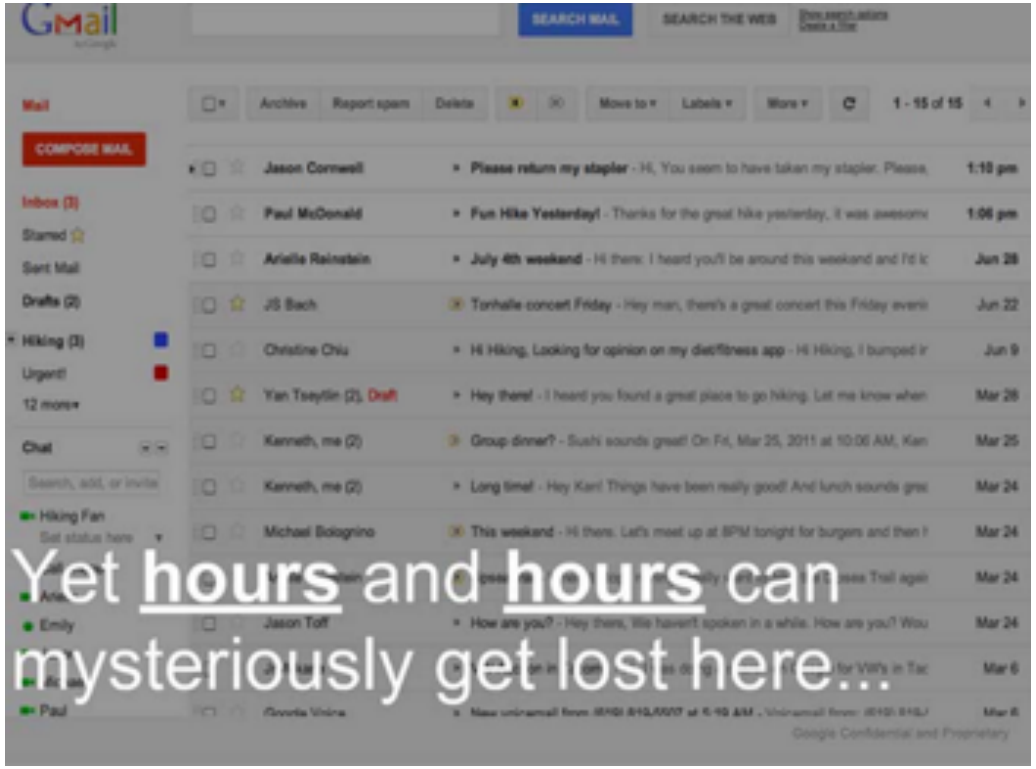
2050

Technology companies **profoundly influence** where all this attention goes…



Yet **hours** and **hours** can mysteriously get lost here...

And **feeds that suck huge chunks of time** away here...


…and destroying our kids'
ability to focus here
(teens 13-17 now send 4,000 texts/month,
once every 6 minutes awake)

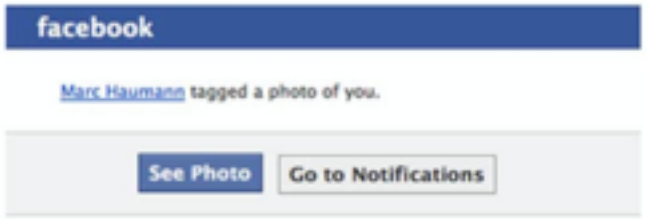

Keeping us on a treadmill
of continuous checking

We need to acknowledge that we have certain vulnerabilities….

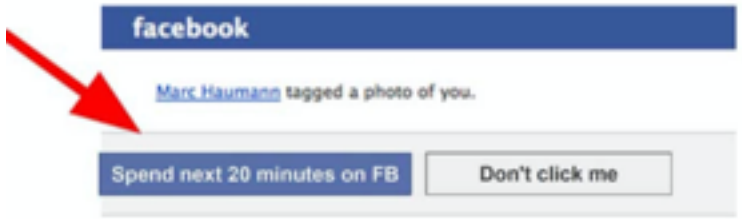
- These vulnerabilities can be amplified and exploited.
- The design of products made, increase our impulsivity.
- These vulnerabilities make us at against our better judgement.

Vulnerability #1: Bad Forecasting

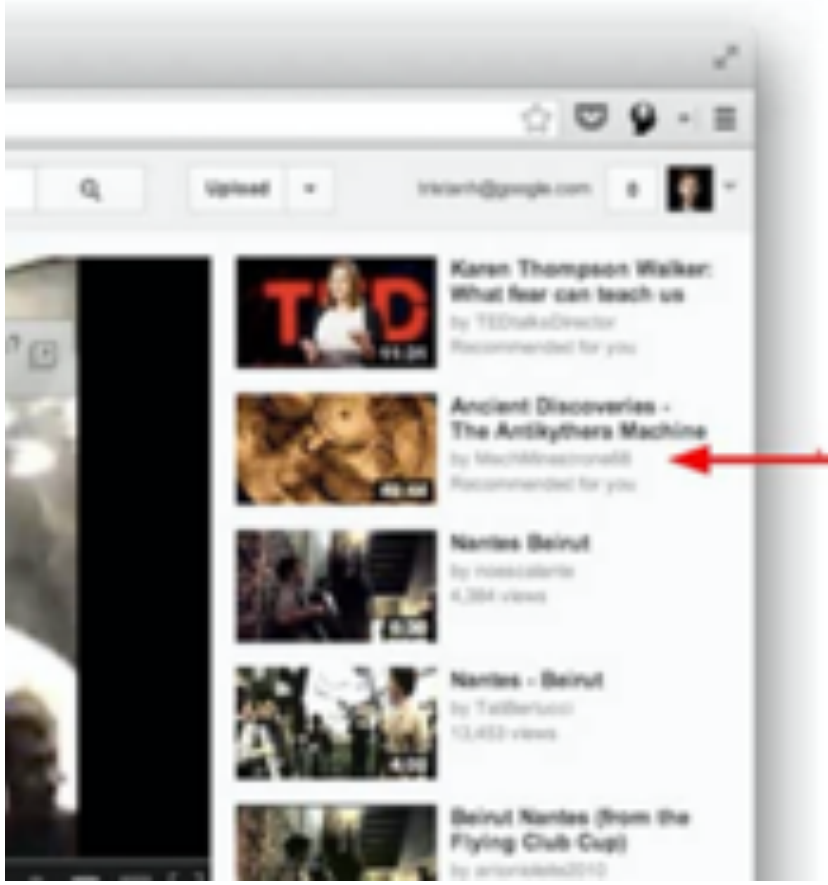
(aka “That won't take long”)



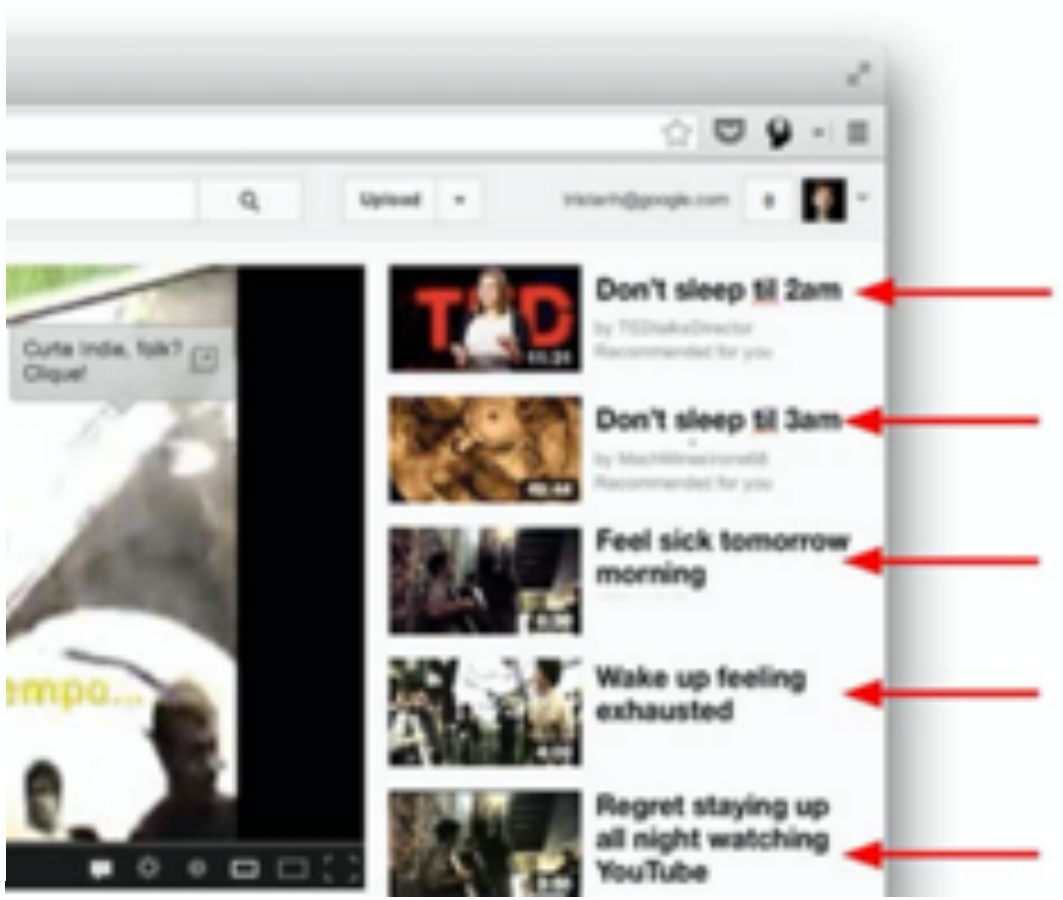
"Want to see this photo of you?"



"Do you want to interrupt what you're doing and spend next 20 minutes on Facebook?"



Watch a related video?

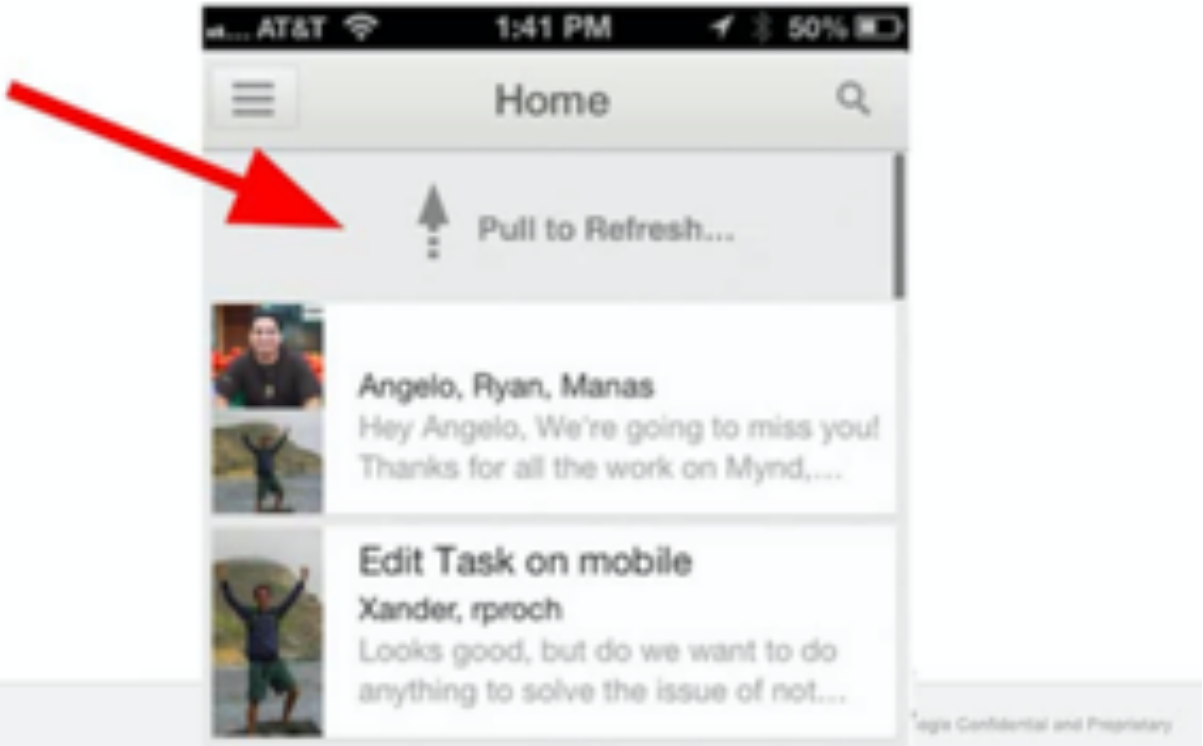


or…

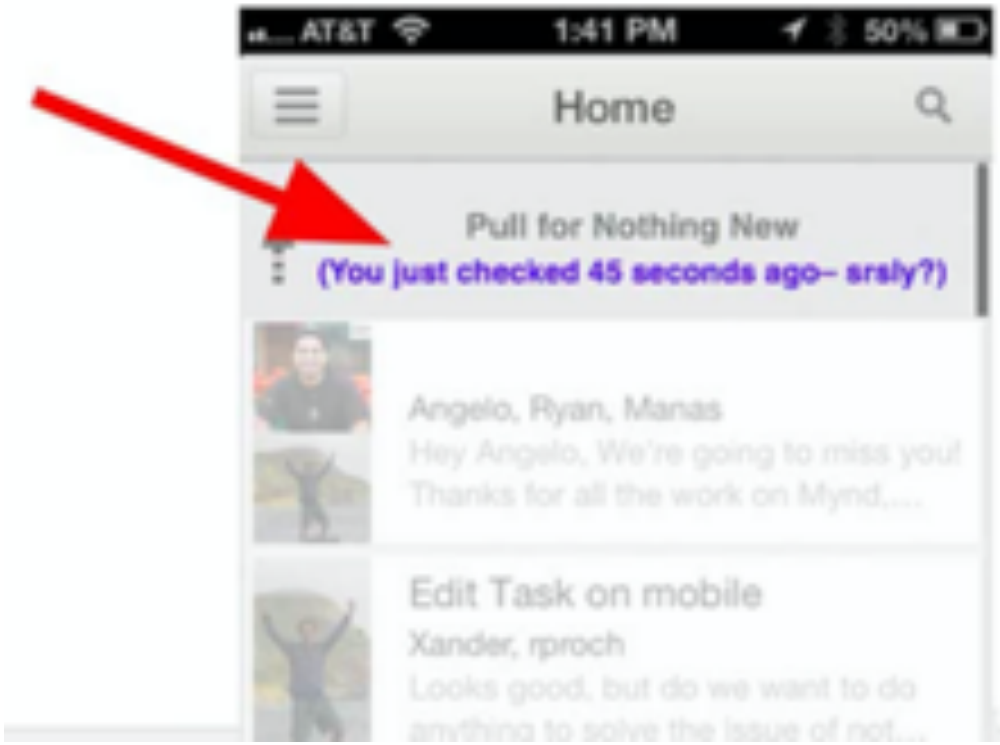
Vulnerability #2:
Intermittent variable rewards
(aka Slot Machines)


Intermittent (vs. predictable) rewards are the
most addictive, and hardest to stop

are we **deciding** to pull for new email?



. or do we do it to feel the intermittent rewards?




These are attention casinos…

Vulnerability #3: Loss-Aversion
(aka Fear of Missing Out)

Suppose we actually **wanted to stop** checking all this stuff…

Vulnerability #4:
Fast vs. Slow Thinking
(aka Mindful vs. Mindless behavior)

Mindfulness…..
Being in the moment

HUMANS MAKE DIFFERENT DECISIONS WHEN WE PAUSE AND RESPOND RATHER THAN WHEN WE **REACT.**

When access to the next hit is **too frictionless,** we *lose the ability* to consider before acting…

When scrolling is **frictionless**, **we don't think** before we flick to see what's next...


NETFLIX
OFFICIAL
TRAILER

What are the stats?

How much time is your child currently Infront of a screen?

Average use per age

Children > 2 years approximately one hour per day on screen media

2 – 8 years spend an average of two hours per day.

8 – 12 years spend approximately four to six hours per day

12 + years spend an average of seven to nine hours per day (Rideout, 2016).

UNICEF REPORT (2017)

Found that children under 18 represent a third of all internet users globally.

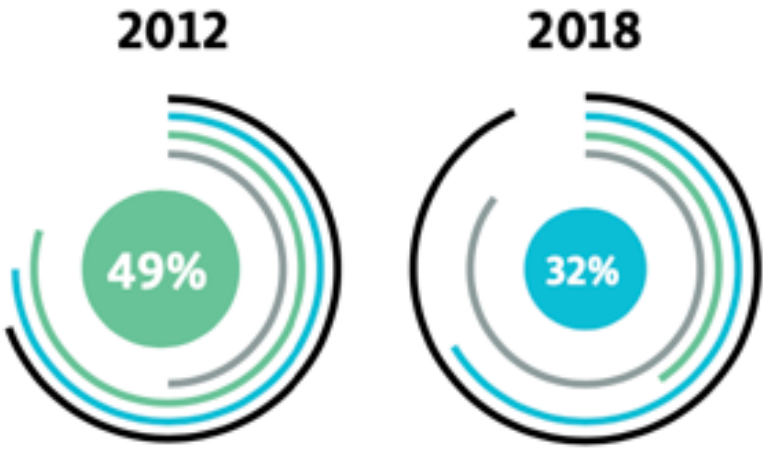
Adolescents and young adults ages 15 to 24 are the most connected cohort, with 71 percent online versus just 48 percent of the overall population.

What We Know About Kids and Teens Online

A 2019 study of more than 6,500 12- to 15-year-olds finds that more than three hours of social media use a day is linked to increased risk of depressive symptoms.1

PROBLEMATIC INTERNET USE (PIU)

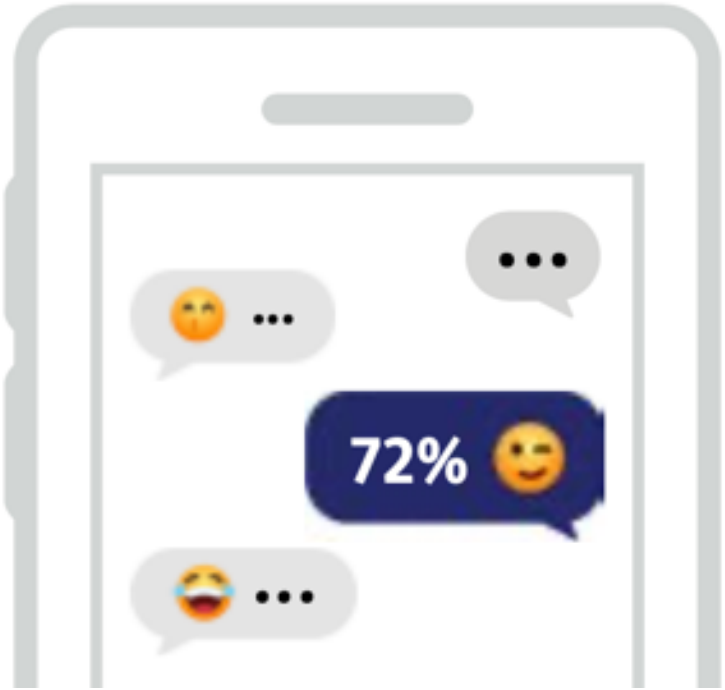
1% to 10% of children and adolescents have excessive and impairing online behavior



Indeed, young people say they value face-to-face social interaction less over time. In 2012, 49% of teens rated their favorite way to communicate with friends as "in person," compared to only 32% in 2018.[7]

ADDICTED TO SMARTPHONES

72% of teens feel compelled to immediately respond to texts, social posts and notifications



More than three hours a day

More than three hours of social media use a day is linked to depression in adolescents aged 12 to 15.

SOCIAL MEDIA, GAMING AND DEPRESSION | Do online communities contribute to depression or help young people cope?

Only follow accounts that make you feel good and empowered.

Turn off notifications for likes or comments.

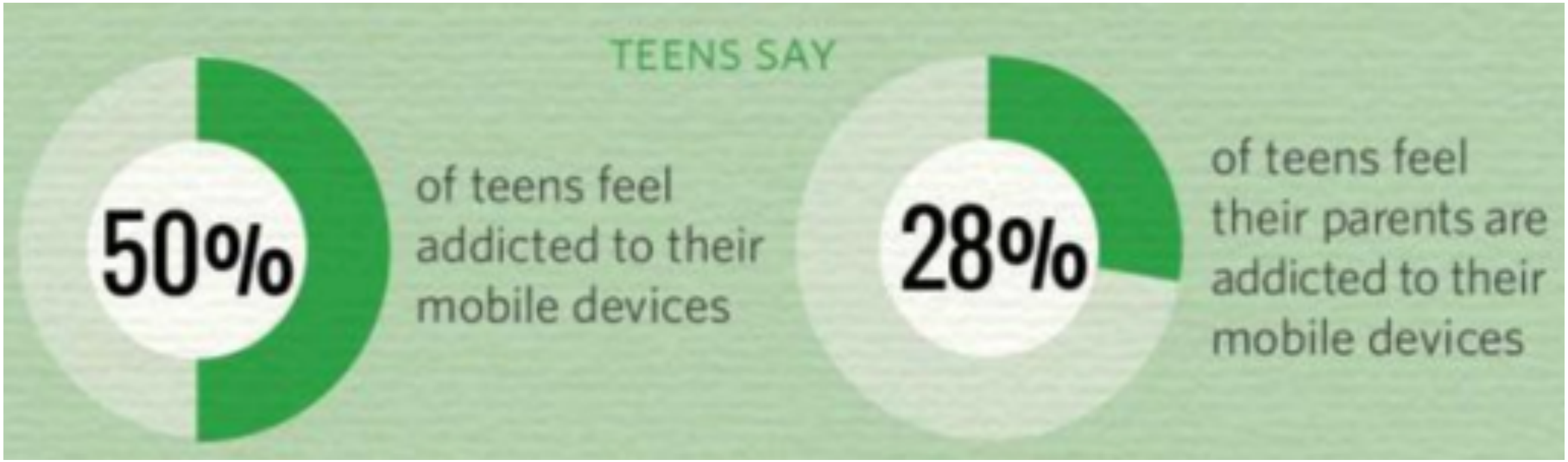
Set a limit for how much time you spend on social media each day.

Give yourself a "curfew" for social media.

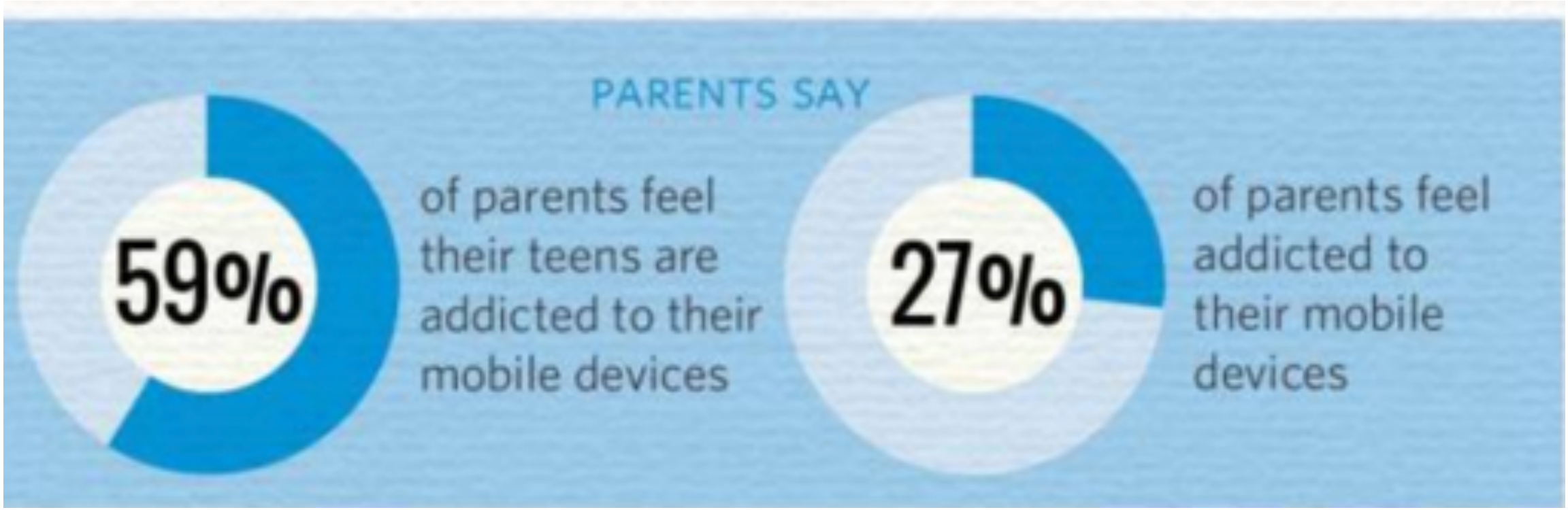
Ask yourself before each post: "Is this something I want to share with everyone and am I comfortable with it possibly being on the internet forever?"

What role do adults play?

Technology use … the impact of modelling



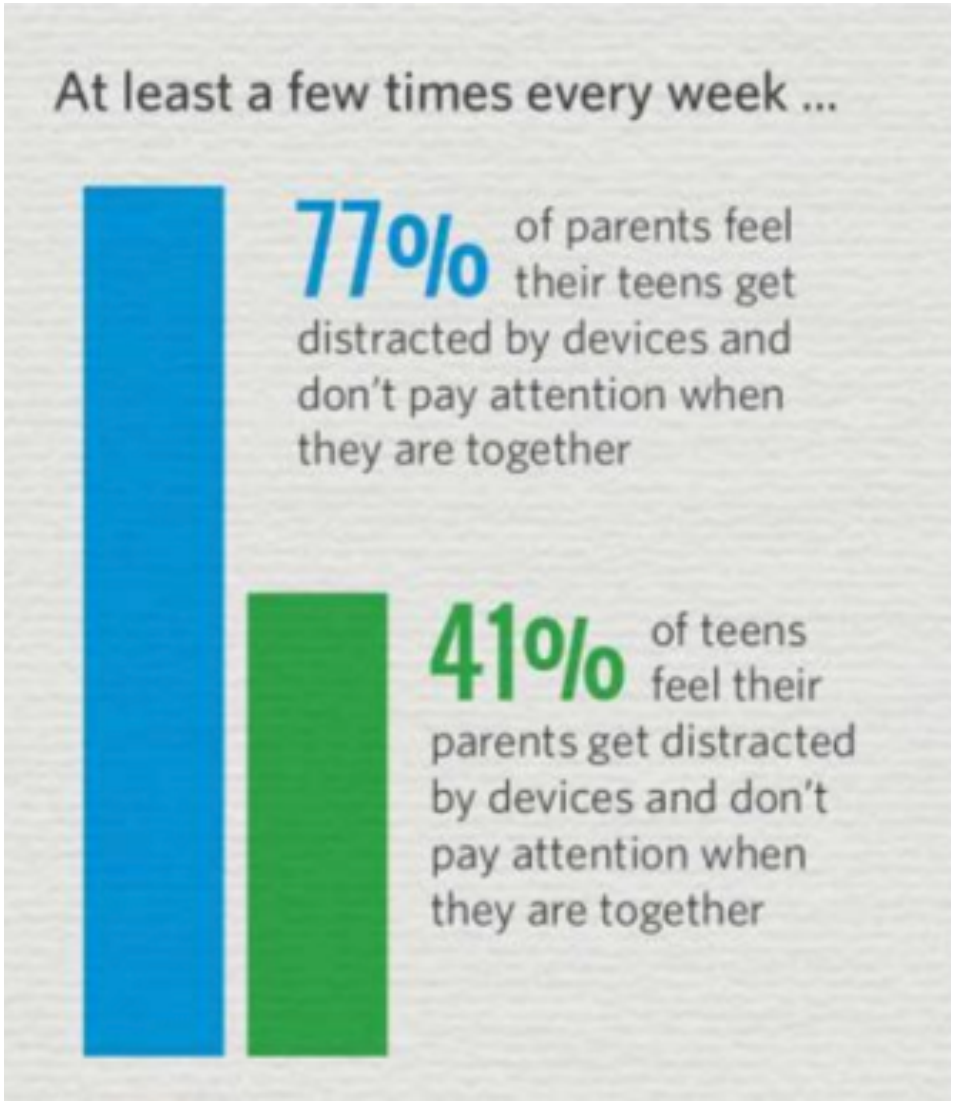
Parents and Teens



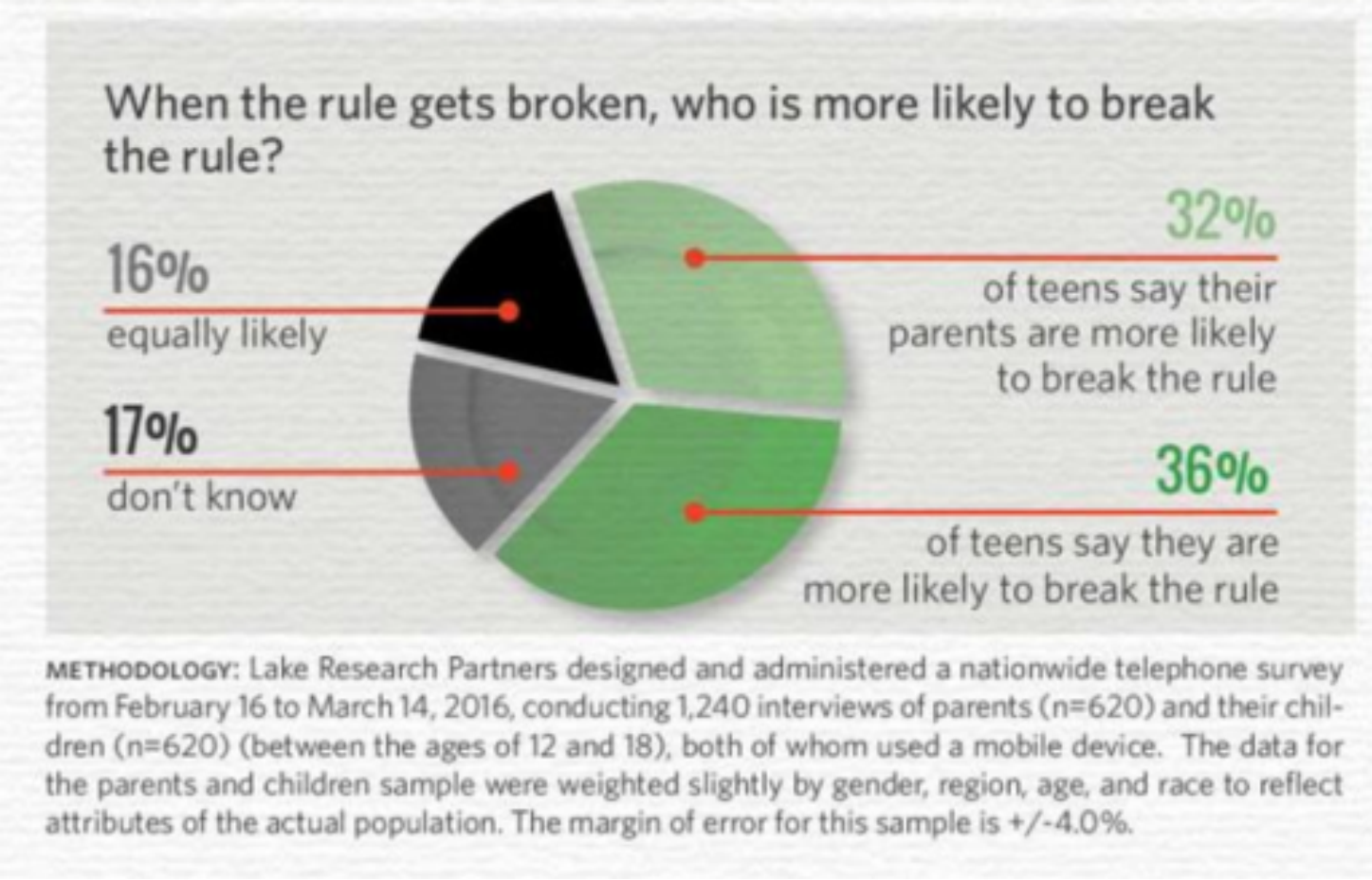
Parents and Teens


ABOUT
1/2
OF PARENTS
1/3
OF TEENS
very often or occasionally try to cut down the amount of time they spend on devices

Distractiblity




And most parents are using devices while driving — with kids in the car
56% of parents admit they check their mobile devices while driving
51% of teens see their parents checking/ using their mobile devices while driving


When the rule gets broken, who is more likely to break the rule?
16%
equally likely
17%
don't know
32%
of teens say their parents are more likely to break the rule
36%
of teens say they are more likely to break the rule
METHODOLOGY: Lake Research Partners designed and administered a nationwide telephone survey from February 16 to March 14, 2016, conducting 1,240 interviews of parents (n=620) and their children (n=620) (between the ages of 12 and 18), both of whom used a mobile device. The data for the parents and children sample were weighted slightly by gender, region, age, and race to reflect attributes of the actual population. The margin of error for this sample is +/-4.0%.

HOW PARENTS CAN HELP[6]

- ★ Talk to children about online use and problems they may face
- ★ Become educated about different technologies kids use
- ★ Be a "digital neighbor": actively monitor online activities and talk with children about their profiles

Conduct parental "mediation" of media use

Co-viewing/playing and being online together let you share your values, casually monitor use and learn together. This strategy has been linked to more positive outcomes of media use.

Establish phone-free time before sleep

Enforce a policy of no smartphones in the bedroom after a specific time and overnight.

Teach mindful use of social media

Encourage teens to be honest with themselves about how they feel and to disengage from interactions that increase stress or unhappiness.

Focus on balance

Make sure your children are also engaging in social interaction offline and have time for activities that help build identity and self-confidence.

Turn off notifications

These tempt users to interrupt what they're doing to engage with their phones. Don't let them!

Look out for teens at higher risk of depression

Negative effects of social media can have more impact when confidence is down.

Model restraint and balance in your own media diet

Disengage from media to spend quality family time together, including phone-free dinners.

Family Media Plan

HTTPS://WWW.HEALTHYCHILDREN.ORG/ENGLISH/MEDIA/PAGES/DEFAULT.ASPX#WIZARD

DEFINING SOCIAL MEDIA AND GAMING

DEFINING SOCIAL MEDIA AND GAMING | The ways in which young people interact, share and play online have multiplied over the years. Here is a breakdown of current social media platforms.

Instagram

What is it? Instagram is a photo- and video-sharing platform. Users create profiles and generate a feed of content by following others whose photos they can comment on or “like.” Instagram also features direct messaging and Snapchat-like “Stories,” where users can post content that disappears in 24 hours.

Snapchat

What is it? What began as a novelty nude-photo-sharing app, where photos quickly “expired” and disappeared, is now a feature-heavy social media platform. With Snapchat, users can now send videos and pictures that last longer, chat, use filters, access news, play games and share “Stories” visible to all followers that remain on a user’s profile for 24 hours.

Facebook

What is it? Facebook is one of the original social networks. Users create personal profiles; features range from sharing links and photos to commenting, participating in groups and direct messaging. Although Facebook used to be incredibly popular with adolescents, its popularity in this group has decreased significantly.

Gaming

What is it? Gaming refers to playing electronic games, whether on video game consoles (Xbox, PlayStation), computers or mobile phones. A person who is into gaming is often called a gamer. Although solitary gaming is still popular, online multiplayer video games have made gaming a group activity. Increasingly, online gaming has a deep social and chat component that connects far-flung gamers over voice or text communication in the context of the game.