



## Addicted to Life



**SWISS RE TEAM** Dr John Schoonbee Dr Debbie Smith Claire Nolan Kelly du Preez Vicki Livingstone Simone Millar





Robert Lustig · 1st

Professor emeritus of pediatrics, Division of Endocrinology, UCSF

San Francisco Bay Area · 500+ connections · Contact info

Message

More...







University of California, Hastings College of the Law



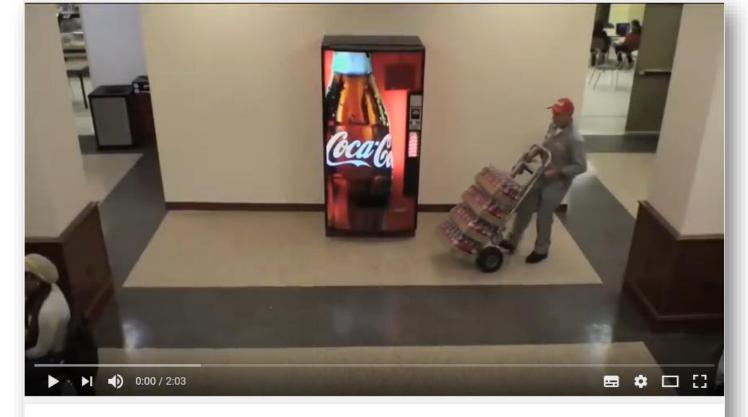
# Happiness

Pleasure



# Happiness vs. Pleasure

- Happiness/Contentment vs. Reward/Pleasure
- Serotonin vs. Dopamine
- Addiction → Dopamine reward pathway
- Substances like alcohol, opioids
- Behaviours shopping, sex, eating, gaming, gambling, social media, internet use, exercise
- Commercial interests can leverage the dopamine pathways to sell us more..... time, app use, products



#### Coca-Cola Happiness Machine



Coca-Cola

► Subscribe 3.21M

10,197,978 views

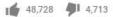












What When Who

Addicted to Life

Tuesday 15<sup>th</sup> October 2019 at 9.20am Dr John Schoonbee, Dr Debbie Smith & Justyn Rees Larcombe







## We need your help

How dependent are you on your mobile device?

- 1. Click the link to complete our anonymous survey
- 2. Come to our session for a first glance at the results

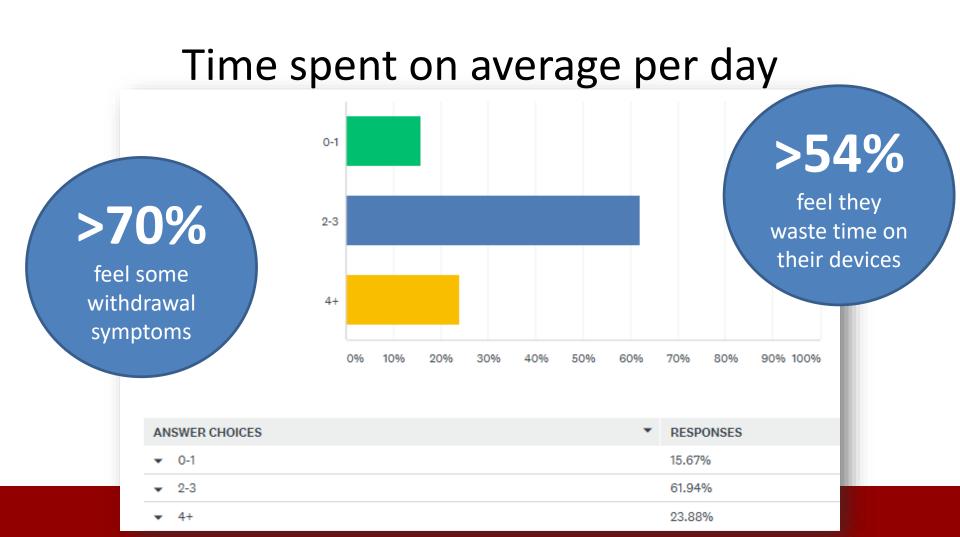
(If you miss the session, you will have another chance to see them on LinkedIn)



https://www.surveymonkey.com/r/VK9VPT3

Come and visit us at Swiss Re's stand 5





# Why have you reduced mobile use?

- "Caused arguments, interrupted focus when talking to family"
- "more sleep / Tired / getting to sleep / Preventing me from going to sleep earlier / It was disturbing my sleep pattern"
- "It was distracting and I was taking time away from other things, like hobbies."
- "I was worried that I might become addicted"
- "Realise it was affecting my quality of life"
- "to improve well being"

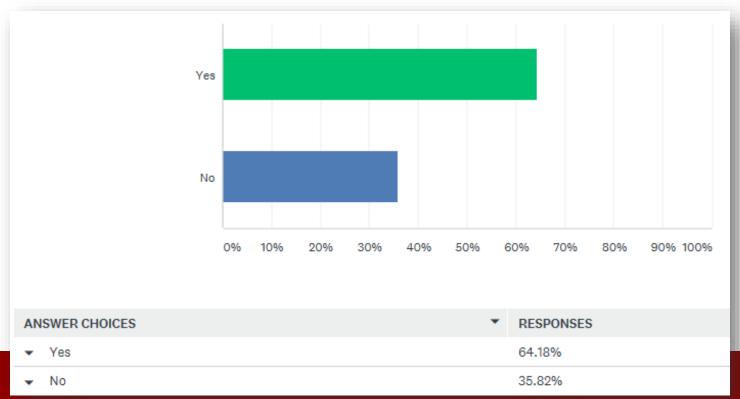
# Notifications per day



How often do you check notifications	No. per day
I immediately check them	548
I immediately check them	168
I only check my phone at intervals (an hour or more from the notification)	160
I only check my phone at intervals (an hour or more from the notification)	147
I immediately check them	143
I only check my phone at intervals (an hour or more from the notification)	126
I only check my phone at intervals (an hour or more from the notification)	123
I immediately check them	108
I only check my phone at intervals (an hour or more from the notification)	105
I only check my phone at intervals (an hour or more from the notification)	100

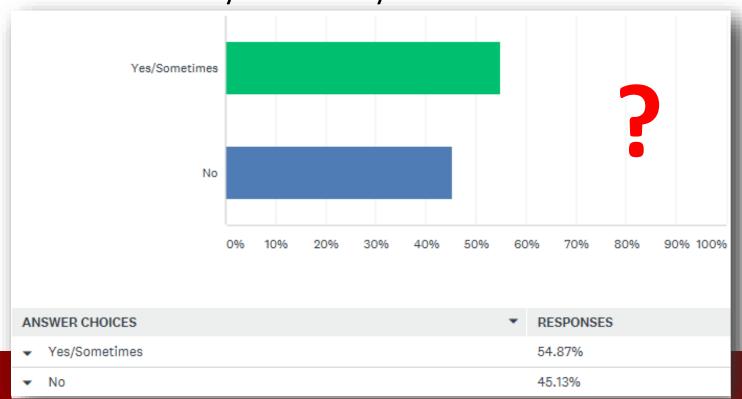
# At night, is your mobile

on do not disturb?



## At night, if you wake...

do you look at your mobile?



# Addictions









• Dr Debbie Smith



#### FORECASTS FOR 1907.



IV.—Development of Wireless Telegraphy. Soene in Hyde Park.

[These two figures are not communicating with one another. The lady is receiving an amatory message, and the gentleman some racing results.]

Reproduced with the permission of Punch Magazine via Topfoto

Evolution of diagnostic criteria

Substance	1 <sup>st</sup> use	1 <sup>st</sup> literature	Spike in exposure	DSM discussion	DSM inclusion	Time elapsed
Opioids	10000 BC	4000 BC	1820 1885 Freud	1910 - "addict" came into common use	1952 primary personality disorder	Over a century
Alcohol	c3000BC	1700's	1849	Legal implications Withdrawal	1952 SOCIOPATHIC	Century
Gambling	? 500BC	17 <sup>th</sup> century - legalised gambling	1970's	Compulsion Repeated harm	1980 ICD 11 shift to addiction section	Decade
Gaming	1978 "Space Invaders" debate	1994 Wired mag	2007/8	Harm, opportunity cost	2013 listed for further study. Included in ICD 11	5/6 years
Sex/love	?	1970's	1990's	DSM V phases out addiction terminology and moves to disorder	ICD-11 "compulsive sexual behaviour disorder"	20 years +
Internet	Advent of internet	1996	2000's	1996	Not recognised	
Mobile	1959 (UK)		By 2018 est 94% of UK households own one	Can fall under Phobia's section	Nomophobia	

## Shifts in thinking about addiction

Single topic disorder with underlying personality defect



Shift from focus on withdrawal, tolerance and illegality



Craving and compulsion control issue with sensitisation, and harm Substance addiction > Substance dependency

## Screening tools

- Commonalities between topics
  - Increasing time spent
  - Increasing strength or volume
  - Objective negative impacts
    - Lying to friends/family
    - Financial impact/losses
    - Criminality
    - · Relationship impact or breakdown
    - Career
  - Subjective negative impacts mood, wellbeing, mental health
  - Failed attempts to change
  - Concern of friends and family

#### The Alcohol Use Disorders Identification Test: Self-Report Version

PATIENT: Because alcohol use can affect your health and can interfere with certain medications and treatments, it is important that we ask some questions about your use of alcohol. Your answers will remain confidential so please be honest. Place an X in one box that best describes your answer to each question.

Questions	0	1	2	3	4	
How often do you have     a drink containing alcohol?	Never	Monthly or less	2-4 times a month	2-3 times a week	4 or more times a week	
How many drinks containing alcohol do you have on a typical day when you are drinking?	1 or 2	3 or 4	5 or 6	7 to 9	10 or more	
How often do you have six or more drinks on one occasion?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
4. How often during the last year have you round that you were not able to stop drinking once you had started?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
5. How often ouring the last year have you failed to do what was normally expected of you because of drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
7. How often during me last year nave you had a feeling of guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
How other during the last year have you been unable to remember what happened the night before because of your drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
Have you or someone else been injured because of your drinking?	No		Yes, but not in the last year		Yes, during the last year	
10. Has a relative, friend, doctor, or other health care worker been concerned about your drinking or suggested you cut down?	No		Yes, but not in the last year		Yes, during the last year	
					Total	

#### The NODS-CLiP Short Problem Gambling Screen

Have there ever been periods lasting 2 weeks or longer when you spent a lot of time thinking about your gambling experiences or planning out future gambling ventures or bets?

Yes ?/ No?

Have you ever tried to stop, cut down, or control your gambling?

Yes?/ No?

Have you ever lied to family members, friends, or others about how much you gamble or how much money you lost on gambling?

Yes?/ No?

If "Yes" to one or more questions, further assessment is advised refer via www. begambleaware.org or the National Gambling Helpline: 0808 8020 133

Using this scale of 5 choices, answer how often the situations below apply to you and your use of computers or smartphones:

	Never	Rarely	Sometimes	Often	Always
1. I find myself using my smartphone or computer longer than I planned to.	0	0	0	0	0
2. I would rather be on my smartphone or computer than interact with my partner.	0	0	0	0	0
3. I would rather spend time online than do things around the house.	0	0	0	0	0
4. My performance in school or at work suffers because of the amount of time I spend online.	0	0	0	0	0
5. People close to me are concerned about the amount of time I spend on my smartphone or computer.	0	0	0	0	0
6. When asked what I do online, I prefer not to answer.	0	0	0	0	0
7. My productivity and attentiveness suffers because of the amount of time I spend online.	0	0	0	0	0
8. I check my social media, text messages, or emails first thing after waking up.	0	0	0	0	0
9. I am bothered when people interupt me while I am using my computer or smartphone.	0	0	0	0	0
10. I feel anxious when I do not have my smartphone with me.	0	0	0	0	0
11. I use the internet to escape from my real life.	0	0	0	0	0
12. I would be less interesting and happy without access to the internet.	0	0	0	0	0
13. I put off things I have to do by using my computer or smartphone.	0	0	0	0	0
14. When I am unable to use my smartphone, I miss it or think about what I could be doing online.	0	0	0	0	0
15. I stay up later at night to 150 intended due to doing things online.	0	0	0	0	0
16. I world rather stay home and use a sinternet than go out with friends.	0	0	0	0	0
17. It eve tried to reduce my smartphone or internet use without success.	0	0	0	0	0
18. I am concerned about missing out on thing online when not checking my smartphone.	0	0	0	0	0

Score m	

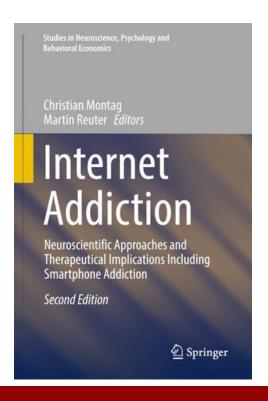
#### Sources

1. H Cash, CD Rae, AH Steel, A Winkler . Internet Addiction: A Brief Summary of Research and Practice. 8(4): CURR PSYCHIATRY REV. 292-298. 2012.

"If every gratified craving from heroin to designer handbags is a symptom of "addiction," then the term explains everything and nothing."

Amanda Heller – The Boston Globe 11 February 2008

## Genes or environment?



Alcohol – ADH1b, ALDH2 (rs1693482 and rs698 protective), SLC6A4, DRDs/ANKK1 Taq 1a allele

Nicotine - CHRNA5/A3/B4

Cannabis – CNR 1, FAAH

Cocaine – DRD2/ANKK1, NCAM1, TTC12, CALCYON, DBH, COMT, POMC, CNR1, TPH2, CHRNA5/A3/B4

Opioids - OPRM1, rs1799971(A118g)

Gambling – DRD1 – rs4532, rs265981

Exercise?

Internet?

### Fact v fiction

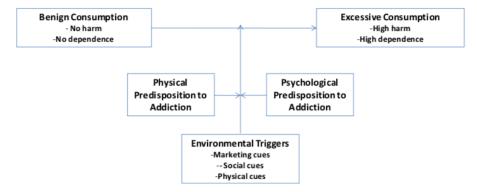


Issue: 19, 2011

From Use to Abuse: When Everyday Consumption Behaviours Morph Into Addictive Consumptive Behaviours

AUTHOR(S): Aditi Grover<sup>1</sup>, Michael A. Kamins<sup>2</sup>, Ingrid M. Martin<sup>3</sup>, Scott Davis<sup>4</sup>, Kelly Haws<sup>5</sup>, Ann M. Mirabito<sup>6</sup>, Sayantani Mukherjee<sup>7</sup>, Dante Pirouz<sup>8</sup>, and Justine Rapp<sup>9</sup>

Figure: Pre-Addiction - Addiction Process Framework







Opinion

Volume 3 Issue 2 - August 2017

DOI: 10.19080/GIARM.2017.03.555610

Glob J Add & Rehab Med
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#### The Myth of 'Addictive Personality'



#### Mark D Griffiths\*

Distinguished Professor of Behavioural Addiction, International Gaming Research Unit, Psychology Division, Nottingham Trent University, UK

Submission: August 17, 2017; Published: August 21, 2017

\*Corresponding author: Mark D Griffiths, Distinguished Professor of Behavioural Addiction, International Gaming Research Unit, Psychology Division, Nottingham Trent University, 50 Shakespeare Street, Nottingham, NG1 4FQ, United Kingdom, Email: marks-riffiths@ntu.ac.uk

"Fundamentally, the idea of a general addictive personality is a myth. Research finds no universal character traits that are common to all addicted people. Only half have more than one addiction (not including cigarettes)—and many can control their engagement with some addictive substances or activities, but not others".

Outlook | Published: 24 June 2015

Genetics: No more addictive personality

Maia Szalavitz

## Neuroscience developments

#### **REVIEW ARTICLE**

Front. Hum. Neurosci., 22 May 2017 | https://doi.org/10.3389/fnhum.2017.00248



#### **Neural Basis of Video Gaming: A Systematic Review**



<sup>&</sup>lt;sup>1</sup>Cognitive NeuroLab, Faculty of Health Sciences, Universitat Oberta de Catalunya, Barcelona, Spain

**Background:** Video gaming is an increasingly popular activity in contemporary society, especially among young people, and video games are increasing in popularity not only as a research tool but also as a field of study. Many studies have focused on the neural and behavioral effects of video games, providing a great deal of video game derived brain correlates in recent decades. There is a great amount of information, obtained through a myriad of methods, providing neural correlates of video games.

Technique	N	%
Electrophysiological methods	32	27.6
EEG (standard)	13	11.2
ERP	16	13.8
ERSP	1	0.9
SSVEP	2	1.7
MRI	70	60.3
MRI (structural)	15	12.9
fMRI	55	47.4
NIRS	8	6.9
SPECT	2	1.7
PET	2	1.7
Doppler	1	0.9

EEG, Bectroencephalography, ERP, Event-related potentials; ERSP, Event-related spectral Dynamics; fMRI, Functional magnetic resonance imaging; MRI, Magneticresonance imaging; NIFS, Near-infrared spectroscopy; PET, Positon emission tomography; SPECT, Single-photon emission computed tomography; SSVEP, Steady-state visual evoked potential.



<sup>&</sup>lt;sup>2</sup>Laboratory for Neuropsychiatry and Neuromodulation, Massachusetts General Hospital, Boston, MA, USA



"A void of understanding filled with predictions of doom"

## Compulsion disorders – at what cost?

Journal of Technology in Behavioral Science (2018) 3:141–149 https://doi.org/10.1007/s41347-017-0041-3



## Problematic Mobile Phone Use and Addiction Across Generations: the Roles of Psychopathological Symptoms and Smartphone Use

Daria J. Kuss 1 · Eiman Kanjo 1 · Mark Crook-Rumsey 1 · Fraenze Kibowski 1 · Grace Y. Wang 2 · Alex Sumich 1

Published online: 8 January 2018

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#### Abstract

Contemporary technological advances have led to a significant increase in using mobile technologies. Recent research has pointed to potential problems as a consequence of mobile overuse, including addiction, financial problems, dangerous use (i.e. whilst driving) and prohibited use (i.e. use in forbidden areas). The aim of this study is to extend previous findings regarding the predictive power of psychopathological symptoms (depression, anxiety and stress), mobile phone use (i.e. calls, SMS, time spent on the phone, as well as the engagement in specific smartphone activities) across Generations X and Y on problematic mobile phone use in a sample of 273 adults. Findings revealed prohibited use and dependence were predicted by calls/day, time on the phone and using social media. Only for dependent mobile phone use (rather than prohibited), stress appeared as significant. Using social media and anxiety significantly predicted belonging to Generation Y, with calls per day predicted belonging to Generation X. This finding suggests Generation Y are more likely to use asynchronous social media-based communication, whereas Generation X engage more in synchronous communication. The findings have implications for prevention and awareness-raising efforts of possibly problematic mobile phone use for educators, parents and individuals, particularly including dependence and prohibited use.

#### Science News

from research organizations

### Excessive Mobile Phone Use Affects Sleep In Teens, Study Finds

Date: June 9, 2008

Source: American Academy of Sleep Medicine

Summary:

Teenagers who excessively use their cell phone are more prone to disrupted sleep, restlessness, stress and fatigue. When compared to subjects with restricted use of cell phones, young people with excessive use of cell phones (both talking and text messaging) have increased restlessness with more careless lifestyles, more consumption of stimulating beverages, difficulty in falling asleep and disrupted sleep, and more susceptibility to stress and fatigue. They behave more like larks than owls, suggesting a delayed biological clock.

Journal List > Addict Behav Rep > v.6; 2017 Dec > PMC5800562

**ELSEVIER** 

Addictive Behaviors Reports



Addict Behav Rep. 2017 Dec; 6: 90-95.

Published online 2017 Jul 19. doi: 10.1016/j.abrep.2017.07.002

PMCID: PMC5800562 PMID: 29450241

Smartphone addiction, daily interruptions and self-reported productivity

Éilish Dukea,\* and Christian Montagb,c,\*\*

Þ

## Internet impact

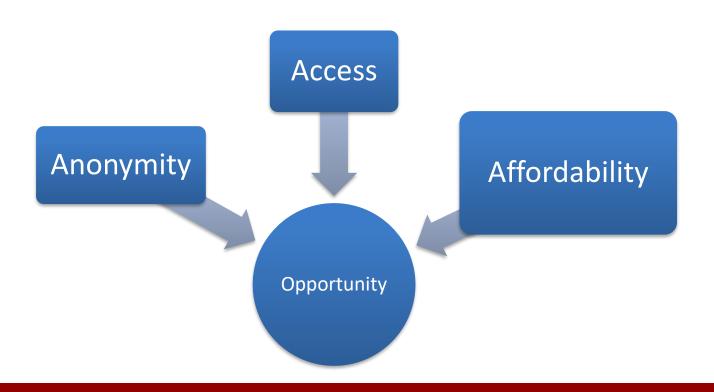


Figure 3: Estimated weekly hours of internet consumption by age, at home (2007, 2010, 2013) or elsewhere (2016, 2017)

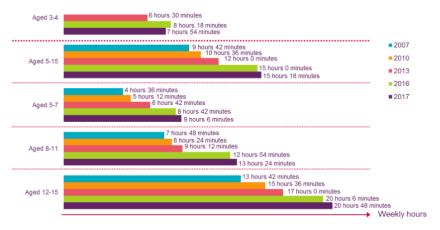
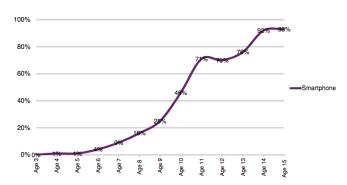


Figure 12: Smartphone ownership, by age of child: 2017



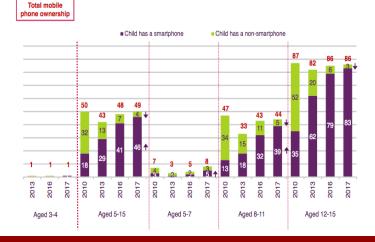
## Ofcom 2017

### Smartphone ownership has increased to close to half of 5-15s, driven by increases among 5-7s and 8-11s

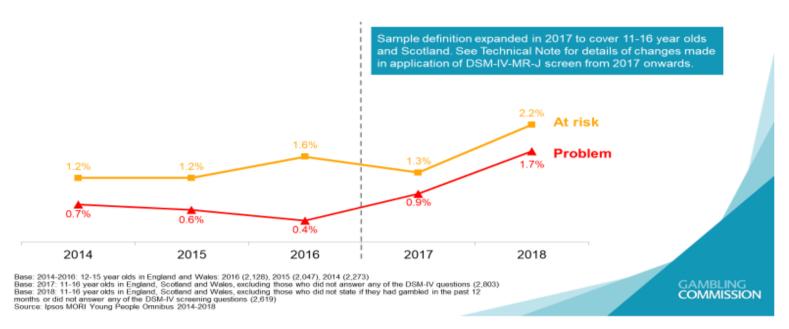
Figure 11 shows that half of all children aged 5-15 (49%) have a mobile phone of their own (any type) and nearly all of them (46%) have a smartphone.<sup>28</sup>

Smartphone ownership is higher compared to last year among all 5-15s (46% vs. 41%), with this increase evident among 5-7s (5% vs. 2%) and 8-11s (39% vs. 32%). The likelihood of owning a smartphone increases with the age of the child, at just 1% of 3-4s, 5% of 5-7s, four in ten 8-11s (39%) and more than eight in ten 12-15s (83%).

Figure 11: Smartphone and non-smartphone ownership, by age: 2010, 2013, 2016 and 2017



## Impact and why insurers should care



The boom in 'skin' gambling has attracted the attention of law enforcement and regulatory bodies around the globe. As part of our work we have engaged with a number of domestic and international regulators who share a common interest in protecting consumers, and children in particular, by seeking to disrupt the provision of illegal gambling facilities.

## Commercial influences on children and regulation

Section 4.1.3, Hayer et al.'s (2018) regression analysis identified that the onset of financial gambling was significantly predicted by two gambling-related factors: (1) participation from home in simulated gambling on social networks (e.g., Facebook), and; (2) significant exposure to advertising (relating to both simulated and monetary gambling). Hayer et al. (2018) concluded that: "there is a clear suggestion that particularly the unregulated product marketing of simulated internet gambling, for example on social networking sites, is affecting adolescent demand".

## Impact of smartphones on employment and morbidity

#### **Positive**

- Scheduling and sharing of schedules
- Communications and connectivity
- Visuo-spatial skills
- Improved concentration and prioritisation
- Education access and learning
- Relaxation activities
- Well being apps
- Exercise and health trackers
- Hobbies

#### **Negative**

- Reduced creativity through distractions/interruptions/"checking habit" development
- Reduced productivity or increased work errors if obsessive/compulsive use develops
- Increases risk of behavioural manipulation through commercial interests
- Data collection from birth through life via multiple organisations
- Mental health impact
- Poor sleep hygiene
- Reduced face to face interactions
- Reduced exercise/mobility, potential for weight gain
- Opportunity costs what could you have done with your time?!

## Bringing it home

### **Underwriting unknowns**

- Don't ask
- Don't get
- Don't know
- Head in sand

#### Claims conundrums

- Iceberg principle
- Sensitivity of topic
- Technology solutions may exacerbate problem
- Long term illness>social isolation>social media increase>reliance

What When Who

Addicted to Life

Tuesday 15<sup>th</sup> October 2019 at 9.20am Dr John Schoonbee, Dr Debbie Smith & Justyn Rees Larcombe







## We need your help

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https://www.surveymonkey.com/r/VK9VPT3

Come and visit us at Swiss Re's stand 5

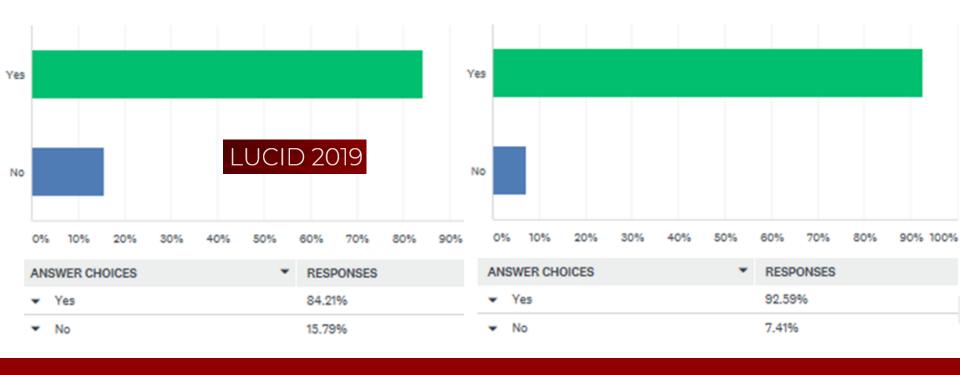


# LUCID attendees are (a little) different...

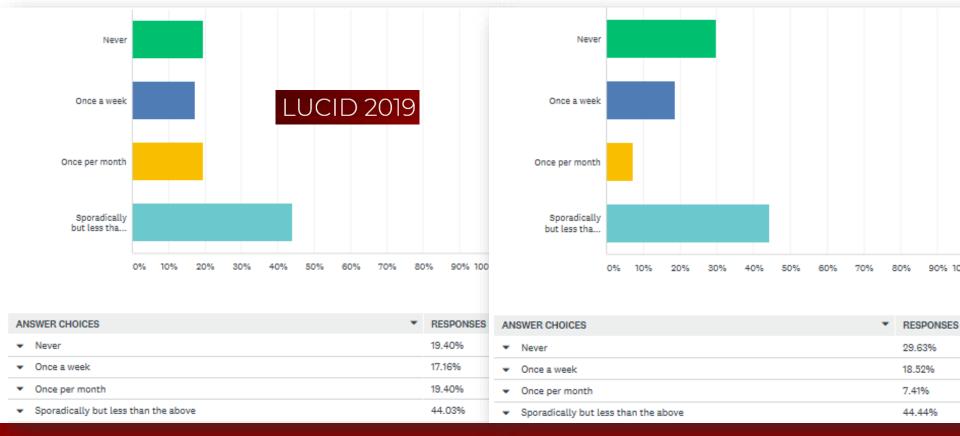
### **LUCID 2019**

- Mealtime rules 60% vs. 54%
- Frustration at time wasting 54% vs. 57%
- Driving and using mobile 41% vs. 37%
- Distracted in meetings/calls 56% vs. 37%

# Is your mobile in your bedroom at night?



## Family discussions about mobile use



## Productivity and safety

**LUCID 2019** 

distracted during important call/meeting (



- used phone while driving 41%
- tried to reduce mobile use 43%

	Mobile use while driving	Distracted in meetings
Want to reduce	(of those answering yes)	(of those answering yes)
No	50%	48%
Yes	50%	52%

### Gambling

- >10% use gambling apps
- >13% spend more than planned



## Justyn Larcombe My Story

justyn@gambleaware.com





Broken family: Justyn with his sons Oscar (left) and Matthew

We were scoins to the swings one him in the car I went parcet Putting the Control of the Control

had begin highly company credit confront of the search was a confront of the search light of the search li

They spent the day phoning up deby to see and world if see up what yers to see and world if see up what yers to see and world if see up what yers the true of the see and the true of the see and the

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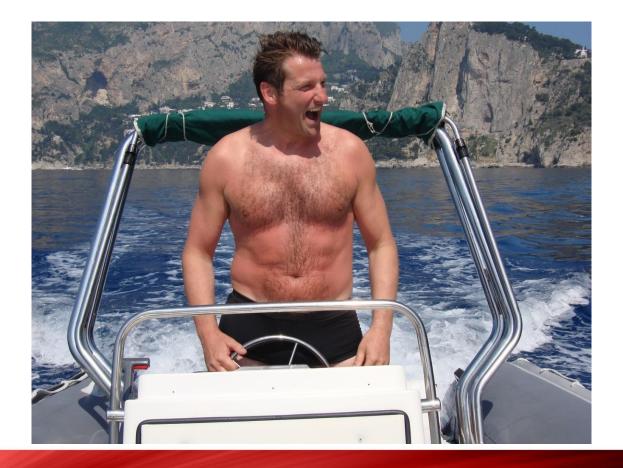
'All I was left with was a binbag of my clothes'

multiple file and the property of the property

broken families. He's not alone to calling for a cracked with the calling for a calling that a cracked with the calling for a calling for a

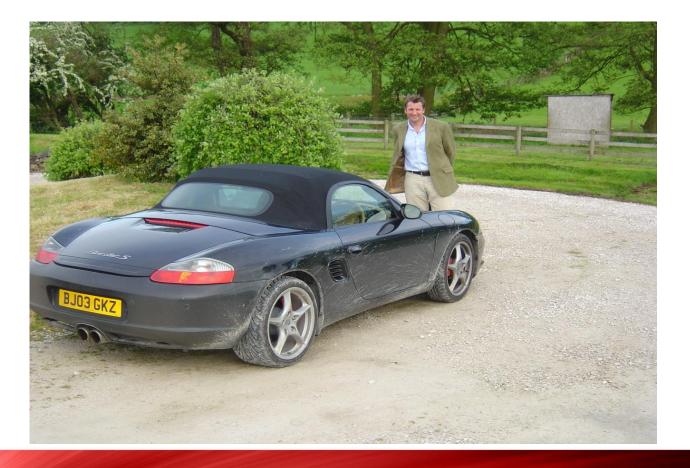


























#### The Facts (Taken from The Gambling Commission):

- ▶ 240,000 gambling addicts in the UK
- ▶ 55,000 are between 11 and 16
- ▶ 2,000,000 'at risk'
- ▶ 75% of the UK adult population gamble, 40% in the last 4 weeks (up 3% on 2016)
- ► For every gambling addict a further 10 people are directly affected
- In March 2013 gambling addiction was reclassified as a full behavioural addiction akin to heroin misuse
- ▶ 18% of all TV advertising gambling related
- ► Gambling addicts 15 times greater risk of suicide
- ▶ 10% of every suicide in UK gambling related



## Open discussion



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- 1. <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4628052/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4628052/</a> (accessed 19 Sept 2019)
- 2. McCrory EJ, Viding E. The theory of latent vulnerability: reconceptualizing the link between childhood maltreatment and psychiatric disorder. Dev Psychopathol. 2015;27(02):493–505.
- 3. <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2780535/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2780535/</a> (impact of behaviour in toddlerhood, inherited genes and structured parenting outcomes prospective adoption study)
- 4. <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4345133/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4345133/</a> (meta-analysis of twin versus adoption studies relating to heritability of alcohol use disorder. Circa 50% risk in both arms. Confounding included influence of spousal choice ie do you marry someone with same predisposition to drink to excess as you?
- 5. <a href="https://psyarxiv.com/eaz3d/">https://psyarxiv.com/eaz3d/</a> (Willems, Boesen et al meta-analysis looking at twin studies and heritability of self-control. Concluded that 60% is genetic variation. Environment taken to be common so MZ twins rate = 60% and DZ twins circa .3
- 6. <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5039518/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5039518/</a> (review of development of DSM codes and addiction/disorder
- 7. <a href="https://onlinelibrary.wiley.com/doi/10.1111/j.1360-0443.2009.02828.x">https://onlinelibrary.wiley.com/doi/10.1111/j.1360-0443.2009.02828.x</a> (accessed 26/9) Development of diagnostic tool for internet addiction

- 8. <a href="https://www.frontiersin.org/articles/10.3389/fpsyt.2013.00153/full">https://www.frontiersin.org/articles/10.3389/fpsyt.2013.00153/full</a>
- 9. <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5039518/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5039518/</a>
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# Gold Sponsor Breakout Sessions Tuesday 15 October – 11:25 and 13:15

Munich Re – Can Morality Define Mortality – Does Your Attitude to Risk Determine if you are a #saint or #sinner?

Pacific Life – A Spotlight on Mental Health – Test Your Mental Health Knowledge

**Medical Screening Solutions** – Innovation in Laboratory Testing – Differentiating Between Smokers and Vapers