

GLOW KIDS

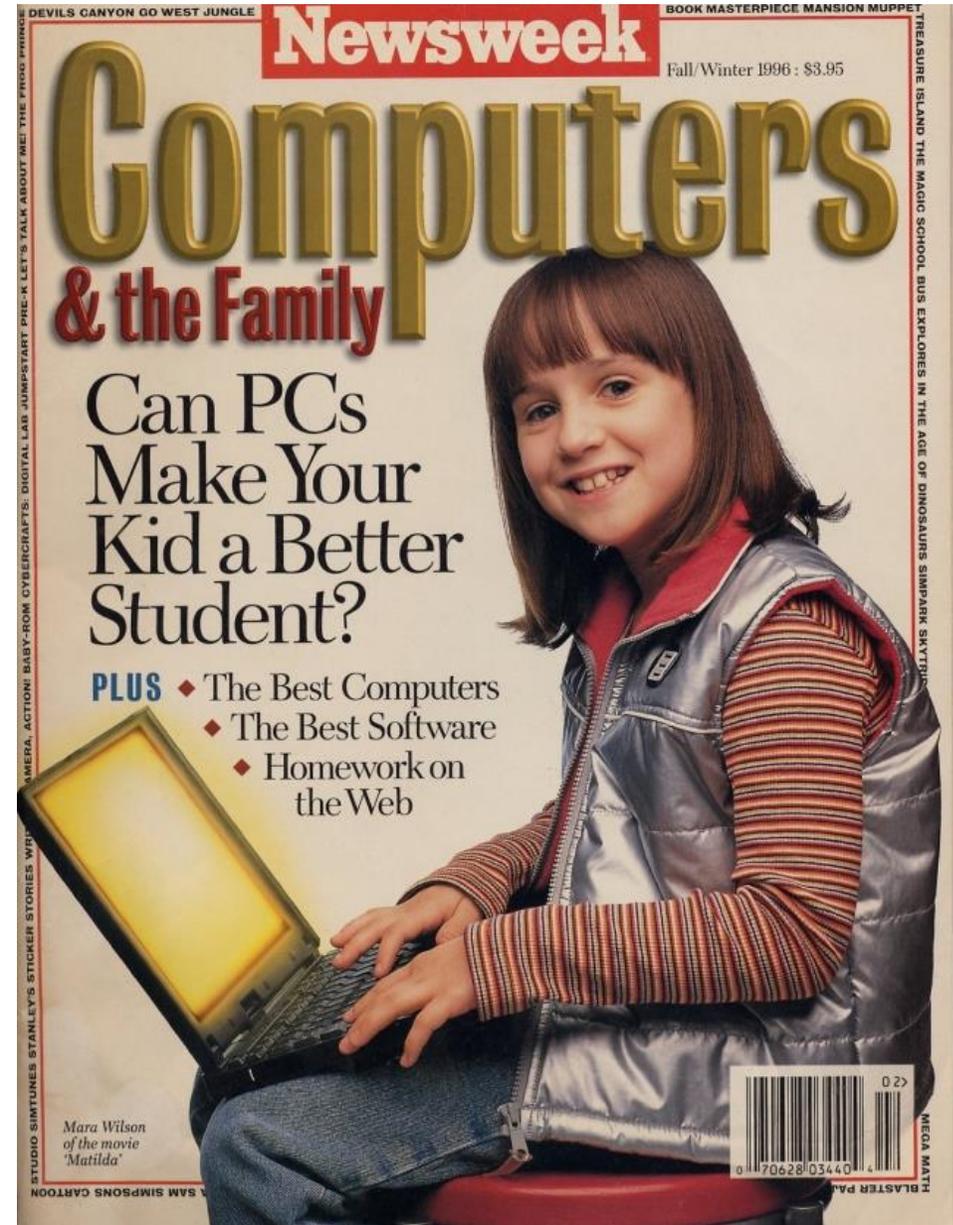
HOW SCREEN ADDICTION
IS HIJACKING OUR KIDS—AND
HOW TO BREAK THE TRANCE

NICHOLAS KARDARAS Ph.D.

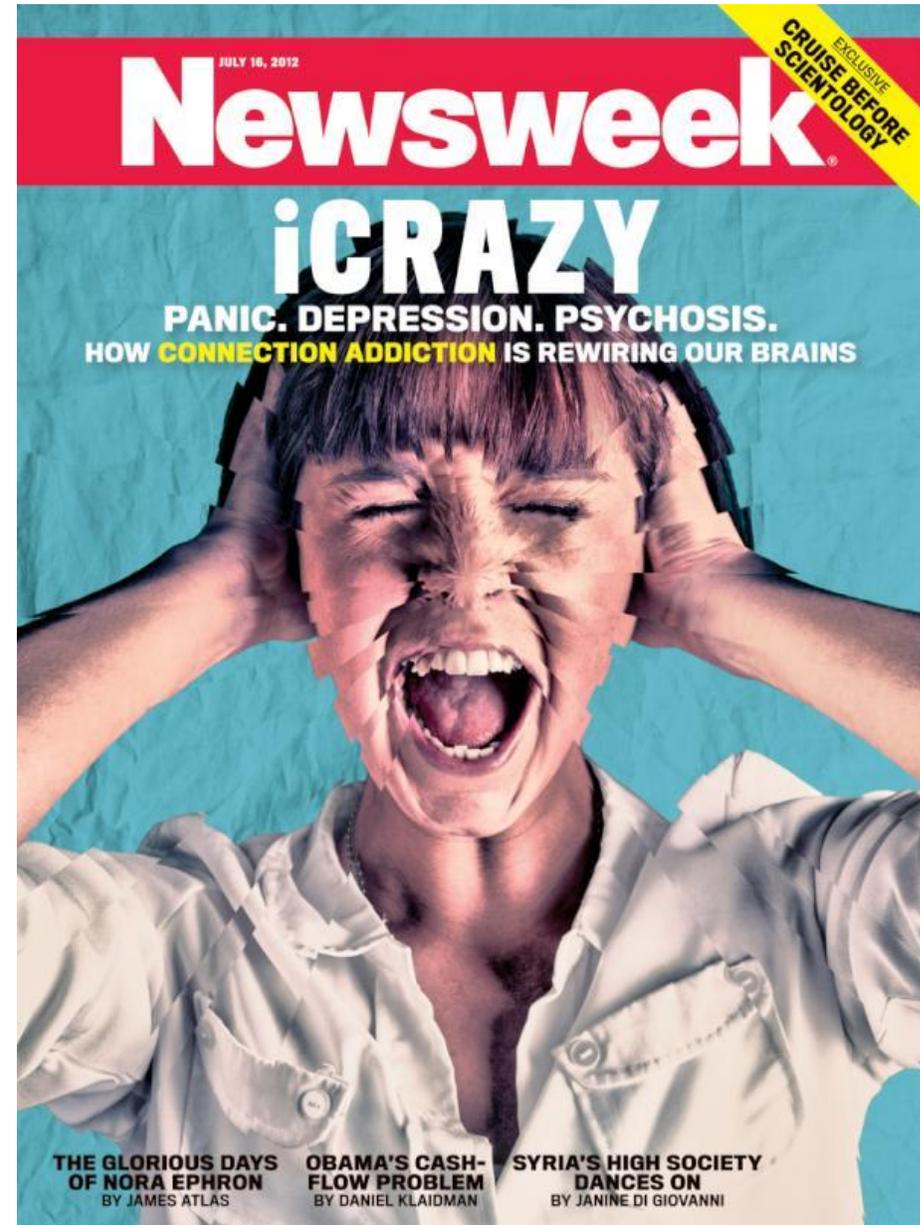
I feel sorry for people who lived before smartphones. All they had to amuse themselves was 197 million square miles of the real world.



THEN: An Optimistic View of Technology and Kids in 1996



16 Years Later in
2012, A Very
Different
Newsweek Cover
Story



Teenage Mental Health



ZOMBIE APOCALYPSE

It has arrived!

USA Today:
“Youth Suicides
are Rising...the
Internet May be
to Blame”
5/30/17

The CDC found the **suicide rate for children** age 10 to 14 **doubled** from 2007 to 2014--at the same time social media usage surged.

Suicide overtook motor vehicle accidents as a cause of death in that age group, the report showed.

Teens' use of electronic devices for at least five hours daily more than **doubled** (from 8 percent in 2009 to 19 percent in 2015). These teens were **70 percent more likely to have suicidal thoughts or actions** than those who reported one hour of daily use.

A black and white photograph showing a close-up of a person's open palm. The word "HELP" is written in large, bold, black capital letters across the center of the palm. The hand is held up, with fingers slightly spread. In the background, a crowd of people is visible but heavily blurred, suggesting a public gathering or protest. The lighting is soft, and the overall mood is one of seeking assistance or solidarity.

HELP

May 25th,
1979: The End of
Innocence
and the
Beginning of the
“Indoor Child”



- The Etan Patz Abduction changed the way that parents parented their children and began the age of the “Helicopter Parent”.
- Parents became more afraid in the 1970s

The End of Innocence: 24 Hr. Cable News

- CNN launches in 1980 and the 24/7 News cycle further amplifies Public Fear
- But statistics show that, in terms of crime and abductions, this is the safest time to be a child.





The Indoor Child

Indoor kids increasingly became TV kids...and then Computer kids.

1985 TV: “Electronic Soma”



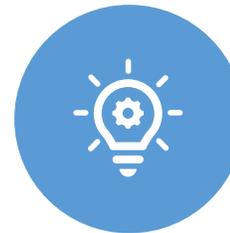
IN 1985 NYU'S DR. NEIL POSTMAN WROTE "AMUSING OURSELVES TO DEATH" (STEINHARDT SCHOOL OF EDUCATION AND CHAIR OF DEPT. OF CULTURE & COMMUNICATION)



COMPARED VISUAL MEDIA LIKE TV TO THE ADDICTING "SOMA" OF BRAVE NEW WORLD



SOCIETY WOULD BECOME UNINFORMED PLEASURE-SEEKERS



VISUAL MEDIA WOULD ALSO IMPACT HOW WE THINK AND PROCESS INFORMATION; READING REQUIRED IN-DEPTH RATIONAL ANALYSIS AND LED TO DIALECTICAL DISCOURSE-- TV DID NOT.



HE WAS VEHEMENTLY OPPOSED TO THE PERSONAL COMPUTER IN EDUCATION; "INDIVIDUALIZED" LEARNING WENT CONTRARY TO GROUP DYNAMICS AND THE SOCRATIC DIALECTIC.

Machines Advance...Humanity Recedes



Technology dumbs us down; “outsources” human skills like memory, math abilities, spelling, cognition...



How many phone numbers can you remember since your smart phone?



Memory is a muscle; University College London Experiment with London cabbies and “the Knowledge”; the hippocampus of those who passed the test had GROWN (in Alzheimer's it shrinks)



Britain’s Cranfield University 2009 study of pilot’s abilities to land a plane in bad weather. The more that pilots used “auto-pilot”, the more their actual piloting skills eroded.

Clinical Tech Effects

Addiction

ADHD

Aggression

Anxiety and
Depression

Psychosis

PHONE ADDICTION

THE NEW DRUG THAT IS KILLING AN ENTIRE GENERATION...



Digital Drugs

Dr. Peter Whybrow, Director of Neuroscience at UCLA, calls electronic screens and video games “electronic cocaine”

Commander Dr. Andrew Doan, MD and Ph.D. in neuroscience and the head of Addiction research for the U.S. Navy/Pentagon calls interactive screens digital “pharmakeia” (Greek for drug).

Chinese researchers call video games “electronic heroin”

Digital Drugs?

The New York Times

- Are Teenagers Replacing Drugs With Smartphones?

- By MATT RICHTEL
MARCH 13, 2017

The New York Times

“People are carrying around a portable dopamine pump, and kids have basically been carrying it round for the last 10 years.”

Dr. David Greenfield, Assistant Clinical Professor of Psychiatry, University of Connecticut School of Medicine

“Teens can get literally high when playing these games...Interactive Media act as an alternative reinforcer to drugs.”

**Dr. Nora Volkow, Director of NIDA
(National Institute of Drug Abuse)**



Chasing the Feel-Good High

Dopamine is the “feel good” neurotransmitter that’s the most critical in the addiction process.

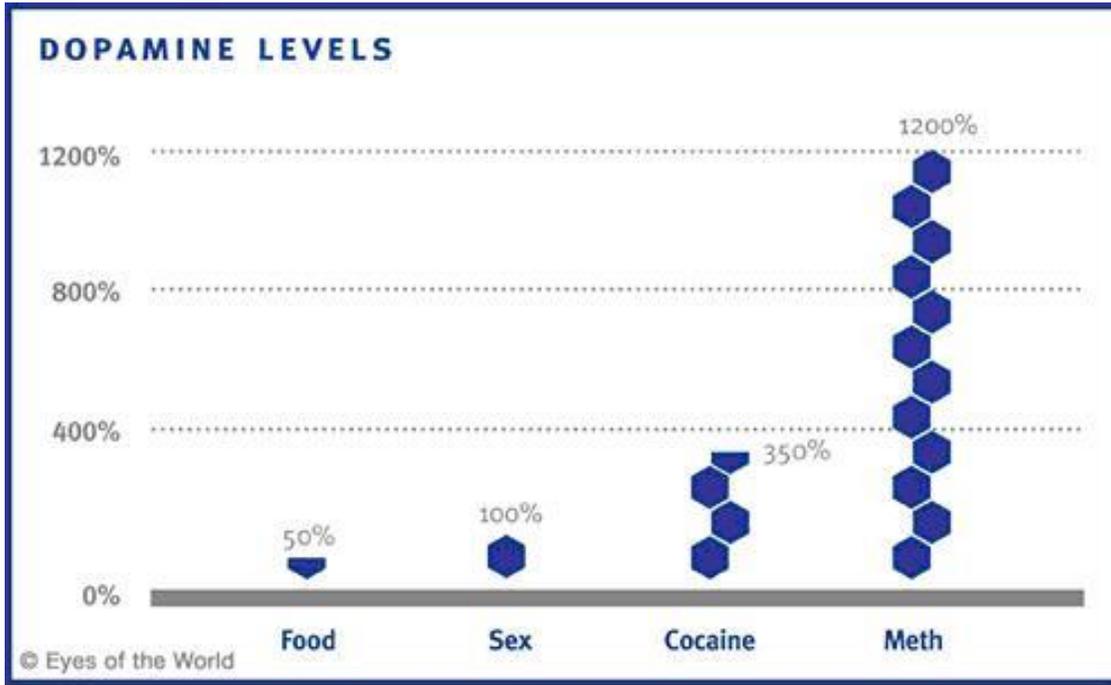
How dopaminergic (how dopamine activating) a substance or behavior is correlates with the addictive potential of that substance or behavior

Dopaminergic substances or behaviors increase dopamine levels so that the dopamine-reward pathway is activated, telling the individual to repeat what they just did in order to get that feel-good dopamine reward again and again.

Video Games are Not Addictive by Chance

- Dr. Doan:

“Video gaming is a multi-billion dollar industry. Video game companies will hire the best neurobiologists and neuroscientists to hook up electrodes to the test gamer. If they don’t elicit a blood pressure of 180 over 140 within a couple of minutes of game play, they go back and tweak the game to get that maximum addicting and arousing response.”



Video Games Raise Dopamine

- Food: 50% Dopaminergic
- Sex: 100% Dopaminergic
- Video games: 100% Dopaminergic
- Cocaine: 350% Dopaminergic

Facebook's Sean Parker on "Facebook Addiction"

Parker: "Facebook uses likes and shares to create a 'social-validation feedback loop' that keeps users coming back."

"We need to sort of give you a little dopamine hit every once in a while, because someone liked or commented on a photo or a post or whatever," Parker said. "And that's going to get you to contribute more content, and that's going to get you ... more likes and comments."

Facebook's Sean Parker:

“We’ve created a Monster” NY
POST 11/9/17

- “Facebook literally changes your relationship with society, with each other. God only knows what it’s doing to our children’s brains.”
- Facebook is designed to exploit “a vulnerability in human psychology” to get its users addicted.
- “The inventors, creators — it’s me, it’s Mark [Zuckerberg], it’s Kevin Systrom on Instagram, it’s all of these people — understood this consciously,” he said. “And we did it anyway.”



60 Minutes : Brain Hacking (4/9/17)

Former Google product manager Tristan Harris: “Silicon Valley is intentionally engineering your phone, apps and social media to get you hooked”

“There’s a whole playbook of techniques that get used to get you using the product for as long as possible...every time I check my phone, I’m playing the slot machine to see, ‘What did I get?’ This is one way to hijack people’s minds and create a habit, to form a habit.”

60 Minutes: Brain Hacking

Anderson Cooper: “You’re almost saying it like there’s an addiction code.”

Ramsay Brown (Dopamine Labs): “Yeah, that is the case. That since we’ve figured out, to some extent, how these pieces of the brain that handle addiction are working, people have figured out how to juice them further and how to bake that information into apps.”

Digital Morphine and The Military

At the University of Washington, researchers found that burn victims who played a video game called Snow World required NO morphine.

Subsequent MRI research showed that brain centers related to pain were more activated by the game than by actual morphine.







- Screens and Neurophysiology



2011 Indiana Univ. School of Medicine Video Game Brain Imaging Study

22 males aged 18-29
with no/low past
video gaming
experience

Randomly broken
into two groups of
11

Experimental Group
asked to play violent
video games for 10
hours in one week

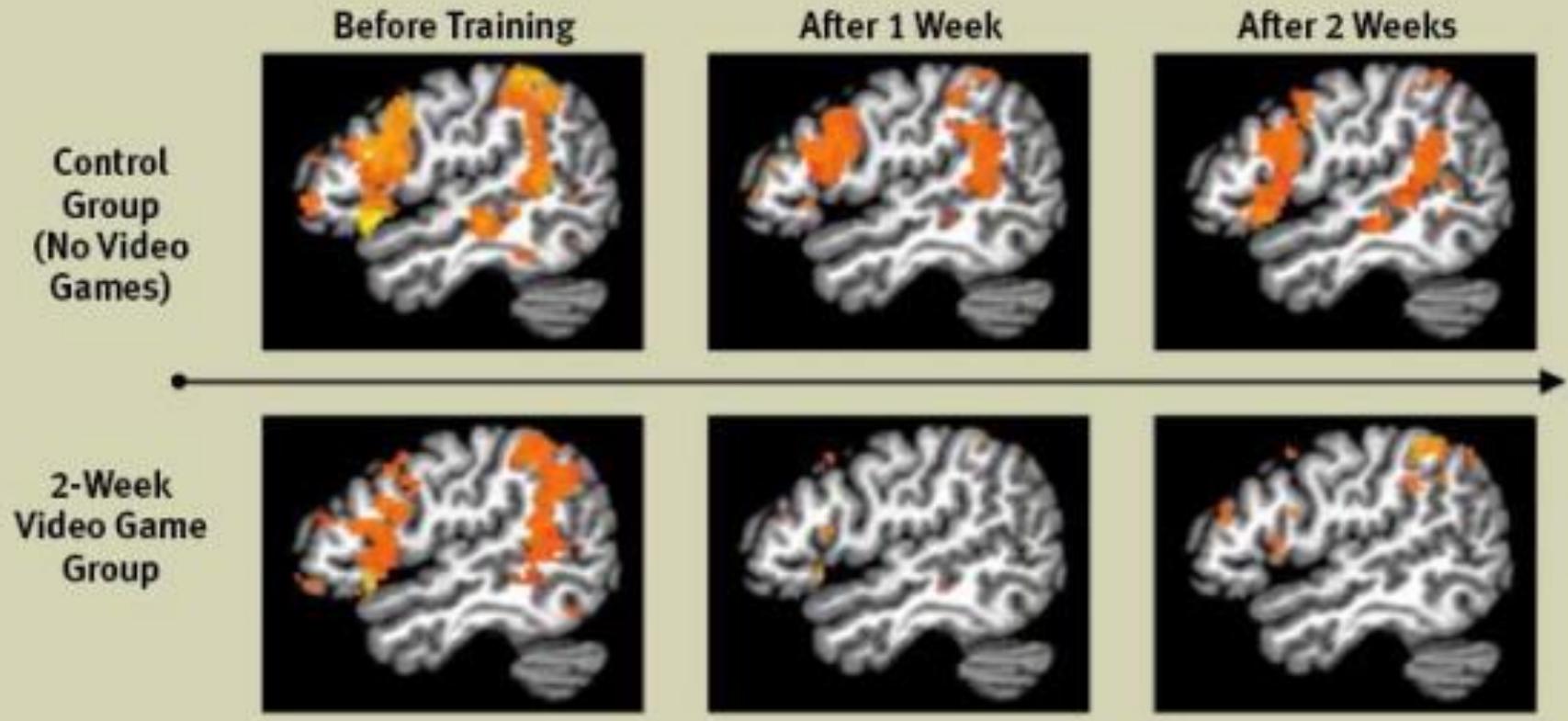
Control group played
no video games

Dr. Wang's Indiana University Study

Dr. Wang: "For the first time, we have found that a sample of randomly assigned young adults showed less activation in certain frontal brain regions following a week of playing violent video games at home. The affected brain regions are important for controlling emotion and aggressive behavior."

The frontal brain regions are also the same brain regions that are affected by drug addiction; for the first time, researchers showed a *direct* relationship between playing violent video games and a subsequent change in those brain regions associated with executive functioning.

Your Brain on Games: Experimental Evidence



LOSING TOUCH Young adult males who played a violent video game extensively for 2 weeks had lower activity in

important brain areas while attempting to control behavior, compared to those who played no video games.

Tech Addiction Brain Imaging Research

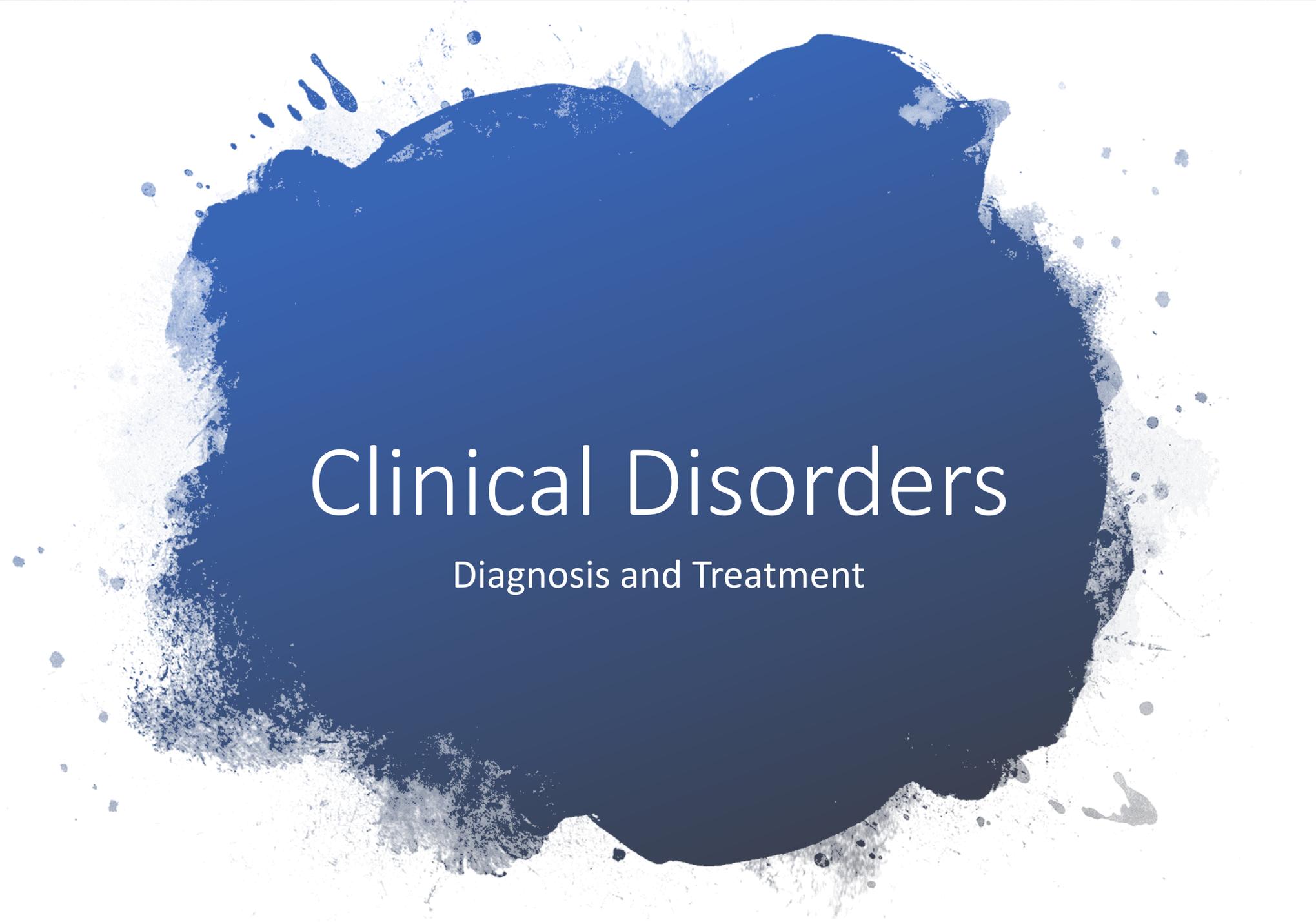
Gray matter atrophy: Several studies have shown shrinkage or loss of tissue volume in gray matter for internet/gaming addicts ([Zhou 2011](#), [Yuan 2011](#), [Weng 2013](#), and [Weng 2012](#)).

Brain areas affected included the important frontal lobe, which governs executive functions such as planning and impulse control. Volume loss was also seen in the striatum which is involved in reward pathways and the suppression of socially unacceptable impulses. Damage was also shown to an area known as the *insula*, which is involved in our capacity to develop [empathy](#) and compassion for others. In other words, behavior that might look sociopathic might ensue if one has a compromised insula.



Screens and the H-P-A Axis

- Research has shown screens to be hyper-arousing and effect the “H-P-A Axis” (Hypothalamus-Pituitary-Adrenal Axis) which leads to “fight or flight response”. Blood pressure goes up; pupils dilate; palms get sweaty.
- Hour after hour of hyper-aroused time can lead to a “dysregulation effect” where children can’t calm down and re “wired and tired”. Dr. Dunckley has called this “Electronic Screen Syndrome” and can look like ADHD, moodiness and aggressive behavior.



Clinical Disorders

Diagnosis and Treatment

Tech Anxiety: Nomophobia: “Oh no! I don’t have my phone anxiety!”

- **Nomophobia** is the irrational fear of being without your mobile phone or being unable to use your phone for some reason, such as the absence of a signal or running out of minutes or battery power. A phobia is by **definition** an irrational fear. ... The word **nomophobia** is a neologism made up of no + mobile + phone + phobia.
- Psychology Department in Rio De Janeiro’s Federal University started the “Delete Institute” in 2013.
- Over 800 treated.
- Classified into one of three possible categories: conscientious user, abusive user or dependent
- Method: Support group and exercises.
- Exercises: Watching a movie without checking phone
- Goal: To go from “abuse” or “dependence” to “Conscientious User”



Beyond Addiction Tech Effects

- Adolescent psychiatrists and author Dr. Victoria Dunckley: “Addiction aside, a much broader concern that begs awareness is the risk that screen time is creating subtle damage even in children with ‘regular’ exposure... I observe that many of the children I see suffer from sensory overload, lack of restorative [sleep](#), and a hyper-aroused nervous system, regardless of diagnosis—what I call [electronic screen syndrome](#). These children are [impulsive](#), moody, and can’t pay attention”.

Speaking of attention...

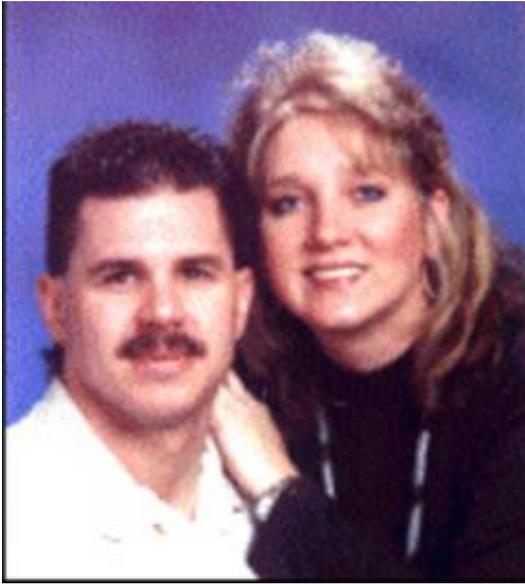
In a 2010 study published in the journal *Pediatrics* by Dr. Dimitri Christakis at the University of Washington found that children who spent more than two hours a day in front of a screen—computer or television—were twice as likely to have attention problems.

A 2004 study by Dr. Christakis published in *Pediatrics* found that for every hour of television watched by children between the ages one and age three, there is a ten percent higher chance of developing an attention problem that could be diagnosed as ADHD by age 7.

Video Games and Aggression

Iowa State University Distinguished Professor of Psychology Dr. Craig Anderson, in the most comprehensive meta-study review ever conducted in this area, exhaustively analyzed 130 research studies with over 130,000 participants worldwide.

Published in 2010 in the APA Journal *Psychological Bulletin*, the study concluded that violent games are “not just a correlation, but a *causal* risk factor for increased aggressive thoughts and behavior”.



Violent Video Games and Real Life Violence

**Daniel Petric killed mother, shot father
because they took Halo 3 video game,
prosecutors say**

December 15th, 2008, *Cleveland Plain Dealer*



Adam Lanza and the Newtown Massacre

Lanza's descent to madness and murder: Sandy Hook shooter notched up 83,000 online kills including 22,000 'head shots' using violent games to train himself for his massacre

By [DANIEL BATES](#) and [HELEN POW](#)

December 1, 2013

The Face of Evil?



Or



Video Game Psychosis

Social Media: The Big Disconnect

We're the most digitally and social media connected society ever—1.23 billion are on Facebook--yet depression and mental health diagnosis are skyrocketing.

According to WHO, by 2020 depression will be second to heart disease as leading cause of disability.

Numerous studies link “hypertexting” (over 120 daily texts) and “hypernetworking” (over 3 daily hrs social media) with behavioral and psychological problems

“Facebook Depression”: more “friends” =greater depression rates. The “Comparison effect”.

Screens in the Classroom

EDUCATION

- **Screens In Schools Are a \$60 Billion Hoax**

Dr. Nicholas Kardaras

Aug 31, 2016

The word "TIME" is written in a large, white, serif font with a thin black outline, centered on a solid red rectangular background.

Follow the Money: The Educational Industrial Complex

- Ed Tech a 60 billion dollar global industry by 2018.
- Not one credible research study that indicates that more tech = better educational outcomes.
- “I think when people come to write the history of this period in education...this investment in classroom technology is going to be seen as a huge fraud” Dr. John Vallance, Headmaster of Australia’s Top k-12 School, Sydney Grammar

Screens in the Classroom

The Organization for Economic Co-operation and Development (OECD) said in a 2015 report that heavy users of computers in the classroom “do a lot worse in most learning outcomes” and that: “In the end, technology can amplify great teaching, but great technology cannot replace poor teaching.”

An exhaustive meta-study conducted by Durham University in 2012 that systemically reviewed 48 studies examining technology’s impact on learning found that “technology-based interventions tend to produce just slightly lower levels of improvement when compared with other researched interventions and approaches.”

The “Google- fication” of the Classroom

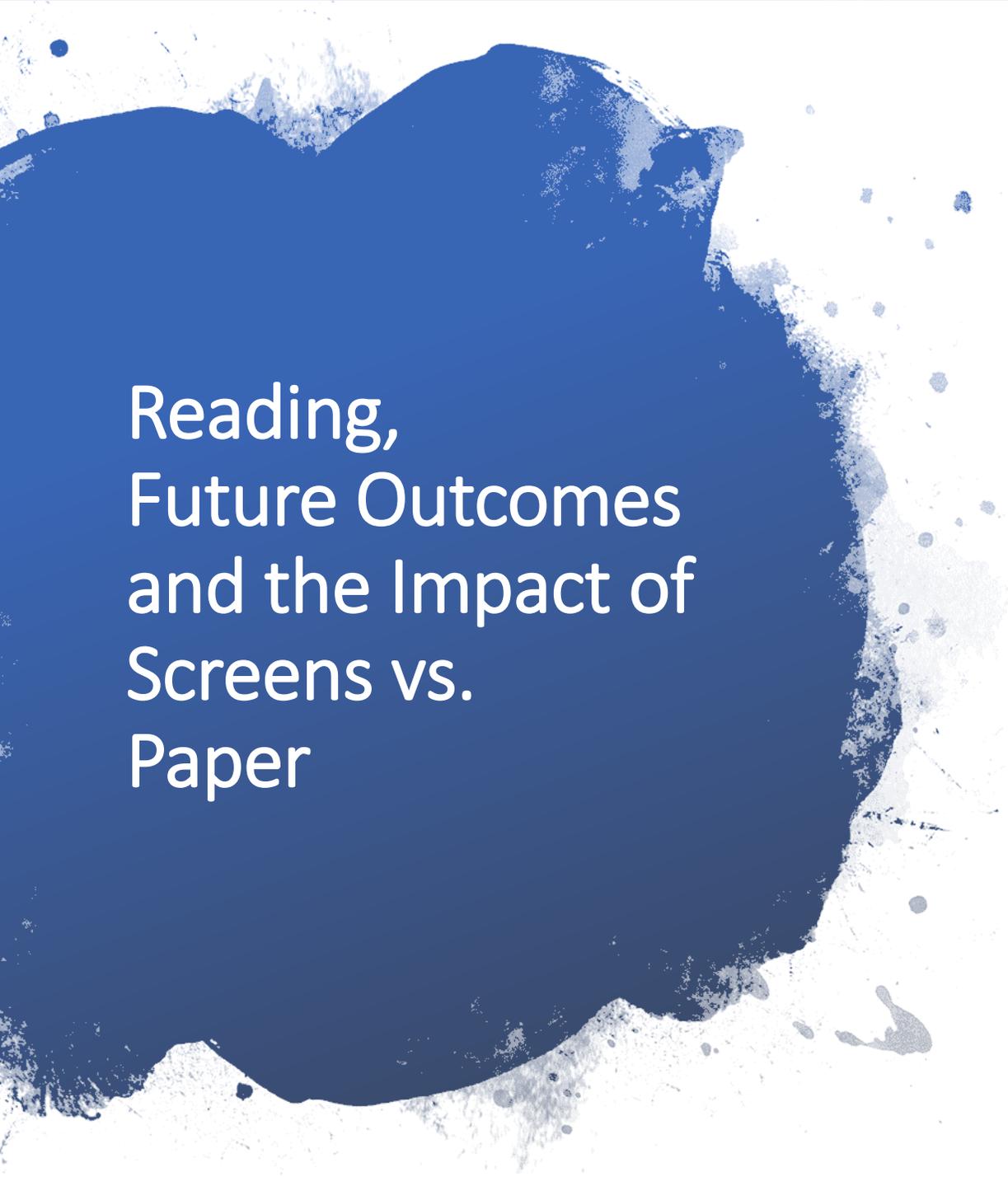
The Google logo is displayed in its characteristic multi-colored font: blue 'G', red 'o', yellow 'o', blue 'g', green 'l', and red 'e'.

Google

- Teachers Joe Clement and Matt Miles discuss in their book “Screen Schooled” the “Googlefication” of the classroom:
- Students can recall facts via Google, but as they get older they don’t develop critical thinking, inference and the ability to weave those facts into a cohesive tapestry/narrative.

Reading Comprehension on Paper vs. Screens

- Professor Anne Mangen, January 2013 Study in *International Journal of Education Research*:
Students' comprehension rates were worse for students who read text on screen vs. paper.
- Tufts University Developmental Psychologist Maryanne Wolf in 2013 *Scientific American*:
“There is a physicality in reading.”
- The Topography and Physical Landscape of the Printed Page.



Reading, Future Outcomes and the Impact of Screens vs. Paper

- A 2013 Study in *Psychological Science* that followed 17,000 people from birth to age 50 found that reading level at age 7 was the most important indicator of future socioeconomic status.
- A 2013 Organization for Economic Co-operation and Development (OECD) study found that “reading for pleasure at age 15 was the most important indicator of the future success of the child”.
- According to research, kids who read on screens are **THREE TIMES** less likely to say they enjoy reading.
- According to recent research, kids are reading much less. The proportion who **NEVER** read **TRIPLED** from 1984 to 2014.
- In 1984, 64% of 17 year-olds said they read for pleasure once a week or more; in 2014, 45% of 17 year-olds said they read for pleasure once or twice a **YEAR**—if that.

No iPad for
You!
Steve Jobs
was a Low-
tech Parent

When asked in 2010 at the unveiling of the brand new iPad about his kids' view of the new device, he said "They haven't used it. We limit how much technology our kids use at home."

Jobs' biographer Walter Isaacson: "Every evening Steve made a point of having dinner at the big long table in their kitchen, discussing books and history and a variety of things. No one ever pulled out an iPad or computer".

Executives and engineers in Silicon Valley (*Yahoo*, *Apple* and *Google*) enroll their young children in no-tech Waldorf Schools. NY Times 10/22/11

The Solution

Prevention: Delay portable electronic Devices until at least age 10.

Parents: Practice what you preach. Watch and moderate your own tech habits.

No screens at the dinner table (and, yes, have the whole family eat—and talk—together).

One day a week: Digital Fast. Smell the roses.

Talk to your children early and often about tech concerns.

Foster balanced, resilient, empathic and emotionally strong children.

Let your children be BORED!

National Institute
of Digital Health
www.usnidh.org

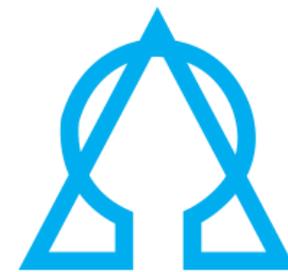
provides education, prevention and treatment resources for schools, families and therapists.

Provides Therapist Training and Certification to be Clinically Certified in Treating Tech Addiction

An affiliate of the National Institute of Science, Law and Public Policy (NISLAPP) in Washington, D.C.

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