

The scientific research behind the “Screen Harmoniser”

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What is the root cause of “screen angst?” (any stress around screens/gaming/tech)

Introduction

Within this article I have summarised the current research around screen time, effects of excessive screen time on the brain, the pattern of fear of technological advancement and most importantly what can we as parents or helpers do?

I then explain my belief, based on experience and work with other parents, that the root cause of screen angst is that parenting is extremely hard. Once a parent feels well resourced and supported, a lot of the stress around screens can be dissolved. Increased understanding of the nature of addiction can help shed a light on why there is so much shouting about screen angst. Once this is understood, then we are able to see how awesome screens can be as tools for learning, connection and entertainment.

Important Definitions

Tech - The **definition of technology** is science or knowledge put into practical use to solve problems or invent useful tools. This could mean laptops, smartphones, digital play devices, tablets, amongst other things.

Screen angst - Any tension around being asked to come off a screen or anxiety once off the screen.

Causation vs correlation - Causation is the relationship between cause and effect. So, when a cause results in an effect, that's a causation. When we say that correlation does not imply cause, we mean that just because you can see a connection or a mutual relationship between two variables, it doesn't necessarily mean that one causes the other.

Premature thinning of the cortex- Age-related cortical grey-matter thinning, thought to result from selective pruning of inefficient synaptic connections and increases in myelination within the neurones (brain cells)

What the current research tells us...

There is a lot of research that attempts to express correlation between our devices and a negative impact on us or being linked to having a negative effect. Or in other words there is a lot of shouting about the awfulness of screens but this research has not found consistent direct causation of technological devices causing harm which in other words means there is no factual research that has found the use of devices to have a negative impact directly.

One of the only empirical studies that relates to tech impact on our behaviour is the 'iPhone effect' out of Virginia Tech by Shalini Misra in 2014. This study found that the presence of devices was linked to a lower empathic response between two people in conversation (dyad).

This study presents field experimental evidence of some of the unfavourable implications of the presence of mobile devices on the character of face-to-face interactions. If either participant placed a mobile communication device (e.g., smartphone or a cell phone) on the table or held it in their hand during the course of the 10-min conversation, the quality of the conversation was rated to be less fulfilling compared with conversations that took place in the absence of mobile devices. The same participants who conversed in the presence of mobile communication devices also reported experiencing lower empathetic concern compared with participants who interacted without distracting digital stimuli in their visual field. The relationship between the presence of mobile devices and empathetic concern was more pronounced for participants who reported a closer relationship with each other compared with those who were less familiar with each other.

However the study did not take into account the type of relationship and was also in over 18s only. Although this still does not prove cause and effect, that the phone is causing harm but merely that in the absence of the phone there is more empathy experienced within the dyad.

Misra concludes that smart technologies offer the possibility of instantaneous and continuous global communities where knowledge is shared, opinions are contributed, relationships are rekindled, expressions of support are enhanced, and social movements are spawned.

Link for the study;

https://www.researchgate.net/publication/270730343_The_iPhone_Effect_The_Quality_of_In-Person_Social_Interactions_in_the_Presence_of_Mobile_Devices

We as a society are learning how to interact with each other under the presence of digital devices. For example, can you imagine someone pulling out a book in the middle of a conversation and even starting to read that book? Granted the book does not have the possibility of connecting you with the entire universe but the behaviour of what to do with devices in relation to real time face to face interactions is still in the learning phase on a whole.

A decade long research study will follow more than 11,000 kids to try to see the effect of screens and length of screen time on their BRAINS.

In part, scientists are trying to understand what no one currently does: how all that screen time impacts the physical structure of your kids' brains, as well as their emotional development and mental health.

This study \$300 million research funded through the American federal government, through the National Institutes of Health, across 21 sites across America have begun interviewing nine and ten years olds and scanning their brains, Dr. Gaya Dowling is currently heading up this extensive research:

To start with, the focus for this study was tobacco, marijuana, all drugs, the screen time component really came into play because we were wondering what is the impact? I mean, clearly kids spend so much time on screens and the fact that screen time is within the

same realm of concern as these other common addictive habits is reason enough to bring focus to this area.

The first wave of data from brain scans of 4,500 participants is in and it has Dr. Dowling of the NIH and other scientists intrigued. The MRI's found significant differences in the brains of some kids who use smartphones, tablets, and video games more than seven hours a day. The colours on the scans show differences in the nine and ten-year-olds' brains. The red colour represents premature thinning of the cortex. Which is the wrinkly outermost layer of the brain that processes information from the five senses, to interpret the outside world.

That's typically thought to be a maturational process, something that occurs in the ageing process. So what we would expect to see later is happening a little bit earlier. This thinning of the cortex is a natural process and there are many correlating traits attached to thinning of the cortex, IQ increases, more inclined to depression, Parkinson's correlations found, but as none of this is factual definitive research one cannot know the outcome until adulthood and even then the rest of each of the children's environment cannot be recorded or controlled. We don't know if it's being caused by the screen time and it is hard to know this for sure, we don't know yet if it's a bad thing. It won't be until we follow them over time that we will see if there are outcomes that are associated with the differences that we're seeing in this single snapshot.

"Kids this age, they need human experiences for their brains to develop optimally and reinforce these tracts," Dr. Hutton said. "We just really need to be careful about making sure kids have access to these same human interactive experiences that probably our brains are wired to require." (Journal of the American Medical Association).

Psychology today reported that "studies show internet addiction is associated with structural and functional changes in brain regions involving emotional processing, executive attention, decision making, and cognitive control." research authors summarising neuro-imaging findings in internet and gaming addiction (Lin & Zhou et al, 2012). Again as in the previous study whether this is good or bad will not be clear until that generation has developed into adults.

Effects of excessive screen time (or more importantly the lack of connection)

Link for the study;

<https://www.cbsnews.com/news/groundbreaking-study-examines-effects-of-screen-time-on-kids-60-minutes/>

So from my perspective, the message to parents, over and over and over, should not be either screens-are-bad, or you're-a-bad-parent, quite the opposite in fact. The message should be: In the early years, you are so important, and good parenting involves being there, interacting, talking, playing, singing, asking and answering questions. In being there for your children you must resource yourself fully for this lifelong task of being devoted to your child. Which of course every parent is already doing. Hopefully by doing this parents can be enjoying it a bit more instead of always having to be stuck in the hard feelings that can come along with parenting so much - guilt, shame, am I doing a good job?

A closer read of the studies linking screen time with depression finds correlation only with extreme amounts of screen time. Teenage girls who spent over five hours per day online

tended to have more depressive or suicidal thoughts, but common sense would have us ask whether the kids who have a propensity to spend excessive amounts of time online might also have other problems in their lives. Perhaps five hours a day on any form of media is a symptom of a larger problem. Even at these extreme levels of use, a study conducted by Dr. Andrew Przybylski at the Oxford Internet Institute found a very minor correlation with decreased well-being. “We’re talking about a very small impact,” stated Przybylski. “It’s about a third as bad as missing breakfast or not getting eight hours sleep.” Furthermore, the same study found too little screen time, an hour or less, was also correlated with negative well-being when compared to teens who engaged in moderate amounts of screen time.

The pattern of fear of technological advancement

Parents care and they will always care and when anything threatens that love whatever is believed to be the “cause” will be vilified - at this point in time it is screens and devices. Throughout time it can be observed that we have been blaming advances in tech for negatively impacting our children for centuries.

“Each successive historical age has ardently believed that an unprecedented ‘crisis’ in youth behaviour is taking place,” the Oxford historian Dr. Abigail Wills wrote for the BBC. “We are not unique; our fears do not differ significantly from those of our ancestors.”

In **1565** (Vaughan Bell wrote in Slate) the Swiss scientist Conrad Gessner worried about handheld information devices causing “confusing and harmful” consequences. The devices he was talking about were books.

An **1883** medical journal predicted a new trend that would “exhaust the children’s brains and nervous systems with complex and multiple studies, and ruin their bodies by protracted imprisonment.” The article was referring to public education.

And in **1936**, kids were said to have “developed the habit of dividing attention between the humdrum preparation of their school assignments and the compelling excitement of the [radio] loudspeaker,” according to Gramophone, the music magazine (Nir Eyal 2020).

Link for the study;

<https://www.linkedin.com/pulse/tech-ruining-kids-how-safely-manage-screen-time-nir-eyal/?trackingId=NvIrlth7ZD6bBfF0%2F1zsCw%3D%3D>

To date, studies suggest there is no consistent evidence that the Internet causes mental problems. If anything, the data show that people who use social networking sites actually tend to have better offline social lives, while those who play computer games are better than nongamers at absorbing and reacting to information with no loss of accuracy or increased impulsiveness. In contrast, the accumulation of many years of evidence suggests that heavy television viewing does appear to have a negative effect on our health and our ability to concentrate. We almost never hear about these sorts of studies anymore because television is old hat, technology scares need to be novel, and evidence that something is safe just doesn’t make the grade in the shock-horror media agenda (Vaughan Bell 2010 in [Slate](#)).

What can we as parents do to help?

Ultimately live the best life you can!

This may be hard to hear, for any of you parents but you have to above all else put your own care first, you cannot take care of a child to the fullest when you are not taking care of yourself. It is the age old saying of charity starts at home or put your own oxygen mask on first, or my personal quite ruthless saying is “grow or die”, I did this “self love/self care” thing kicking and screaming, I had to grow every part of me so I could be a half decent mum but I was resistant, I had to re-learn how to take care of myself. The good care of your children will come naturally as you yourself are nurtured and cared for because above all else you love your children. I cannot promise to make parenting any easier or less challenging but what I can do is point to something that was always there all along and that is your unconditional love for your child. I can help dispel the fear that anything can be more powerful than this love or the bond that exists.

Parenting is hard!

It's easy to understand why many parents might think tech is the source of the trouble with kids these days. But is tech really the problem?

As a passionate scientist and a loving parent I yearn to know the root cause of any painful symptom, in this case the symptom is “screen angst” and I believe one of the root causes is the fact that parenting is hard not that technology is inherently bad because of course it is not.

Parenting is hard and sometimes screens help us cope with parenting, but they are a plaster on a broken leg, it is warm regular loving support that parents need to enable them to then be fully present with their child and as a result the child is protected against developing unhealthy reliance on screens. Love acts as a protective balm to any child.

When we are trying to get our child out in the fresh air and turning off the screen is just too much for them and for you to deal with. This is when we can collapse in our parenting and again feel like failures. As many new models of parenting highlight now, this is when we need the ‘emergency support parent ambulance’ to swoop in and help us. Most of us do not have this support or we cannot access that support because we ourselves feel cut off from the world. The screen harmoniser is a support tool to remind parents that it is through simple activities that we can connect with our children and therefore ourselves. It does not have to be so hard.

The power of play

Schoorel from his book “Managing screen time” (2015) asks “what on earth is more beautiful than a child at undisturbed play?” As if from nothing children develop a stream of images, ideas, decisions, and twists and turns. The flowering season of the imagination, of fantasy games, lies roughly between the ages of two-and-a-half and five. Some children use materials for their play, whatever is at hand. A block that first was a boat is moments later a drowning victim to be rescued. A pinecone is quite easily a tree in a field as a cow in pasture. Children bend reality to their will and create new worlds. But their fantasy land is anything but arbitrary.

When we watch children undisturbed at play, we can observe an artistic process of creating balance and healing.

Screens are here to stay

From my perspective, it is not the screens or technology that pose the threat, it is our relationship with screens just as someone struggling with their diet you cannot just cut out food altogether, it is about re establishing good habits around your diet. These habits are where the power lies, and under the age of 7 children's brains are absorbing everything around them all the time and building sub conscious brain maps constantly (Bruce Lipton, 1991). Lipton also says that under seven years is when we are in the THETA wave length (imagination) so we are most susceptible to the world around us. Our own consciousness is the biggest influence. Norman Doidge, an expert in the field of neuro-plasticity - "it is possible to change our brain map at any age as long as we have the motivation etc..."

So my desire is to support parents in helping their kids develop good habits with screens and technology from a young age, sub conscious habits that will support them throughout their lives. And in doing so hopefully prevent further rises in extreme addiction in adults that are much more difficult to un-learn (but not impossible of course).

Screens are awesome!

Screens are what we make of them, screens are a part of our modern society. The digital age is here so let's enjoy it and learn how to use it to our advantage. The "Screen Harmoniser" is made to be a supportive tool for parents to turn to when they are feeling unsure what to do once the screens are turned off or put away. When you become a parent there is a process of remembering how to play, as an adult whose working a full time job we can forget that once a long time ago we were children who used to play and run and dance and do all the magical silly things children do so freely. It can be tough to get out of our own way and connect with that playful part of ourselves again.

Technology and screens have allowed loving connection to be maintained all over the planet. This technology when serving our hearts is absolutely wonderful, we are finding our way with these fairly new inventions. And just as with the relationship with smoking, having a loving perspective will instantly allow the trauma to be unravelled. Punishment and shaming will only push us back into our addictions. We all have trauma, it is how we collectively hold each other through our traumas that will unravel these addictions.

The nature of addiction

Defining addiction in general can be difficult. When we think of addiction we usually think of drug or alcohol addictions but there are many types of addictions. Nearly any craving or excess fixation can be categorised as an addiction. "Addiction is a term used to describe a recurring compulsion by an individual to engage in some specific activity, despite harmful consequences to the individual's health, mental state, or social life" (World Book Encyclopedia, 1966).

If connection is the opposite of addiction as Johann Hari says ([TED talk](#)), then an examination of the neuroscience of human connection is in order. Published in 2000, *A General Theory Of Love* is a collaboration between three professors of psychiatry at the University of California in San Francisco. *A General Theory Of Love* reveals that humans

require social connection for optimal brain development and that babies cared for in a loving environment are psychological and neurologically 'immunised' by love. When things get difficult in adult life, the neural wiring developed from a love-filled childhood leads to increased emotional resilience in adult life.

Conversely, those who grow up in an environment where loving care is unstable or absent are less likely to be resilient in the face of emotional distress.

How does this relate to addiction? Gabor Maté observes an extremely high rate of childhood trauma in the addicts he works with and trauma is the extreme opposite of growing up in a consistently safe and loving environment. He has found that it is extremely common for people with addictions to have a reduced ability for dealing with emotional distress, hence an increased risk of negative dependence.

"It's not an exaggeration to describe iGen as being on the brink of the worst mental-health crisis in decades," writes Dr. Jean Twenge in *The Atlantic*. "Much of this deterioration can be traced to their phones and technology."

Or at least in my opinion screen addiction can highlight this deterioration in mental health, screen addiction is a symptom not the cause.

The solution to the problem of addiction on a societal level is both simple and fairly easy to implement. If a person is born into a life that is lacking in love and support on a family level, or if due to some other trauma they have become isolated and suffer from addiction, there must be a cultural response to make sure that person knows that they are valued by their society, to support and nurture both the addict and their family if this is feasible.

Portugal has demonstrated this with a 50% drop in addiction thanks to programs that are specifically designed to re-create connections between the addict and their community.

For me when I wanted to face my addictions, such as when I stopped smoking, it meant I had to take a look at the pain that the smoking was attempting to cover up and this is where I needed help in the form of counselling primarily and also much more nurturing hobbies and pastimes began to seem more appealing to me. To put it simply I had to begin to take care of myself in a deeper way.

Ask not why the addiction, but why the pain. – Gabor Maté

Recreating bonds is essential in the long term, but human connection is crucial in the immediate task of clearing trauma. When a person decides to face and feel the pain that they may have been avoiding for years or decades, the first steps cannot be done alone.

Perhaps love exists

One of the implications of the increase in horizontal relationships (Gergen, 2002) is the lack of focused attention to any one interaction context.

In the "floating worlds" (Gergen, 2003) created by the presence of mobile communication technologies and the potential for access to a wide range of relationships and information at all times, individuals' thoughts are directed to other places, people, and contexts. The result is diminished quality of the "here and now" interactions with co-present others.

People who are closer to each other are more irritated by the presence of mobile devices, possibly because they expect complete attentiveness of persons who mean so much to them (Geser, 2006; Humphreys, 2005; Mazmanian et al., 2005), in more distant relationships, perhaps partial attentiveness may be more likely to be tolerated?

What we are missing out on?

In my opinion it is not the effects of screens that causes pain, it is what we are missing out on when we are not connecting with each other or our children to the fullest. We miss out on the massive personal growth and love that can come through human connection, nothing can match that.

Recommended guidelines for parents by the American Academy of Pediatrics Guidelines (2018)

- Make your own family media use plan.
- Treat media as you would any other environment in your child's life.
- Set limits and encourage playtime.
- Screen time shouldn't always be alone time.
- Be a good role model.
- Know the value of face-to-face communication.
- Limit digital media for your youngest family members.
- Create tech-free zones.
- Don't use technology as an emotional pacifier.
- Apps for kids – do your homework.
- It's OK for your teen to be online.
- Warn children about the importance of privacy and the dangers of predators and sexting.
- Remember: Kids will be kids.

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