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THE 4TH INDUSTRIAL REVOLUTION - IMPACT ON PERSONAL & FAMILY LIFE

BY JONATHAN EBSWORTH



In preliminary chapters of this book, we have read about the assembly of rapidly developing technologies that together are driving the Fourth Industrial Revolution (4IR). This revolution is truly pervasive, but perhaps more than any previous change of this type, the revolution directly impacts our Personal and Family lives.

The rise of technology in our daily lives

In the 1990s, we saw the rise of the internet and more particularly the world-wide web – which began as a somewhat academic endeavour, then started to transform first business to business commerce closely followed by online shopping.

Around 2000, smartphones became widespread; their popularity boosted massively when Apple launched the fashionable, user-friendly iPhone in 2007. Suddenly we had an attractive consumer device that was (almost) always connected, always on, in our pockets or our hands wherever we went. Significant improvements in mobile communications (3G, 4G and soon 5G) and high-speed Wi-Fi networks added further momentum.

It was not only new shiny hardware and better communications protocols that changed things – but new software offered entirely new possibilities. User-friendly search engines helped democratize access to the incredible range of information on the internet. These were often coupled with content portals like AOL, CompuServe and Yahoo. Napster and iTunes music store began to challenge the traditional physical media for music of singles, LPs, CDs and of course the compact cassette. YouTube was founded in 2005 and began to provide access to a massive range of visual content.

Internet-based social media appeared around the year 2000, and quickly gained very large numbers of users. Friends Reunited (1999) and Myspace (2005) were some of the early successes. The arrival of Facebook on the scene in 2004 quickly took user-growth into uncharted waters. Helped by the growth of fashionable iPhones and its derivatives, Facebook achieved 500m users during 2010. By 2018 Facebook had over 2.3bn users out of 4.2bn internet users in a global population of 7.6bn people.

Many social media start-ups come and go; but today we live in a world where Face-

book, Instagram, WhatsApp (Facebook companies), YouTube, Waze, (all owned by Alphabet – Google’s parent company), Snapchat, Pinterest, Twitter, Reddit, TikTok and for business people LinkedIn dominate our lives. These are augmented by Spotify, Apple Music, Netflix, Amazon Prime and our cable TV providers offering more entertainment. Our smart home technology comes primarily from Google Nest, Amazon Ring, Apple Home, Phillips Hue and any number of other smart home device manufacturers. Smart speakers developed by Google, Apple and Amazon (not to mention third parties who include these capabilities in their own products) allow us to ‘talk to our tech’ and increasingly installed in our homes. Cars are increasingly connected both directly and often embedding our phone capabilities via Android Auto and Apple CarPlay. We can add to that level of connection with smart watches or fitness devices.

We can be connected all our waking hours, wherever we are – always reachable, always on (even often when we are sleeping). Our mealtimes, our work time, our times of quiet, our times of worship or devotion (if that is a part of our life) often are accompanied by our devices.

Made for relationship

As human beings, Genesis describes us as being created for connection. Connection with God our Creator, and with one another:

“Yahweh God said, „It’s not good for the human being to be on his own. I’ll make him a helper suitable for him.” (Genesis 2:18⁸⁵)

All through Scripture we hear the story of a Covenanting God, who has made promise after promise that humankind could have relationship with him, to the point of sending his Son to die in our place. Jesus prayer in the Garden of Gethsemane contained these words:

“I do not ask for these only, but also for those who will believe in me through their word, that they may all be one, just as you, Father, are in me, and I in you, that they also may be in us, so that the world may believe that you have sent me.” (John 17:20-21 (ESV))

85 John Goldingay, The Bible for Everyone © 2018 John Goldingay

In this chapter, one of the key questions I want to explore is, “What impact does 4IR technology have on our relationships – with one another, those we love and with God?”

Technology – a force for good?

Our attitudes to technology innovation to fall into one of three headings:

Technophiles are excited by new things, new possibilities. They embrace as much new technology as they can; many people are **techno-ambivalent** – they remain unexcited by new tools and technology;

And the final group could be described as **technophobic**. They may be suspicious or frightened by new technology – but whatever the reason they do not like it.

As a technology professional who has worked in this industry for almost 40 years, I can appreciate all these perspectives. There is some wisdom to be found in each.

I have heard many say that technological artefacts are ‘neutral’; that it is only their application that determines whether they are beneficial or harmful. This view is usually described as Instrumentalism. I think we need to look harder at technology innovations to understand the underlying perspectives and values that are innately reflected within.

Embedded in every tool is an ideological bias, a predisposition to construct the world as one thing rather than another, to value one thing over another, to amplify one sense of skill or attitude more loudly than another.⁸⁶

Not all the values and impact of technology are immediately obvious. Look at the development of the mechanical clocks, which were developed to help regulate times of devotion in monasteries. However, the clock quickly became the means to regulate time and events in people’s lives. The clock is not merely a means of keeping track of the hours, but of synchronizing the actions of men . . . The clock is a piece of machinery whose ‘product’ is seconds and minutes: by its essential nature it dissociated time from human events and helped create the belief in an independent world of mathematically measurable sequences.⁸⁷

⁸⁶ Neil Postman, *Technopoly* (1993)

⁸⁷ Lewis Mumford, *Technics and Civilization* (1934)

Instrumentalism can engender a degree of complacency. A view that originated during the Enlightenment in the 18th Century, is Technicism. This belief has three characteristic tenets:

- advances in technological capability is inevitable; it cannot be stopped;
- technology progress will inevitably improve the lot of humankind; and
- any emerging issues caused by technology can be overcome by technology solutions.⁸⁸

Technicism can cause us to become naïve and fatalistic; assuming all innovation will be beneficial and cannot be resisted. I think as we look at the impact of technology on our personal and family these two sets of assumptions start to look flimsy.

Being grateful for the many benefits of 4IR Technology

This book has been written at an extraordinary moment within modern history. The world is gripped by the consequences of an invisible, infectious virus (SARS-CoV-2). Entire nations have spent weeks locked down, forbidden from socialising; with schools and colleges closed; churches shut down. Digital technology has offered us a lifeline – enabling us to remain in contact with our friends, families, social groups, churches and workplaces - even while we cannot meet in person. Single people and families have (eventually) managed to secure essential supplies, and receive support using online tools and services. Folk struggling with mental health issues have secured some assistance via video technology, as have those needing physical therapy. Teaching at all levels – both synchronous and asynchronous has been available for many. Extra-curricular activities like music groups and choirs have been able to keep practising. None of these things would be possible without digital technology.

The fellowship I belong to, began daily prayer sessions via Zoom at the start of the UK lockdown. While numbers have fluctuated – on average over 50 people attend morning prayer, seven days a week. This was something that we could not achieve prior to lockdown. A new community has been built from people who really didn't know each other very well, many of whom had not even met in real life. This could not have happened without digital technology.

88 Stephen V. Monsma, ed., *Responsible Technology*, (Grand Rapids Eerdmans, 1986)

Despite these blessings – lockdown has been an extraordinarily hard time for many. The difference between embodied and ‘digital’ contact has become all too apparent. The richness of experience we can enjoy when we are together in real life only becomes clear when we lose the chance to enjoy it. This pandemic has shined a light both what is good, and what is inadequate about digital technology. We need to remember that lockdown would have been far harder for many of us without it.

Those benefits were more costly than we realized. The superficial limitations of living our virtual lives have been laid bare. Despite endless video chats and meetings; even virtual coffee’s and meals – the lonely are still alone; missing the power of physical human touch: the comfort of human presence. We have also discovered that we are not designed for large video group video calls. Fatigue creeps in perhaps as a result of our minds trying to fill in gaps in perception of tens of concurrent moving pictures. There is a still darker side that lurks beyond these experiences.

We don’t pay directly for much of the technology we use. We receive no monthly bills for Facebook, Instagram, WhatsApp, Facetime, Snapchat, Waze, TikTok, LinkedIn, Pinterest, Reddit, YouTube or Google. They provide an incredible range of capabilities, seemingly at no cost – while the companies behind these applications have rapidly become some of the richest in the world. How can that be?

At its simplest – advertisers are paying for these services. They are moving away from traditional channels in magazines and newspapers, TV, movies and radio onto these digital platforms. What is it about these channels that makes them so attractive? Is it just access to our eyes or something more?

Advertising media has never just been about product promotion but ultimately aimed at trying to get us to change our behaviour. Advertisers are moving away from traditional forms of influence and persuasion because digital technology reaches further and works more effectively than traditional ‘influencing’ techniques.

If you have been keeping tabs on the most successful Silicon Valley start-ups, have watched the recent docudrama “*The Social Dilemma*” (Netflix, 2020), or have read books like Shoshana Zuboff’s “*The Age of Surveillance Capitalism*” (2019)⁸⁹ or Rana

89 Zuboff S., *The Age of Surveillance Capitalism*, Profile Books, London, 2018

Farooohar's "*Don't Be Evil*" (2019)⁹⁰ this won't be news to you. For those of you who simply use these tools, this claim may seem a bit far-fetched, so let me elaborate.

Google - the inventors of an unholy exchange

Google led this journey, and have arguably (together with Facebook) been the most effective practitioners of this art. In the early 2000's Google had a great search engine – better than anyone else's. They had acquired some very significant startup investment – but they had two problems. First, they weren't profitable and second the dot.com bubble which had driven venture investment at the end of the last century had burst in the early years of the new millennium. Investors attitudes changed. They were desperate to see a pathway to profit – and great though Google's search engine was, there was no clear plan that would deliver a return on those investments.

The secret to making staggering amounts of money was already embedded in Larry Paige and Sergey Brin's search engine – they just hadn't realised it yet. Google had built developed a search engine that offered more accurate outcomes than anyone else by harvesting all the contextual information they could from their users, not just the search terms they entered: but all the information about our activities before and after the search was executed. By using sophisticated computation, they could anticipate what we intended to ask and provide better outcomes as a result.

When they designed their search engine they did not want to 'corrupt' its findings by tying search results to advertising. When the pressure for profit became irresistible, they realised that our 'digital exhaust' could be applied to offering better targeted advertising than anyone else. The moment Google acted on that concept, Google's relationship with their customers changed. They were no longer users but now they were the source of the raw material that powered Google's business: our behaviour. At first Google was limited to gathering information about our 'digital behaviour'. Their results were being honed into ever better understanding of who we are and better predictions of how we were likely to respond when certain stimuli were applied.

Google appreciated their already massive databases needed to be extended contin-

90 Farooohar R., *Don't be Evil, The Case Against Big Tech*, Random House, New York, 2019

uously. With the arrival of smart phones, they had a wonderful opportunity to move beyond the virtual internet world to the real physical world. Everywhere we went, our smartphones came with us. This reach has gathered pace as connected fitness bands, smart watches, connected cars and smart homes and even smart cities started to come online.

Google's tools are provided 'free' to users for two reasons:

1. By capturing our attention, Google can sell outcomes to their paying advertisers.
2. By sustaining our attention and applying digital nudges Google can increase the probability of our acting on the advertisements we see. The more users they have the greater their reach and ability to drive revenue.

Any new incursion into another part of our lives or that of our children provides opportunities to gain new insights and increase their power to influence our lives. This business model is what Professor Shoshana Zuboff calls 'Surveillance Capitalism'.

Google's incursion into our lives has been systematic, largely invisible, and very intrusive. They have turned us into connected sensors for their ecosystem pushing as far into our lives as they are able – seemingly ignoring privacy regulations and creating an environment where the concept of 'informed consent' for technology users has become ridiculous.

Facebook and many others have followed down this path. Google are not alone in this. In 2008, Facebook were facing the identical struggle Google faced back in 2001/2. Their user base had grown incredibly fast, but their 'free' software and service business model lacked the pathway to serious profitability. Mark Zuckerberg hired Sheryl Sandberg as Facebook's Chief Operating Officer. She came from Google where she had been Head of Ad Services and was one of the primary architects of Surveillance Capitalism. Her mission was to help Facebook make money. She did that by helping Facebook implement the Surveillance Capitalist playbook she had developed at Google, with one big advantage. Most of their core data had been given to them directly by their users. They didn't need to infer much at all. Their pursuit into our lives has been just as extreme as Google's and they both have run covert human behaviour modification experiments outside of any recognised ethical supervision⁹¹.

⁹¹ <https://research.fb.com/publications/a-61-million-person-experiment-in-social-influence-and-political-mobilization/>

Around the same time, an academic, BJ Fogg established the 'Persuasive Technology Lab' at Stanford University. There they researched and taught the models that could all but ensure that users would keep going back to their mobile or web-based applications⁹². Another Stanford graduate who attended some of BJ Fogg's lectures was Nir Eyal. He is the author of a book called "Hooked" (2014)⁹³ which describes in frightening simplicity how application designers can initiate a Hook cycle following repeated loops of:

Trigger (app or environment) -> Action (user) -> Variable Reward (app) -> Investment (user)

The result of the investment generates another trigger. Consider Instagram: You have developed the habit of posting beautiful scenes on Instagram. You see a beautiful view (trigger). You take a picture, perhaps an elegant selfie with the view as your backdrop (action). Other users like or comment on your post (variable reward) and so as more people respond to your posts, you become more vested (invest) in the environment and susceptible to the next trigger.

A new class of business – social media comes of age

Since the birth of the iPhone we have had explosive growth and consolidation of social media platforms in the West. The result is we now have an 'attention economy' where Google (Android, Search, YouTube, Waze, Maps, Nest, Fitbit), Facebook (Facebook, WhatsApp, Instagram, Oculus), Amazon (Alexa, Prime, Ring, Audible,), Apple (Music, TV, Siri), Microsoft (Skype, LinkedIn, Bing and other business tools) on top of these 'big corporates' we have SnapChat, TikTok, Reddit, Pinterest. We mustn't forget Netflix, Satellite, Cable and Terrestrial TV providers, Games Consoles and the movie studios. With our always connected lives via our mobile phones, smart watches, tablets, smart TV, laptops, connected cars and homes we are 'always on', always monitored and frequently being subconsciously conditioned or manipulated, as are our children when they are online.

⁹² To avoid accusation of demonisation of BJ Fogg, it should be noted he was aware of the potential for misuse of his work from an early stage and on Persuasive Technology Lab holding page, there is a list of publications on ethics, undertaken by the lab and required for its students. <https://captiveology.stanford.edu/go/welcome?from=>

⁹³ Eyal N., Hoover R. Hooked - How to Build Habit-Forming Products, Portfolio/Penguin, New York, 2014.

What is the impact of this on our own and our family's lives? Tristan Harris' Center for Human Technology has published a measured and thoughtful 'Ledger of Harms'⁹⁴ that have followed "Big Tech's" relentless pursuit for our attention. Here I have summarised some headlines under their key areas of harm:

Making sense of the world – misinformation, conspiracy theories and fake news: Fake news reportedly spreads 6x faster than true news. Researchers believe that this is because fake news is more attention grabbing, more emotive, and perhaps more shocking than true news. This makes it more attractive to the content provider recommender engines of seeking to retain our attention.⁹⁵

It is claimed that 64% of people joining extremist groups do so as a result of algorithmic recommendation on social media. While this seems to be recognised within Facebook's corporate leadership, there is little priority given to addressing these issues. ⁹⁶ 45% of tweets about Corona virus are initiated by bots intentionally spreading false information.⁹⁷

Attention and cognition – loss of crucial abilities including memory and focus: Persuasive tools like Eyal's 'Hook Model' means that apps are designed constantly to nudge, to distract and to interrupt. Researchers suggest that we switch between content every 19 seconds⁹⁸ and that we experience a neurological 'high' each time we switch. This response makes us vulnerable to manipulation by attention-seizing technologies.

It may seem strange, but research has demonstrated that the mere presence of a smartphone (even switched off) in the same room has negative impact on both working memory and problem-solving in adults. This disappears when the device is in a different room to us.⁹⁹

Talking with people leading times of reflection, meditation, prayer or silent study

94 <https://ledger.humanetech.com>

95 <https://science.sciencemag.org/content/359/6380/1146.full>

96 https://www.wsj.com/articles/facebook-knows-it-encourages-division-top-executives-nixed-solutions-11590507499?mod=hp_lead_pos5

97 <https://www.kpbs.org/news/2020/may/20/researchers-nearly-half-of-accounts-tweeting/>

98 <https://academic.oup.com/joc/article-abstract/64/1/167/4085996?redirectedFrom=fulltext>

99 <https://www.journals.uchicago.edu/doi/abs/10.1086/691462>

adult participants often struggle to cope with stillness and silence. So much so, that we are considering developing training to help people set technology aside and (re-) learn to be comfortable sitting in stillness and silence.

Physical and mental health – stress, loneliness, feelings of addiction and increased risky health behaviour: We hear anecdotes about stress, harm and deteriorating mental health associated with the use of social media. An experimental study of Facebook users in the US (up to an hour a day on the application), deactivated their accounts for a month (before the mid-term elections in 2018), saw a decrease in all online activity, an increase in offline activities (including socialising), along with a significant increase in emotional well-being.¹⁰⁰

Analysis of Emergency Department Visits for nonfatal self-inflicted injuries amongst youth in the USA from 2001 – 2015¹⁰¹ demonstrates a clear but modest increase in the rates of nonfatal self-harm admissions for females aged 20-24 from 2001 to the present (2% increase year on year). The rates of admission for girls aged 10-14 rose 18.8% year on year until the end of the study. The rates of admission for 15-19 year old girls increased 7.2% year on year from 2008. The rates of admission for young males was stable for this period. This suggests to me an increasing level of anxiety, particularly within the younger female population and a plausible relationship with the growth of social media.

Social relationships – Less empathy, more confusion and misinterpretation: There is a mass of information on the impact of devices and social media on our human relationships. When my wife and I became more conscious of these issues, she began to become increasingly irritated by haptic alerts from news, messages, emails and other services that were delivered by my Apple Watch. She complained, reasonably that my distraction meant that I was not fully present for her when we were talking. As a result, I have turned off the bulk of notifications on my watch and my phone as a result. How many of us allow digital interruptions to prevent us from being fully present for those we work with and those we love?

Laura Donnelly in the Daily Telegraph (London) reported¹⁰² in February 2019, that

100 <https://www.aeaweb.org/articles?id=10.1257/aer.20190658>

101 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5753998/>

102 <https://www.telegraph.co.uk/news/2019/02/07/children-spend-twice-long-smartphones-talking-parents/>

children under 14 were spending almost twice as long on devices as they were talking with their families. A Pew Research study¹⁰³ found that almost 90% of mobile phone users admit to checking their smartphone for alerts during their last social gathering. 82% of millennials think it is OK to read text and emails while in a social setting and 75% think its OK to send a text or email in the same setting. Acceptance of these practices drop with older demographic groups.

Politics and Elections – Propaganda, distorted dialogue and disrupted democratic processes:

We have already touched on the issue of fake news. The algorithms that drive recommendation on tools like Facebook, Instagram, YouTube and Twitter behave a bit like an echo chamber – amplifying ever more extreme versions of material that resonate with our own points of view which in turn drive polarisation.

In the recent Netflix documentary “*The Social Dilemma*”, Jaron Lanier used the metaphor of each user being presented with their own version of Wikipedia to describe how most forms of social media present us with our own ‘personalised’ version of the ‘truth’, which consequentially destroys the concept of common ground. Each side of a debate is simply unable to conceive of how the other could hold a different opinion to their own. We are being shepherded into positions of intolerance and misunderstanding by the technology we use.

Many will remember the Cambridge Analytica scandal of 2018. As a result of a journalist’s ‘sting’ Alexander Nix was recorded appearing to offer entrapment and bribery as means of manipulating election outcomes. I found an earlier video he made at the Concordia Summit in 2016, describing Cambridge Analytica’s work with Ted Cruz and anticipated work with the Trump 2016 Presidential Campaign even more sinister.¹⁰⁴ His company had also had some involvement in a number of other elections around the world, including the UK Brexit Referendum (Leave.EU campaign).

Systemic Oppression – amplification of racism, sexism and ableism:

A New York Times Article¹⁰⁵ contrasted the words and financial commitments made

103 <https://www.pewresearch.org/internet/2015/08/26/americans-views-on-mobile-etiquette/>

104 <https://www.youtube.com/watch?v=n8Dd5aVXLCc>

105 <https://www.nytimes.com/2020/06/19/technology/facebook-youtube-twitter-black-lives-matter.html?auth=login-email&login=email>

by senior executives at Twitter, YouTube and Facebook in support of the Black Lives Matter movement, and the response of their platforms to the movement. On Facebook, for example 70% of the most shared posts concerning Black Lives Matter in 2020 were critical of the movement, despite public opinion being generally supportive (CrowdTangle research). A 2018 book by Safiya Noble, called the Algorithms of Oppression describes the vulnerabilities of Google's search is to manipulation through Search Engine Optimisation (SEO) – to perpetuate existing bias, like racial or gender oppression.

The Next Generation – from developmental delays to suicide, children face a host of physical, mental and social challenges: According to the American Academy of Pediatrics, 46% of children under two years of age have used a mobile device at least once. The average 2-4 year old is estimated to spend about an hour a day on mobile devices according to a study conducted by Common Sense Media in 2017¹⁰⁶. According to an Association for Psychological Science Study, between 2010 and 2017, high depressive symptoms in girls aged between 13-18 rose 65% following almost 20 years of decline¹⁰⁷.

There appears to be conflicting results on correlations between time spent using electronic media before bedtime and adolescent depression. An Oxford Internet Institute Study (Screens, Teens and Psychological Well-Being: Evidence from Three Time-Use-Diary Studies – found little evidence for substantial negative associations between digital-screen engagement—measured throughout the day or particularly before bedtime—and adolescent well-being¹⁰⁸. Whereas an earlier US study – which followed a completely different approach found electronic media use was negatively related with sleep duration and positively with sleep difficulties, which in turn were related to depressive symptoms.¹⁰⁹

There is strong evidence based on systematic review of twenty studies that there is an association between bedtime access to and or use of electronic devices and reduced

106 <https://www.commonsensemedia.org/research/the-common-sense-census-media-use-by-kids-age-zero-to-eight-2017>

107 <https://journals.sagepub.com/doi/full/10.1177/2167702617723376>

108 <https://journals.sagepub.com/doi/10.1177/0956797619830329>

109 https://www.researchgate.net/publication/264785892_Adolescents'_Electronic_Media_Use_at_Night_Sleep_Disturbance_and_Depressive_Symptoms_in_the_Smartphone_Age

sleep quantity and quality as well as an increase in daytime fatigue¹¹⁰. Perhaps the most shocking statistic reported in this study (2016) that in the US the presence of media devices is almost ubiquitous among children: 72% of all children and 89% of adolescents have at least 1 device in present in their sleep environment, with most used near bedtime.

Access to Pornography

The Internet has provided almost unfettered access to pornographic materials – and as access to smartphones have reached ever younger ages, it should not surprise us that children are increasingly exposed to unsuitable content. In the UK, the National Society for the Prevention of Cruelty to Children (NSPCC), the Children’s Commissioner and Middlesex University¹¹¹ published a report into the impact of online pornography on children and young people.

The research included an online survey of 1001 children and young people aged 11-16 across the UK. The study found that:

- 48% of 11-16 year olds surveyed had seen pornography online. Over 9 in 10 children have been exposed to porn online by the age of 14. More boys view online pornography, through choice, than girls.
- 7% of 11-16 year olds surveyed had shared a naked or semi naked image of themselves.
- 53% of boys believed that the pornography they had seen was realistic compared to 39% of girls.
- 56 % of 11-16 year olds have seen explicit material online.

It cannot be helpful that so many children are being exposed to these materials. Content once seen can never be unseen. Behaviours presented in these materials are often abusive – and the gift of sexual relationship is torn from its intended context and presented as a pleasure there to be taken. For some, this content can also become addictive.

¹¹⁰ <https://jamanetwork.com/journals/jamapediatrics/fullarticle/2571467>

¹¹¹ <https://www.childrenscommissioner.gov.uk/report/an-examination-of-the-impact-of-online-pornography-on-children-and-young-people/>

I found Catherine Steiner-Adair's book, "The Big Disconnect"¹¹² helpful in understanding some of the practical challenges and nuances throughout a child's development considering the impact of technology – both positive and negative on that journey. Two points struck me particularly strongly. The first was the idea that having access to technology at night was a seriously bad idea. In her words, the combination of the 'instant everything' that tech offers; and the way that it 'deletes the pause between impulse and action', aggravate many of the potential harms.

She quotes Ned Hallowell, the author of *Driven to Distraction*, "Simulation has replaced connection, and I think that's what you need to watch out for."

The other is the reminder that the development of the pre-frontal cortex is not typically complete until the age of 25. That centre is critical to rational decision-making. Our teens and even our young-adult offspring do not have full brain maturity to make wise decisions on complex matters; particularly to manage sophisticated impulse manipulation. As parents we need to learn how to avoid being 'Scary, Crazy or Clueless' as many of the teens described their parents.

Do Unto Others—many leaders in the tech world strictly limit tech usage in their own homes: Looking across the media, we have reports that Steve Jobs didn't let his children use iPads and that he limited their access to technology at home. Steve Jobs limited his daughter's screen time and decided that his children would not be allowed a smart-phone until they were 14.

Chamath Palihapitiya, former VP of user growth at Facebook, has said that: "I can control my decision, which is that I don't use that [stuff]. I can control my kids' decisions, which is that they're not allowed to use that [stuff]. The short-term, dopamine-driven feedback loops that we have created are destroying how society works."

In Silicon Valley, several low-tech (private) schools have adopted strategies that ensure screens aren't used for teaching until eighth grade (year 9 in the UK).

112 Steiner-Adair, C., & Barker, T. *The Big Disconnect: Protecting childhood and family relationships in the digital age*. HarperCollins, ISBN: 978 0 062082435

What does this mean – What should we do about it?

We have created a world where online connection has become primary, especially for younger generation. The only way it is financed is by introducing a sneaky third person who is paying to manipulate those two people. We have created an entire global generation of people who are raised within that context where the very meaning of communication; the very meaning of culture is manipulation. We've put deceit and sneakiness at the absolute centre of everything we do.

This comment made in “*The Social Dilemma*” lacks nuance – and it does not address the full range of benefits and harms of 21st Century technology or of surveillance capitalism. It does crystallise one of the most important issues we must address while seeking to live well in a digital age. How can we differentiate between ‘mediated’ and human connection, and how do we learn to become fully present for the people we love and care for?

1. Learning how to be fully present for those we love

Here one way to begin to look at the life of your family and try to develop some practices to help keep technology in its proper place. We are not helpless. We can support one another on this journey.

2. Generosity – unlocking the door of communication

To begin – please remember that no generation before this one has had to deal with the technology challenges we face today. There are many books, but few are based on long experience. We will make mistakes, and so will our children. An approach that may be ideal for one family might be a disaster for another. Let husband and wife be mutually generous – and let parents be generous towards their children. Let's fight any temptation to turn our disagreements on these issues into crushing public put-downs. Human beings, even human children are incredibly resilient – God seems to be able to protect them from much of the harm that we inadvertently cause.

3. Values provide the foundation

As carers or parents, start by considering the values that you feel are most important for your family. What would you like your family to be known for? If you had a banner flying outside your home, which represented the values that mattered most for

you – what would it show? Some of those values might change as you move through different life-stages. Try to periodically review these values. Write them down or have the children create a picture or a banner that you can put up. We suggest that if your children are old enough you share your thoughts with them and see if they agree.

4. Look at your own tech use

As a team, look at how your technology use is helping or undermining those values. It is best if each partner can explain how the other's technology use is helping or hindering them achieve their family goals. This is an area where we need to be gentle. We are role models for our children in almost everything including tech use. That is what sets the tone. If our first action on returning from work is to shut ourselves away and reach for a smartphone, then we should expect our children will do the same, it is modelled behaviour. If we spend mealtimes checking or responding to our messages – we should expect our children to do the same when they have a phone of their own. Modern personal technology is designed to draw us in and hold us there: swapping embodied relationships for digitally mediated ones. This is something we can do very quickly – start now. Write down a joint action plan and take more control of your own digital life. Perhaps you could try making yourselves mutually accountable.

Think about the times and places that you want technology to be 'put away'. We know that even a silent phone somehow can distract us if it is in sight. Put it away – leave it behind. We set two simple principles in place:

- a) Mobile devices must not be present at mealtimes – ideally, they should be in another room.
- b) Devices are left downstairs at bedtime. We all need good quality sleep – and glowing, buzzing phones interrupt that. We are also more vulnerable to temptation – and make poorer choices when tired. We owe it to our children to enable to let them rest.

Whatever choices you make, you should anticipate some challenge while new boundaries are established – but for most of us that will be worth that effort.

3. Safety and protection

There are many resources available to help you make the technology world safer for

our children. These can involve applying settings to your wireless network, to the family phones, tablets and laptops, setting up screen time controls or the android equivalent. It is wise to consider loosening the controls as your children grow up, trying to ensure that channels of communication remain open. We need to prepare them to make good, independent choices when they become adults. Whatever walls, shields or moats we erect to keep our children safe – they will be weak in a digital world where society has not established strong, shared defences. We have found helpful content on these sites:



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DEFENDING
KIDS FROM
ONLINE DANGER

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Parents need to play an active part of our children's' technology journey. 4IR personal technology is powerful and designed to grab and occupy as much of the user's attention as possible. We need to exercise caution in when and how we allow our children out onto the 'Information Superhighway'. Most schools will support you on this – but just as it is dangerous to leave all moral education of your children to a school; it is unwise to assume that in curriculum Internet Safety or Digital Citizenship lessons will instil in them the values you care most about as a family. If you are not comfortable with some of the 'trendy' apps they like, find out about them. Show interest and ask your children to show you why they like them and help them to be wise about what they might be exposed to.

113 saferinternet.org.uk - organises Safer Internet Day in the UK and have information on parental controls (including BT, Sky, Virgin and Talk Talk), apps and games

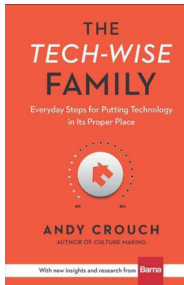
114 net-aware.org.uk - sponsored by O2 and NSPCC and provides guides to social networks, apps and games

115 protectyoungeyes.com - app reviews, parental controls

116 internetmatters.org - has guides for setting up setting up controls and security for broadband, mobile network, device level, smart TVs, apps, gaming consoles, digital "smart" toys, wearable gadgets and smart speakers

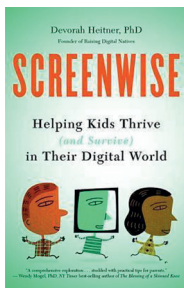
117 commonsensemedia.org - guides on movies, TV shows, books and apps. Reviews from parents and kids. Conducts and publishes research.

Books and resources



The Tech-Wise Family Everyday steps for Putting Technology in its Proper Place - Andy Crouch, 2017

When you pick up this little book, with its bright red cover it seems quite innocuous. It's only just over four hours as an audiobook. I expect that it will provoke strong responses in many readers with its challenging, personal examination of the potential impact of technology on family life, and how you might go about keeping it in its proper place.



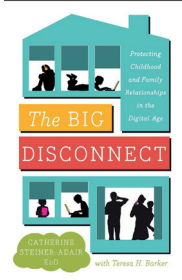
Screenwise, Helping Kids Thrive (and Survive) in Their Digital World - Devorah Heitner, 2016

You don't have to know everything about every app and device to mentor your children. But you do need to be in the conversation. If you're not a part of their world, you can't influence their world.



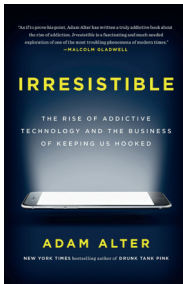
Raising Humans in a Digital World - Diana Graber 2019

This beautifully written book gives you the tools to raise healthy kids in a digital world. The anecdotes underscore the thoughtfulness of today's youth and their hunger for learning how to navigate their world well, instead of just being warned off by fearful adults. It is thoughtfully organized and theoretically sound and will empower parents to have some of those much-needed conversations with their kids.



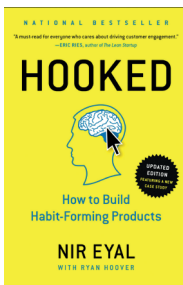
The Big Disconnect: Protecting childhood and family relationships in the Digital Age - Catherine Steiner-Adair, 2013

“Scary, Crazy and Clueless”: these are the labels the Author uses to characterised common, unhelpful parental responses to challenges young people have negotiating adolescence in a digitally dominated age, based on interviews with over a thousand children in recent years.



Irresistible: The rise of addictive technology and the business of keeping us hooked - Adam Alter 2017

Adam Alter is a psychologist and writer, currently based at NYU Stern School of Business. His academic research focuses on social psychology, judgment and decision-making, with an interest in the effects that subtle cues in the environment can have on human cognition and behaviour. *“Irresistible”* is more about diagnosis than self-help.



Hooked - how to build habit-forming products - Nir Eyal with Ryan Hoover

If you want to understand why so many smartphone applications seem to be ‘addictive’ – this book explains, with devastating simplicity how it is done. Nir Eyal graduated from Stanford University Business School. He wanted to understand how products could ‘modify’ our actions and ultimately cause compulsions. At that time there was no predictable description of how to achieve this at will.