



# Through the Looking Glass

How smartphones change our behaviour,  
shape our thinking and increase inequality  
... and what we can do about it



## INTRODUCTION

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# How smart are you with your phone?

It's too simplistic to say smartphones are good or bad for us. But the ways we use them do have consequences, and these can be worse for some people than others



**How often do you leave the house without your phone? Probably never. How often do you even leave the room without your phone? Probably rarely.**

We keep our phones within reach, picking them up tens or even hundreds of times a day. They are our constant companions.

For over a year, we have been researching the ways people use their phones for an ongoing project we have called Through the Looking Glass. We have compared what people say about how they use their phones with what we can see through observation and using innovative technology that records what is on their screens.

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What we have found is that there are often stark differences between what people say they do and what they really do.

While we've been carrying out our research, there have been increasingly loud warnings that smartphone use is a public health risk associated with mental health problems, poor sleep, addiction, bullying and low self-esteem.

Most of this discussion has looked for someone to blame or called for sweeping policy or regulatory changes. It has tended to focus on social media as distinct from other content, calling on 'tech giants' to change the ways they operate or what they do with our data.

Some schools have banned mobiles. The UK's chief medical officers have issued advice for parents on screen and social media use for children and young people. The government is consulting on plans to make companies more responsible for their users' safety online.

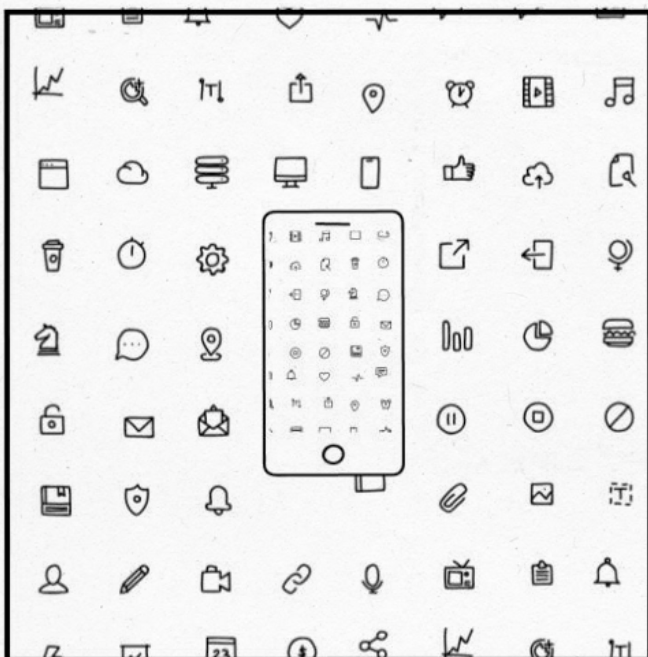
Increasingly, we're all encouraged to do a 'digital detox' or install apps that limit – or at least measure – our time online.

But phone use is not as straightforward as many other public health concerns. Smoking is unarguably bad, exercise is nearly always good. Even when it comes to diet there is usually a clear sliding scale that says too much of anything, and some foods in particular, is not a good idea.

Phone use is different. Setting abstract screen-time limits or telling people to switch off are too simplistic and undermine the many benefits the technology can bring us individually and collectively.

But there are risks or potential downsides to the ways we use our phones, and these are unlikely to be addressed by taking a side-swipe at tech giants, restricting particular apps or telling children they can only use their phones for a certain amount of time each day. The negatives will just manifest themselves in other ways.

Even plans to legislate for online harms may have unintended consequences. In deciding what is





deemed officially harmful or unsafe, we also send an implicit signal that everything that falls outside the remit of regulation is fine. But in practice there are grey areas. Some content and activities deemed 'safe' are still likely to have harmful effects for some people, some of the time.

There's little talk of the digital divide anymore – almost everyone who wants to can be online – but that doesn't mean inequalities relating to technologies have gone away.

Has the rapid adoption of smartphones benefited everyone equally?

But actually watching back what someone we don't know has seen or done on their phone can be jaw-dropping. What other people see is not just a bit different from what we see or do on our own phones, it can be almost completely unrecognisable. Inside our smartphones we live in wholly different worlds.

All this has consequences. And these consequences are unlikely to be the same for everyone. The danger is that smartphone use entrenches – or even worsens – advantage or disadvantage. More vulnerable people are more likely to suffer more harm – and at the same time be the least aware of it.

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Do some people suffer more negative effects from their smartphone use than others? Does the pace of change create unequal advantages?

These are all questions that go beyond thinking of smartphones or the technology behind them as simply good or bad for us.

One of the most powerful things we have captured using screen recording technology in our research is just how different our individual experiences of our phones can be.

We all know, on an intellectual level, that our own social media feed is different from someone else's, that the content we are shown changes according to unseen algorithms using our personal data. We make jokes – or accusations – about people being locked in filter bubbles or echo chambers.

Our research and the conclusions we have drawn from it suggest that we all need a more nuanced way of thinking about how we use our phones, so we are conscious of what we are using them for and why, and what consequences this might have.

We need to ask ourselves: What is my phone good for? What is it not good for? How does its design affect the way I use it? Am I stopping to consider whether it's the best way of achieving my goals?

How smart are you with your phone?







## PART ONE



# The input problem

It's much easier to get information 'out' of our phones than to put it 'in'. So that's what we tend to do



## Smartphones are ubiquitous, powerful, disruptive.

This is partly because they can do loads of things. They're personal computers, libraries, cameras, movie makers, navigation tools. They can track your speed, your steps, your calorie consumption, your sleep and your location. They allow you to communicate with your friends – and to make contact with people you don't even know. They deliver your news, stream the music you like and allow you to watch the next episode of that series you're binge-watching while you're on your way to work. They're a way to keep your child occupied on a long journey, find out how to change a tyre, arrange delivery of the ingredients for that recipe you like the look of and video call your relatives overseas.

But what are smartphones *really* good for?

The answer is they're optimised for output. Because of this, phones are a fantastic way to consume content. Held sideways, they are pocket-friendly portable TVs with excellent screen quality and increasingly high-quality audio. Held upright they offer us an endless conveyor belt of content, ideal for scrolling.

But smartphones – as they are now – are not designed for input. Although they've got bigger, they still need to fit in our pockets and this has forced a huge compromise, particularly when screen size is so highly prized. The screen itself – designed for viewing – has therefore become the primary means of input, with significant consequences.

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Touch screen keyboards are blunt tools. The speed and precision with which we can type is limited. Now that BlackBerry phones, which had a button keypad, have largely been consigned to history, there's really no alternative to swiping your finger over the keyboard and hoping that one of the words the phone offers up resembles what you intended – or furiously tapping with both thumbs and the dubious assistance of predictive text.

This is a difficult, slow and inefficient way to input information. It's slower than talking or typing on a computer keyboard; it's trickier to copy and paste or to drag and drop. Saving documents is possible but finding them again is not easy. And comparing information from more than one source is usually too onerous to be worthwhile.

As a result, it's much easier to get information 'out' of our phones, than to put it 'in'. So that's what we tend to do. ➤



Do you know what this box of text is about?  
Are you sure?



Descended from emoticons – combinations of punctuation marks used to illustrate facial expressions – the first 176 emoji were designed in 1999 specifically for use on early smartphones.

Emoticons were initially used to convey tone or add emotional nuance to short messages such as texts or chats – to indicate a joke or sarcastic comment or to express shock or love, for example.

Emoji are used for these reasons too. But because the design of our phones makes it difficult to type, we increasingly use emoji *instead* of words. We don't give this much thought. It's easy – and fun – to communicate with a few faces, a flower or a flame.

But it's not usually more effective. As with so many of the ways we use our phones, there are opportunity costs to using emoji instead of words.

A string of emoji can't convey a complex idea with anything like the same precision or nuance as a collection of words. And the risks of misunderstanding or misinterpretation are much greater.

What's more, if we don't practise using more complex language we won't maintain or improve our ability to do so – our communication skills will become blunted.

So too might our cognitive skills. Unlike a real language, which can evolve naturally, gatekeepers decide which emoji we have access to. This can build in bias, however subconscious. That's one reason why people lobbied for the introduction of emoji representing a greater diversity of people, cultures and experiences.

Emoji are billed as a lingua franca for everyone in a digital world, understandable across borders and cultures, regardless of mother tongue, or age, or operating systems.

But reaching for 'off-the-shelf' emoji shapes the ways we communicate and, potentially, even the ways we think – with costs to ourselves and those we interact with.



Sometimes, this input-output imbalance isn't a hindrance, it can even serve us well. Using maps, for example. We have only to input a tiny bit of information, such as a post code, and we are served a detailed map that shows exactly where we are, tells us how to get to where we want to go, corrects us if we go wrong, and points out other useful amenities along the way. Plus it remembers all that data for the next time we want to travel.

*The fact that it's difficult to input a lot of information means we simply don't bother, we fall back on passive consumption of content.*

But in many more cases, the fact that it's difficult to input a lot of information means we simply don't bother. We fall back on passive consumption of content rather than

*Shortcuts save us time, but they cost us accuracy, nuance and precision in terms of communication.*

productive or creative activity. Building a relationship with another person, researching a topic, editing still or moving images, writing documents – all these activities are severely hampered by input limitations.

Sometimes we find workarounds. Because it's hard to write or edit, we fall back on 'easy' but simplified communication. We use abbreviations and leave out punctuation, we insert a string of emoji or a GIF, or we simply press the 'like' button and scroll on.

Such shortcuts save us time, but they cost us accuracy, nuance and precision in terms of communication. >

## The value of friction

The people who design the apps and websites we use on our smartphones just want to make our lives easier.

In the language of user-centred design, this means they seek to eliminate 'pain points' and give us a 'frictionless' experience, removing any elements of the software or user interface that may slow us down or require us to make too much effort. They don't want to lose customers or users.

As smartphone users we expect this – and if we do encounter friction we tend to get annoyed. This creates a feedback loop that is difficult to break, pushing designers to create an ever easier experience for us.

But is an easier experience always better? Not necessarily – especially not over the longer term.

Digital designers are as constrained by the limitations of the smartphone as we are. Because it is so much harder to put information into our phones than to get it out, designers reduce the need for us to do so.

Where it's unavoidable, we are given presets, suggested options or autofilled forms. These reduce friction but they also limit our choices.

Greater ease is often at the expense of richness or complexity. For some of the ways we use our phones – to tell the time, or using maps, for example – the less friction we encounter, the better. But never experiencing friction means we miss out. Sometimes friction can have benefits.

Without friction, people tend to fall into a 'System 1' mindset, which favours automatic, less conscious decision-making. A moment of friction can provide an opportunity for reflection – a literal pause for thought – and this can prompt a more active and reasoned choice about what we're doing or how we spend our time.

Sometimes, a jolt of friction offers a moment of serendipity, a gateway to a path we might otherwise not encounter.

There can also be a trade-off between short-term effort and long-term reward. Doing something that feels difficult in the moment can bring gratification later. If we strip away challenge, we also rob ourselves of the opportunity to feel productive – a vital element of wellbeing.

And if we don't stretch ourselves or practise activities that are difficult, we are unable to develop our skills. We may also become less skilled at certain things if we stop doing them.

If we don't have to put as much effort 'in', we may ultimately get less reward 'out'.

This concept is widely accepted in other aspects of life. It may be easier to use the lift to get to the second floor of your office every day, but it will improve your health if you use the stairs.

When it comes to smartphones, we have generally accepted – even welcomed – their evolution. But would it be better for us to have a bit more friction?



These easy or even lazy workarounds are no accident – they’ve been deliberately designed into the way smartphones work. Designers know people want to be able to communicate or to produce things, but because the device itself puts limits on what’s possible, they create ways to make it easier. This is known as frictionless design.

The danger is that we end up with a frictionless design arms race and this brings about trade-offs. In striving to make smartphones ever easier to use, designers make

performing certain tasks, such as inputting information, more difficult.

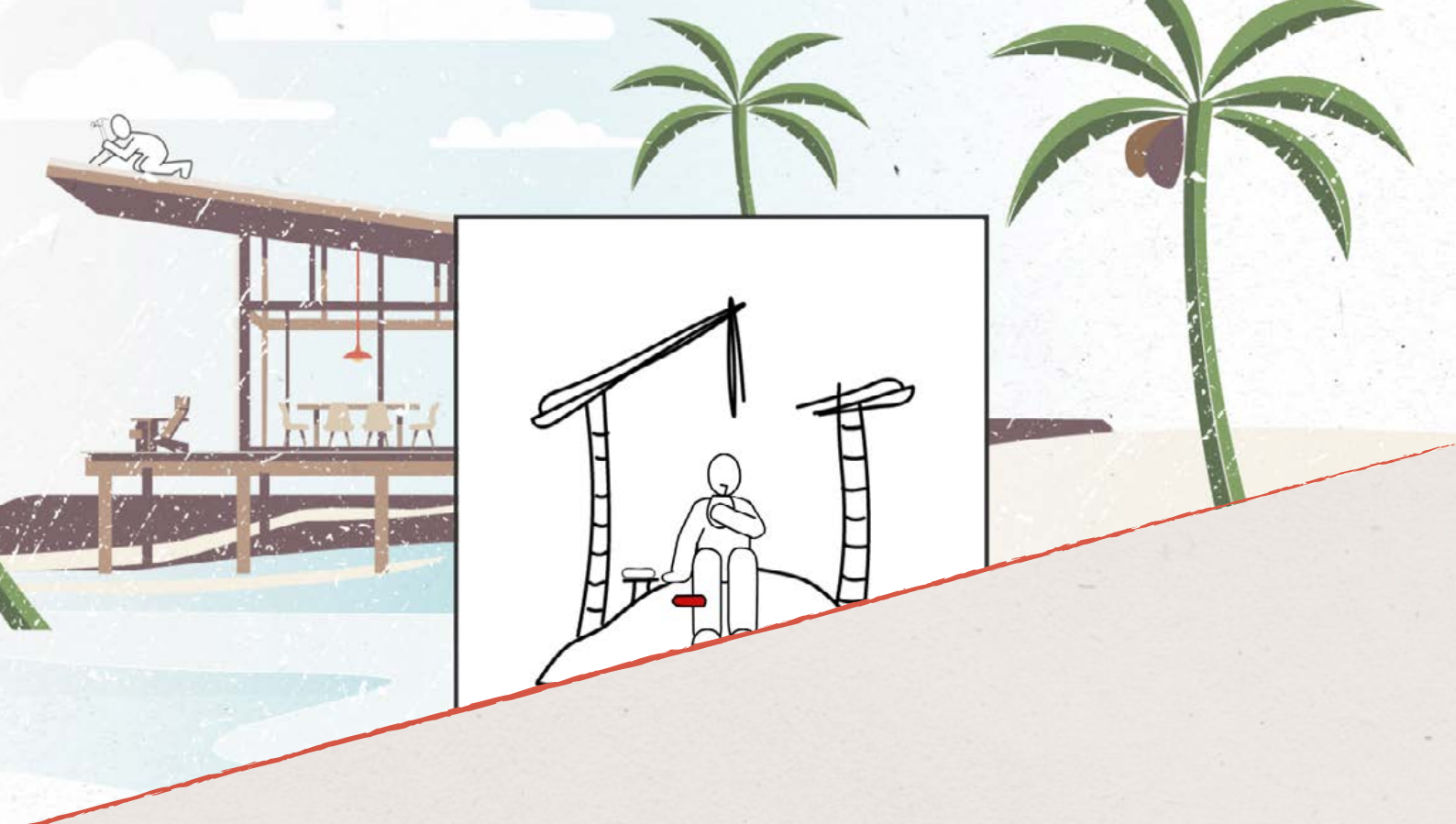
Over time, people become used to the easier ways to use their phone – scrolling, clicking, emojis – and their abilities to use alternatives waste away. They prefer the shortcuts and so designers provide more of them, or develop them even further, creating an endless feedback loop that leads to ever ‘flatter’ content.

## Summary

The consequences of smartphones’ input/output imbalance.







## PART TWO



# The price of convenience

We use our phones like digital Swiss army knives. But is a phone always the best tool for the job?



**Because they're small, convenient and always close at hand, we treat our phones as the digital equivalent of a Swiss army knife.**

We reach for them without thinking, using them to help us stay in touch with people, find out what's going on, carry out a bit of life admin, kill time, take pictures, buy things, search for a new job, look for a new home – the list goes on.

But a Swiss army knife is only a really good tool to use in situations where it's the only tool available. If you were stuck on a desert island, a multi-tool would be a great thing to have grabbed from your sinking ship. But in almost any other situation, where there is a choice, there is a better, specialist tool for any particular job.

Smartphones are no different. And, since we're not stuck on a desert island, there usually are better tools available – digital or otherwise.

*When we unthinkingly use our smartphones instead of a specialist tool, there are opportunity costs. We can only do a given activity as well as our phones allow – and they have their limitations.*

When we unthinkingly use our smartphones instead of a specialist tool, there are opportunity costs. We can only do a given activity as well as our phones allow – and they have their limitations.

Although we treat our phones like a digital Swiss army knife, we don't tend to think of them dispassionately as a multi-tool. In fact, we frequently don't think of them as a tool at all.

Some of this is just habit – we use our smartphones in the same ways every day and we don't really stop to think about it. We often also have an emotional relationship with our phones, thinking of them as an extension of ourselves, rather than just a tool or a means to an end.

But beyond habit or attachment, the likelihood of us thinking of our phones as a tool, or being aware of the opportunity costs of using them when there are better tools available, varies considerably. It depends how much thought we've given it, our digital literacy, our understanding of what's possible, our emotional control, our frames of reference.

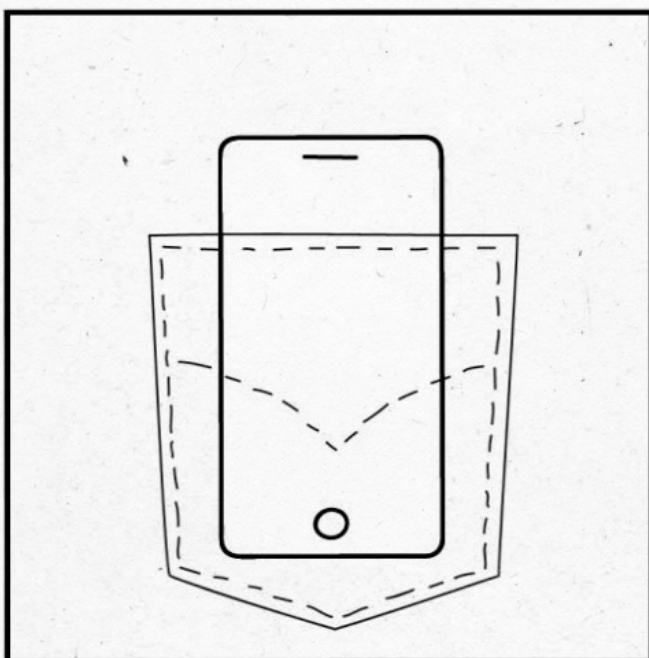
There have been numerous reports recently of Silicon Valley executives – the very people responsible for designing smartphone technology – restricting their own children's screen time and access to devices because they believe they will do them more harm than good.

These stories catch our eye because they make us uneasy. These super-tech-literate parents know what technology can do and what it can't, and they've concluded that it's more important that their kids develop offline than online skills. Indeed, the implication is that the offline skills are a necessity to make the most of an online world. Is there a new gap opening up between haves and have-nots where disadvantage sits not with those who don't have access to technology, but those whose access is uncontrolled or unconsidered?

*The price of convenience can be high – and it doesn't fall equally. While almost everyone who wants one now has a smartphone, the ways we think about them, the activities we use them for and the opportunity costs of doing so are not the same for everybody.*

There's no question that some people are likely to be better equipped than others to spot that their (or their children's) smartphone is not always the best tool for the job and to be alive to the consequences.

Even when people are aware there might be better tools for a particular job, they won't necessarily have equal access to them.





So the price of convenience can be high – and it doesn't fall equally. While almost everyone who wants one now has a smartphone, the ways we think about them, the activities we use them for and the opportunity costs of doing so are not the same for everybody.

We face a fresh digital divide. Smartphone use by default is likely to maintain – or even heighten – existing inequalities. And the most disadvantaged, the most vulnerable, are likely to lose out the most.

The people who are least able to make informed choices, or even to recognise that there are choices to be made, are most likely to waste their efforts, to miss out on fulfilling their potential. And at a national level, this has implications for productivity.

### **What are the opportunity costs of using our phones?**

Opportunity costs are most often talked about in economics, where they're used to weigh up investment decisions. Will this company get a greater return if it buys new machinery or if it increases staff wages?

But we all make choices that have opportunity costs every day, sometimes hundreds of times a day. And these include the ways we use our phones.

Every time we pick up our smartphones, there are opportunity costs in doing so. If we are using our phones to carry out a task for which it is not the best tool, the opportunity cost is the gap in efficiency or the difference in the quality of the outcome.

Over years this can add up to a huge amount of unnecessary effort or thousands of missed opportunities.

If we allow ourselves passively to consume content served up by an algorithm, we've traded the satisfaction or education we could have gained by spending that time proactively teaching ourselves something of our own choosing.

Every time we message our friends, we are missing out on an opportunity to practise our verbal or physical communication skills. More importantly, if we only ever communicate via text we are passing up a chance to deepen our relationships. There is a wealth of evidence that suggests meaningful personal connections are closely correlated with mental well-being. Messaging is highly convenient, but there are opportunity costs.

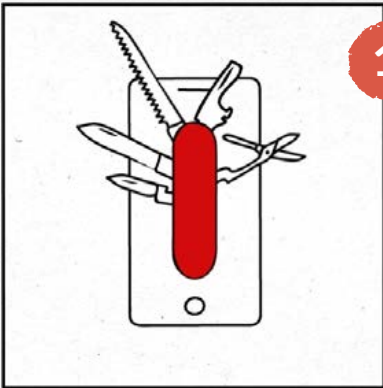
We are constantly making trade-offs without stopping to think about them.

We're more likely to consider these opportunity costs if we have been taught or prompted to do so. These prompts might come from 'moments of friction' that give us a chance to reflect. Or they might come from parents, teachers or role models.

But if our access to role models or education or aspiration is not equal, then the likelihood we'll consider the costs of using our smartphones won't be equal either – another way in which smartphone use and its consequences are likely to exacerbate existing inequalities.



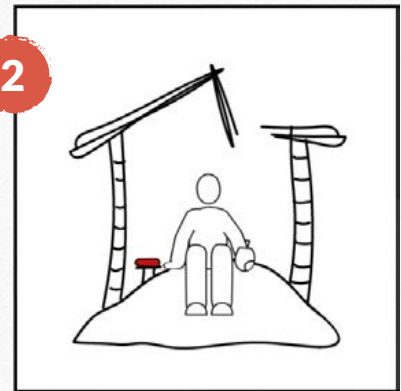
## Summary



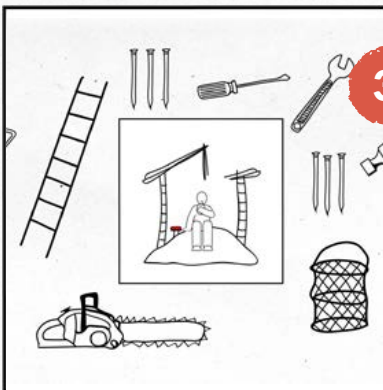
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Because they're convenient and close at hand, we use our phones as the digital equivalent of a Swiss army knife.

But a Swiss army knife is only a really good tool to use in situations where it's the only tool available. In almost any other situation, where there is a choice, there is a better, specialist tool for any particular job.



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When we unthinkingly use our smartphones instead of a specialist tool, there are opportunity costs. We can only do a given activity as well as our phones allow - and they have their limitations.

The likelihood of us thinking of our phones as a tool, or being aware of the opportunity costs of using them, is influenced by our education and the role models we have, which increases the risk that the costs of using our phones are likely to be higher for those who are already the most disadvantaged.



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## PART THREE



# Illusions of success

We often believe that our phones are helping us achieve our goals. But is this an illusion?

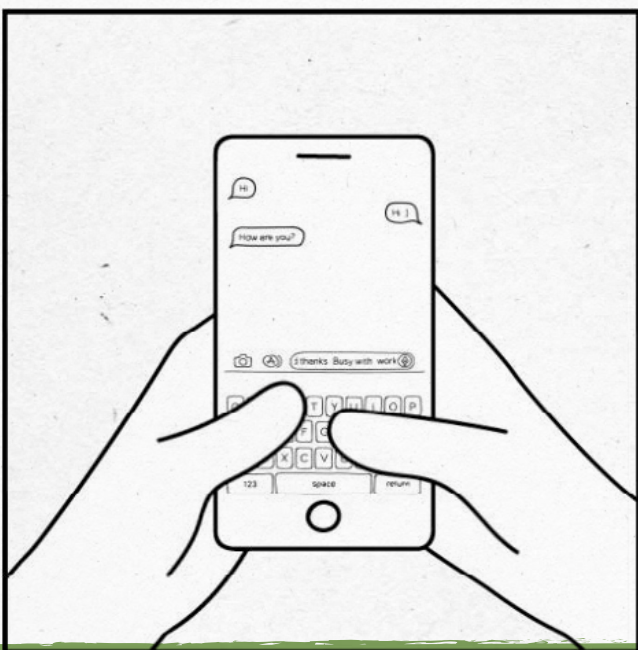


**As we become accustomed to easier ways to use our phones, the skills to use alternatives can waste away.**

In the same way, if we don't generally consider whether our phone is the best tool for the job at hand, we might forget what that job well done actually looks like.

The participants in our research were often under the illusion that they were achieving their goals by using their phones, but our observation of what they were doing and the screen recordings of how they were using their phones suggested otherwise.

Broadly speaking, these illusions fall into one of four categories: the illusion of connection, the illusion of exploration, the illusion of creativity, and the illusion of productivity. We tell their stories below.



**Illusion of connection**

Seventeen-year-old Olympia said she did not have enough time to see her friends face to face because she was in the middle of revising for her A-level exams.

She felt satisfied she was keeping up to date with them via WhatsApp and Snapchat.

*The time she was spending on social media or communicating with her friends on her phone, as seen in her app usage (below), meant that she struggled to find the time for exam revision.*

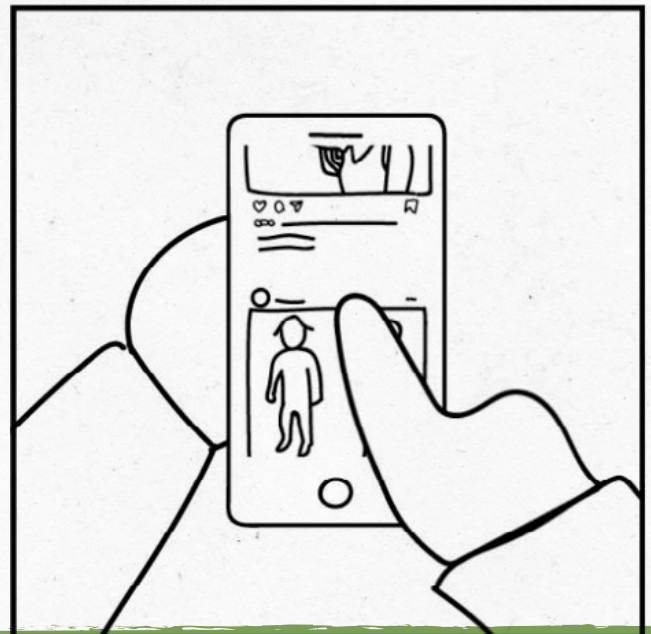
	<b>Snapchat</b> 3.3 hrs on screen - 3.6 hrs background
	<b>Instagram</b> 2.5 hrs on screen - 1.6 hrs background
	<b>Safari</b> 1.8 hrs on screen
	<b>FaceTime</b> 2 hrs on screen
	<b>WhatsApp</b> 2.4 hrs on screen - 5.1 hrs background

*Olympia's app usage over six days*

However, the time she was spending on social media or communicating with her friends on her phone, as seen in her app usage (below), meant that she struggled to find the time for exam revision.

Over the course of six days, she spent more than 10 hours on social media or chatting online.

She was neither seeing her friends face to face nor successfully revising.



**Illusion of exploration**

Samantha, a 23-year-old who lived with her daughter and was unemployed, said her goal in life was to move to France to teach English, so she had been learning French. She had been using the Duolingo app for the past four years. The app told her she was making progress, rating her as '40% fluent'. But her spoken French was very limited, as you might expect without conversational practice.

*Because it's so easy to get distracted while we're using our phones, it's more difficult to sustain focus on genuine exploration.*

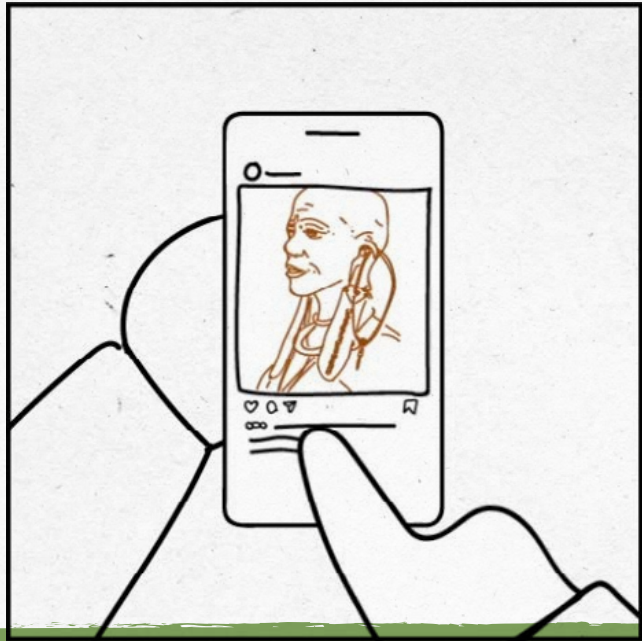
It is hard to focus on learning, a task which typically requires effort and usually has delayed returns, in the smartphone landscape of apps and notifications that demand your attention and favour immediate reward.

Indeed, Samantha's app usage revealed she was spending little time on Duolingo compared with other apps - less than 11 minutes a week.

Because it's so easy to get distracted while we're using our phones, it's more difficult to sustain focus on genuine exploration. If we really wanted to eat more healthily, we wouldn't store biscuits in the same place as



healthy snacks because we'd find the temptation harder to resist. But on our phones the content is all together in one giant digital cookie jar, and the 'biscuits' are constantly flashing up notifications about how delicious they are.



### Illusion of creativity

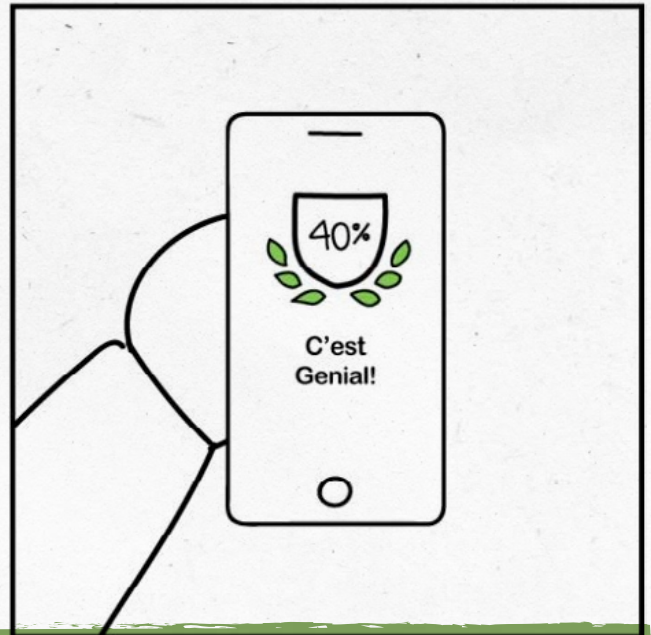
Lots of people talk about the ways in which their smartphone enables them to create things or share their creativity with the world – from photography to ideas to make-up tutorials.

Joanne, for example, used her phone to edit beauty vlogs she had made. However, she had not uploaded any to YouTube, as she had been struggling to edit them to a standard she was happy with.

*Joanne has a laptop but she chose to use her phone for the job of video editing*

Joanne has a laptop, which might have been a better tool for the job of video editing, but she chose to use her phone as it was easier to learn to use a video editing app than master computer software.

In this case, Joanne's creativity was being limited by the tools she had chosen to use.



### Illusion of productivity

Simon, 23, used his phone for everything related to his work as a film extra: finding work, responding to job offers, even sorting out his tax. He said his phone made his life easier and saved time.

Using his phone meant he could respond instantly to job alerts or offers. But for his tax calculations, which took time and which he did at home anyway, Simon probably would have found his computer more effective.

*just because we can do something using our phone, that doesn't mean it's necessarily the quickest or most effective way to do so.*

David, 21, a music student, volunteered with dementia patients once a week. He and his fellow volunteers sourced lyrics from the patients and then wrote the music for a song for them to sing together. They swapped ideas for the songs using Facebook Messenger, which was a useful way to share ideas, especially as one of the musicians lived a long way away. But it was a while before David realised that moving between a photo of lyrics shared via Messenger, and his Notes app, where he was transcribing them, took a lot longer than if he'd used pen and paper. It also made it difficult to write the lyrics alongside the music itself.



People often insist they can do almost anything and everything on their phones. Because it's possible to do so many things on our phones, believe the smartphone is an enabler, a tool that increases our productivity and helps us get things done.

But just because we can do something using our phone, that doesn't mean it's necessarily the quickest or most effective way to do so.

When we asked the participants in our research consciously to reflect on their smartphone use – particularly if they watched back their own screen recording – they were sometimes visibly uncomfortable. To their surprise, what they had told us about their smartphone use and what they had really done were often quite different.

The people we interviewed had often underestimated the time they spent passively scrolling through feeds on apps such as Instagram and Facebook, and overestimated the time spent doing active activities such as talking to friends or taking photos.

When we asked them to talk us through what was on their newsfeeds, prompting them to actively consider it rather than passively skim through it, they would often seem embarrassed. "It's normally a lot more interesting than this," was a common justification. But screen recordings revealed what we were looking at was not significantly different any other time.

## Summary

People are often under the illusion that their smartphones meet all their needs, that they are achieving their goals by using their phones.

Broadly speaking, these illusions fall into one of four categories:

### The illusion of . . .



#### Connection

People believe they are maintaining and developing relationships using their smartphones, often at a direct cost to more meaningful interaction.



#### Productivity

People believe they are getting everything done on their phones, without considering whether there might be better tools. For example, using a smartphone to create a CV.



#### Creativity

People believe smartphones give them the ability to create things and share ideas, but the limitations of the phone's functionality constrain their options and blunt their technique.

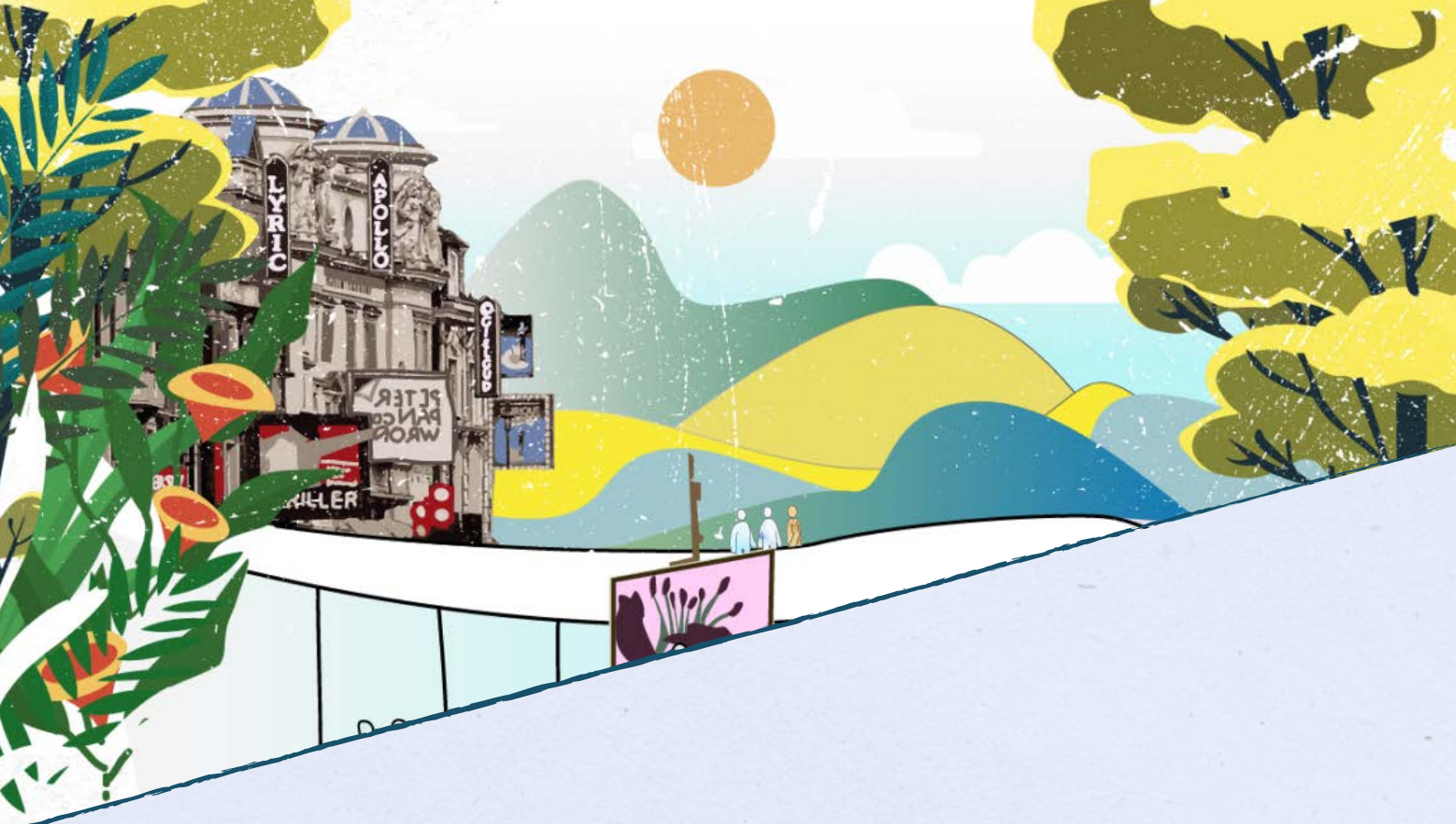


#### Exploration

People believe they have access to a wealth of knowledge and ideas, without considering filter bubbles or whether they are better ways to compare and retain information.

Just because we can do something on our phones doesn't mean that's necessarily the best way to do so. If we don't stop to consider whether we might be under an illusion, opportunity costs will go un-noticed and unchecked.





## CONCLUSION

# How can we be smarter with our phones?

If we think of our phones as tools we will be better able to understand why, when and even whether to use them



## Most of us wouldn't want to be without our smartphones. They've opened up a new world of information, communication and entertainment at the touch of a screen, and a pocket-sized way to capture, store and share our experiences wherever we are.

But there are trade-offs in the ways we use them. Being alive to the costs, being aware of the illusions and working harder to reduce inequalities can help increase the benefits and mitigate the potential harms – for everyone.

Debate over the risks smartphones pose to public health will continue to rage, but the narrative needs to move beyond simplistic characterisations of good vs evil.

Our phones are better for some things than others – the key is to be able to tell them apart.

There are things all of us could do – for ourselves and for each other – that would help raise awareness, improve digital literacy and ultimately make us smarter with our phones.

### A reframing of digital skills

The first thing we could do is rethink what we mean by digital literacy.

Digital skills need to go beyond understanding what technology to use and how to do so to include why, when and even whether to use it.

Digital skills frameworks, whether they've been designed for primary school children, disadvantaged teenagers or so-called silver surfers, have tended to focus on how to improve people's confidence and competency in using applications or software. The device itself is usually not

considered – there is an implicit assumption that its use is a good thing.

Our research suggests this is not the best place to start. Before we start talking about how to use a smartphone, we need to encourage people to think of it as a tool. Only then will we actively consider whether it's the best tool for the job, whether its use is likely to lead to the outcome we want and how we should assess whether it's done so.

In a world where our smartphones are always in our pockets, these digital skills are just as important as – if not more important than – knowing how to use a device. And, like any other skills, they can be taught, and practised, and developed over time.

**Digital skills need to go beyond understanding what technology to use and how to do so to include why, when and even whether to use it.**

If the concept of digital skills were reframed to include these prompts and assessments, it would empower us to make more proactive and informed choices about how and when to use our smartphones – and how and when not to.

If this broader conceptualisation of digital skills was role-modelled by parents, taught in schools, understood by health professionals and talked about more widely, it would go some way to lessening the iniquitous effects of reaching unthinkingly for our phones as the go-to means to do pretty much everything.

Ideally it would stop us reaching *unthinkingly* for our phones at all.





## What could teachers do?

### Teach kids to appreciate the smartphone's limitations

Teachers want to help children and young people make the best of technology. This can feel tricky because most teachers didn't grow up with smartphones themselves.

But just because many young people have had access to phones from an early age, that doesn't automatically make them the experts in how to use them to their greatest advantage. In fact, the reverse may be true. Old though it is, the adage "If the only tool you have is a hammer, everything looks like a nail," is just as apt in the digital age.

If the definition of digital skills is re-cast to consider the phone as just one tool among many others – digital and non-digital – then being digital natives does not necessarily make young people more digitally skilled than others.

Effective teaching and wider discussion of digital literacy – including an appreciation of the limitations of and alternatives to smartphones – would benefit everyone.

Being digitally skilled means being able to consider not just how to use technology but when – and when it's probably better not to.

## What could parents do?

### Lead by example

Parents are children's primary role models. Young people observe and absorb their parents' behaviours and attitudes – for better and for worse. Just as with healthy eating or attitudes to exercise, parents can lead by example.

This could include starting conversations about what 'good' phone use looks like, promoting the idea that the phone is a tool and modelling the use of better tools where appropriate.

## What could policy-makers do?

### Be alive to 'softer harms' and productivity gaps

The government is working hard to develop and implement policy that will protect all of us – and particularly young people – from harm. It also explicitly recognises that the effects of technology have an impact on our health and wellbeing.

It is more difficult to legislate against grey areas where technology, content or the behaviour they prompt may have effects that could be considered harmful in some cases, or to some people. But it is essential not to overlook them.

Similarly, being alive to the productivity gaps that smartphone use can lead to – not just in time wasted but in reduced skills and effectiveness – would provide a broader and more powerful narrative connecting technology and health, and individual behaviour and wider society.

## What could software providers do?

### Give users more control

Software providers are, in many ways, as constrained by the limitations of smartphones as everyone else. It makes sense for them to make their software easy to use. But they could give users more choices, more control.

Software companies could prompt us to consider the trade-offs we're making when we use our phones, and give us options that effectively allow us to prioritise quality of smartphone use over quantity.

## What can we all do?

- Think of our phones as a tool
- Consider whether it's the best tool for the job
- Weigh up the costs or trade-offs we make each time we use it

**We all have a choice. Let's be smart with our phones.**



THE AUTHORS AND PROJECT:

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# About Revealing Reality

Revealing Reality is a multi-award-winning insight and innovation agency. We enjoy working on challenging projects with social purpose to inform policy, design and behaviour change. Respondent testimony is central to all our work, but we believe the research sector has been reliant on respondents to articulate their needs and accurately describe their behaviour for too long. We have pioneered a range of observational research methods that go well beyond traditional qualitative and quantitative techniques to study behaviour in context.

Visit [www.revealingreality.co.uk](http://www.revealingreality.co.uk) to find out more about our work or to get in touch.



## Why we set up Through the Looking Glass

Through the Looking Glass is an ongoing, self-funded research project by Revealing Reality.

The goal of the project is to gather and share detailed evidence about the ways people use their smartphones and to prompt discussion and consideration of the consequences.

We aim to capture and explore people's behaviour at a unique moment in time, when smartphones have recently transformed our lives and the way we live them, and to create a resource that we and others can build on over time in the development of policy or resources, or simply as a source of evidence.

Through the Looking Glass is informed by commissioned research Revealing Reality has done – and continues to do – into consumption of and attitudes towards media and news, use of technology and the interplay between them.

These valuable and exciting projects, for a range of clients including government departments, public bodies, regulators, content providers and private sector organisations, have given us an opportunity to develop expertise in this space, and to identify areas we believe would benefit from further exploration – which led to the decision to establish this project ourselves.

***Carrying out a self-funded project has allowed us to test and develop innovative research methods, techniques and technology, which we have been able to carry across into other projects.***

In particular, we felt research was needed that focused more specifically on how the smartphone – the device itself – shaped behaviour and attitudes, rather than just the content or the platforms that it allowed access to.

We also thought it was important to explore whether smartphones were helping – or hindering – people equally.

Carrying out a self-funded project has allowed us to test and develop innovative research methods, techniques and technology, which we have been able to carry across into other projects.

This ideas in this report have been developed using Wave 1 of our Through the Looking Glass research.

Having done research for Ofcom, the Children's Commissioner and the Information Commissioner's Office and others on children's use of and attitudes towards various aspects of media and technology, in Wave 1 of Through the Looking Glass we focused

on young people in their teens and early twenties to provide a sense of 'what happens next'.

Our research was deliberately qualitative, exploring in detail and in depth the behaviour and attitudes of 16 young people who were drawn from a range of backgrounds and recruited from all over the UK.

***This 'screen record' gave us direct sight of people's smartphone use – fascinating in itself, much more diverse than you might imagine, and even more interesting when compared with what people told us about it.***

We are grateful to all the young people who agreed to be interviewed about their smartphone use over several hours and who consented to us using screen recording technology to capture the ways they used their phones over several days.

This 'screen record' gave us direct sight of people's smartphone use – fascinating in itself, much more diverse than you might imagine, and even more interesting when compared with what people told us about it.

These differences between what people told us they were doing and what they were really doing were often stark, and the approach not only allowed us to capture real behaviour more accurately but to uncover and explore the gaps in motivation and activity between what people said and what they really did.

Building on Wave 1, the next phase of Through the Looking Glass is well underway. Wave 2 is focusing on gathering the most detailed evidence of people's smartphone behaviours yet, through analysing full-time screen-recording of everything people are doing on their phones, with an emphasis on finding out the ways in which people's lives are shaped by their smartphones. We look forward to sharing our findings later this year.

In the meantime, please feel free to take the ideas in this report and share them more widely. We'd love to hear your feedback or contribute to further thinking.

We are always happy to talk about our work – do get in touch if you'd like to find out more or think we might be able to help you.



## Further reading

Just as we hope people will share the ideas in this report, we would like to signpost the books and articles we found particularly useful in developing our thinking.

### Books

#### **You Are Not a Gadget, Jaron Lanier**

Published in 2010, this book consists of a series of essays on subjects relating to digital technology.

While readers may find some of the ideas fanciful, we feel it was ahead of its time. Most helpful to this project were Lanier's ideas about technological lock-in and the limitations that pre-existing digital architecture place on design decisions and user experience.

#### **iGen, Jean Twenge**

Generational researcher Jene Twenge illustrates US statistics relating to the newest emerging "iGen" – those who grew up with smartphones. Twenge shows that while the amount of time young people spend watching TV or doing school or paid work has remained the same over the last few decades, other forms of screen time have increased dramatically at the cost of in person interactions, which are central to mental wellbeing.

The book shows the correlations for the iGen between mental health, fear and anxiety. It also evidences how they grow up 'later' – they're less likely to go out without parents, go on dates, have sex, get married, drive or leave home than previous generations at the same age.

For us, Twenge reinforced the importance of thinking about both the direct and indirect costs of increased smartphone use.

#### **Thinking Fast and Slow, Daniel Kahneman**

This book is foundational reading for anyone interested in the often over-hyped field of behavioural economics and is worth a read for that reason alone, whether you are buying or selling.

For us, it's a healthy reminder that faster, easier and more passive consumption has a price attached to it.

Kahneman explains that there are two mental systems when it comes to considering judgement and choice. The first system is fast and automatic in comparison to the second system which is slower and more deliberate. As humans we default to intuitive, fast 'system one' thinking when we're able to as it is cognitively easier to do so, but that we are much more likely to be subject to cognitive biases and mistakes in reasoning as a result.

#### **Anti-fragile, Nassim Nicholas Taleb**

The concept of anti-fragility described by Taleb is powerful: some systems respond positively and are strengthened by physical and mental friction or stress.

Taleb makes that point that humans are anti-fragile systems. Making things too easy may be the worst thing you can do to someone.

#### **Human Scale Development, Manfred Max-Neef**

This is a set of ideas developed by a Chilean economist with contributions from Antonio Elizalde and Martin Hopenhayn.

When most people think of human needs they think of Maslow's hierarchy of needs, but it's well worth doing some reading on Max-Neef, particularly his thinking on violators, inhibitors and pseudo-satisfiers. How often are people failing to meet their needs when they feel they are met?

Max-Neef's ideas primarily relate to the concept of illusions in Through the Looking Glass.

As we continue this project, we will be looking into how we can further test, refine and apply these ideas.

#### **(Re)-Introducing Frictions in Design – A study on the frictionless cult and the idea of positive frictions, Gaelle Lgd**

This series of articles explores the focus on friction in contemporary design thinking, and the potential negative consequences.

If you are a designer it's almost heretical to suggest that pain points might have a purpose in themselves, and if you aren't it's difficult to imagine how focused designers are on making experiences smoother and easier for all the right reasons.



## Articles

**'Our minds can be hijacked': the tech insiders who fear a smartphone dystopia**

Guardian, October 2017

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**Human Contact Is Now a Luxury Good**

New York Times, March 2019

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**The Digital Gap Between Rich and Poor Kids Is Not What We Expected**

New York Times, October 2018

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**Why beating your phone addiction may come at a cost**

Guardian, March 2019

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**Have Smartphones Destroyed a Generation?**

The Atlantic, September 2017

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**Young and Cueless: Thinking about the Big Rise in Anxiety**

Psychology Today, November 2017

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**Our society is being hijacked by technology.**

Centre for Humane Technology

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**What's the difference between apps we cherish vs. regret?**

Centre for Humane Technology

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**Infinite Scroll: The Web's Slot Machine**

Psychology Today, August 2012

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**A Brief History of the GIF, From Earlier Internet Innovation to Ubiquitous Relic**

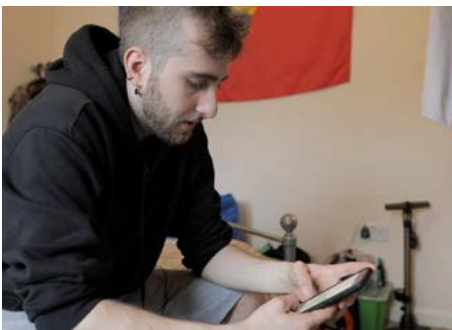
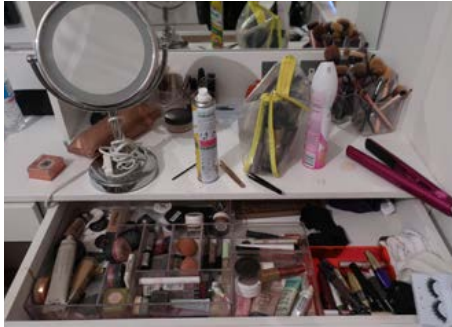
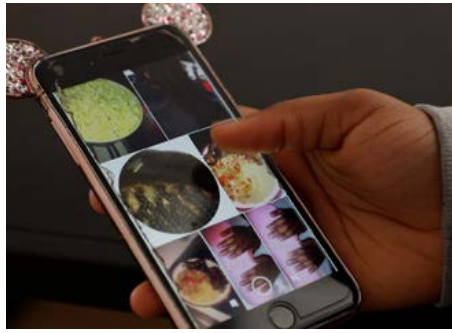
Smithsonian, June 2017

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**The Wired guide to emoji**

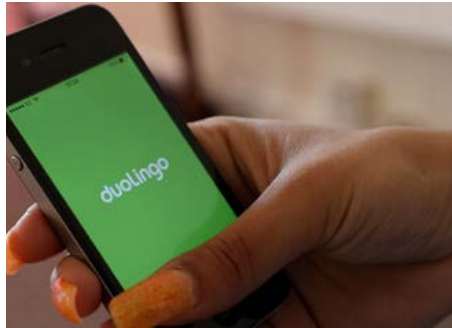
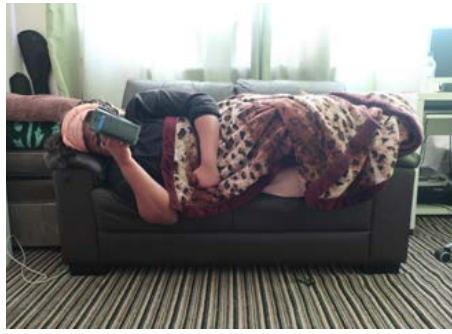
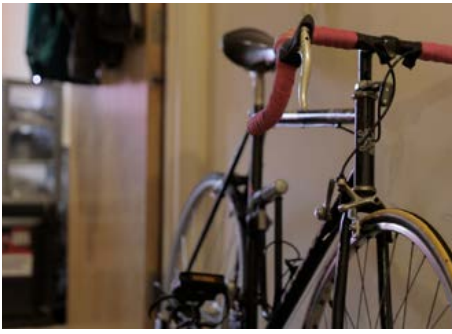
Wired, January 2018





Photos taken during fieldwork





Photos taken during fieldwork