How to Think

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Introduction: Thinking about thinking

⇨ Metacognition and making sense of the world

⇨ Thinking together

⇨ Identifying and addressing your ignorance

Metacognition and making sense of the world

As I type these words, it's Thursday 26 March 2020. I am seated at my desk, at home, in the middle of the COVID-19 pandemic. It's a time of tremendous fear and uncertainty, but I'm one of the lucky ones: my family and I are well, so far, and able to self-isolate at home, on the edge of a small town about 30 miles outside London. Much of my and my wife's energy is going into looking after our two small children, planning food and deliveries, and trying to keep working as best we can from home. Given that my main occupation is writing, I'm doubly lucky, in that I can do this from almost anywhere.

I'm finding it hard to focus, though. The UK is in lockdown. Schools and nurseries are closed. The only people I've seen in person for the last fortnight are those immediate family members who live with me. My ordinary routines have been profoundly disrupted, and there's no end in sight. The website of the World Health Organization tells me that there have been 416,686 confirmed cases of the virus globally, and 18,589 confirmed deaths, as of yesterday evening, 25 March. I find it hard to imagine what it will be like to read back these words as this moment recedes and whatever is going to happen happens, but I know that it will be difficult to recapture the depths of the uncertainty that I and the rest of the world are currently facing.

To be human is to experience a constant tension between two different types of time: between our moment-by-moment experiences of the world, and the ways in which we remember and resolve these experiences into patterns. As the philosopher Søren Kierkegaard noted in his journal in 1843, 'It is perfectly true, as the philosophers say, that life must be understood backwards. But they forget the other proposition, that it must be lived forwards.'[2] The day-by-day business of living feels, at this particular moment, spectacularly distant from the ways in which I and others will come to comprehend these events.

Yet this is just an extreme version of something that is always true: human understanding is always both provisional and belated. Many things that appear obvious in retrospect were anything but obvious at the time, because the clarity we experience when looking back in time is utterly unlike the cloud of uncertainty that surrounds day-to-day existence. The world is far more complex than any stories we can tell about it; far more mysterious, far harder to predict. Our ability

to tidy things up into tales of cause and consequence is at once an astonishing and a dangerous talent.

Most of the time, as adult human beings, we do this kind of integrating and rationalizing so effortlessly that it seems as natural as breathing. Yet the ways in which we make sense of the world represent an overlapping set of competencies that, if we hope to improve their effectiveness and accuracy, demand lifelong practice and interrogation. In order to improve our thinking, in other words, we must take the time to reflect upon thinking itself: a process known as *metacognition*.

I've called this book 'How to think' – which is, it's true, both an immodest and a slightly odd title. Thinking is something you have always done and will keep on doing. What you may not have done so much of, however, is explore such themes as:

- *What* it means to think well
- The *nature* of knowledge and understanding
- The processes of *reasoning* through which people try to explain *why* things are the way they are…
- …and *what* is likely to happen in the future
- The potential sources of *error, confusion* and *misunderstanding* that surround you
- The particular modes of *critical, creative*, *investigative* and *collaborative* thinking that can help you build a more rigorous and less deceived understanding.

The following pages offer guidance, ideas and practices to help you interrogate and develop all these competencies – and to take surer control of your studies, learning and self-reflection.

Thinking together

Humans are not the only animals that think: many other species can do this. But we are unique in our ability to think collectively and culturally. Through language and the artefacts of the human-made world, we are able to capture and share observations about our inner lives and shared existences – and to turn these into structures with astonishing explanatory and analytical power.

Doing so is also, however, fraught with uncertainties that we are all too adept at ignoring. As I type these words, the number of confirmed cases of COVID-19 in the world is increasing exponentially. What will happen next? What is the relationship between the number of confirmed cases and the actual number of infections? How accurate are the tests? How bad are things going to get? Reflection Box 0.1 contains some questions to consider.

REFLECTION BOX 0.1

⇨ Assuming you yourself lived through the pandemic, how did you feel at its start?

⇨ If you could send one piece of advice back in time to me as I type this, in March 2020, what would it be?

⇨ What do you think changes most – and least – in people's thinking during a time of crisis?

I can assure you that I'm not making any of this up. Everything you have read so far in this book was written on Thursday 26 March 2020. My children are playing outside in the sunshine of our garden as I type this sentence, marvellously unaware of the nature of the unfolding crisis. They are, respectively, four and six years old; and one of the challenges my wife and I face is how to explain what's going on in terms that they can understand.

This is a version of a challenge that every teacher and parent must constantly engage with: what does it mean to help children, and especially young children, to think effectively? How can you help them to understand complex events outside their immediate experience? How can you best prepare them for the world?

As soon as you start to explain pretty much anything to a young child, you notice that a great deal you take for granted when talking to an adult simply cannot be assumed. A bright six-year-old may know a lot of facts about dinosaurs, outer space or Pokémon, but probably has little concept of what it means to have a job, earn money, pay rent,

or worry about losing that job and not being able to afford that rent. How could they? Even if some or all of these things have affected them, a child's understanding of what it means to 'have a job' will have little in common with an adult's.

To some degree, the same thing also applies to adults from different backgrounds or generations. Just imagine what would happen if you were sent back in time to the 1970s and tried to explain, for example, working as an Uber driver. How might you make the 2020s comprehensible to someone from a time before not only smartphones and GPS, but the world wide web? Or – to ask a more practical and urgent question – what does it mean for people from very different backgrounds genuinely to understand one another in the present day?

I've heard a number of commentators claim, recently, that the pandemic is a 'great equalizer' in the sense that a virus cannot know or care about the colour of someone's skin, where they're from, or how wealthy they are. While it may be well-intentioned, this claim is palpably false. As is the case for many diseases, factors like age, wealth and ethnicity are among the most important predictors of how unwell someone is likely to become if infected – not to mention whether they get infected in the first place, and how societal upheavals affect them. A single parent experiencing lockdown from a one-bedroom flat is living in a very different world to a family with a large house and garden. The experiences of those with access to excellent healthcare will differ profoundly from those without. Those with precarious work and few savings are vastly more vulnerable than those with secure, flexible jobs – and so on, across the whole spectrum of a society's inequalities.[3]

It takes little more than empathy and attentiveness to grasp at least the essence of these differences. Especially at times of stress and uncertainty, however, almost all of us tend to attach more weight to our own perspectives than they merit. Psychologists call this *availability bias*, and it describes something so obvious that its significance is easy to overlook. Unless we pay careful attention to the limitations of our knowledge and experience, our thinking tends to be dominated by whatever comes most easily and vividly to mind, no matter how unrepresentative it may be of everything else that's going on.[4] Spanning this

divide – between our own and others' perspectives; between what we do and do not know – is a constant struggle.

This is why even very young children can be brilliant at maths or chess, but are unlikely to write great novels. It's easy to explain how chess pieces move, and for a child rapidly to build up chess-playing experience; but it's very difficult for a child to grasp the lived intricacies of the adult world. Similarly, it can be just as difficult for an adult to grasp that their experiences of something they take for granted – a home, a job, a family; their health, their race, their identity – don't directly correspond to others' experiences. And this is before you get into the deep divisions of sense and significance wrapped up within some words and ideas. For example, is calling someone a 'liberal' an insult, a compliment, or a neutral observation? It all depends on who's doing the talking – and where, and when and to whom.

This is partly why games, conversations and stories are such important forms of teaching. They create ways for learners to enter imaginatively as well as intellectually into others' experiences – and to grasp something of their intensity, variety and complexity. As the author Annette Simmons puts it in her 2000 book *The Story Factor*:

> Truth with a capital 'T' has many layers. Truths like justice or integrity are too complex to be expressed in a single law, statistic, or fact. Facts need the context of when, who, and where to become Truths. A story incorporates when and who – lasting minutes or generations and narrating an event or series of events with characters, actions and consequences… Story can hold the complexities of conflict and paradox.[5]

Facts, statistics and empirical research are of tremendous significance. But so, too, are the narratives and lived consequences that animate them; that mould them into competing claims about which things matter, and why, and what should be done. Reflection box 0.2 contains some more questions to consider.

Identifying and addressing your ignorance

One of the most useful things we can do in the face of the complexities outlined above is to *seek to better understand the nature of our own ignorance*.

⇨ If you had to educate a six-year-old at home, what would your priorities be? Why?

⇨ How might you to try explain the idea of a pandemic to a six-year-old?

⇨ How might you help two people compare very different experiences of the same thing?

Although we may forget it – or may not like to admit it – we are all a little like children when it comes to our understanding of the world. There aren't many big questions that we know enough about to be able to answer entirely unaided. I'm busily writing a book called *How to Think*, but that doesn't mean I know the first thing about viral pandemics or, for that matter, about the practical business of educating my six-year-old son at home. What I do have, however, is a strategy for mitigating my ignorance. In the case of my son's schooling, it goes something like this:

- Be as clear as possible about the central question I'm trying to answer (*What's the best way of home-schooling my son during the pandemic?*)
- Spend some time exploring this question in order to discover what other questions I need to answer (*What is going to work best for me, my son and my family in terms of wellbeing and practicality? What should our priorities be? Why? What might help?*)
- Seek out some good content and advice from sources and people well placed to assist (*school, other parents, high quality websites, textbooks*)
- Keep on assessing and revisiting all of the above based on how things are going.

Most importantly, what I need to do is turn those things I don't even know I don't know (my 'unknown unknowns') into things I don't yet know, but that I'm aware I need to find out (my 'known unknowns').

Away from the delights of home-schooling, this approach also suggests why I visited the World Health Organization's website when I wanted to find a figure for confirmed coronavirus cases. I didn't know this without looking it up. If I had guessed it, I would (I think) have got the number wrong by more than 100,000. Two of the most important things that I did know, however, were:

- The specific nature of my own ignorance
- A reliable method for redressing this ignorance.

It may sound too obvious to be worth saying, but all learning entails the admission and exploration of ignorance. If you're convinced you already know everything, then, by definition, you're incapable of learning. Six-year-olds sometimes suffer from this problem; as do some 60-year-olds.

Where does this leave us when it comes to the title of this book? Above all, I believe it leaves us in it together. We may be locked inside our own lives and experiences, but the world we share is one that can only be understood and explained through collective effort. And given that every aspect of an individual's life is also defined, to some degree, by their interactions with the world – and with its people, systems and societies – this means we cannot know even ourselves without grasping this collective context.

To see the world more clearly is to realize, constantly, just how much you do not know; and to take careful steps to test what you *think* you know on the basis that, in the end, all human knowledge is provisional. This kind of *scepticism* may sound negative, even paralysing, but in fact it's the basis of the scientific method through which people have together constructed astonishing edifices of explanation and understanding – and have, adjusted or dismantled such edifices in the light of new knowledge (just think how far humanity's knowledge of our place in the universe has shifted over the last millennium).

Contrary to some heroic accounts of scientific reason vanquishing unreason, I'll spend much of this book focusing on the limits of human reasonableness and understanding, together with the importance of introspection and the embracing of attributes often dismissed as irrational: our emotions, our creativity and empathy; our capacities for compassion and wonder.

Alongside this, I hope you'll take the time to keep interrogating your own learning needs, interests, habits and vulnerabilities – and the talents and aptitudes you wish to nurture. Some final questions for this chapter can be found in Reflection box 0.3.

/// REFLECTION BOX 0.3

⇨ What are you hoping to get out of this book?

⇨ What do you consider your best and worst thinking habits?

⇨ What does the idea of thinking effectively mean to you, right now?

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Summary and recommendations

- You need to make the time to actively reflect upon your own thinking if you want to improve. This thinking-about-thinking is sometimes called *metacognition*.
- Be as honest as possible about your limitations. Don't get into the habit of pretending greater confidence than you actually have.
- Learning entails taking a close interest in the gaps in your knowledge, experience and expertise – and what you need to find out (and who you should listen to) in order to redress these.
- Seeing the world more clearly means taking careful steps to test what you think you know – and being prepared to change your mind in the light of new knowledge.
- No matter how strongly you believe something, be prepared to submit it to honest scrutiny.