Climate change

In brief: Climate change is a threat to all human beings, and yet we are struggling to meaningfully tackle it as a global society. It is a uniquely difficult problem for human beings to solve, given the LASID creatures we are. We are stuck in a loop of inaction that is made even harder to break due to external structures and actors influencing us to avoid taking the necessary action. There are no guarantees we can solve this issue in time – but to do so we must act quickly and decisively as a global tribe to transform our structures and institutions so that they will enable us to lead good lives within the parameters of the planet.

Chapter 16
What is stopping us from addressing climate change?

We are in a climate emergency. Human activities have driven an ongoing rise in the Earth's air temperature beyond pre-industrial levels, and this is wreaking havoc across our planet, causing a transformation of our environment that is destroying lives. Ice sheets and glaciers are melting, oceans are warming to record-breaking levels and extreme weather events are taking place around the world, including floods, droughts and wildfires. The years 2014-2020 were progressively the warmest years on record[552], and 2023 has continued that worrying upward trend, with global temperatures moving to 1.26°C by the end of the year.

These changes have had a devastating impact on countries and communities around
the world, particularly those most vulnerable to the effects of climate change, in which more than 3 billion people live.

That is the first problem. The other problem is that we are failing to take the steps necessary to deal with this crisis within the timescales needed to avoid even greater disaster. Climate change can still be addressed, but we will need to make a number of major changes to our structures, institutions and habits as a species if we are to limit global warming to 1.5°C – the limit scientists suggest is necessary to prevent climate change from causing increasingly

devastating and irreversible impacts[553], and the basis for the Paris agreement for climate change. This is the global agreement between nearly 200 nations to cut their greenhouse gas emissions in order to avoid the worst effects of climate change.

The State of Climate Action 2023 report produced by the World Resources Institute (WRI) provides a comprehensive review of whether we are on track to achieve the global changes we need to limit global warming to 1.5°C[554]. It finds that we are failing to take the necessary steps to achieve this – either in their pace or scale. The report largely serves to show just how far away we are from making effective progress to address the issue. It notes 42 indicators of progress that we need to have achieved by 2030 if we are to consider ourselves on track to keep within the limit of 1.5°C. We are behind – often way behind – on 41 out these 42 targets. For example:

- Target – reduce the carbon intensity of electricity generation to 48-80g of CO2 per kWh. Progress to date – the current level of intensity is 440g.
- Target – phase out public financing for fossil fuels, including subsidies, down to $0 per year. Progress to date – the current level of public financing is $1,100 billion per year – an increase on previous years.
- Target – reach 2 km of high-quality bike lanes per 1,000 inhabitants across urban areas. Progress to date – the current length is 4.4 metres (0.0044km).

We even appear to be increasing, rather than reducing, the intensity of some of the activities that drive climate change. For example, greenhouse gas emissions produced by humans have risen by 50% since 1990.

99.9% of scientists are united in their view that climate change is happening[555]. 80% of people are worried about the impact of climate change on humanity[556]. We know what it will take to address the issue and have clear plans like the one above to do it. So why are we failing so badly to tackle climate change?

This chapter will explore this question, and the next will ask whether there is anything we can do to tackle it more effectively, given what we now know about how human beings think and behave. It will argue that the nature of climate change as a problem is particularly challenging for human beings, as it creates conditions that make it difficult for us to take the steps necessary to resolve it, given the way we think and behave as individuals, groups and nations. Any potential solution to the climate crisis must break this Gordian knot.

What is stopping us from addressing climate change?

There is a wide range of reasons why we struggle to deal with global issues like climate change as a species, from our perception of it as individuals to our ability to gain collective action from our institutions. This chapter will begin by exploring our individual positions and broaden its focus from there.

Individuals and climate change

Our thinking and behaviour as LASID creatures influences how we perceive the issue of climate change, as well as our capacity to react to it in the ways we need to.

Awareness of the scientific consensus – the first question one might ask is how much awareness people have about the weight of evidence suggesting that human-led climate change is taking place. People underestimate how much scientific consensus there is about climate change. Research has shown that 99.9% of scientists agree that human-caused climate change is taking place[557], yet when asked what percentage of scientists has concluded that human-made climate change is happening, people in the UK think it is only 65%. This underestimation is significant, as other research suggests that increased public perceptions of scientific consensus on this issue lead to an increased belief that human-caused climate change is happening and a significant threat. These beliefs are, in turn, predictive of greater support for public action. So, scientists have a role to play in showing their support for the evidence on climate science, as this can help to promote the need for greater action.

Understanding the issue – one might think that a contributor to our failure to solve the climate change crisis is people's lack of knowledge of the topic. A study[558] by psychologist Dan Kahan and colleagues sought to investigate whether deficiencies in public knowledge or thinking capacities led to greater polarisation on disputed political issues like climate change.

They found that people who showed the strongest numeracy and reasoning skills performed better than others in making accurate sense of scientific data when it was presented as results from a study of a new skin rash treatment. But when the same data was presented as results of a study on a more politicised issue – a gun control ban – they actually ended up producing *less* accurate and more polarised results. This suggests that people's ability and willingness to understand scientific evidence is derailed by their need to protect their identity within the cultural groups to which they belong – i.e. when the more politicised issue of gun control was added, this activated people's sense of political identity, and they used their intelligence to double down on their biases and make the facts suit their own position. As a result, on topics such as climate change that are pertinent to people's group identities, the more intelligent a person is, the less accurate and more entrenched their views can become.

This finding is important as it suggests that improving public understanding of science is not in itself an effective solution to alleviating public differences in belief about scientific issues like climate change, even though such education is important in its own right. Instead, we need to remove the temptation for people to process scientific information in ways that protect their identity. Indeed, Kahan and his fellow authors of this study argue passionately that finding ways to protect scientific knowledge from culturally-led biases is the most important thing that psychology can do to assist democratic government. This bold claim may be somewhat exaggerated, but it is an important step, both in tackling climate change and some of the other challenges covered in this book, such as prejudice and truth. The 'solutions' section of this

chapter will examine how this might be applied to the issue of climate change.

Motivated perception – as shown in Chapter 9, our beliefs and identities can even influence how we perceive identical information. A study found evidence of a general 'motivated attention framework' in which liberals and conservatives not only perceive climate change evidence differently, but also respond differently to ways this evidence is presented[559]. For example, the researchers presented participants with a graph of annual global temperature changes, and highlighted either stronger or weaker climate evidence in red. They found that liberals were more likely to take action (donating or signing a petition to stop climate change) when the stronger evidence was in red, but conservatives were less likely to act when stronger evidence was in red. The researchers concluded that focusing attention on motivationally consistent information tends to increase the level of action taken by liberals, but discourages conservatives. These findings could help us to tailor communications about climate change more effectively to different groups.

The power and biases of storytelling – our beliefs and world views also influence how we talk to each other about climate change – in particular, the stories we tell. Human beings have used storytelling over millennia as a core way to communicate with each other, pass on knowledge and inspire action. One study[560] found that as people retold stories about climate change these stories became less accurate over time. It also found that when a story was retold to an audience that was known to have a particular world view (for example, a liberal egalitarian view, or an individualistic

conservative one), the speaker tended to retune the story to the audience's world view if this was known, as well as connecting the problem to the solution that was favoured by that audience. These findings illustrate how 'echo chambers' can develop between groups of people about the issue of climate change, with people telling each other what they think they want to hear rather than an accurate representation of the facts.

Expanding our radius of care – the last few examples have explored some of the ways in which we process and communicate climate evidence as individuals. Many psychological studies and reports tend to focus on this individual level. Climate change is not just about individual perceptions and actions however, and if we are to address it successfully, we need to do so as a planet of 8 billion people. We will consider this global mobilisation challenge now.

As discussed in Part 1, human beings evolved to live in small tribes. Evidence suggests that the number of neurons in our neocortex limits the amount of information we can process, which in turn limits the number of relationships that we can each keep up with at the same time. The magic number of stable relationships we can maintain at one time is around 150, also known as Dunbar's number, after Robin Dunbar, the author of the research proposing this idea[561]. Dunbar proposed that when a group of humans (or other primates) exceeds this limit, it tends to become unstable, meaning that cohesive social groups consist of 150 or fewer people. If you consider your own group of family members and friends, you may well emerge with a figure below this number.

This limit to tribe sizes has implications for our ability to deal with global issues such as climate change. We care enormously

about the people we are closely connected to – those within our tribes. If climate change just affected these people, the chances are we would be incredibly motivated to take almost any action necessary to prevent their suffering, even if it meant us personally having to make major sacrifices. By contrast, it could be argued that we didn't evolve to care for everyone at a global level. We simply don't have the cognitive capacity to compute or feel all the suffering that is going on in the world equally, so we have to prioritise our group. This inhibits our motivation to seek global change as we are more concerned with the people closest to us.

Some people, however, do seem to be prepared to extend their 'radius of concern' way beyond their own tribes to the planet as a whole. These are people with strong 'other-focused values' – those that transcend concern just for themselves. Evidence from an experiment carried out across a diverse set of countries (the Netherlands, China and Columbia) suggests that people with self-focused values were linked with greater levels of climate scepticism than those with other-focused values[562]. A small but significant potential step to help us address climate change may therefore be to inculcate more of these collectivist, self-transcendent values in people, beyond self-focused ones. The authors of the above study suggest that this could be achieved in early adolescence, when people are in the process of developing their values and views on issues such as climate change. So, we can apply our System 2 rational thinking to extend our 'radius of concern' globally, but we need to be brought up with these values to begin with.

On an optimistic note, some evidence suggests that the majority of people are willing to expand their 'radius of care' to other people around the world, as well as future generations, in relation to

climate change. In an Ipsos 2023 survey[563] of people's attitudes in a range of countries towards climate change, 63% of responders in Great Britain agreed that their country needs to do more to combat climate change and 66% agreed that if individuals like them don't act immediately on climate change, they will be failing future generations.

Immediacy bias and resistance to change – the problem in tackling this issue is therefore perhaps not people's attitudes but their willingness to take significant action – or to accept it being taken on their behalf – for example, by their government. Despite this shared concern from most people about the problem of climate change and a sense of a need for action, the same survey[564] gave some insights about what people were prepared to do to address climate change:

- 72% of responders in Great Britain agreed that if everyone made small changes that would make a big difference.
- 43% of British respondents agreed that financial incentives/ tax cuts for env friendly products/services would help them make changes.
- Only 32% of British respondents agreed they would be willing to pay more tax.

In another survey, the Organisation for Economic Co-operation and Development (OECD) teamed up with Harvard University to explore the attitudes of people across 20 of the world's most carbon-emitting countries about climate change. They found that calls to limit unsustainable behaviours such as eating meat and driving cars did not produce strong support (40% and 37% of respondents

respectively) – perhaps in part because they are strong culturally embedded behaviours[565].

Together, these findings suggest that people are willing to make small changes if other people do so too, but are largely unwilling to make bigger sacrifices such as paying more tax, which isn't a massive sacrifice relative to the other lifestyle changes that might be demanded of us. There is also an indication that people need to be incentivised even to make small changes, such as buying environmentally friendly products.

It therefore appears that people are only prepared to make minor changes to their lifestyles, despite their apparent concerns about climate change. Human beings don't like change, and for many people the prospect of having to completely change the way they live in order to address climate change is unthinkable. The popular fear that we will end up 'going back to the stone age' persists when people are told they will have to make changes to their lifestyles. Psychologists Daniel Kahneman and Amos Tversky identified another bias in human thinking that plays a role in these beliefs – *loss aversion*[566]. When we make decisions, we are wired to avoid losses as much as possible. As a result, we would rather avoid potential losses than make similar gains, as the pain of a loss is twice as great as the pleasure of a gain[567].

There are some clear reasons why this might have been evolutionarily beneficial to our ancestors – if we have expended energy on tracking down food, it makes more sense to invest energy in protecting this than spending more energy trying to find more. As with many other traits in human thinking, this has an unfortunate downside when trying to get people to make or accept changes to their lives to avoid climate change. Many people feel that changes to

their lifestyles to address climate change will result in losses (less driving, eating less meat, having fewer of the things they like and feel they have a right to), and they feel the pain of a potential loss, and reluctance to change as a result. This sense of potential loss has been exacerbated by many of the messages they have received about climate change from external sources – both those campaigning against change and those seeking it! If we are to get people to support significant changes to their lives to tackle climate change, these must therefore not be presented as losses to people – for example, as sacrifices that they need to make. They can be framed as potential benefits (such as getting more of what really matters to them, building a better, inspiring future etc.) and as ways of avoiding other losses (such as the idea that climate change will threaten the things and people they care about – like their lifestyles and loved ones).

This unwillingness to make significant changes in our lives leads to people seeking more palatable solutions to the crisis, which explains why there is strong support for technical fixes, such as subsidising low-carbon technologies, which is supported by 67% of people in high income countries[568]. Technical fixes like this can contribute to building a better future, but they are not sufficient. Although we will do almost anything to try to avoid this conclusion, the only way we can meet our targets to avoid a climate catastrophe is to change our behaviour to live within the parameters of the planet.

This public fear of lifestyle change can also have an effect on the motivations of politicians, who are unwilling to present and implement the radical policies needed on climate change because they believe the public won't back them. This creates a 'loop of

inaction' between politicians and citizens that can be very hard to escape from – particularly in democratic countries in which politicians are increasingly inclined to set policies based on their views of what will be accepted by the electorate so that they can hold on to power. This loop of inaction not only exists at national levels within countries around the world but also internationally, as leaders attempt to build a critical mass of individual countries, countries and other agents to take the necessary action as a species.

It seems it will require a greater sense of urgency to convince people they need to support the stronger measures we need to address climate change. Yet there are a number of traits of human thinking that make it difficult to produce this boost in urgency. First, we are built to prioritise the present over the future – a heuristic known as *hyperbolic discounting* or the *immediacy bias*. As LASID creatures seeking to make most efficient use of our limited cognitive capacity, this trait helped our ancestors to devote their mental resources to respond to immediate threats quickly in order to survive. Unfortunately, it also reduces our ability to address challenges that are slower to develop, more complex or situated in the future, such as the anticipated effects of climate change. A similar point applies to events that are not geographically close to us and affecting our daily lives or those of the people we care about. This lack of physical or temporal proximity reduces our ability to see the urgency of the crisis and therefore take the level of action needed.

Ultimately then, people are concerned with their own immediate day-to-day lives and tribes. This is not a morally condemnable form of selfishness – it is how we are built, and we have been through evolutionary adaptations to be like this.

These factors lead to one of the central challenges for human beings presented by the climate crisis. We respond to immediate, short-term cues. But by the time we have experienced a global disaster of a big enough magnitude to make governments prepared to take the necessary action to address climate change, it may be too late. This is primarily because some of the major changes to our climate will be irreversible[569] so these devastating effects may be here to stay, but also because there is a time lag both between our actions on climate change and the effects we see on the climate as a result (in some cases, of decades) and also between governments deciding to take action and then implementing that action.

A core challenge we have to address if we are to deal with climate change within the timescales needed is to stop this 'loop of inaction' between the public and politicians, and ensure that either one party or the other (or both) begins to take the level action necessary to save us from the worst effects of climate change. The next chapter will explore some options on how this could be achieved.

Our external context

Up this point, this chapter has shown that our ability to act on climate change is hampered by some of our thinking and behavioural traits as individual human beings. This situation cannot be understood fully by simply looking at individuals in isolation however, as being LASID creatures, our context plays a big role in our thinking and behaviour. It is even harder for people to act if most of the systems, structures and values that surround us in society are encouraging us to continue our unsustainable lifestyles

as normal, and some of the most powerful actors around us are influencing us against treating climate change with a sense of urgency. These factors will be explored in more detail now.

The power of established norms – a first point to note is that many of us around the world are embedded in a particular lifestyle, culture and set of values and aspirations that represent and promote an unsustainable way of life. WWF estimates that the environmental footprint of the lives we are living in the UK is four times more than our planet can sustain[570].

Most human beings in the West have grown up with these norms surrounding us, and they simply represent 'how life is'. For example, the idea that buying more material goods will make us more effective and happier, and that we need to keep up with other people in the brands and items we have in order to show our status. Or the feeling that we need career or financial success to be seen as successful or to have meaning in life, and that being busy and working long hours helps us to achieve this.

Some of these habits, behaviours and assumptions are unsustainable for our planet, and it can be difficult to extract ourselves from them, even if we are trying to make changes to our lives to address climate change. This can lead to a great deal of contradictory thinking and behaviour – for example, someone might be diligently trying to 'do their bit' by recycling their waste packaging, but at the same time buy an oversized Sports Utility Vehicle (SUV) as their transport. The reasons why they might make these decisions are of course complex, but many are made as a result of the habits, assumptions and expectations we have. As part of any solution to climate change, we therefore need to establish a new set

of norms for what a good life looks like, which we can aspire to in our daily lives.

The influence of powerful opposition – these norms and expectations are not simply maintained by us in isolation however, and context is critical to human beings. One of the biggest problems we face in relation to climate change is that a range of powerful actors exist within the world that are seeking the opposite of what we actually need, by either aiming to maintain the unsustainable way we currently live, or taking it to a more extreme level. These actors take a range of forms – from politicians to media owners to companies – but many have significant power and are able to influence our views and values, as well as shaping some of the structures that surround us in our daily lives.

For example, Rupert Murdoch has been accused by scientists of being a 'climate villain', using his media empire (including *The Sun* and Fox News) to sow doubts about the causes and consequences of climate change, and to delay efforts to address it[571]. A 2008 study showed that this had affected people's beliefs: watching Fox News reduced people's acceptance of the fact of climate change compared to other channels, such as CNN[572].

It is not just media barons seeking to derail progress on this issue. An independent report in 2021[573] aimed to identify the world's most obstructive companies holding back policies to address climate change. The top three companies on the list were the petrochemical companies ExxonMobil and Chevron and the car manufacturer Toyota. The report suggests that a company's influence over policy and regulations may have a much greater impact than the emissions produced by its products or operations – a worrying conclusion when

one considers these are petrol and car companies. Another independent report[574] found that, in the three years after the Paris climate agreement in 2014, the five biggest publicly-traded oil and gas companies in the US (ExxonMobil, Royal Dutch Shell, Chevron, BP and Total) invested over one billion dollars of their shareholder funds on misleading climate-related branding and lobbying.

It is not just such blatant attempts to influence people about the facts of climate change that have an effect on how we see the issue and our willingness to take action on it. Advertisers use psychological knowledge to manipulate people into buying their products – to build a want or need for a product or service in someone even though they may not have wanted it before. As a result, the entire multibillion dollar industry of advertising helps to maintain the (incorrect) cultural norm that consuming more stuff makes us happy and brings meaning to life. Politicians push the idea of economic growth, productivity and the power of economic markets, so that the business agenda takes clear priority over other goals, such as environmental needs – which are addressed inconsistently and often for political expediency. Influential individuals such as footballers, television stars and social media influencers promote a lifestyle of consumption, air travel, and luxury goods – one that young people and other members of the public aspire to.

Some of the structures and institutions that surround us can also influence us to not see the issue clearly – for example, as Chapter 9 argued, we can easily get sucked into filter bubbles on social media, in which we only hear perspectives that back up our existing views or ways of life, and make it difficult for us to see beyond these.

In summary, an incredibly wide range of influences and structures around us shape how we feel about climate change and our willingness to seek action on it. Many of these promote the continuation of our current unsustainable lifestyles, norms and values, which can prevent us from taking the action needed on climate change. Although concern about the climate emergency has seeped into our culture and is a much more visible priority than it was even ten years ago, it is still largely presented as something that can be solved whilst continuing the lifestyles we already have or as something that threatens these lifestyles but is less important than maintaining them. As a result, we are currently at a bizarre place in our cultures where we still cling to old norms such as consumerism whilst recognising the conflicting priority of environmental concerns. This leads to the confused and inconsistent behaviour and priorities we discussed earlier – both from members of the public and political leaders. Eco-consumerism is a good example of this confusion in action.

Gaining consensus and action from competing global tribes – we also face challenges at a political and international level when seeking to address a global issue such as climate change. There is now basic international consensus that human-made climate change is taking place. The central challenges are to gain global agreement on the actions needed, and to undertake collective action at sufficient speed and depth to meet our targets. A range of psychological and political issues make it hard to gain consensus on these points, and some of these will be explored now.

The first point is simply that there are a lot of separate and often competing tribes that need to balance their interests and work

together to address this issue. At the most basic international level, these tribes are the 195 separate countries in the world. At other levels, there are competing businesses, religions and many other varieties of tribe that need to unite on this issue.

At the country level, different nations are at different stages of economic development and some (such as India) argue that other countries have had hundreds of years to burn fossil fuels and build their economies on this as a result. Established industrial nations like the US or European countries argue that we simply need to act now, regardless of the history. Any solution to this particular argument will need to arrive at a fair way to balance the needs of developing countries and subsidise their transition to a non-fossil fuel economy, as well as making clear that the future is based on renewable energy, as are the present and future economic opportunities.

Another challenge exists in the form of countries that stand to benefit from the continued use of fossil fuels – for example, those with plentiful oil reserves like Saudi Arabia (with 21.5% of the world's oil reserves[575]). To meet our climate targets, fossil fuels need to be kept in the ground and production halted. Saudi Arabia however has been accused of various attempts to stifle progress on climate change including lobbying to weaken global climate change legislation[576] and building investment plans to create more demand for its oil and gas in developing countries[577].

National tribes face further challenges as they look to protect their geopolitical interests and avoid ceding power to others during this time of upheaval and transition. Energy use affects many aspects of people's lives and a country's economy and some countries may well do worse from quick action on climate change than others

– for example, those without the natural resources or space to benefit from alternative energy sources such as solar panels, tidal or geothermal energy. These pressures to compete at this time of transition can be exacerbated by existing tribal tensions between countries, especially if these are fuelled further by aggressive and nationalistic political leaders.

The need to reach consensus and cooperation as a species to address the climate crisis therefore presents a range of challenges related to our evolved tendency to live and cooperate in smaller tribes. This extends from the need for people to extend their 'radius of care' about other people beyond their own tribe to such a level that they will change their lives on their behalf, through to the need to balance the claims and needs of different national tribes, each with different circumstances and attitudes of their leadership.

A final issue challenge on the political level relates to the short-term nature of the political system in many democratic countries (such as the US and the UK). The electoral arrangements in these countries mean that governing parties can change every four or five years. This is not to say this short-term political model is wrong in itself, as it gives citizens the chance for reasonably regular reviews of their government, which in democratic terms is a good thing – but it can make it harder to achieve action on big issues like climate change. This is in part because it encourages parties to work within a reasonably short-term window in terms of the policies they will choose – as they need to show the electorate results in the short term so that they will vote for them again at the end of the next electoral cycle. This does not however create strong incentives for bold, long-term political projects from each party.

Another reason why short-term politics can be a hindrance to long-term global issues like climate change is that governing parties may adopt very different policies and values relating to these issues. These policies not only change how much action that country takes to address climate change, but also how its government uses its influence to seek greater, faster action on it at a global scale, and also the cultural and social norms it sets for its own population on this issue. For example, in the US, at the time of writing this book, the Joe Biden administration had made tackling climate change one of its key priorities, and had implemented a raft of policies aimed to meet its target of achieving a net-zero emissions economy by 2050[578]. His predecessor, Donald Trump, however was focused on rolling back actions that aimed to stop climate change[579], including withdrawing from the Paris agreement and lifting bans on oil and gas exploration in parts of Alaska.

Chapter 17
How to tackle climate change more effectively

Despite all these obstacles to us being able to tackle climate change with the depth and speed of action required, evidence suggests there is some hope. Just looking at the US alone, according to a 2021 Pew Research Center report[580] the majority of Americans (across all political tribes) believe not enough is being done about climate change by elected representatives, corporations, the energy industry or the public as a whole, and 64% say efforts to address it need to be prioritised now even if this means deprioritising other issues. Also, although political tribes differ significantly in their attitudes towards climate change, the younger generation of Republicans is much more supportive of action to reduce fossil fuel use than older members. For example, Gen Z Republicans are more than three times as likely as Baby Boomer and older Republicans to support a complete phase out of fossil fuel use (20% vs. 6%). So, what can we do to build on this hope and address some of the behavioural obstacles we face in dealing with the challenge of climate change more effectively?

This chapter is not going to discuss the vast array of measures and policies that are needed to address climate change – these are covered in other places including the WRI State of Climate Action report mentioned earlier. Instead, it will consider the likelihood of

getting the change we need and a number of steps – some big, some small – that could help us to address some of the psychological barriers we've identified to achieving this change. Climate change is a collective action problem requiring a global response within a very limited timeframe, and any approach based on psychology needs to focus on both individual and collective factors. The suggestions below aim to integrate both of these elements.

Breaking the loop of inaction

The first question is how we can address the 'loop of inaction' discussed in the previous chapter at both national and global levels that is preventing us from taking the actions needed at the speed needed to avoid the worst effects of climate change. The reality is that we only have a handful of years in which to make these changes – an incredibly short timescale to achieve a global transformation. Based on the progress reports discussed in the last chapter, we are way behind where we need to be to achieve this in the time needed. Something extraordinary and unprecedented therefore needs to happen to accelerate this action.

Regrettably, the most likely outcome for human beings on this issue in the coming decades seems to be that we will fall well short of keeping climate change within the 1.5C limit we have set in the Paris agreement. The likelihood is that we will overshoot this temperature by a significant amount and this will cause enormous climatic changes which will have severe global consequences in countless areas, including food supply, population displacement and geopolitics. Human lives – and the environment – will be transformed in severe and unpredictable ways. We need to face up to

this reality – and to do so now. If we don't, our other, less likely, options for solving it will disappear into impossibility.

So, what are these other options? Given the size of the challenge that exists in tackling climate change within the timescales required, history and psychology suggest it is unlikely that human beings can meet this goal without suspending the normal operation of democratic countries, and moving to a state of emergency within them. History suggests that a radical, quick change of lifestyles and behaviour is possible in human societies when it is imposed by governments in emergency situations – for example, our governments banned us from leaving our homes during the Covid-19 lockdown, which would have seemed an unimaginable infringement of our freedom in a democratic society at any other time, yet it was accepted by the majority of people[581]. During World War Two, governments introduced various measures that radically changed people's lives, such as conscription and rationing. It could be argued that we need to invoke a state of emergency similar to a 'war footing' to tackle the climate crisis in an effective way, with significant changes possibly including reduction of meat production, quick phasing out of fossil fuels and significant curbs on aviation. The question is whether politicians have the political will to do this and whether they believe that citizens will accept such strong measures.

The climate emergency differs from these other crises in some significant ways in terms of the public's attitudes towards it. Both the Covid-19 pandemic and World War Two were existential crises that directly affected the population of this country. Although it appears regularly on our news feeds, the climate crisis has not yet affected the British public severely (aside from flooding in some areas), so it is unlikely to be regarded with the same urgency.

A vital question therefore has to be asked – at what point does the climate situation become so bad that the public and politicians are prepared to make the changes needed? Based on history, it appears that the only thing that is likely to break the loop of inaction is that politicians are forced into declaring a state of climate emergency – not because we voted for it or politicians implemented it voluntarily, but because they were forced to do so in the light of an existential crisis at the level of World War Two or Covid-19. Perhaps our most likely hope is therefore to experience a global climate crisis that doesn't cause too much damage but unites the population into demanding immediate, radical action on climate change from politicians. As previously noted though, by the time the crisis becomes this severe, we may already be way past the 1.5C limit, and heading towards grave consequences.

Another possibility is that popular support can be built in certain influential countries that enables the emergence of politicians or parties who are prepared to set a strong approach to the climate crisis as the centrepiece of their platform. This feels like a less likely scenario, because it fails to address the loop of inaction or gain international consensus on action quickly. The leadership of these nations would also need to inspire other countries to cooperate and take action too. These policies may either be enacted through the willing participation of the public within democratic systems or may be delivered through a more authoritarian stance. The latter would challenge the priority we place on freedom and democracy – but it is possible to imagine a party that suggests that climate change is such an important issue that it is worth suspending some freedoms to get it solved.

The possibilities above are either unpalatable or unlikely. But there is another extraordinary and unprecedented way we could address the climate crisis – and its potential depends upon whether the people of the world are ready for it. This alternative is a massive international movement-building campaign that seeks to unite the world population to rise up and force politicians and businesses into global change on the scale and speed we need. This may be our best chance of achieving the changes in a democratic way. Over recent years, there has been a massive number of groups and campaigns seeking to address climate change, from Extinction Rebellion to the United Nations 'Race to Zero' campaign, but none has achieved the level of leverage needed to influence sufficient change. A last-ditch global campaign, funded by wealthy individuals and large companies to achieve an unprecedented level of scale, ambition and funding, and joined by campaign groups around the world, would seek to frame humanity as one in-group battling an external enemy or threat together – that of climate change. Building this sense of a global in-group is not as easy as it may seem due to differing circumstances and power dynamics between smaller groups[582], but evidence suggests this idea of a shared fate – a fight against a common enemy – can bind cooperation between people[583]. Another factor that can do this is building a sense of 'global cosmopolitanism' in which people feel a dual identity, as part of global humanity as well as belonging to sub-groups such as nations within this, and being open about the differences between these sub-groups rather than trying to force humanity into a homogeneous whole[584].

The campaign would argue that this external enemy threatens our livelihoods and children (making use of our tendency for loss aversion), and we have a limited time to defeat it – and a specific

deadline would be set. Alongside the fight against a common enemy threatening to inflict massive losses on our in-group, there would be a simple call to action to complete a petition, attend marches or undertake other actions appropriate to each targeted group to tell politicians around the world that we, as the global public, are ready for them to take the radical steps needed to build a better future and address climate change. The campaign would have a simple, definitive title and message – such as 'The time is now' or 'We're ready'.

The campaign would set out a simple road map to show how this issue can be dealt with in a few radical, timed steps. We need to make the solution seem simple, even if it is complex and radical underneath. It will acknowledge how ambitious and radical the plan is – but counterintuitively, this, in combination with its simple presentation, could help to make it seem possible, and build the cultural belief that we can do this. The campaign would aim to counteract people's sense of hopelessness about this issue and show them how we can have power and collective agency when we come together for our mutual survival.

The aim would be to gain the funders and organisational actors needed to produce this campaign at a global scale and depth that has not been achieved before – relentless, repeated communications that reach most individuals around the world. It would therefore aim to gain the participation of powerful non-government actors that influence and control the structures around people, including leading technology and social media companies. It would also use many of the techniques that have been explored in this book to encourage people to join and take action – from building social norms through influence in social media and newspapers, and using

advertising techniques. Such a campaign is of course dependent on the participation, generosity and ambition of some of the world's wealthiest and most influential individuals and companies who have benefitted most from our unsustainable way of living to date – but this may be possible, and removes the necessity for a public funding campaign that would be unable to raise the level of funds needed. If successful, the campaign would lead to the global mobilisation project that will be discussed shortly. There is evidence suggesting this approach has potential – for example, the Australian 'Climate 200' project is a crowdfunding initiative to support independent political candidates who will push forward the climate change agenda. It includes donations from wealthy philanthropists such as share trading firm founder Rob Keldoulis, who have contributed millions of dollars to the cause, which has helped to challenge the power and perspectives of the larger parties, including helping pro-climate candidates to win seats in the Australian federal elections in 2022[585].

Steps to seek change

Regardless of the way in which we get to the point of taking substantial action on climate change, the section below sets out some ways this action could be taken most effectively, considering the potential for both action and obstacles to action brought by our makeup as LASID creatures. These can be broadly split into two categories – measures that can be implemented to the structures around people in their lives that they can simply 'slip into' (such as improving public transport) and those that represent changes they will just have to accept (such as reducing meat consumption).

Integrate nature into our priorities, systems and lives – the breakdown in our relationship with nature is at the centre of our problems with climate change. One of the most important stories we need to establish in our global culture is that human beings are part of the natural world, and custodians of it rather than masters of it. This is not only a cultural necessity but also a practical one. Every aspect of our lives, activities and infrastructure as a species needs to take place within the parameters of nature and our planet, as it is the only one we have.

Putting the planet first in this way will demand changes in our fundamental priorities and values, as well as a radical rethinking of our structures and institutions. For example, we need to challenge the idea that material wealth is the sole route to human flourishing, as studies have shown it is not, beyond a basic level of income[586]. We need to adjust structures to reflect this, including much tighter regulation of the industries that promote over-consumption, such as advertising. Restricting the amount of time and physical space we allow for advertising would help us to improve our immediate environments and reduce the continuing pressure to consume more. We could redirect this industry's remarkable skills in influencing people away from destructive ends like over-consumption and towards constructive goals such as influencing cooperative behaviours on climate change and reducing prejudice and violence.

We need to prioritise human flourishing within nature above economic goals and see the latter as a means to an end of the former. These changes in focus will require a change in political and economic systems – not necessarily meaning the end of capitalism, but certainly the end of the neoliberal consensus that has dominated economics since the late 1970s which demands that financial

markets should be free to operate in an unfettered way. Our economy needs to work for us, not vice-versa.

As part of these structural changes, we also need to address inequality between human beings – both economic and other forms – as both poverty and extreme wealth are key drivers of human suffering in climate change as well as in people's capacity to make changes on this issue. These are large-scale and complex changes that there is insufficient space to explore in more detail here.

At a simpler level, we need to rebuild our relationship with nature more generally – and there are many reasons why this matters. For example, studies have shown that having a strong sense of connection to nature promotes human well-being and functioning. There is also considerable evidence that greater connection with nature promotes pro-environmental behaviours in people[587]. We therefore need to build nature into our lives and societies more, and a report produced in 2023 by the University of Derbyshire[588] sets out a range of ways we could do this. Steps include integrating nature into our financial system and rewarding actions that protect and promote it, building infrastructure that doesn't encroach on nature and giving everyone the opportunity to have nature present in their daily lives.

Implement the changes as one global programme – many of the most significant changes that will be required to meet our climate targets do not directly relate to individual behaviours, and require larger, structural changes from industry, governments and other institutions such as phasing out the use of fossil fuels in energy production or increasing climate finance flows.

Changes of this nature seem particularly challenging, as they require global industries in competitive marketplaces to transform themselves at a speed that is unprecedented. One way to give this extraordinary effort a chance of success is to portray it as a war-like global mobilisation of industries and governments over a fixed period to make this transformation. This would be a massive global investment project in which countries and companies contributed to the cost of rebuilding our global infrastructure and practices in order to meet our targets on climate change, avoid catastrophe and build a habitable world.

Like the global communication campaign discussed earlier, this project would use a range of psychological principles to maximise its effectiveness, particularly in achieving global cooperation and support across a diverse set of actors (from nations to companies) with differing needs and motivations. These principles include:

- Undertaking the project as a distinct, time-limited exercise, so that many of the steps are taken quickly or simultaneously, and there is a clear end point.
- Bringing every global tribe (nations, industries and other actors) together to address this issue, rather than asking individual tribes to do this on their own.
- Building the sense of a global in-group fighting against an external threat.
- Invoking the idea that 'we all do this together' – it is a collaborative effort requiring a previously unseen sense of solidarity and cooperation as a global group. We take the steps together, and we share the gains and pains that come with it. This includes the rich countries helping the poor – bringing everyone along, as we can't

achieve this if we're divided. Research shows that a majority of people across many nations feel that they need to see others (especially the wealthy) making changes if they are to be willing to change their own lifestyle[589].

- Promoting a sense of confidence that we can achieve these goals – evidence shows that campaigns to promote more sustainable behaviours are more successful when there is a strong rather than weak sense of group efficacy[590].
- Portraying it as an infrastructure project – OECD research suggests that there is general support for infrastructure projects – even transformational ones, and subsidies to help people make changes. The initiative could be seen as a transformative global infrastructure project, similar to the one President Joe Biden tried to build in the US from 2020 – but at an even greater scale and speed.

This global mobilisation project could be one of the steps outlined in the global communication campaign discussed earlier, in order to gain momentum and support from the global public for it.

Reduce the friction of structural changes – if possible, most of the changes to people's lives that will be needed to address climate change should be implemented in a way that changes the infrastructure around us, rather than asking individuals to each take responsibility for making enormous personal changes to their lives. Minimising the 'behavioural friction' like this enables us to make the transition between our old, environmentally

unsustainable, lives and our new, planet-friendly ones feel as smooth and effortless as possible, without people feeling that their entire routines have been changed or that they are suffering significant losses or disruption.

For example, increasing the energy efficiency of buildings can be achieved through a national programme to refit people's homes to better energy standards at a greatly subsidised rate or at no cost, so that it is the responsibility of the state to make this happen rather than the individual. Changes like these can be framed as major benefits to people's lives that they don't have to take action on – it will be done for them. Part of the communications strategy around a climate change action plan will be to show people that these things will be done for them – and they just need to support this idea for it to happen. By taking this proactive approach governments show that the effort to implement these changes is being shared, and make it more likely that individuals will be willing to 'do their bit' when they need to.

Another behavioural principle to follow when implementing changes is to emphasise the benefits that they will bring beyond building a sustainable society – for example, showing how having a more energy efficient house will make it warmer.

Incentivise other necessary changes – there will be a range of changes needed to our lifestyles that will be less popular for both individuals and groups, including the suppliers of these 'climate-unfriendly' goods and services. These include reducing both meat consumption and air travel dramatically. Punitive measures such as high taxation of these carbon-heavy goods may be necessary (especially if the revenue is reinvested in climate initiatives), but

these don't always eliminate the behaviours they aim to remove (e.g. people still smoke, drink and drive large, carbon-intensive cars, despite higher taxes and costs for these products). We could therefore also try another approach – incentivising climate-friendly behaviours – as evidence suggests that having financial support to change into more sustainable behaviours is important for the majority of people in most countries[591]. For individuals, this might take the form of rewarding people for keeping within a specified 'carbon diet' over the course of a year – an initiative that could be assisted by an app and technology monitoring people's fuel, transport, food and other consumption. It could also include heavily incentivising sustainable alternatives to each choice, so that these become much cheaper and more attractive than the carbon-heavy ones. For example, absurd as it may seem, in the UK air travel is currently subsidised – from airlines paying zero duty on their fuel (unlike motorists) through to passengers having to pay no VAT for their flight tickets[592]. This actively incentivises rather than disincentivises the climate-damaging activity. At the time of writing, it is 50% more expensive to get a return train journey from London to Aberdeen than a return flight. If we turn this on its head and incentivise the sustainable activity (in this case, including using trains and other methods to travel abroad as well), whilst removing subsidies for the unsustainable one (in this case, aviation), it will encourage many more people to change their behaviour. Arrangements will also need to be made with suppliers to compensate them for these changes and smooth the process of transition.

Leverage social identity for climate action – social identity plays a critical but underappreciated role in how we respond to the climate change crisis, both as individuals and as groups, including at an international level[593]. The previous chapter showed how social identity processes can play a role in biasing people against pro-environmental attitudes and behaviours, but they can also provide a powerful push towards them. For example, one study found that seeing the social norms of how other people (in this case, their neighbours) behaved led more people to conserve more energy than any of the other usual appeals used to get people to cut down on energy use – for example, that it would save them money or protect the environment[594].

We should therefore use the insights of social identity theory to develop strategies to promote pro-environmental behaviour, both at small and international group levels. For example, one group of academics in Germany has proposed a Social Identity Model of Pro-Environmental Action (SIMPEA) that identifies three key aspects of social identity that could be leveraged together to provide a powerful drive for pro-environmental behaviours[595]. These are:

- **In-group identification** – each of us belongs to a wide range of in-groups and our attitudes and behaviour towards climate change may be different, depending on which group we activate in our minds. It therefore makes sense to refer to people's membership of in-groups that promote pro-environmental behaviour rather than those that don't – for example, encouraging people to see themselves as citizens of the world rather than a country that relies on the oil industry.

- **Collective efficacy** – making people feel that the challenge of climate change is not theirs alone, and that their in-group is capable of addressing it collectively.
- **In-group norms and goals** – the social norms of the groups we belong to have a significant impact on our behaviour. Messages about climate change that work with, rather than against, these norms tend to be more effective. For example, if a particular group values responsibility as a norm, then taking action on climate change could be framed to them as a way of taking responsibility for the environment.

We can also apply knowledge about the power of social identity to inform how we speak to different groups of people about climate change, including how we make messages more palatable to those who are more sceptical about the issue or are members of groups with this identity. For example, policies and communications on climate change can often seem like contested issues between groups that provoke conflict between them and activate defensive mechanisms within members of those groups to protect their identities. One group (such as Republicans or climate sceptics) might therefore reject information that has come from an out-group (such as Democrats or scientists). Using identity theory, we can help people to lower these barriers that they use to defend their identity, and increase their receptiveness to action on climate change – in this case by making it clear that the messages to take action on climate change come from within their in-group[596].

Academics, policy-makers and campaigners urgently need to develop ideas to apply these models at an international as well as a local level, as the large-scale change that is needed has to date been

neglected. Some of the principles from this SIMPEA model have been used in developing the ideas for the international movement building campaign and global implementation program set out earlier, but other ideas resulting from these techniques may be equally or more effective. These insights also highlight the importance of leaders in establishing positive social norms towards tackling climate change. For example, a study showed that when leaders used inclusive language of 'we' and 'us' to promote renewable energy, this gave it a stronger sense of being a norm in their group, and led to greater intention on behalf of in-group members to act in relation to it[597].

Regulate climate change information – applying our knowledge about social identity will help us to address the way people perceive and act on climate change information, but we also need to do more to regulate the information itself and the sources people use to obtain it, so that it is easier and more useful for them to process, as well as being as reliable as possible.

To ensure that the information is as reliable as possible, the steps recommended in Chapter 10 on how to protect the truth can be applied, including 'inoculating' people against climate change misinformation and preventing attempts to seek profit or power by exploiting people's vulnerabilities to manipulation.

Simple labelling of goods and services may also help people to make better decisions on the complex issue of their climate impact. Each individual could be provided with a daily carbon allocation – the amount of carbon they can consume whilst keeping the planet within 1.5C heating limits. This 'carbon diet' measurement helps to anchor a particular figure in people's minds, which acts as their

reference point – even if they struggle to meet this. An app could be provided to help people monitor their carbon consumption each day. People have become used to counting calories and understanding recommended daily limits, and similar principles could help them develop their carbon literacy, as well as make less carbon-intensive choices.

Each product or service, from train journeys to cans of baked beans, could carry a mandatory label that tells the potential customer how much carbon it carries overall in its manufacture, consumption and disposal, as well as the contribution this makes to the individual's carbon allocation for the day. High carbon options could be flagged with a black label (for example, travelling by car), and consumers directed to lower carbon alternatives (such as using public transport). Carbon health labels could also be attached to products and services that are particularly high carbon or unnecessary, asking 'Do you really need this?' – for example, air travel. These ratings and labels should be mandatory on any promotional materials such as advertisements that encourage their consumption.

Behaviours could also be measured on the app, with similar labelling principles applied – for example, a car journey would gain a black warning label and suggestions of alternative transport methods.

Tell better stories – the discipline of psychology has learnt a lot about what people do or don't respond to and how to create effective messages. This knowledge needs to be applied consistently to the effort to beat climate change, as messaging is often negative, inconsistent or ineffective at present.

As we have seen, the majority of people are concerned about climate change, but are not affected at a deep enough level to take meaningful action or demand it of their political leaders. The rational, intellectual extension of our 'radius of concern is therefore perhaps not enough to motivate most people to take sufficient action. We therefore need to use communications to awaken the powerful, visceral emotion that comes from our automatic System 1 thinking – such as our care for our own tribe. This leads to a range of communication possibilities, such as framing humanity as one 'in-group' in order to build global cooperation, telling positive stories that fit with the world views of different groups and relate to 'people like me'.

This process of communicating better should start with creating a simple but clear vision of what people's lives would look like in a sustainable future, so that it becomes real to them. Bearing in mind the human tendency to be more concerned by losses than by gains, we also need to challenge the idea that our current lifestyles are worth keeping, and show that we won't be losing but gaining by making changes. We need to challenge the dominant stories of our time, including the fact that the consumerist, rushed and unequal lifestyles that we aspire to actually militate against human flourishing in a variety of ways, and that we have a chance to build a better future when we take action to address the climate emergency.

We should therefore not simply present climate change as a threat we must overcome, and that the future we scrape together as a result of this is all we have to look forward to. We need to build a positive, aspirational vision of the future, showing the tangible benefits of a sustainable future on the things that matter to people so that they feel inspired by it and actually want to move towards it,

rather than feeling they will be losing a lot from the lifestyles they have now. The actions taken by governments on people's behalf will need to gradually deliver on these expectations, in order to retain people's commitment and trust to this vision.

Changing the stories we tell like this can help to shift the way people perceive the issue of climate change, alongside the other measures we have discussed in this section.

Conclusions

Climate change is a uniquely difficult problem for human beings to solve, given the LASID creatures we are. It requires us to make substantial changes to our lives in the present – something we do not like doing – in order to avoid negative consequences that are both situated in the future and that do not affect everybody's lives in an immediate way in the present. It is made even harder by the fact that we need to have concern for people beyond our immediate tribes in order to take action – something that demands rational, effortful System 2 thinking, not just automatic System 1 – and are faced with a range of politicians, corporations and other powerful interests that wish to avoid making these changes and that attempt to influence us to avoid taking the action that is necessary. This is in addition to the fact that some of the structures around us, such as information architecture (in the form of social media, newspapers and other sources) make it difficult for us to reach reasoned views without being influenced or driven by aspects of our LASID tendencies, such as tribalism and identity. Overall, this feels like a challenge built by a malevolent games master, which is in theory solvable (we simply

need to change our consumption of energy sources), but in practice is as hard as possible for humans to solve, given the creatures we are.

In the light of this, there are no guarantees we will solve the issue of climate change in the way we want to – in other words, to limit global warming to 1.5 degrees C (2.7 degrees F) by 2030[598], in order to avoid the increasingly devastating and irreversible effects that will impact the human population and the way we live.

Perhaps our most likely hope is to experience a global crisis that does not cause too much damage but unites the population into demanding immediate, radical action on climate change from politicians. Even this option demands an unnecessary level of suffering, however. In order to avoid these consequences, human beings are going to have to gather not just our technical knowledge but our understanding of how people think and behave as well as our collective will, and apply them in a way we have not done before – to act quickly and decisively as a global tribe to transform our structures and institutions so that they will enable us to lead good lives within the parameters of the planet.