Chapter 1. Our positive and negative problem-solving brain

Introduction

Every family, team, company, government and civilisation is run by human brains. If we do not understand the brain, we will misunderstand the systems it builds and the way those systems behave under pressure.

The brain evolved first to keep us alive. It reacts quickly to threat. It protects status, belonging and identity. It can narrow attention to the short term and to the immediate 'I'. But the same brain can reflect, imagine, learn, copy, create concepts and think far into the future.

That gives us the central tension of the chapter. The brain can pull us down toward fear, defence and short-term survival. It can also help us climb toward a wider 'We', longer time horizons, restraint and cooperation.

Civilisation works by changing the setting around that brain. Rules, customs, approval, disapproval, law, education and institutions draw out some predispositions, restrain others and repurpose others. The brain does not disappear as society becomes more complex. It remains inside every level.

This matters now because AI enters a world already animated by human brains. AI can inflame fear, status and certainty. It can also help us stand outside our reactions, make our felt truths visible and widen the field of choice. Before we can decide how AI should help us, we need to understand the human brain it will be helping.

The chapter therefore moves from survival, to brain structure, to animation, predispositions, restraint, the five human superpowers, quirks of thought and the I-We / short-term-long-term matrix. It ends by asking what all of this means for humans and then for AI.

How this chapter unfolds

1. **The brain as a survival system** - Human beings solve four survival problems. The tension between the individual 'I' and the collective 'We' begins here.

2. **The layered structure of the brain** - The brain stem, limbic system, amygdala and prefrontal areas help explain fast reaction, slow thought, emotion and restraint.

3. **Animation** - Biology becomes behaviour when the brain turns need, threat, reward, belonging and curiosity into attention and action.

4. **Predispositions, survival and levels** - The same survival brain carries both cooperative and defensive predispositions, and the setting around us changes which ones come forward.

5. **Threat, the amygdala and restraint** - Threat can narrow choice quickly. Cultural habits, law and self-calming create time for a wider response.

6. **Five superpowers** – Concept building, time shifting, truth formation, copying and self observation let human beings move beyond immediate reaction.

7. **Each superpower can help or harm** - *The same capability can support truth, cooperation and civilisation or become dogma, manipulation and self-justification.*

8. **Civilisation draws out the positive and manages the negative** - Customs, rules, approval, disapproval and institutions change which expressions of the brain are rewarded and repeated.

9. **Quirks of thinking** - Fast thinking saves effort, but it also creates predictable shortcuts that distort judgement.

10. **The I-We / short-term-long-term matrix** - Civilisation climbs when the brain can hold a wider 'We' for longer; it falls when threat pulls us back toward short-term 'I' defence.

11. **What this means for humans** - Brain literacy gives us more room to see our reactions, test our felt truths and choose a wider and longer response.

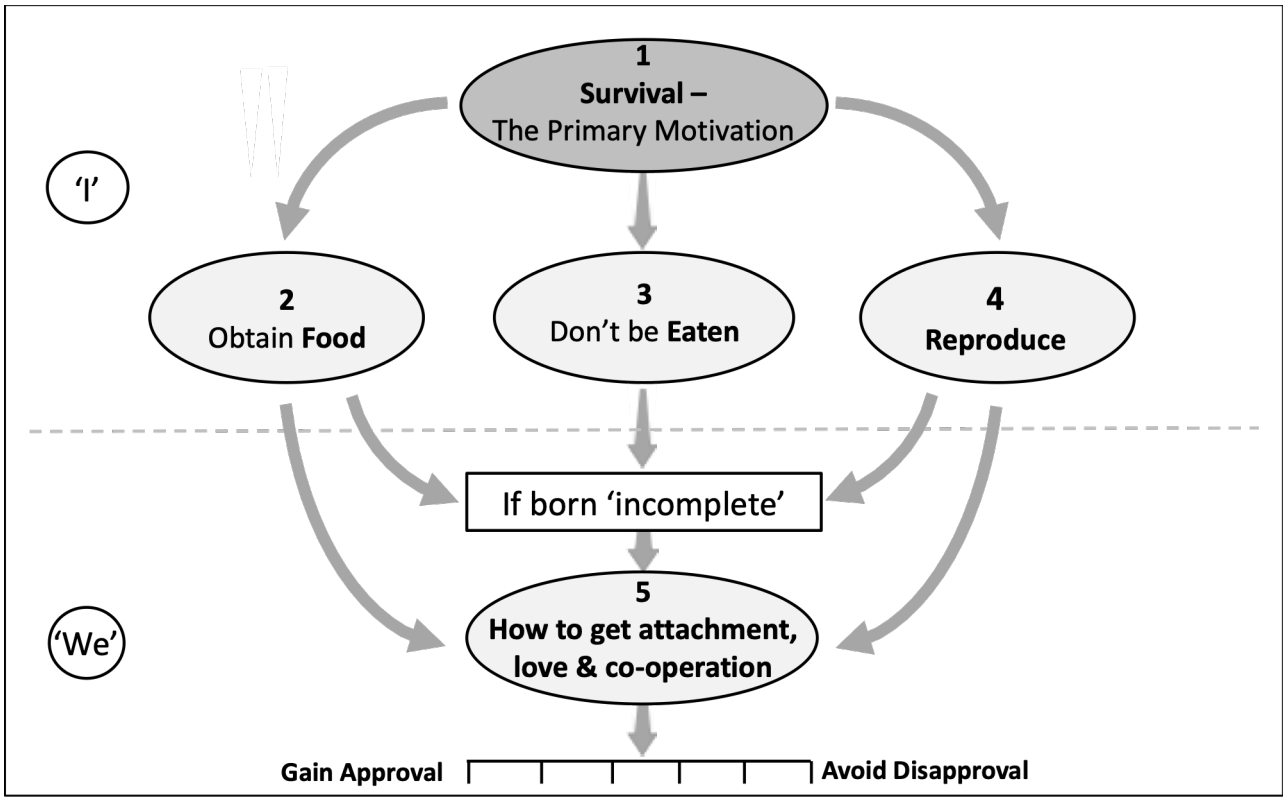
12. **What this means for AI** - AI will act inside nested human systems and should help make reaction, bias and consequence more visible rather than simply amplify them.

1. The brain as a survival system

We solve four survival problems. Without them, we do not survive.

All living creatures solve three: find enough food and energy, avoid becoming someone else's food too often, and reproduce. Humans face a fourth because we are born incomplete: we need attachment and care. We are individuals - 'I' - but we survive through groups - 'We'. That tension sits underneath much of human behaviour.

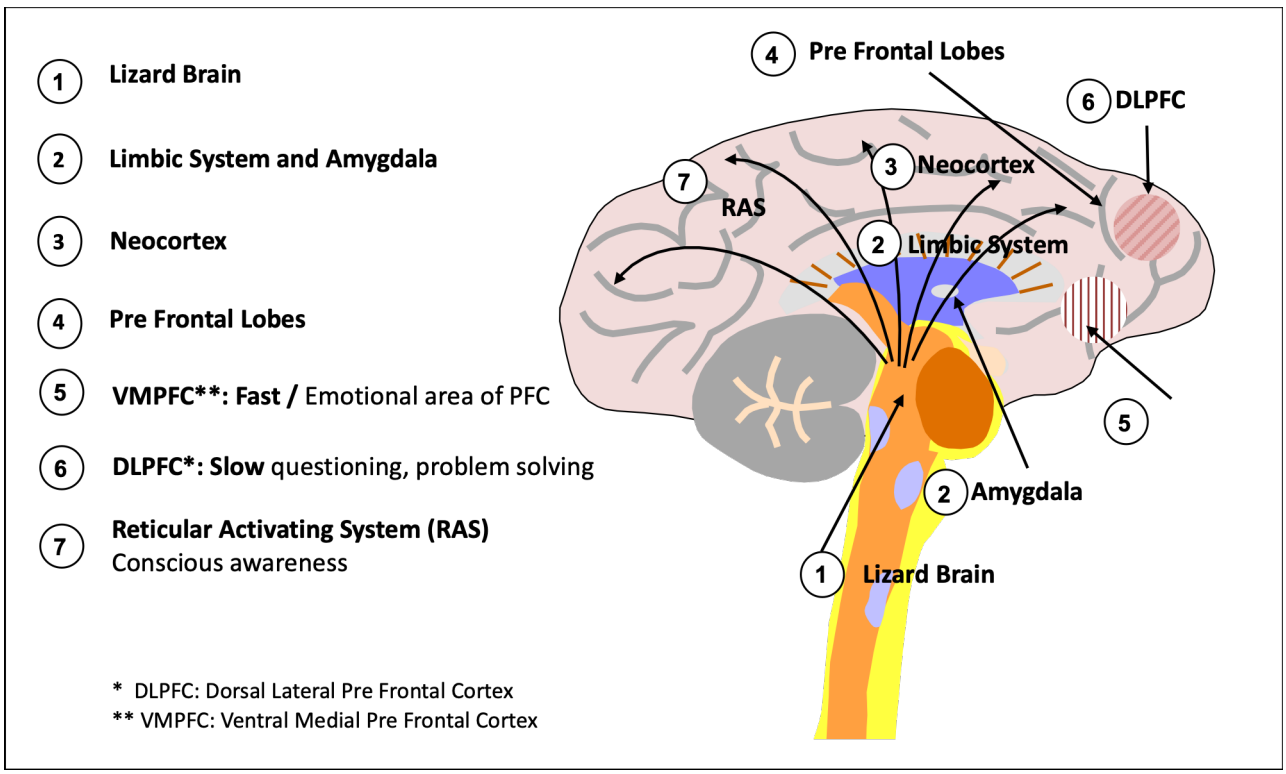
The four problems of survival. Exhibit 1.1



2. The layered structure of the brain

The brain has several major parts that help explain how we react and think. The brain stem keeps basic body functions going. The limbic system, centred on the amygdala, handles emotion, attachment, reward and rapid threat response. The neocortex supports language, planning and reasoning. The prefrontal areas help us integrate these signals, slow down and choose. Fast and slow thought are not separate brains. They are different ways the same brain responds to the world.

Sub-structures of the triune brain. Exhibit 1.2



Neurotransmitters help shift the brain between states. Dopamine, serotonin and oxytocin are often linked with reward, social connection and future-oriented behaviour. Adrenaline and cortisol help mobilise a fast survival response. Exhibit 1.3

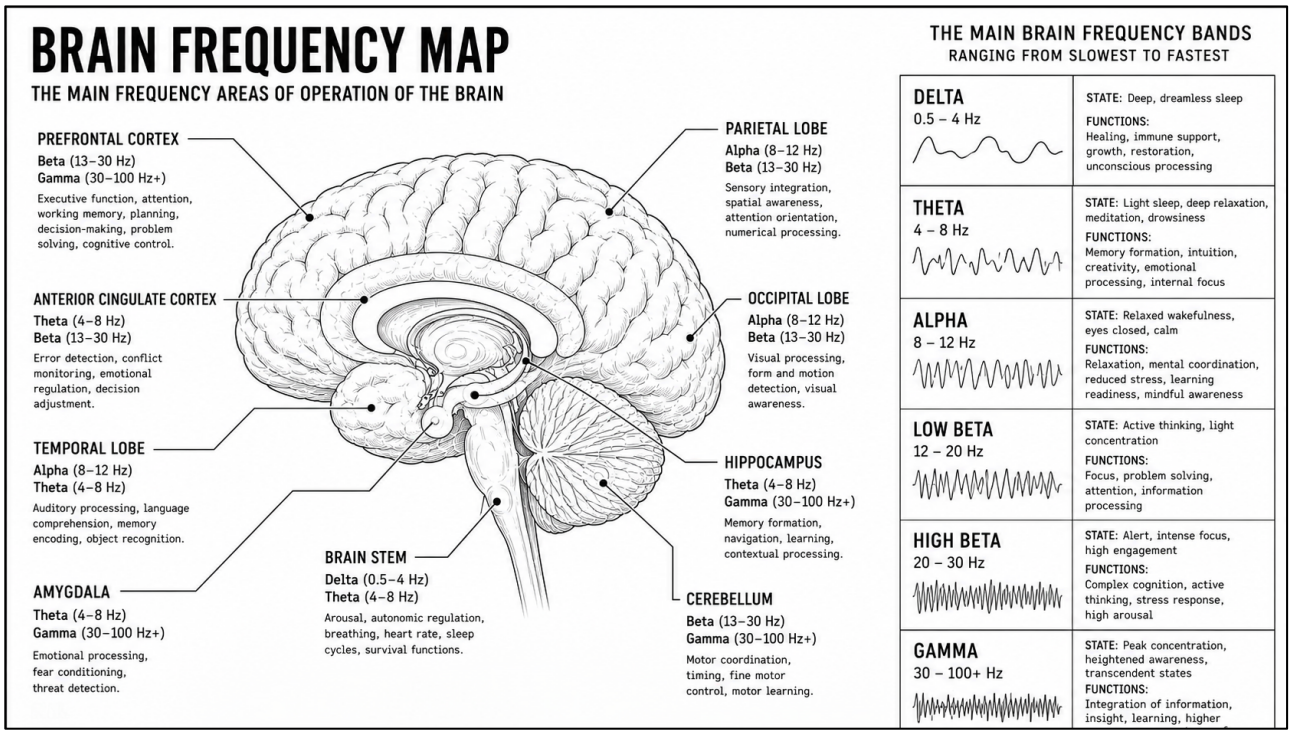
Function and areas of control for the triune brain and sub-structures. Exhibit 1.3

Brain Part	Focus	Function	Controls
1. Lizard Brain	Survival	**Reacts** quickly, keeps you alive	**Instincts**, fight/flight/freeze response, heart rate, breathing, territorial behaviour
2. Limbic System **Amygdala** - core component of limbic system	Emotion Link between Perception and emotion	Feels and remembers **experiences** Crucial for **rapid survival responses**, also for **moral maturity** when integrated with higher brain systems like the **VMPFC** and **DLPFC**.	**Emotions**, memory, attachment, fear, reward **Emotional processing**, emotional memory, social and moral signalling, modulation of decision making
3. Neocortex	Reason	**Thinks**, plans, and reflects	**Language**, logic, decision-making, imagination, empathy
4. Prefrontal Lobes	Intentional control	**Coordinate** thinking, planning, restraint and adaptation around chosen aims.	Keep behaviour guided by goals and consequences rather than impulse alone.
5. RAS (Reticular Activating System)	**Arousal & Wakefulness**	Maintains **alertness**; Filters sensory input; Regulates sleep-wake cycles	**Conscious awareness**; Attention threshold; Basic alertness; Transitions between sleep and wake
6. VMPFC (Ventromedial Prefrontal Cortex)	**Emotionally-informed Decision-Making**	Integrates **emotion and memory**; Regulates social behaviour; Evaluates risk and reward with moral/emotional input	**Impulse control**; Empathy and guilt; Moral judgment; Context-sensitive choices
7. DLPFC (Dorsolateral Prefrontal Cortex)	**Rational Executive Function**	**Planning**; Abstract reasoning- Working memory; Cognitive flexibility	**Logical decision-making**; Suppression of distractions; Goal-setting; Self-regulation and delayed gratification

Brain activity also changes with our state. Beta is linked with active waking thought. Alpha appears in relaxed alertness. Theta is associated with early sleep, deep relaxation and some forms of meditation. Delta is most closely linked with deep sleep. The detail matters less here than the larger point: the brain does not operate in one fixed state.

Everyday actions can shift those states. Breathing, exercise, rest and attention can change how activated or calm we are. That matters because state affects the kind of thinking available to us.

Brain states. Exhibit 1.4



But structure only tells us what the brain is made of, not what sets it in motion. The wiring described here sits inert until something makes the organism *care* — and that caring is where biology becomes behaviour.

3. Animation

Initiation of action. The brain is animated to survive. It moves the body toward food, safety, attachment, comfort and continued life. This is not a defect in the brain. It is what the brain was built to do. Life is not neutral. A living system has to remain inside viability boundaries: enough energy, enough warmth, enough protection, enough attachment, enough repair, enough future.

Animation begins as **homeostatic pressure**: the gap between the present state and the viable state.

Always on. The **brain stem** keeps the organism alive; the **limbic system**, centred on the **amygdala**, detects danger, attachment, reward and pain; the **prefrontal areas** can evaluate, regulate, sequence, reflect and choose. These higher capacities sit on top of a survival system that is always active. The brain is not just a processor of information. It is an animated organ: it turns biological need, social threat, reward, belonging, fear, curiosity, anger, hope and approval into attention and action.

The problem of truth. The brain is built for survival before truth. Accurate maps of reality help survival, but the brain does not meet the world neutrally. It interprets events through threat, opportunity, belonging, status, memory, identity and expectation.

Immediate survival is 'relative'. Often, before conscious thought begins, the brain is already asking: Is this safe? Am I included? Am I losing status? Is my group at risk?

Second-order survival. Once immediate survival is secured, the brain does not stop being animated. It begins to animate the person socially, symbolically and temporally. It seeks status, trust, fairness, competence and control. It wants to be seen, accepted, respected and effective. It is drawn toward curiosity, humour, affection, competition, cooperation, pride, shame, meaning and legacy. These secondary animations remain connected to survival. Status affects access to protection and resources. Trust lowers the cost of cooperation. Fairness protects against exploitation.

Spontaneity out of awareness. We can be animated before we know why. We feel insulted before we can explain the insult. A crowd becomes excited before it has a doctrine. A market panics before it has a theory. A leader feels threatened before a strategy appears. Feeling often comes first. Explanation follows.

Survival becomes symbolic. In a simple environment, survival symbols are concrete: food, water, warmth, shelter, bodily safety, maternal protection, sexual access, territory and group protection. As societies develop, survival becomes abstract. Food becomes income. Shelter becomes mortgage security. Protection becomes law, police, nation, insurance, savings and reputation. Mate value becomes status, beauty, wealth, title, credential and following. Belonging becomes class, profession, party, nation, religion, platform and online tribe.

The central complication is that the biology is ancient while the symbols are modern. The body can still react as if status loss, exclusion, humiliation, rejection, ideological defeat or public shame are immediate survival events, because in older environments they often were. Money is not survival, but it represents food, safety, freedom, rank, options, dignity and future security. Status is not survival, but low status can mean fewer resources, less mating opportunity, less voice, less

protection and higher vulnerability. Nation, religion, and reputation are not survival in the narrow bodily sense, but they may hold the order through which people remain safe, attached, and meaningful.

The error is not that symbols are false. The error is that symbols can detach from their survival function and then be defended as if they were the function itself. A society can become powerfully animated by money, flag, title, identity, ideology, market, class, technology or moral slogan while losing sight of whether those symbols still serve life, dignity and trust.

4. Predispositions, survival and levels

We carry both positive and negative predispositions. They sit around the same two survival needs that run through this chapter: ‘I’ survival and ‘We’ survival.

The brain evolved both competition and cooperation because we need both. A person with only ‘I’ would struggle to live in a group. A person with only ‘We’ would have little capacity to protect their own needs or contribute independently.

Predispositions therefore come in pairs, not on one simple good-to-bad line. Trust can help cooperation; suspicion can protect against cheating. Compassion can bind a group; too much unbounded compassion can exhaust it. Context, threat and the surrounding rules help decide which response comes forward.

Small scale. That is what makes these predispositions the starting point of our face-to-face morality in small groups, rather than the finished article. A tribe, a family, a small team can run almost entirely on these raw, unmediated predispositions, because everyone can see everyone else's behaviour directly, and reputation does the enforcing.

Enlarge scale/scope. But the same predispositions do not scale automatically. Loyalty that binds a family together can curdle into tribalism the moment "We" is asked to include people we have never met; cooperation that works face-to-face collapses into free-riding the moment the group grows too large for anyone to keep track of who is contributing and who isn't. This is precisely the gap that institutions exist to close — taking predispositions built for groups of a few dozen and finding ways to make them hold at the scale of a nation, or a civilisation, without either curdling into exclusion or dissolving into indifference.

And amygdala-driven switching operates here too. Safety and security pull us to the left, toward the neo-cortex's more rational, generous pole; threat and humiliation pull us to the right, toward the limbic system's more suspicious, self-protective one.

Positive and negative 'I/We' predispositions. Exhibit 1.5

Positive & Negative 'I/We' Predispositions

We **Pro-social Positive Predisposition**	**Scope of care** High Med Low	**Anti-social Negative Predisposition** I
Loving		Indifference
Compassion		Cruelty
Forgiving		Vengefulness
Gratitude		Entitlement
Caring		Neglect
Protecting		Abandonment
Trusting		Suspicion
Co-operating		Dominating
Generous		Greedy
Sympathetic		Judgmental
Inclusivity		Tribalism
Emotional regulation		Volatility
Conflict resolution		Revenge-seeking

Notes

1. We survive as individuals "I" and within groups "We"
2. This can be seen in terms of "I–We" predispositions
3. We are all capable of both
4. Amygdala triggering shifts us **right - limbic**
5. Safety/security shifts us **left**
6. Good governance maintains us left - neo cortex moral structure
7. Scope of our goodness is also a spectrum:

I → We → Us → Them → Indifference → Not human

8. Face to face pro-social behaviour does not scale

5. Threat, the amygdala and restraint

The amygdala can react before the prefrontal cortex has time to think. Under threat, the brain can shift quickly toward a fast survival response and away from slower reflection.

When triggered it blocks slow, rational thought – possibly throwing us hard right. It's the fight/flight/freeze response.

That matters because modern threats are often symbolic. A cut-off in traffic, a slight from a colleague, public humiliation or a contested idea can trigger parts of the same survival system once used for immediate physical danger.

Two forms of restraint help. Culture builds habits and expectations inside us. Law adds external consequences.

6. Five superpowers – concept building, time shifting, truth formation, copying, self observation

Alongside its survival reactions, the brain has five remarkable capabilities. We call them superpowers because they let us move beyond the immediate moment: conceptualisation, time shifting, truth formation, copying and self-observation.

Superpower 1.

Concept building - The ability to create concepts that do not exist physically in the world.

Human beings can group individual experiences into abstract ideas such as justice, money, family, nation, freedom, ownership or democracy. Once formed, concepts allow us to think, communicate and organise at levels far beyond immediate experience. Concepts become the building blocks from which cultures, institutions and civilisations are constructed.

How concepts are used Exhibit 1.6

Concepts	Use
Flourishing, dignity, survival and responsibility	What kind of future is worth building.
Freedom, order, truth, safety and belonging	Keep competing goods visible.
Institution, incentive, trust, risk and capability	Connect consequences across systems
Aim, threat, opportunity, timing and trade-off	Frame the real choice
Bottleneck, dependency, handover and feedback	See relationships.
Standard, variation, error, waste and quality	Improve performance.
Step, tool, instruction, check and completion	Guide action.

Superpower 2.

Time shifting - The ability to connect past experience, present conditions and possible futures to guide what we do now.

Humans can reconstruct what has happened, understand what is happening now and imagine multiple possible futures. This allows us to learn from experience, anticipate consequences, prepare for uncertainty, postpone gratification and take actions now whose benefits may not appear for years, decades or even generations.

How the brain applies time shifting. Exhibit 1.7

Level of work	Application of time shifting
VII — Human future design	Imagines possible long-term futures, then works backwards to decide what must be protected, created or avoided now.
VI — Civilisational architecture	Connects past experience, present tensions and possible future settlements to judge what will remain legitimate over time.
V — Multi-system integration	Traces how present decisions may create consequences across interconnected systems over years or decades.
IV — Strategic design	Uses past patterns and present conditions to compare possible futures and choose a direction now.
III — System coordination	Looks back for causes and forward for likely flow-on effects to coordinate present action.
II— Process optimisation	Uses past performance and expected future requirements to improve what is done now.
I — Direct execution	Uses the immediate sequence of what has just happened, what is happening and what comes next to guide the next action.

Superpower 3.

Truth Formation - The ability to make sense of what we experience and form beliefs about how the world works.

The brain constantly tries to make sense of what is happening. It combines what we see and hear with memory, experience and what we already believe. From this we form explanations about what is happening, why it is happening and what it means.

These explanations become our felt truths. They help us make decisions quickly without having to work everything out again from the beginning. But what feels true is not always true. New experience or evidence may strengthen a belief, change it or show us that we were wrong.

Felt truths leading to helpful beliefs. Exhibit 1.8

Felt Truth Created	Identity created	Helpful day-to-day belief
"I am safe with my people."	Group member / insider	"My group protects me; loyalty matters."
"I am capable and deserving."	Competent contributor	"Effort, skill and discipline earn reward."
"I am a good person."	Moral self	"My intentions are decent and fair."
"My lived experience tells me what is true."	Practical knower	"I can trust what life has shown me."
"My group has suffered or been treated unfairly."	Member of a wronged group	"We deserve recognition, protection and redress."
"Our way of life carries wisdom."	Cultural inheritor	"Our customs, values and routines keep life ordered."
"Rules and authority protect order."	Lawful participant / follower	"Good leadership and rules keep chaos away."
"The future can be better if we act."	Hopeful agent / reformer	"Sacrifice and action now can improve what comes next."

Superpower 4.

Copying - The ability to learn from others and reproduce what they know and do.

Human beings learn much of what they know by watching, listening to and copying other people. We learn language, skills, customs, values and ways of behaving this way. Instead of having to discover everything for ourselves, we can begin from what others have already learned.

Copying also allows knowledge to build across generations. Each generation can take what it inherits, keep what works, change what does not and add something new.

Superpower 5.

Self observation - The ability to stand back and notice our own thoughts, feelings and behaviour.

Human beings can do something remarkable. We can not only think and act; we can also notice ourselves thinking and acting. We can recognise that we are angry, frightened, defensive or mistaken. We can ask why we reacted as we did and whether we want to react differently next time.

That ability creates choice. Once we can see our own reactions, we have a better chance of questioning them, learning from them and changing what we do.

An example to enrich this idea a bit. I help fund and volunteer with an Australian charity called One Heart that works in Vietnam. The purpose of One Heart is to get bright but very poor children through school and even into university. The families of these children live on less than US$10 a day – probably less than US$2 per person. The people are rice farmers or fishermen living in the farthest reaches of

the Mekong Delta. Without One Heart's help, the children simply wouldn't even be able to get to school, because the boat fare costs 20 cents a trip (40 cents a day) and school uniforms are out of the question.

One Heart was established by a Vietnamese woman called Mua, who came to Australia as a refugee in the 1970s. She's quite a remarkable woman who lost an arm in an attack by pirates who killed her father and stole their boat. I had talked to Mua about my ideas about the brain and one day when I was visiting she asked me if I would teach my "brain stuff" to her Year 12 students and their parents. I was flattered but a bit concerned that they might not be able to understand the ideas I was talking about – particularly the parents, few of whom could read or write, their lives having been totally disrupted by the war and its aftermath.

Eventually, Mua bullied me into it – she's a 5'3" dynamo – and I stood in front of a class of 15, mostly girls, and about 15 very shy parents, who sat up the back of the room. It was probably the first time most of them had been up close and personal with a "white man". Anyway, I talked them through the three-tiered brain structure and added an extra twist – the fact that humans were special as we could stand outside ourselves and listen to what our amygdala was saying and separate it from what our prefrontal cortex was saying. In doing this we could hear our rational response to an event as well as our emotional response. In other words, there were actually three people in our single head – the Rational the Emotional and strangely the Observer.

I asked them if my explanation made sense. One of the girls spoke up. Exhibit 2.10

'It's easy,' she said. 'There are three soldiers.' And she explained it this way:

A red soldier is the amygdala; it overreacts, gets angry and upset and sometimes says and does stupid things.

Then there is the blue soldier who is a more rational calming voice, saying "no" if you get upset, answer without thinking, get angry and walk out – responses that may not be a good thing.

And then there is a white soldier standing outside the red and blue soldiers who can listen to both and decide 'what to do'.

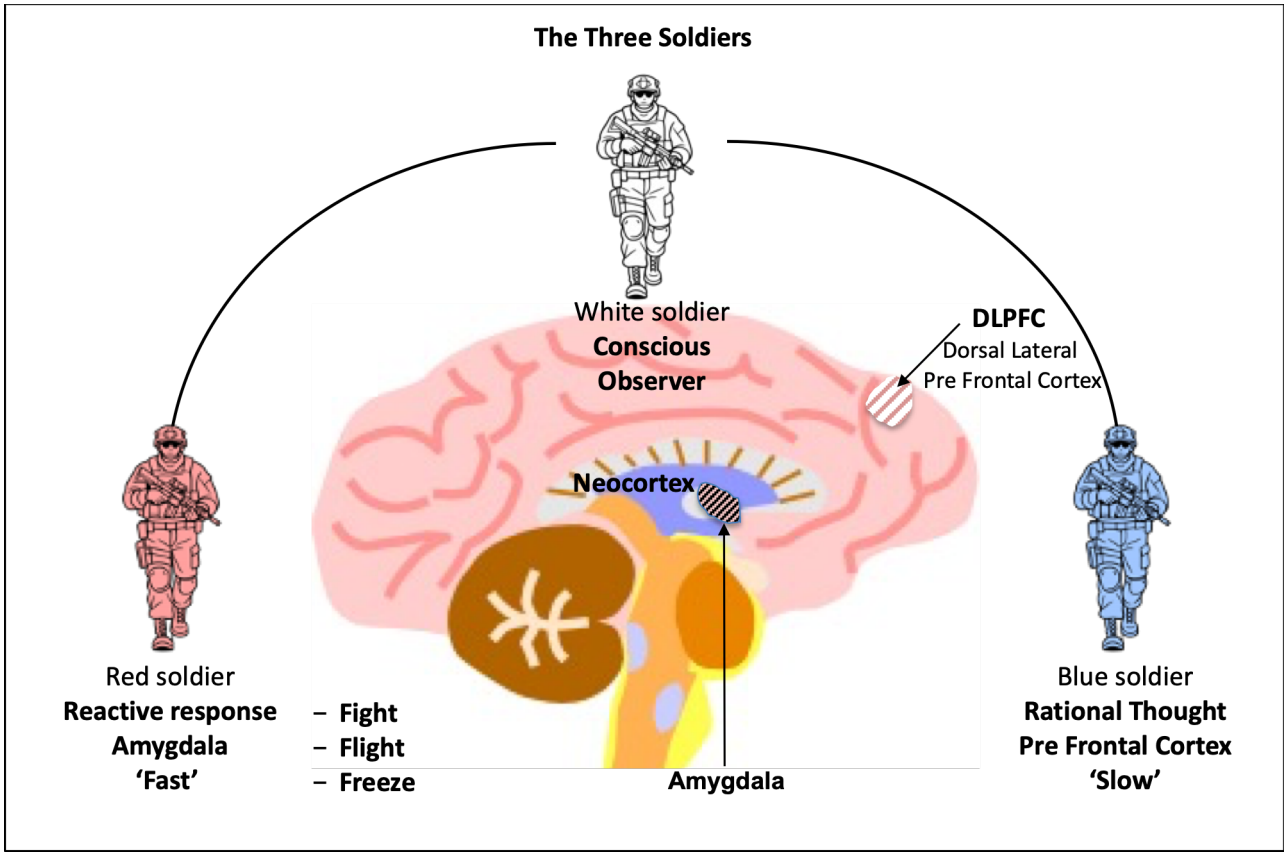
I loved it. Mua, quick to seize the moment, said, 'Let's do some red, blue and white role plays.' We asked the group to suggest some high energy, amygdala/red soldier situations. One of the shy parents ventured that she had a 16-year-old son who arrived home and said he wanted to get married; this mum had lost it - screaming and yelling that such an idea was totally impossible and the most stupid thing he could do.

We played out that particular scenario with three students each playing the red, blue and white soldier; it was hilarious and even better when we got them to change roles. At the end of a long day, I asked them all what they had learned and how they might be able to put into practice what they had learned.

Surprisingly several of the shy, probably illiterate, parents put up their hands. I asked one woman what it was: 'I am going to spend much more time in my white soldier,' she replied. The children beamed proudly at their parents; it was a lesson well learned. I left it at that because it had been a long day.

The brain has an ability to stand outside itself and observe (the 'white soldier').

Exhibit 1.9



These five capabilities work together rather than independently.

- We **observe** the world.
- We **form truths** about what we observe.
- We **copy ideas** and behaviours from others.
- We **create new concepts** from those experiences.
- We **project those concepts forward and backward** through time.

7. Each superpower can help or harm

There are not two brains - one good and one bad. The same brain can use the same capability in opposite ways. Science and propaganda both use concepts. Planning and revenge both use time shifting. Reflection can produce insight or clever self-justification.

Concept building Superpower Distorted - Concepts simplify reality, but they can also oversimplify it. Categories can become stereotypes, ideologies or rigid identities. Abstract concepts such as race, class, nation, religion or ideology may become so dominant that they replace direct observation. Once this occurs, people begin seeing the world through the concept rather than allowing the concept to be corrected by reality. Conceptual power then becomes a tool for exclusion, propaganda and dehumanisation.

Time Shifting Superpower Distorted - The ability to imagine the future can become anxiety, conspiracy, revenge or long-term exploitation. People may justify present harm in the name of an imagined future benefit, selectively reinterpret the past to support current beliefs, or manipulate others by creating exaggerated hopes and fears. Strategic thinking becomes strategic manipulation.

Truth Formation Superpower Distorted - Felt truths can become dogma. Scientific evidence can be ignored, selectively chosen or deliberately misrepresented. The brain naturally prefers familiar explanations because they conserve mental effort. Confirmation bias, motivated reasoning and identity-protective cognition reinforce existing beliefs even when contradictory evidence is available. The result is not merely false belief but resistance to correction.

Copying Superpower Distorted - Imitation spreads harmful behaviour just as efficiently as beneficial behaviour. Rumours, prejudice, corruption, violence, unhealthy lifestyles and misinformation all propagate through the same learning mechanisms that transmit language, science and culture. The greater the prestige or influence of the model, the faster undesirable behaviour may spread.

Self Observation Superpower Distorted - Reflection itself can be captured by self-interest. Rather than honestly examining assumptions, people may rationalise them. The prefrontal cortex is capable not only of correcting emotional reactions but also of constructing sophisticated justifications for them. Self-observation can therefore become self-justification, allowing intelligence to defend prejudice, privilege, resentment or exploitation instead of questioning them. The capacity for reflection is powerful, but it is not automatically truthful.

Pro-social and anti-social expression of five superpowers. Exhibit 1.10

Superpower	Prosocial Expression	Antisocial Expression
Conceptualisation	Creates useful abstractions, science, law, measurement and shared understanding.	Creates stereotypes, rigid ideologies, dehumanisation and propaganda.
Time shifting	Supports planning, delayed gratification, strategy and stewardship.	Supports fear, revenge, manipulation, exploitation and imagined threats.
Truth formation	Builds reliable knowledge, tested understanding and accumulated wisdom.	Hardens into dogma, confirmation bias, identity protection and misinformation.
Copying	Transmits language, culture, skills and civilisation across generations.	Spreads corruption, prejudice, violence, rumours and harmful social norms.
Self observation	Questions assumptions, regulates emotion, revises beliefs and promotes moral growth.	Rationalises prejudice, defends privilege, protects identity and justifies harmful behaviour.

8. Civilisation draws out the positive and manages the negative

Civilisation changes the setting around the same brain. Language, stories, customs, education, approval, disapproval, law and institutions reward some behaviours and restrain others.

The big change is scale. In a small group, attachment and reputation do much of the work. At higher levels, we must cooperate with people we do not know, think about consequences we cannot immediately see and act for futures beyond our own lifetime.

This is where civilisation works directly on the brain. It does not remove old survival systems. It surrounds them with cues, habits, rules and restraints that make a wider response easier to reach.

The positive and negative predispositions are not erased in this process. They are organised. Love can be widened from family to neighbour, citizen and stranger. Trust can be extended beyond people personally known to institutions, contracts, courts and offices. Competition can be moved from personal dominance into lawful

contest, sport, commerce, science and politics. Suspicion can be redirected from indiscriminate hostility into audit, evidence and due process. Anger can be lifted from retaliation into protest, reform or judgement. The same survival energies remain present, but they are given higher-order forms that allow more people to live together without relying only on immediate kinship, fear or submission.

This is why moral structure matters. **Human beings moralise quickly**. The brain turns loyalty, disgust, fairness, betrayal, harm and status into strong felt judgements, often before slow reflection has done any work. Moralising can be useful: it marks some conduct as unacceptable, protects vulnerable people, strengthens group norms and gives courage to restraint. But moralising can also become dangerous when it is unbalanced by institutions, evidence, proportionality and appeal. It can become accusation without truth-seeking, punishment without restraint, loyalty without fairness, purity without mercy, or justice without due process. Civilisation does not progress by releasing moralising in its raw form. It progresses by building moral structures that hold competing moral claims in balance.

A moral structure is more than a moral feeling. It is a patterned way of deciding what matters, what must be restrained, what must be protected, who may judge, what evidence is required, what response is proportionate, and how correction remains possible. Law, custom, education, professional duty, ritual, forgiveness, rights, obligations, public reasoning and institutional appeal all perform this function. They allow the brain's moral energy to be carried upward into forms that can survive scale. At their best, they prevent a society from collapsing either into amoral appetite or into uncontrolled moral punishment. They counterbalance self-interest with duty, freedom with restraint, justice with mercy, loyalty with truth, and immediate outrage with longer-term repair.

The red, blue and white soldier image helps explain this. Civilisation works on all three soldiers at once. It neither removes the reactive red soldier introduced in section 6 nor adds a fourth; it changes the odds among the three. It strengthens the blue soldier of rational calmness with reliable customs, roles, ceremonies and institutional routines; it strengthens the observing white soldier with education, law, deliberation, evidence and appeal; and it restrains the red soldier by making immediate violence, humiliation, domination and revenge costly, disapproved and, where necessary, illegal. A developed society is not one in which the red soldier disappears — it is one in which **it is less often allowed to command the whole person, group or institution.**

This also explains why social order is not maintained only by police, courts or formal rules. Much of civilisation operates before enforcement. Tone of voice, facial expression, embarrassment, apology, praise, exclusion, status, ritual, professional discipline and public reputation all cue the brain toward restraint or release. A person may hold back from saying something cruel because they fear punishment, but more often because they feel the immediate social meaning of cruelty. They do not want to lose belonging, approval, dignity or self-respect. Civilisation works when these cues are sufficiently aligned with its higher aims: when approval flows toward contribution rather than domination, status toward service rather than intimidation, loyalty toward legitimate membership rather than tribal hostility, and shame toward genuine breach rather than mere difference.

None of this removes the older survival responses. Fear can still turn the five superpowers towards exclusion, manipulation or self-protection. Under threat, humiliation or scarcity, conceptualisation can harden into enemy categories; time-shifting can become revenge or catastrophic imagination; truth formation can become dogma; copying can spread panic or cruelty; and self-observation can become clever self-justification. Civilisation is never finished. It is the continuing human achievement of creating conditions in which more people, more often, use the same brain capacities for wider cooperation, longer-term thought and greater restraint.

9. Quirks of thinking

Behavioural researchers have developed experiments that demonstrate our **fast irrationality** time and time again. We use fast thinking to reduce complexity and to express our DNA predispositions — a bit disturbing, given that classical economics is built on the irrational, fast felt truth that well-informed individuals will always act with rational self-interest.

Researchers have identified at least twenty ways we regularly act irrationally rather than with slow, high-cognitive-load rationality. A few of them:

- Expert bias — we believe what TV talking heads tell us: submission to alphas.
- Confirmation bias — we listen to, agree with, and search for information that confirms our felt truths, because self-contesting takes too much cognitive load.
- Latest information bias — we give much more credibility to the last thing we heard, whether or not it is as important as prior information: limits to memory recall, and the RAS paying attention to the immediate.
- Loss aversion bias — we hold onto loss-making situations well beyond what is sensible: a combination of territoriality, and the fact that losers lose status.

- Story bias — tell me a story rather than statistics and I will go with the story every time: we are social animals who understand stories about people far more easily than numbers, which take cognitive load.
- Wealth bias — if a wealthy person advises you to do something, you are more likely to believe and follow them: alphas are assumed smarter and to provide protection, triggering the submission reflex.
- Group bias — do what the group is doing, because sticking with the group has historically improved survival odds.
- Ownership bias — whatever you own, you emotionally overvalue, significantly.

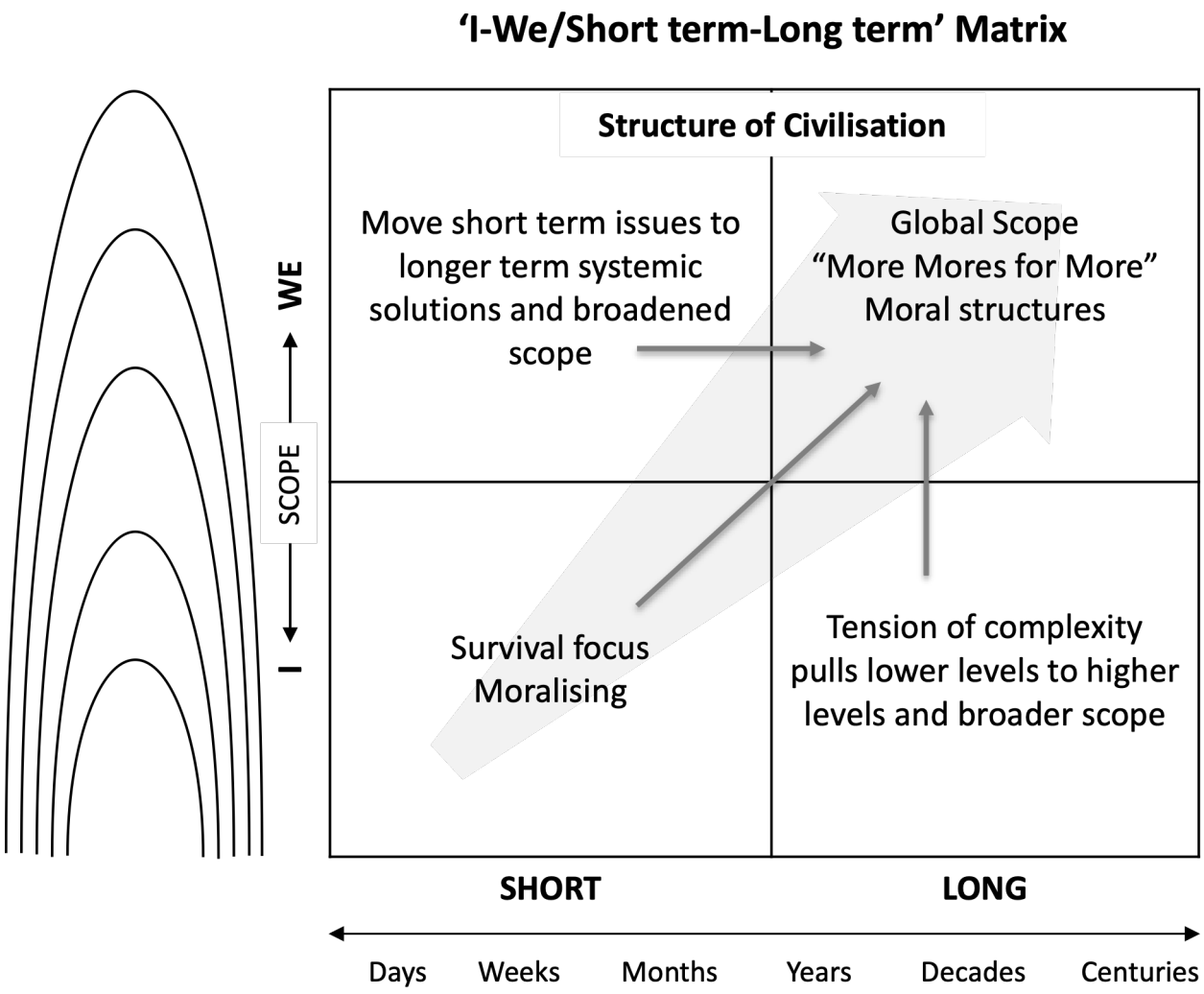
Our brain moves between 'I' and 'We', and between short-term survival and long-term flourishing. Civilisation climbs when it helps us hold a wider 'We' across a longer time. It falls when fear, humiliation or disorder pull us back toward short-term 'I' defence. Exhibit 2.12 makes that movement visible.

10. The I–We / short-term–long-term matrix that aligns with civilisational development and regression

Architecture does not act by itself. Human brains animate it. The chapter can therefore be pulled together in one simple matrix: 'I' to 'We' on one axis, and short term to long term on the other.

As civilisation climbs levels, the brain is asked to hold a wider field. We move from immediate reaction toward reflection, from local loyalty toward wider membership, from obedience toward participation, from simple stories toward stronger evidence, and from short horizons toward longer ones. None of this is permanent. Under pressure, people and societies can fall back quickly. Exhibit 1.11

The 'I–We / short-term–long-term' matrix. Exhibit 1.11



11. What this means for humans

This chapter introduces the human brain. We are not purely rational actors. We are survival-driven, social and highly responsive to threat, status, belonging, approval and disapproval. We can cooperate at great scale, but we can also narrow very quickly toward short-term 'I' defence.

Brain literacy therefore matters. If I can see my own reaction, I gain a little room to choose. If I can separate what I know from what I feel to be true, I can test my judgement. If I can state an opposing argument fairly, I have a better chance of seeing beyond my own position.

Six practices follow directly: know that some of what you believe is felt truth; practise self-observation; engage seriously with opposing views; walk toward fear rather than simply obey it; learn to laugh at your own quirks; and learn how to calm yourself before making important decisions.

The larger point is social. Architecture changes behaviour. Rules, roles, customs, status, approval, disapproval and institutions change which parts of us come forward. Civilisation works when it draws out cooperation, curiosity, restraint and reflection, and manages fear, domination, exclusion and short-term self-interest.

We do not need a different human animal. We need to understand the one we have, build better settings around it and become better at seeing ourselves while we act.

12. What this means for AI

AI enters the brain-mediated world described in this chapter. It will not be used by perfectly rational people. It will be used by people already animated by fear, attachment, status, belonging, control and curiosity.

That means AI can push human behaviour in either direction. It can make threat, outrage, certainty and group loyalty stronger. It can also slow the moment down, widen the field, show alternatives and help us look at consequences beyond the immediate ‘I’.

AI can also amplify the five superpowers. It can help us build concepts, move through time, form explanations, copy knowledge and observe ourselves. Every one of those gains can help or harm. Better concepts can clarify or stereotype. Longer planning can support stewardship or manipulation. Copying can spread knowledge or prejudice.

One useful role for AI is therefore the external ‘white soldier’ from the story in this chapter. It can help make three things visible: what we know, what we are interpreting and what we merely feel to be true. It can help us name the quirk, restate the opposing case and keep the longer and wider consequence in view.

AI is not an embodied human brain. It does not carry human fear, attachment or status in the same way. That difference makes it useful as a mirror, but it also means we should not confuse fluent reasoning with human judgement or human moral experience.

The test, at this point in the book, is simple: does AI narrow us toward short-term ‘I’ defence, or does it help us move toward a wider ‘We’, a longer time horizon and better choices?