

Your Amazing Brain

Introduction

This article seeks to discuss some of the amazing things the brain does, how we can be grateful for such a miracle as the human brain, and how we can move forward as humans in our quest for progression. I very briefly cover some areas of brain performance and function, as well as some interesting questions regarding the brain, so that we can appreciate some of its tremendous qualities:

- What is the brain's purpose?
- Why and how do we as human beings think?
- How many 'minds' do we all have?
- Do we choose to think, or is it something we are compelled to do?
- What secrets will the human brain give up as we continue our research into its workings?
- How should we view our brain? Where should it stand in the grand scheme of our lives?

Where did my interest in the human brain begin?

My passion began when I started researching personal development, and becoming a life coach. Personal development is a field where you learn to improve one or many aspects of life or your whole life altogether. For example, it could be seeking to enhance your organising skills, strengthen your memory, improve your emotional intelligence or any other area of your life. In addition, I became interested in becoming a life coach and started to look into what it looks like to assist clients as a coach. For those of you who do not know what a life coach does: in a sentence, a coach empowers their clients to lead their best life possible. So, they would typically guide and help people with the obstacles facing them in achieving their goals.

These two research areas led to my interest in how the brain works. As I discovered the fantastic facts about the brain, I delved deeper. At first, I was interested in how I could increase my intelligence. Next, I went on to how I could use the brain for practical life hacks, and develop my memory skills. After that came the power of the subconscious mind. And now, my interest in writing about the brain has gained momentum. This leads me to where I am now - I use my passion for writing and my fascination with the brain to write this article.

I also suffer from paranoid schizophrenia. Early on in my illness, I could not cope with the number of questions I had in my mind about all sorts of stuff, but mainly questions about religion. The intensity of it preoccupying my mind was overwhelming. I ended up in hospital and having to take medication to help me manage my mind. However, I have to say that this illness did contribute to my interest in thoughts and the human brain in general; so my journey has been a combination of life circumstances that have led to my fixation with the brain.

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Are the brain and thoughts central to life?

The brain facilitates our experience of life. Without the brain, there is no life. Our hopes, wishes, fears, happiness, sadness and everything we feel result from chemical reactions in the brain. It is the originator, maintainer and destroyer of our human experience.

The human brain is the most complex organ known to man. Studies have confirmed that it is a most wonderful organ. Since being found as the centre of our existence, it continues to amaze those who come close to its complexity. The evolutionary story of the human brain must form the pinnacle of human evolution. In fact, our brains are what make us human.

Human beings are the only creatures who constantly change their environment to suit their needs. Humans build homes out of bricks; if they get bored of that, they make homes out of glass. As a result, entire civilisations have formed over hundreds of years, with continual change and development in every field. We had the Mesopotamian (the oldest known civilisation), ancient Greece, the Egyptian, the Mayan, Persian civilisations, to the oldest surviving culture, the Chinese. And it is to many of these civilisations, we have to give credit for much of our current inventions, social norms, and values. I view these civilisations as experiments in our human evolution. We now have the correct answers to many of our problems because they experienced the wrong ones. And no doubt, our societies of today will be of use for our future generations. But none of this would have been possible without the thinking mind.

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So, how is the brain protected?

The brain is well protected. The first line of protection is the skull which, as everyone can see, physically protects the brain. It also has fluid to cushion it within the head. Then there are the three lines of tissue, after which there is the blood-brain barrier which acts as another safety level from bacteria and toxins in the blood from entering brain matter and the central nervous system. The brain is arguably the most protected organ in the body. And this level of protection can be understood when the brain's importance, compared to other organs, is appreciated.

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What is the brain's purpose?

In short, the brain's purpose is survival, to keep us alive. How does it achieve this? Well, if we look at when we are faced with a threat, our body goes into 'fight, flight or freeze' mode. This is our typical reaction if we face immediate physical danger. And in the event of bodily injury, our body directs resources such as blood flow to the vital organs to help them keep functioning. Our body is geared for survival.

Even our thinking happens to understand our surroundings best and act to make our lives more efficient, programmed towards improving our chances of survival. This seems to be the principle and overriding reason for our existence and precisely the purpose of the brain. It is there to keep us alive.

How does our survival instinct manifest?

Our survival instinct plays a significant role in our lives and is part of the brain's quest to keep us safe and alive. We have much behaviour that fits our survival mode through this instinct. Some of these may be that:

- We look to get the most out of our situations – the most favourable according to what is beneficial for us;
- We are competitive;
- We want a better car than our neighbour;
- We want a secure job, we want the highest paying job;
- We look both ways when we cross the road;
- Some of us may back away from confrontation, while others may even move towards it and become aggressive depending on our personality type;
- We are risk-averse - we seek comfort and predictability.

These are just some of the behaviours we engage in, which points to our instinct of survival and is one of the key features of the brain. A brain that has evolved over 600 million years. Without this drive to keep us alive no matter what, we would not exist, so it makes perfect sense that survival is priority number one. We are dealing with a brain that evolved to keep us safe in the wilderness, where many of our ancestors lived. And so, many of its survival mechanisms are primitive in our modern and much safer world. To put it another way, we are dealing with an ancient brain.

Even some of our more ethical values may be because our ancestors needed security. If we think about it, our 'moral' ideals, although they sound righteous and beyond question, actually serve the group's survival. When we were hunter-gatherers, we had to rely on each other to catch our prey. So we had to work together as a team to be

successful. And so, if any member of the group did something not conducive for the greater good; being deceitful - say, for example, lying about the whereabouts of the target prey - in this situation, it may have led to the failure of the whole hunting group (meaning no dinner that night). Or if one person caught the prey and hid it to keep it for himself, the entire group's members would be affected. So, it is part of our evolutionary history that we work for the benefit of the group, because if the group survives, we survive.

In addition to our morals, other biological traits support our need for survival. If we analyse the reality of fear, we see that it is a significant player and a contributor to our well being. It's common advice, 'Don't be afraid, everything will be alright'. But fear serves us and has helped us well. Because of fear, we take steps to protect ourselves. Fear moves us and makes us act. For example, we are afraid of the dark, so we turn the lights on. If we're in the woods, we turn our torch on to see any danger. This extends to emotional fear. We may, for instance, be afraid that we will become depressed or have a nervous breakdown if our girlfriend/boyfriend leaves us. And so, we act in endearing ways to either secure our love, or we do the opposite and stop ourselves from falling in love with our partners. We fear our young children getting hurt, so we take precautions such as buying them mobile phones to stay in touch with us or call the emergency services if required.

So we can come up with reasons why any action can be linked primarily to our survival. And nature has its logic: if you don't do things for your survival, it will lead to your death or pain. So the brain's quest to keep us safe is a most valuable one, and it should be understood that without this aim of survival, we would be in serious trouble.

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How do we think?

The dictionary definition of thinking is:

'The action of using one's mind to produce thoughts' Merriam-Webster dictionary

But this definition is not comprehensive. It doesn't cover the many ways we think.

How many ways of thinking are there? I suppose part of the answer depends on what we mean by 'thinking'. The brain experts differ amongst themselves about the different types of thinking. I will cover a general understanding of the various ways we think below.

Critical thinking

Critical thinking is when you look at things objectively and not subjectively. Allow me to explain through an example. Let's say you see a traffic accident between two cars. One car is green and the other blue. What you see can fall into two general camps: objective and subjective:

- objective - you saw the green car hit the blue car
- objective - you heard the driver of the green car shout out before the actual collision
- objective - the police find that the speedometer indicated that the green car was above the speed limit

- subjective - you felt angered by the green car's reckless driving
- subjective - you were shocked to see the event

Using this example, it becomes clear that all objective facts form part of critical thinking because they are not tied to any feelings, opinions, or views but rather on points based on reality. On the other hand, subjective information is opinions based on feelings.

People who use a lot of critical thinking include:

- Judges
- Teachers
- Police officers
- Public prosecutors
- Forensic scientists

Analytical thinking

Analytical thinking is where you analyse, study, or examine. You would be particularly good at noticing patterns and trends. You go through a certain amount of depth in the subject of your analysis and come up with accurate conclusions.

People who use a lot of analytical thinking include:

- Scientists
- Economists
- Accountants
- Crime investigators
- Stockbrokers

Creative thinking

Creative thinking is where you come up with the new and innovative. However, things are rarely entirely 'new' but instead are usually a combination of what's gone before and what is in the present. The joining of two ideas to make a third is creative thinking. Ideas, after all, are built on ideas and knowledge is built on knowledge.

People who use a lot of creative thinking include:

- Writers
- Painters/Artists
- Inventors
- Government policymakers
- Desktop publishers

Abstract thinking

Abstract thinking is simply thinking about the intangible, related to something that cannot be sensed using the human senses. It is hidden in the mind. Literary devices such as metaphors, allegory, similes and analogies use abstract thinking. Likewise, when talking about morals: right, wrong, good and evil as ideas or concepts, we use abstract thought.

People who use a lot of abstract thinking include:

- Philosophers
- Mathematicians
- Psychiatrists
- Physicists
- Software programmers

Concrete thinking

Concrete thinking is the opposite of abstract thinking. It is thinking about the physical and material world around us; it is thinking about things literally. Babies and toddlers around the age of 2 are said to think in concrete terms. For toddlers, if you switch off the light, that light is gone permanently. Concrete thinking focuses on things you can sense with your senses.

People who tend to think in concrete terms include:

- Schizophrenics
- Autistics
- Literal philosophers
- Many interpreters of religious texts
- Many religious people

Divergent thinking

Divergent thinkers use the creative right side of the brain. This type of thinking is used when generating as many

probable solutions to a problem. For example, all the possible answers to the dilemma of fair water distribution in a dam-building project may be explored; this exploration for all potential solutions would use divergent thinking.

People who use a lot of divergent thinking include:

- Engineers
- Managers
- Journalists
- Hospital doctors
- Hostage negotiators

Convergent thinking

Convergent thinking uses the logical, rational left side of the brain. So, when you assess all the different possibilities to come to the best single solution, you are using convergent thinking. Let's take the example of when you have many routes from London to Paris - for you to come to the fastest route possible, you'd be using convergent thinking.

People who use convergent thinking a lot:

- CEOs of companies
- Prime ministers
- Students while doing multiple-choice exams
- Detectives
- Psychotherapists

We all probably use all the types of thinking, more or less, in our day-to-day lives. And we may also have a predominant way of thinking that influences or forms part of our personality.

Nevertheless, we can now marvel at the many different ways we think and employ the mind. There is depth to the brain. And the various ways it is used is just the tip of the iceberg. With the different types of thinking, I have illustrated how these form some of the brain's complex functions, but we take them for granted and are unimpressed. We are unmoved because we are surrounded by fellow humans who have the same skills we have, so we don't give it another thought. But we should be amazed by what our brains can do and be more thankful.

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How do we deal with our many minds?

Believe it or not, we have multiple minds, and they all work in diverse ways.

We have the subconscious mind in charge of our heart beating, breathing and our mental programming that we've developed since birth. It holds our beliefs - what we feel is right or wrong. It is also where we store our long-term memories.

Part of the subconscious is our automated/habitual thinking. We go through our days, usually doing what we did before - waking up in the morning, brushing our teeth, having breakfast, going to work, watching TV...you get the idea. We do these actions subconsciously because we are so used to them. And this is a good thing because if we had to think through every move, we wouldn't have much time for anything else, so doing things habitually is time-saving. And since we have approximately 60,000 thoughts a day, if we had to sift through each and every one, we'd be in trouble. So habitual thinking serves us.

We also have an unconscious mind. Many use the terms unconscious and subconscious minds interchangeably. But because our reality of being awake (where the conscious and subconscious work together) and sleeping (where the unconscious is in charge) are two different states, I will use different terms.

We probably spend one-third of our lives sleeping (where the unconscious mind is in charge). This means that our unconscious mind controls one-third of our lives. Something we have no influence over. We have no say in what time we can drift off to sleep. Yes, we can engage in sleep hygiene and rituals, but ultimately, it is up to our

brain's whims when we fall asleep. What happens to us after we sleep is also within the unconscious realm. Whether we dream, what we dream about and whether we remember what we dream is beyond our control.

From an evolutionary point of view, it seems nonsensical to sleep. But, in fact, sleeping opens us up to hazards: we cannot defend ourselves; we are not aware, so we can't make decisions; it doesn't serve any direct purpose for procreation. So why we sleep remains one of life's great mysteries.

The unconscious mind does serve us to some extent: when we need to relax, recoup, and refresh ourselves. So when we sleep, research has shown that the brain goes about cleansing itself and consolidating memories and things we have learned during the day. But we have no definitive reasons as to why we sleep.

This leaves us with the conscious mind. The conscious mind is what we use to make decisions: what will we have for lunch, how much time we're going to spend in front of the television, what clothes we'll wear for the day? Of course, these are all conscious decisions we make. But how much independence we really have when we make our choices is up for debate because the subconscious mind has a say in how we make decisions.

Let's take, for example, the brain's reticular activating system (RAS). Anyone who's been to a late-night disco will understand the job of the doorman or bouncer. The doorman's job is to decide who comes in and who is not 'suitable' to which he would say, 'not tonight, mate'. Well, the reticular activating system is the doorman of the brain. It decides which information coming in from the senses makes it into our conscious mind for us to take action if we think it's important enough. And we know that it automatically allows information related to our safety. Crossing the road can be a hazardous task. You will be on high alert and will notice if any cars are coming your way, using primarily your sense of sight and hearing. Your RAS will let in any information to help you cross the road safely.

Some experts on the brain say that you can train your RAS to allow information related to the things you value into your conscious mind. So let's say, for instance, that you are interested in football; you would tend to notice football-related things wherever you go. If you were at the cafe, you would observe football fans with their club's scarf on their neck walking past, or you may notice that they are talking about football on the radio. These details may completely escape someone not concerned with football, but because you've in a way primed your brain to be concerned about football affairs, you tend to become aware of them more than others. This would be an example of how the RAS brings to attention to the conscious mind something we value and, in so doing, is one of the influences of how we make decisions. The RAS's workings seem to be something that we cannot control and functions independently of the conscious mind. Still, many brain experts say that if we want our brain to focus on the things significant to us, we should actively and consciously try and train the RAS so that our wants are in line with what our subconscious mind prioritises. So it seems that there is a lot at play even though we seemingly make 'independent' and 'conscious' decisions with the conscious mind.

We could ask which mind serves our existence the best (considering that we accept that the brain's primary goal is to keep up alive, one of survival)? And the answer from my point of view is that all the three minds serve a purpose and have a role to play; we couldn't do without any of them. In fact, we would be held back if any of them did not function properly. It's just how we have evolved - working with all three minds.

There is one central element in discussing the different minds: having control. Control is a big deal for us as humans. When we don't have it, we are uneasy, not comfortable, and we will seek to remedy it and place ourselves in a position where we have control and mastery. And so, understanding that we don't control a lot of what goes on in our minds is a bit unsettling. But I would argue that we should not be troubled but rather admire our evolutionary brilliance and make the best use of all three realities of the mind as nature's gift to us.

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Do we have a choice about whether to think or not?

Although it may seem like a silly question, I have rarely heard others address if we have a choice in our thinking. Do we have any say whether we think or not? Maybe some believe there is an obvious answer, 'of course, we do!' But my view is, the more you look into it, the weirder the answers get and sometimes we don't even have the answers! So, having thought a bit about this (through choice, I think), I believe that we do and we don't. Now, before you point to me and say that's a politician's answer, hear me out.

Everyone can appreciate the difference between when we are on autopilot and consciously thinking or reflecting on something. For example, while coming to the library to work on this article, I would say that I was on autopilot. I walked here without thinking about it because I am familiar with the route since I take it daily. It has become something I do without needing much thought. But once I am in the library and have started the article, I need to switch to a more critical thinking state, a more conscious position, because I need to concentrate on what I'm going to write and say. This takes the brain's energy, and it is hard work at times (or nearly all the time). It takes a lot of energy to get started. The point is we have a choice in our thinking when we are paying attention and are conscious, but then there are other times when we are not so aware and more on autopilot where we are not so much in control.

The more I explore the mind and the brain, the more I'm drawn to the notion that we have a minimal choice in our decisions and actions. This is because of the influence of aspects of our brain that we have no control over. There is so much going on in our minds that we may have little choice even if we think we have complete independence. We choose conscious thought, but I speak from experience when I say this is for a small amount of time; we are mostly on automatic and habitual thinking.

Another side of me thinks that we do not have a choice but to think. We are compelled. For example, people who have difficulties with their thoughts, like those with mental illness, experience thought overload where they can't seem to control the intensity of their thoughts. Many experiencing mental illnesses sometimes just wish their brain would stop; they just want to stop thinking. And there is medication for such symptoms that sedates the patient and slows their thinking down.

So, it's a mixed bag – we can have control over our thoughts if we want to, but it is also true that we drift in and out of attention. I suppose a good way of thinking about it is like the example of breathing – although we breathe without thinking about it, we can also take control of it when we want to.

Certainly, looking into this aspect of our brains has been an eye-opener; something seemingly as obvious as to whether we have control over our thoughts seems to be not so clear after all.

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What are some of the mysteries of the brain still left to uncover?

We still have a long way to go to understand some of the basics of brain functions. Some of the areas which require further research are listed below.

- Why do we dream? How do we see with our mind's eye even though our eyes are shut when we dream? And could our conscious existence be like a vivid dream?
- What is the nature of thought? How come we can't see thoughts? We can analyse ideas using our mental faculties and abstract thinking, but we can't see them under a microscope like we can see brain cells. Will thoughts one day be visible, like seeing the brain's 100 billion brain cells under the microscope?
- What is intelligence in human beings? Unfortunately, the experts cannot even agree on a definition of intelligence.
- Why do people have mental illness, and will scientists ever develop cures for such diseases as Alzheimer's, Parkinson's, or dementia?
- Indeed, will research give us answers to what level of choice we make in our decisions?
- Will we ever see the brain's 'mind', something that remains abstract and somehow linked to our wakeful consciousness?

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Are questions the answer?

Deep thinking and contemplation are healthy in many cases. For example, Einstein once said, 'If I had an hour to solve a problem I'd spend 55 minutes thinking about the problem and 5 minutes thinking about solutions.' [1] In other words, Einstein would spend much of the given hour understanding the problem, after which the solution would be apparent. And often, reflection and thought involve asking the right questions through which the answers to the questions present themselves as solutions.

Humans are filled with questions, and the brain searches for answers. Why do we do this? We have questions and search for the answers because we are curious beings, and we have the problems of gaining our basic needs such as food, clothing and shelter. Much of our curiosity and search for solutions to our problems drives us into action. And our insatiable search for answers to our questions continues and has probably been unrelenting since we developed the thinking mind. I believe that part of having the great gift of the discerning mind is to have questions, feed our curiosity, and move forward. We also have high expectations, and when our expectations are not fulfilled, we begin to sense a problem between what we hoped for and what we face in reality. And so begins our quest to fulfil our expectations and lead a comfortable life.

There is continuous development and progress in our quest to answer questions on the human brain and mind. And there is no reason to believe that our discoveries into them will end. On the contrary, we have been unearthing new facts for many years, especially with the advent of technologies that have given us a glimpse into what happens inside the brain. So, I say our questions will be answered with hope and confidence.

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What are the takeaways?

Humanity has a bright future if we can only prioritise the right area of human development. And part of that, I believe, is understanding the human brain and mind. Look at what we can achieve if we apply our minds to it.

- New illnesses are tackled through vaccination - the coronavirus vaccination was developed within a year; something unparalleled in medicine;
- Life expectancy is increasing, populations living in the western world can expect to live into their eighties;
- Modes of transport have been upgraded, we now have driverless cars, faster and safer trains;
- Intelligent fridges which tell you when items are out of date;
- Smartphones using artificial intelligence;
- Quantum computers taking the computers that we have at the moment to as if they were from the Dark Ages;
- Drugs that are more targeted in treating disease, a more personalised regimen;
- Languages are constantly changing with new words being used and new generations altering how we speak. We can hear changes in how the younger generation uses language and new hip and fashionable words.

The world is our oyster if we can only work together as a species for even more growth and development. At the moment, the brain is hugely undervalued and unappreciated. I think we are a long way off when it comes to brain care and doing positive actions toward brain health.

There are times when worrying or thinking about an issue is taken to the point of obsession. For example, we may overthink about finances, relationships or health. There's no end to things that crop up in our minds. And many of us ruminate about something to the point it makes us ill, and we need to seek professional help.

But how do we look after and manage our minds for optimum health? I believe part of the answer lies in the things we do (or don't do) in our daily lives. From my research into how to look after the brain, I've listed some possible ways to take care of our brains and mental health below.

Firstly, we have to watch what we eat. I believe in the saying, 'We are what we eat'. So to be mindful of eating less processed foods, less processed sugar, and less junk food goes a long way in contributing to overall health, including brain health.

Secondly, there are also lifestyle changes we can make and habits we can take up to help toward a positive state of mind. For example, forming habits such as: reading every day, meditation, doing crosswords, keeping company with grounded people, organising our time and life, setting and achieving life goals, maintaining relationships/socialising, getting into the habit of writing in a journal or articles or learning a new skill or language. Basically, anything that challenges your brain and pushes you harder is good for the brain. The possibility of gaining benefits from our brain can be at any age. Brain development is not just for the young.

While I was in school, we hardly covered the brain in our science lessons; our children should be more informed about it, especially in science lessons. A big chunk of our science lessons should be about how we should care for and manage our brains and minds.

On one front, thankfully, there is a greater awareness of mental health issues in the UK, and that starts with education and public awareness. The more we are educated about an area of health and mental well being in wider society, the better.

In our search for human progression, understanding the brain and mind is essential. And for us to make rapid progress, we have to work together. Part of the problem we encounter is competition amongst ourselves. We have around 7 billion (and growing) of us on the planet who are all human, but all distinct and unique at the same time. The dilemma facing us is - do we value human co-operation? We do not appreciate it as much as it should be respected. And so we have to work together to conquer the next frontier of human progression, and it is the human mind that will take us there.

[1] [Problem Solving - whose approach is better. Einstein or Robbins? - Carol Harding](#)