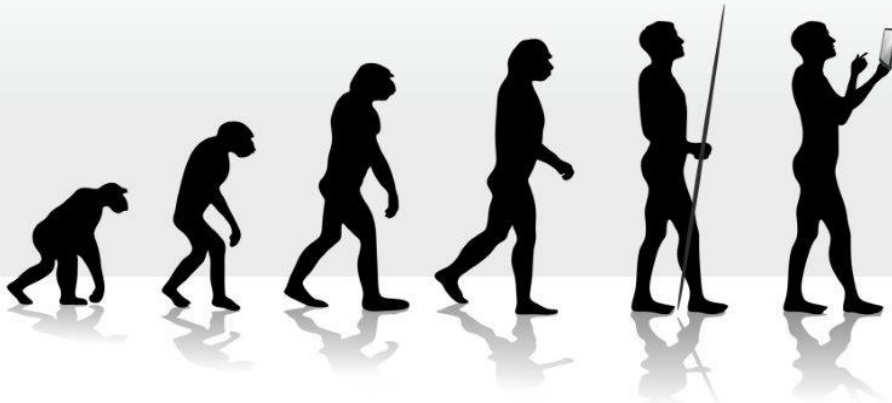


# Are we primates in suits

How good are we at running 21<sup>st</sup>  
century software on stone age hardware



Ever pondered over why we do the things we do?

Why is it that we display instinctive behaviours at home and work without even giving it a second thought and influenced by things we don't even realise?

Where does this instinctive 'automatic' hardwired behaviour come from?

Explanations can be found in understanding evolutionary psychology and discoveries in the emerging field of neuroscience. If evolution shaped the human body, it's also possible that it shaped the human mind.

This white paper, in the form of a light hearted short story, examines some of these evolutionary traits that have shaped our ordinary daily behaviours for good and for worse. Viewing our behaviours through this evolutionary and neuroscience lens provides insights to improving our understanding of human relationships at work and at home.

November 2015

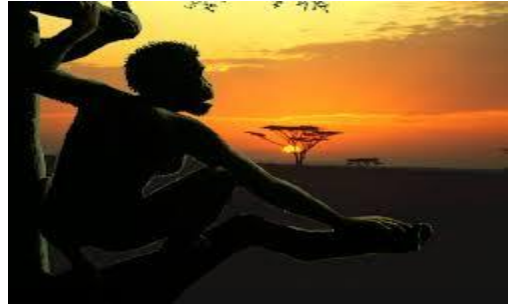
# Introduction

Have you ever wanted to find out what makes us tick and explore our genetic identity. Well, imagine travelling back in time for a family dinner reunion with countless generations of your ancestry? You may have more in common with your dinner guests than you think! Invite a few colourful evolutionary academics, neuroscientists and psychologists to observe their behaviours and we're guaranteed to have a rumble in the jungle.

Since climbing down from trees seven million years ago, our primal ancestors have journeyed into the savannah and beyond, adapting to our changing and complex environment. Each new environment led to psychological adaptations which over time became heritable traits. As we mingle with our descendants during the evening, it becomes apparent that these adaptations made along their journey have been hardwired into the way we think and behave today.

Tonight, we'll hear stories of their lives on the savannah, as we focus our evolutionary lens on its vibrant 'emotional landscape' to find out what drives our instinctive behaviours. One of tonight's guests, Professor Nigel Nicholson, an organisational behavioralist, with other evolutionary academics, offer insights and theories on how some of our instinctive behavioural traits were constructed over the last seven million years.

Tonight we will randomly observe and 'cherry pick' snippets of conversation to put pieces of our evolutionary puzzle together. Just to make it interesting, we have given our ancestors the magical ability to speak in our 21<sup>st</sup> century tongue.



## Are we social creatures of habit?

The idea to convene a social gathering and observe our ancestors' behaviours provides an opportunity to examine the recent research findings by psychologist, Matthew Lieberman, who argues that our need to reach out and connect with others is so powerful that it is one of the primary drivers of our behaviour. What better way to observe this concept of 'social connection' for group living and social interaction than placing people in a safe social setting in my backyard.

To further highlight the role that socialisation played in our development, Lieberman suggests that Maslow's famous 'Hierarchy of Needs' pyramid requires rethinking. The importance of our 'social need' should now be placed at the pyramid base, above our physiological needs for food, water and shelter. An interesting proposition!



# Has our mental architecture gathered dust?

Now that the gathering has started, I've already overheard a discussion that evolutionary biologist, Stephen Gould was having with a group of my ancestors, suggesting that humans stopped evolving about 50,000 years ago and that everything we have done since, has been done with the same body and brain.

A 'Generation Y' relative entered the debate by arguing that quantum leaps in our brains design surely must have occurred over the last 10,000 years. Professor Nicholson said that the 10,000 years since the Agrarian Age, is too short a time period for any significant change in our mental architecture. In fact, evolutionary psychologists suggest that there have been no quantum shifts in our species' evolution since then and that this 10,000 year period is only a blink in the evolutionary eye of our ancestors.



*"Chimps are unbelievably like us – in biological, non-verbal ways. They can be loving and compassionate and yet they have a dark side... 98 per cent of our DNA is the same. The difference is that we have developed language – we can teach about things that aren't there, plan for the future, discuss, share ideas."*

*Dr Jane Goodall*

## Did Darwin knock humans off their biological perch?

Professor Nicholson with humour, suggested that "we may have taken ourselves out of the Stone Age, but we haven't taken the Stone Age out of ourselves". This raised an enormous amount of laughter among the guests, with many of them scratching their heads, as it occurred to them that we indeed have a lot in common. According to evolutionary psychologists, human behaviour, like our physiology, evolved through the process of natural selection as depicted by Charles Darwin in 1859.

It has been suggested that developing social intelligence and the ability to gain mastery through group cohesion provided the essential ingredient for survival in a hostile environment over all other species. To suggest back in 1859 that we were not shaped by divine intervention rocked the mainstream creationists.

The big breakthrough arrived with the discovery of the human genome a few years ago which provided scientific evidence to support Darwin's theory.

*“Human decision making is complex. On our own, our tendency to yield to short-term temptations, and even to addictions, may be too strong for our rational long-term planning.”*

*Peter Singer*

# Does emotion override logic?



Just as I was about to play one of my favourite songs, 'The lion sleeps tonight' our domesticated pet dog, Buster, escaped from his enclosure and started barking behind the cover of the trees. I noticed my ancestor's pupils dilating and I could hear his heart pounding loudly. Jodar, whom I had met earlier in the evening was absolutely terrified. I was witnessing an adrenalin rush before my very eyes as he ran for cover. Psychologist, Daniel Goleman, yelled out from across the yard to get out of his way, he's having an 'amygdala hijack'.

It occurred to me that my ancestor's trusted instinctive behaviours were kicking in. He had never seen a domesticated dog and probably jumped to the conclusion that it was a wild wolf about to tear him apart. His survival mechanism had given him a massive adrenaline hit in the limbic part of the brain, the amygdala, providing an immediate unconscious awareness of looming danger.

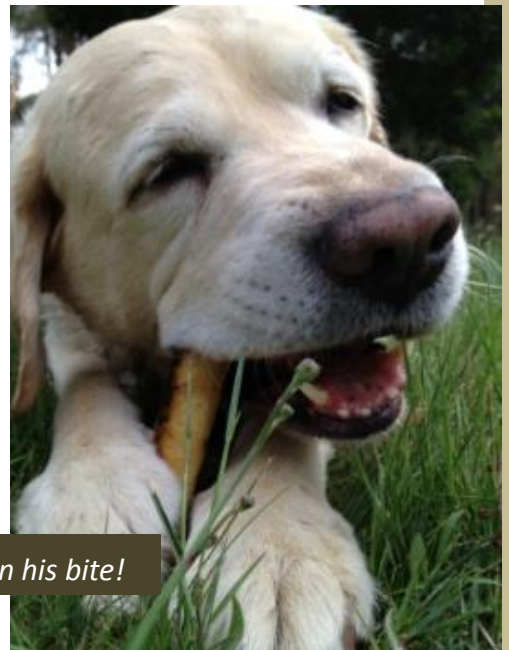
His amygdala, no bigger than the size of an almond, instinctively classified Buster's bark as a wolf's howl, a potential threat that prepared him for the fight or flight response. He had probably heard similar noises in the savannah from hungry predators and a quick exit prevented him from being the next evening meal. This highly emotional response toward a harmless domesticated pet was an instinctive reaction.

His amygdala had become the major regulator of his judgements. Each time my ancestor had heard a similar noise, he associated it with danger.

When we make these associations we coat our neural pathways with a substance called 'myelin' which acts as a fatty lubricant in helping messages move even faster in the brain. Each time my ancestor hears a bark, his amygdala returns to the well worn myelinated pathway in preference to making a new neural connection that may better regulate his instinctive reaction.

Donald Hebb, who is considered the father figure of neuropsychology, commented on my observations by saying that "neurons that wire together fire together".

He explained to Jodar that each experience we encounter, including our sensations, emotions and feelings and muscle actions become embedded in the network of our brain cells and that each time we repeat these actions and thoughts we strengthen that particular pathway.



*Buster's bark is worse than his bite!*

Whilst I thought Jodar's behaviour was amusing, I recalled the countless times I had metaphorically jumped at shadows, paused to reappraise the situation. I began to realise that my ancestor's survival mechanism that had served him so well in the savannah was an inappropriate response to the way I was handling the not so 'life threatening' situations in my personal life and at work.

How many other times was I placed on 'high alert' with this artificial sense of crisis, a term commonly referred to as 'allostatic load' in situations that were not life threatening? Whilst we have been told to dispense with emotions and rely on rational analysis, it is difficult to avoid making snap decisions based on emotion. It's dangerous, but unfortunately it's instinctive.

To 'err' is human, but then again, we are a very unpredictable species. I tried to provide a simple explanation of the physiological and psychological reaction that was occurring in my ancestor's brain. I explained to him that neuroscience research reveals that when we are in this threatened state, oxygen and glucose is drained from the area of the brain that performs our cognitive performance or 'rational behaviour' and diverts oxygen and glucose to the limbic area of the brain.

Blood is now being pumped through the dilated vessels of the muscles of your limbs in readiness for a rapid flight or fight response. He was puzzled by the impact these neural cocktails of chemicals such as adrenaline, dopamine, serotonin, testosterone and oxytocins had on his instinctive behaviours. This type of response was so fundamental to their survival, but unfortunately, gets in the way today.



It's unlikely that Jodar would understand why modern day ancestors appeared so stressed and suffer from conditions of neurosis and psychosis. Psychiatrist, Norman Doidge, was grinning all through our conversation and asked whether any of us had read his latest book 'The brain that changes itself'.

Whilst confirming that establishing a new neural pathway requires some effort, he proclaimed that our future may not be so grim and said that our human brain has a wonderful capacity for learning and rewiring itself. After all, we've successfully made adaptations along the evolutionary journey.

Norman's parting comment to us as he was heading towards the sofa lounge to lie down for some quiet reflection was to say, "Mindfulness lads is what we need to achieve...mindfulness".



*"The emotional brain responds to an event more quickly than the thinking brain"*

Daniel Goleman



## Are we eavesdropping on the mind?

Only recently, have the insights from neuroscience in the fields of Functional Magnetic Resonance Imaging (fMRI), enabled us to begin mapping the human mind. By studying the anatomy and physiology of the brain with an understanding of the human mind and its behaviour, we are now able to explore the previously unseen neural connections in the brain.

Neuroscientist, Read Montague describes this as 'eavesdropping on the brain', indicating that fMRI shows neural connections literally 'lighting up' parts of our brain that respond to thoughts, emotions and images. David Rock, a neuroscientist and thought leader in this field, mentions that brain analysis technologies can follow the energy of a thought making its way through the brain in a similar way that blood flows through our circulatory system.

This is providing us with a more holistic understanding of how the brain operates. These amazing breakthroughs in neuroscience are building on the continuing research in the areas of paleontology, primatology, behavioural genetics and anthropology to gain a better understanding of our evolutionary transformation and how it impacts on the way we behave today.

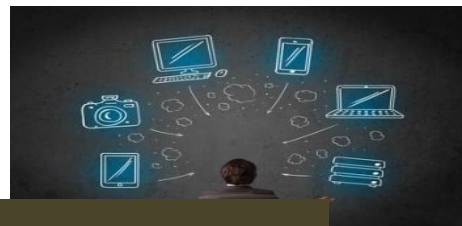
## Are we paragons of reason?

The harshness of the savannah environment meant that our ancestors had to make snap decisions based on limited information. Stereotyping people based on looks or a few readily apparent behaviours made life simpler. Professor Nicholson points out that this primal instinct 'classification before calculus' worked well in the savannah but poses challenges today.

Faced with connectivity addiction in our digital landscape where we are required to juggle many balls and rationally evaluate complex options, our brain has difficulty in handling multiple pieces of information and suffers from mental exhaustion.

Daniel Kahneman, a psychologist joined the discussion with a philosophical jibe by saying that we are not the paragons of reason we assume ourselves to be when making complex decisions. Many quick decisions that are unconsciously made, have been based on deeply ingrained mental short-cuts, or rules of thumb that we commonly refer to as 'heuristics'.

Behavioural economist, Dan Ariely, laughed about the astonishingly simple mistakes we make every day and that many of these 'heuristics' are irrational and result in poor decision making. In tough times on the savannah, mistakes often resulted in death.



*"Logic is easier said than done,  
emotions are easier done than said."*

*Unknown*

## Did a diet of meat fuel our developing brains?

The smell of pork crackling was drifting into the room and I noticed a number of my ancestors gathered around a campfire in the backyard telling yarns and stories.

Dr Robert Winston, an evolutionary academic and BBC presenter, was helping out by the BBQ and explained the role that fire had played on our evolution journey: “Once fire had been harnessed, about one and a half million years ago, we learned how to cook and that too made both meat and vegetables easier for our bodies to digest. So it seems that our craving for meat led to a shorter intestine and a larger brain, triggering a revolution: the rise of the brainy hominids”.

This extraordinary growth of the brain defined our evolutionary path. Our brain is a hungry resource and consumes 20% of our energy requirements. This makes an interesting fact, considering that it accounts for only 2% of our body weight. Studies have shown that the growing brain demanded a diet more nourishing in protein that contained many essential fats and bone marrow, essential for brain development and growth.



## Are we nutritional misfits?



Back at the party, my primate ancestor, Jodar is observing a number of ‘well padded’ humans queuing up in front of the assortment of cakes and sweets available at the servery. He keenly watched and examined our eating habits. Jodar said that maintaining a balanced diet in a world where we have an abundant supply of food requires enormous self control, something that was never an issue back in our days on the savannah.

The thrill of chasing down an antelope was somewhat more strenuous than the convenience of merely opening the door of a well stocked fridge. Jodar is deliciously shoving strawberry cheese cake into his mouth while licking cream off his fingers. He lets out a loud grunt and loves the taste. I told him that we modern humans have a craving for sugar and salt.

Jodar tells me that this is probably a hangover from his hunter-gatherer days when sweet sugary foods were hard to find but important for survival, particularly when this food supply was unpredictable. It suddenly occurred to me that what was once a survival advantage in an age when the only sweet foods were honey and fruit now makes us easy targets for irresistible and clever advertising from companies promoting more-ish flavours in cheeseburgers, fries and milkshakes.

This was a telltale sign that we haven’t adapted too well in adjusting our nutritional mindset to our sedentary lifestyles. To compound the problem, we have become addicted to caffeine and energy drinks which is fuelling our digital connectivity. I overheard another group of my kin saying that they couldn’t understand why modern humans drink when there’re not thirsty and eat when there’re not hungry and expressed concern about their modern descendants’ inability to burn all the calories they ingest.



# I heard it on the grapevine...is this the stone age equivalent to social media?

The gossiping and rumours taking place around the fire was fascinating. It revolved around issues relating to survival fitness on the savannah, who's fertile, who's first at the kill, who's nursing a grudge and who could be trusted. The gossip was important as it provided updated 'survival news' on 'who's who in the zoo' so to speak. There appeared to be a great deal of bonding taking place through this process of gossiping. Some of my ancestors eavesdropped in on a mobile phone discussion taking place and laughed, as similar banalities of life were being discussed back in their time. I was beginning to understand why gossip columnists and the plethora of women's magazines grab our attention.

We have evolved into social media omnivores. News on the evolutionary grapevine works in mysterious and wonderful ways. Whilst grooming each other of fleas, two other ancestors were engaging in another form of grooming. They appeared to be conversing with one another, both picking up on the social clues of communicating without one word being spoken. They seemed to have developed a great empathy for one another in being able to read one another's mind. A robust debate had erupted on the other side of the backyard between two primates who had observed this act of non verbal grooming and related it to the use of 'Botox', especially by females for cosmetic purposes.

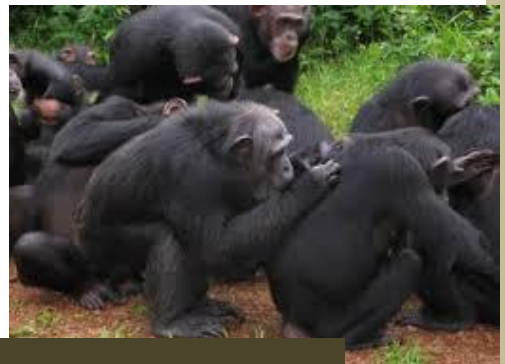
One of them was arguing that the importance of a mother bonding with her baby was dependent on the child being able to 'read the emotions' on a mother's face. He said that stripping away these facial expressions by 'freezing facial muscles' would interfere with our evolutionary trait involved in the mother/baby bonding process. Let's hope the Collins Street plastic surgery specialists don't hear this!

# Is it Machiavellian monkey business or just bananas?

As I was observing other groups, the Machiavellian instincts of developing alliances and rivalries amongst their family clans were clearly evident. Jodar told me that survivors back in the savannah were those who were savvy enough to anticipate power shifts. Their ability to pick up on the nuances of body language and read other people's minds was a key survival tool to develop. This communication process was critical to the social power structure of the group and of kinship.

One of the hominids had said to me that on the way to the bathroom he caught a glimpse of two TV shows that reminded him of behaviours displayed within his own clan and commented that things hadn't changed much over evolution. I later found out that he had been watching 'Survivor' and 'Big Brother' with my son. I should have told him to watch 'The Bear Grylls Survivor Show' and 'The Bachelor' to observe behaviours similar to his primal ancestors.

All these reality TV shows had stripped down power struggles to bare reality, resembling life back on the savannah. I told him that he would probably see the same behaviours or maybe worse behaviours displayed if he was to leap into a corporate meeting room.



*"Evolution has developed man to such a high degree that he builds zoos to keep ancestors in cages."*

Unknown

## Is 150 the magic number?

My observation skills allowed me to peel off the tailored dinner suits my guests were wearing to reveal the nakedness of their true intentions. Recurring patterns were visible everywhere. My ancestors were following their primal ways of thinking.

Another group of ancestors explained to me the structure of their tribal group where they all appeared to have allocated roles for men and women. The social network and pecking order within the clan hierarchy was clearly visible. Anthropologist Robin Dunbar came up with the theory that there was a correlation between the size of the primate brain and the size of the social group for its species, inferring that the larger the brain, the larger the group size.

With humans, in history the group size reaches approximately 150. Of these, we form a close connection of approximately 12 people in our 'grooming clique'. Professor Nicholson made the revelation that the formation of this primitive organisational structure is what evolutionary psychologists see as our 'ancestral archetype' that still exists today.

## Does change hurt?

They weren't big risk takers on the savannah, particularly in harsh environments when surviving day to day was a challenge. Only when threatened were they forced to gamble on seeking new horizons. However, if they weren't resistant to change they would never have climbed down from the trees. The reward of changing needs to be greater than the threat of not changing. It occurred to me that this primal 'resistance to change' and 'aversion to loss' mentality is anchored in our thinking today. It's probably where the mantra "it's better to be safe than sorry" comes from.

Taking a loss unfortunately becomes an admission of failure and perceived as loss of face with others and this instinct is still carried by us today.

*"It's not what happens to us, but our response to what happens that hurts us."*

*Stephen R. Covey*



## Are you looking at me?

One of my ancestors appeared to be showing off and 'peacocking' in front of my female companion. This primal urge for display and competitive contest originated from his desire for the best mating opportunities and survival of his offspring. We see these types of competitive displays in many organisational settings today and manifests in many different types of behaviours.

In an outrageous status display, one of my early primate ancestors gained a strategic position by climbing the tallest tree in my backyard and started thumping his chest. It created an enormous amount of interest and attracted the attention of the group, a reaction he was expecting. It reminded me of Rupert Murdoch banging his fists on the table at the UK News Corporation enquiry a couple of years ago, proclaiming his innocence.

It seems that these instinctive behaviours displayed by executives with super egos never change.

*“People will always prefer black and white over shades of grey, and so there will always be the temptation to hold overly simplified beliefs and to hold them with excessive confidence.”*

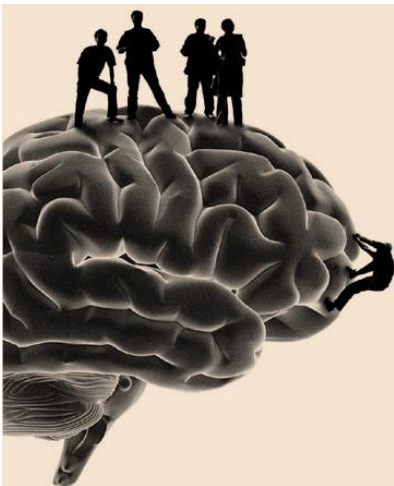
*Thomas Gilovich*

## Are we bold and brash?

We noticed a group of our ancestors showing an enormous amount of bravado by the poolside. They were bragging about their exploits on the savannah. Professor Nicholson called me over and whispered in my ear to say that this was a classic illustration of how our instinct for overconfidence can overshadow reality.

He said that our ancestors who radiated the most confidence were the ones that clan members often looked up to, demonstrated the best chances of survival and were more attractive as mates. I was now beginning to join the dots and thinking how this primal legacy impacts many of our work practices today and our personal preferences.

Evidence of this type of behaviour can be observed in poorly scoped projects resulting in massive cost overruns. Often this instinct of overconfidence, leads us to overlook flaws in others resulting in disastrous consequences.



## Will the digital landscape reshape our brains?

Understanding how our instincts impact behaviours allow us to modify our thinking and temper our primal impulses. As Professor Nicholson suggests “just because we have instincts doesn’t mean we don’t have choices”.

It appears that in addition to being adaptors of our evolutionary environment, we can now play a greater role in shaping it. Look out for my work on how we can make better choices to minimise the downside of our instinctive behaviours and strategies to maximise the upside of these innate traits.

As this memorable evening was winding down, I heard two of my ancestors talking about all of the digital devices they had noticed scattered around my home.

Interestingly, they were pondering about how the new digital landscape, framed by social media tools such as Facebook and Twitter, will reshape the way we will think in the future and whether our instinctive behaviours will be as prevalent today as it will be at the next family reunion in half a million years time. I too considered this idea as I turned off the light.

What evolutionary journey will our rewired neural pathways take us on?

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*"We are all now connected by the internet like neurons in a giant brain."*

Stephen Hawking

## Who wrote this paper?

**Grant Ross**

Speaker | Facilitator |  
Human Behaviour Specialist

**Primates in Suits**

BEC, MBA (Monash)

[primatesinsuits@gmail.com](mailto:primatesinsuits@gmail.com)

[www.primatesinsuits.com.au](http://www.primatesinsuits.com.au)

<https://au.linkedin.com/in/grantross>

@GrantRoss21

