

# WHISPERING TO THE AMYGDALA

## The Role of Language, Frame and Narrative in the Process of Transition

*“It would be best to consider this as a revolution, not of guns,  
but of consciousness, which will be won by seizing the key images,  
myths, archetypes, eschatologies, and ecstasies so that life won’t seem  
worth living unless one is on the transforming energy’s side.”*

Gary Snyder

Dissertation Thesis - 2017

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## ABSTRACT

**Elections are won and lost in the amygdala.**

**The next electoral cycle may decide the future of both our democracy and our planet.**

Proposing these two statements, and in the belief that transformation can still be enacted through the ballot box, this paper contends that those of us dedicated to a sustainable, equitable and socially just future need to understand the means by which narratives shape our world.

We need to parse the neurophysiology of language, tease out how words work, how ideas are grasped by the brainstem, how words are shaped into metaphors, metaphors into frames and frames into narratives so compelling that they can shift the consciousness of a nation, a culture and an age: and then we need to act on our new understanding.

This paper offers a route map through linguistic neurophysiology and a structured set of signposts to follow and actions to take that may enable us to win the race to the bottom of the brainstem, or, if we so chose, lift our entire culture out of the running.

## ACKNOWLEDGEMENTS

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# INTRODUCTION

*“In order to fix the climate crisis, we need to first fix the Government crisis. Big money has so much influence now.... Our democracy has been hacked.”*

Al Gore (Carole Cadwalladr, 2017c)

It is said of Donald Trump that the world’s press took him literally but not seriously, while his myriad supporters took him seriously but not literally (Zito, 2016). In more objective terms, we could say that his opponents on both sides of the political aisle parsed his language with their cerebral cortices, found it lacking in rational coherence, and rejected it, while his supporters heard him with their brainstems, responded with their gut instincts - and voted into office an individual who finds it useful to withdraw the US from the Paris Climate Accord and indulge in verbal brinkmanship with North Korea.

Amidst the continuing fallout from that election, comes the revelation that staff at the US Department of Agriculture have been told to avoid using the term ‘climate change’ in any official documents. According to emails leaked to the Guardian, it is to be replaced with the term, ‘weather extremes’, while ‘reduce greenhouse gases’ has been abandoned in favour of ‘build soil organic matter and increase nutrient use efficiency.’ (Milman 2017b)

This is not a new phenomenon: for decades, those on the right of the political spectrum have understood the power of language to shape a debate.

Indeed, the term ‘climate change’ itself was coined by Frank Luntz, author of ‘Words that Work’, and of the 1994 Republican ‘Contract with America’ which is credited with turning around failing GOP fortunes, giving them the first majority in the House since the 1950s (Abadi, 2017). Luntz argued that the earth’s climate was benign and always changing and required Republicans under his sway to use ‘climage change’ in place of the then-current phrase ‘global warming’ in an effort to reduce the sense of threat and urgency embodied in the concept. By his own lights, his strategy saw success when the left-leaning newspapers and media took up the term. (Luntz, 2007).

Opposite is a list of words or phrases he suggests that Republicans should not use, and alternatives to employ instead to strengthen the conservative frame.

**RIGHT MUST NOT SAY**

Government  
 Global warming  
 Drilling for oil/coal/gas  
 Undocumented workers  
 Estate tax  
 Taxes/paying dues  
 Capital Markets  
 Experienced  
 Peace of Mind  
 Compassion  
 Balance  
 Abortion/miscarriage

**RIGHT MUST USE INSTEAD**

Washington  
 Climate Change  
 Exploring for energy  
 Illegal aliens  
 Death Tax  
 Involuntary taxation  
 Investors/The public interest  
 Independent  
 Security  
 Fairness  
 Fairness  
 Partial birth abortion

Progressives can invert this instruction – use the word or phrase in the left hand column, while being aware of circumstances in which those in the right hand column are being weaponised and used, often to good effect given that broadcasters are so steeped in this language that they don't notice its power to shape a culture's consciousness.

Those who, like Luntz, study language and its impact are agreed that the parties of the electoral right instinctively aim their narratives at the brainstem: that outrage, fear and disgust are their tools and these, as we shall see, are the primary triggers of brainstem responses. Thus we have individuals and entire political entities engaging in a direct appeal to the brainstem, bypassing rationality by the use of carefully curated language – and it works.

Conversely, those on the progressive left appeal largely to reason and to the better angels of ourselves: to compassion, fairness and empathy resulting in a situation where the left seems to be elected into office largely by default (Lakoff, 2004. Luntz, 2007. Haidt, 2012). The electoral effect of this has become so pronounced that progressive social scientists such as Lakoff and Haidt, have written blogs, papers, and entire books in the effort to persuade the parties of progress/sustainability that they need to begin to address these issues.

There is a powerful argument to be made that our electoral decisions – indeed any decisions – have always been made at the level of the brainstem and that we delude ourselves if we believe otherwise (e.g. Greenwald et al, 2011). Neurophysiologists, neuropsychologists and social scientists have increasingly sophisticated tools to measure intrinsic bias in our decision making which amply demonstrate the degree to which our conscious minds fail to catch up with our instinctual responses. (Those with an interest can test themselves at Project Implicit: <http://www.ProjectImplicit.org>). Be that as it may, the second decade of the twenty first century is unique for four reasons.

*First:* it is the case that the naked appeal to the worst of ourselves is more apparent in the western industrialised nations than it has been since the rise of Weimar Germany.

*Second:* we are in the age of the technological singularity (Kurzweil, 2006), in which technological advance is not just increasing, but the *rate* at which it is increasing is accelerating towards infinity. In the dissemination of language and in the arts of persuasion, the internet and social media have, in the past twelve months, demonstrably outpaced the so-called ‘legacy’ media of print and broadcasting. Never in human history has our attention been so divided, nor been the subject of such a concerted ‘race to the bottom of the brainstem’ by so many highly trained minds seeking to influence our behaviour on a daily – hourly – basis (Harris, 2017).

*Third:* We exist at a tipping point in our output of carbon dioxide. Climate scientists recently stated that we have less than a 5% chance of hitting our Paris Accord goal of less than two degrees of warming (Milman, 2017). Given that we are already in the midst of the sixth mass extinction (Thomas, 2006) and the last five have been associated with climate change (Mayhew et al, 2008, Diffenbaugh et al, 2017), leading to ninety seven percent species loss, the need to make the political and cultural changes that will transform our culture could not be more urgent.

*Fourth:* the self-styled ‘alt-right’ Leninist libertarians (v.i.) have gained power in the United States and we are witnessing the impacts of their hegemony on a daily basis.

According to author and broadcaster, Paul Mason, ‘Democracy is dying. And the startling thing is how few ordinary people are worried about it.’ While this is accurate, his analysis of the underlying causes misses one point. He cites political theorist Wendy Brown, author of ‘Undoing the Demos’ as having made “*a convincing case that the world’s backsliding on democratic values has been driven by its adoption of neoliberal economics,*’ and that the ‘*free market elites*’ do not enact this drive deliberately, but that it arises as a natural result of an economic system which “*transmogrif[ies] every human domain and endeavour, including humans themselves, according to a specific image of the economic.*” (Brown, 2015, cited in Mason, 2017). (Emphasis added throughout).

This is not true. As will be shown below, there now exists compelling evidence that the systematic destruction of liberal democracy – and the concomitant rise in climate change denial and the stripping away of social, labour and environmental protections that attend this - is not in any way serendipitous. Rather is a deliberate capture of the democratic systems of governance and their sequential undermining in the pursuit of untrammelled free market capitalism by reactionary, racist individuals of extraordinary wealth determined to cement into permanency their status and privilege at the expense of the majority.



This paper is built on the same premise as that which underpins the Masters course in Economics for Transition taught at Schumacher College: that we exist at a time of great change in which humanity must make the transition to a collective sustainable lifestyle — or face extinction. The corollary to this is that the current economic system is broken and that, for the necessary transition to take place, we must move to a new economic model embracing sustainability, equity and social justice.

The additional premise of this paper is that for the changes to be made swiftly and effectively, they must grow through the democratic process. Further, if the parties of progress, of co-operation and consensus are to win at the ballot box, they must learn the language of the brainstem.

Clearly, there are baselines of decency below which those devoted to equity and solidarity may be unwilling to drop. This is laudable, but if we bring flowers to a cage fight, we can't complain if we are beaten.

The answer then, is either to find a way decently to outrun the opposition – or to find a way to cancel the race and remove our entire culture from the running. Success in either option requires that we understand the pathways of the human mind.

Finally, it is imperative that we do so swiftly and effectively, because time is short.

Put more succinctly, the tripartite thesis of this paper is that:

- in the twenty first century, elections are won and lost in the brainstem
- the reactionary (increasingly organized, increasingly libertarian) right has an instinctive understanding of the use of language to trigger brain stem responses that the left/progressive parties have, until recently, lacked - and may still lack.
- that we have one electoral cycle in which to achieve genuine political change.

There is one final point. Until the night of June the 8th, it was (almost) universally accepted that the forces of reaction were in the ascendancy in the UK as they were in the US: that brainstem targeting coupled with a hegemony of social media, a universally hostile press (Cammaerts et al, 2016) owned by tax-haven billionaires and television companies immersed in neoliberal economics to the exclusion of all else, was an indefatigable combination.

The exit poll at 10pm on 8th June overturned this expectation. Under Corbyn, the Labour manifesto offered a mix of eco-socialism and heterodox economics that its detractors maintained was a new version of the longest suicide note in history. In fact, the result saw Labour's position enhanced such that Corbyn is now being viewed by sections of a previously hostile press as Prime Minister in waiting.

We know now that a counter-argument to neoliberalism can gain electoral traction.

Just as importantly we know that, in the UK at least, democratic structures remain sufficiently robust to permit the voice of the demos to be heard.

Whether this continues, or whether Mason is right that democracy is being dismantled in front of our eyes, is an open question. Nonetheless, it remains the case that, absent a worldwide revolution, social change manifests primarily through the ballot box, and that the economic and social transformation required to avert runaway climate change and mass extinction must, first and foremost, be political – and it must happen soon.

This dissertation is structured in a manner akin to Otto Scharmer’s ‘Theory U’.

From a brief, top level examination of the Humpty Dumpty strategy and the race to the bottom of the brain stem, we dive deep and fast into the neuropsychology of language, frame and metaphor. Only by understanding how language – visual as well as verbal - works to shape our decisions, how opinions are formed, how Tristan Harris’s ‘hundred guys behind the screen’ are targeting our brainstems, can we hope to understand the race and empower ourselves either to join it and win, or lift ourselves and our entire culture out of the running.

Having understood the nature of language, we need to put those building blocks together so that we understand the nature of metaphor, frames and narrative as the foundation of success and failure. Thus the upswing of the U begins by an analysis of metaphor and how we comprehend (or fail to) the internal images that words create. Particularly, with conceptual metaphor theory, we examine the nature of embodied metaphors – how ideas take on physical expression, and how this, too, shapes our inner landscapes.

Ascending further, we examine the nature of the frames that shape us, and the basic polarities within them: strict father vs nurturing parent, care vs harm, fairness vs cheating, freedom vs liberty and the concept of intrinsic and extrinsic motivators. As we move towards the weaving of narratives, we examine the means by which frames become narratives and how to disseminate the ideas that underpin them. Too, we look at how these can be assessed and seek to understand how and why access to Big Data can offer large scale, timely feedback.

As we reach the upper tail of the U, we take all that we have learned and apply it to the recent past. By examining key elements of the recent UK General Election (GE17), by homing in on the successful, and blatantly unsuccessful, attempts to use language to shape a winning narrative, we can observe framing at work in the real world, and appreciate Corbyn’s ability to harness his message to events and events to his message.

If we can understand what he did, how he did it and *why, when and how it worked*, his techniques can be built upon and spread more widely in the UK and elsewhere.

Finally, we offer a number of strategies that could be implemented which may help to build a new set of cultural frames over the next five years as we await the next UK General election.

## SECTION I

### THE HUMPTY DUMPTY STRATEGY

#### Buchanan, Koch and the sixty year plan

*“The goal of the cause...should no longer be to influence **who** makes the rules, to vest hopes in one party or candidate. The focus must shift from **who** rules, to **changing the rules.**”*

(Buchanan, quoted by MacLean, 2017)

In a world facing crisis, there is something particularly terrifying in the idea that the forces pushing us over the brink are in any way concerted. There is comfort in the concept that our fellow travellers are fundamentally decent and that, while the cumulative effects of our decent attempts to carve out momentary happiness, comfort and security may be unfortunate, they are broadly well meaning. Apart from anything else, if our entire herd of human lemmings is simply blundering off a cliff, then we bear little personal responsibility for altering the trajectory of our travel.

Conversely, the evidence that there is, in fact, a concerted effort to overturn democracy feels like a step into the world of conspiracy theories and tinfoil hats. Nonetheless, the evidence exists and is compelling.

In 2013, in a serendipitous investigation into racial segregation of schools in Virginia, Professor Nancy MacLean entered an unlisted archive at George Mason University's Virginia campus. She expected to find the usual indexed papers. What she found instead, was the former headquarters of James McGill Buchanan, a Nobel Memorial laureate, and Professor at Mason University. Within this Virginia clapboard house were entire offices packed with the unsorted, unexamined, unread letters and emails stretching from the mid seventies to 2008 detailing Buchanan's lifetime's work, and particularly his connections to, influence on, and work with the billionaire libertarian financier Charles Koch. It appeared that, on decamping to their new premises, the group had simply walked out and shut the door. The result of her research is incendiary, and may be game changing.

Buchanan's thesis was that 'liberty' - defined as the capacity for the rich further to

enrich themselves unhampered by government – was paramount and that in the battle between capitalism and democracy (acknowledging that these two are incompatible), capitalism must win. On the understanding that the annihilation of even such limited welfare systems as exist in the US was not one likely to command appeal at the ballot box, Buchanan and Koch cautioned stealth.

According to MacLean, their strategy was simple.

*“For liberty to thrive...the cause must figure out how to put legal – indeed constitutional – shackles on public officials, shackles so powerful that... [elected officials] would no longer have the ability to respond... Once those shackles were in place, they had to be binding and permanent. The only way to ensure that the will of the majority could no longer influence representative government on matters of political economy was through ...‘constitutional revolution.’”*

(MacLean, 2017).

Buchanan proposed this as a sixty year project. The election of Barack Obama in 2008 accelerated it: the libertarian movement is inherently racist and the election of someone not wholly white raised the internal level of urgency. MacLean details the capture of the Republican party by the Koch-promoted Tea Party and the self-acknowledged use of Lenin as a role model – not for his politics, but for his absolute refusal to compromise and his understanding that, in order to build a new structure, the old structures must be torn down. This is not a latent idea, Steve Bannon, Trump’s campaign co-ordinator and, until recently, senior White House advisor has stated publicly that he is a Leninist for exactly these reasons. (Sebesteyen, 2017)

It is startling to observe the speed with which this group set about altering the democratic structures of the US government following the election of Donald Trump.

More distressing is the fact that, as MacLean points out, this faction now has ‘trifecta’ control of twenty five states of the Union: that is, they hold the Governorship and both Senate and Congress in half the states. The vote of a two thirds majority – thirty four states - is required to trigger ‘an article to propose amendments to the US constitution.’ If that vote is passed, and if the new convention follows Buchannan’s plan, a century of social evolution in the United States will be wiped out – with unimaginable consequences. The impact on efforts to mitigate climate change will be enormous: the Koch brothers have been leading funders of climate change denial and leading voices

against any kinds of environmental regulations. Given the parlous state of the planet's ecosystems, it is not unreasonable to say that nine state legislatures stand between humanity and oblivion.

This is not the time or the place to examine the Leninist Libertarians Right's strategies in depth: for those with sufficient interest, the detail is in MacLean's book. In Section II, however, we examine the basic human instincts that allow a fundamentally destructive strategy to thrive.

## SECTION II

### RACING TO THE BOTTOM OF THE BRAIN STEM

#### Capturing human attention

*“How do you ethically steer the thoughts and actions that appear in two billion peoples’ minds?”*

Tristan Harris (tristanharris.com)

The battle lines of the immediate political conflict are clearly drawn. What is becoming clear, too, is the battle ground. Until 2016, the support of the so-called ‘legacy’ media of press and broadcast stations was crucial to winning any election. Barack Obama’s use of social media signalled a shift, but it wasn’t until the UK EU Referendum of 2016, that this change became obvious - although it took extended investigative journalism on the part of the Guardian’s Carole Cadwalladr to expose the extent to which US money and data manipulation had influenced the vote to leave the EU (Cadwalladr, 2017a, b).

2017 is the year when we have begun to appreciate the extent to which our time and attention are being harvested, often for political ends; when our amygdalae are being routinely targeted in what Tristan Harris refers to as the ‘*race to the bottom of the brain stem*’ (Harris, 2017).

Harris is a graduate of the Stanford Persuasion Technology laboratory, and a former employee at the Google under the job title, ‘Design Ethics and Product Philosopher’. In 2014, he left Google and currently describes himself as Co-Director and ‘Concerned Human’ at the ‘Time Well Spent’ consumer advocacy group which campaigns to ‘Demand a different future from the tech industry’ (data from his LinkedIn profile).

When he tells us in his TED talk that at any given Facebook, or SnapChat or YouTube visit, there are ‘a hundred guys’ with PhDs in persuasion technology ‘on the other side of the screen working out how to keep you there’, (Harris, 2017), we can assume he knows what he’s talking about. Social media are now the defining factor in deciding the outcome of an election. Twitter, Instagram, SnapChat, Reddit and –particularly – Facebook, have become agencies of massed communications and a good video now takes the place of the good headline as a means of shaping opinion.

There is added impact if a video, image, or other content can be highly targeted. In previous eras, headlines remained the same throughout the distribution network of a newspaper. What is different now, is that social media allow targeting of particular ads to particular demographics. For those (and only those) who have access to, for instance, core profiling data of Facebook users, this micro-targeting can narrow down to the level of the individual.

In theory, detailed individual analytical data is private, but, according to investigative journalist Carole Cadwalladr, Cambridge Analytica, a company on whose board sits Steve Bannon, has access to sufficient data to change the course of a referendum.

*There are three strands to this story. How the foundations of an authoritarian surveillance state are being laid in the US. How British democracy was subverted through a covert, far-reaching plan of coordination enabled by a US billionaire. And how we are in the midst of a massive land grab for power by billionaires via our data. Data which is being silently amassed, harvested and stored. Whoever owns this data owns the future.*

(Cadwalladr, 2017b)

*Whoever owns this data, owns the future.* Cambridge Analytica may not be alone in owning this data, but it is the most obviously adept at using it. The CA website claims that it collects up to five thousand data points on over two hundred million US citizens and uses more than one hundred data variables to model target audience groups and ‘predict the behaviour of like-minded people.’ In an interview with Bloomberg’s Sasha Issenberg, CA CEO, Alexander Nix is quoted as saying,

*“This is really trying to use psychology to understand why hostile audiences do what they do, and to use this methodology to deconstruct that behavior and then use communication to try and change attitudes and ultimately behavior. Persuading somebody to vote in a certain way, is really very similar to persuading 14- to 25-year-old boys in Indonesia to not join Al Qaeda.”*

(Issenberg, 2015)

By the time of the EU referendum, CA claimed to be able to narrow down to single voters,



and to send them both ads promoting one side of a campaign and others denigrating the other side with the explicit aim of raising one vote and suppressing the other.

Cadwalladr alleges that this had a significant impact on the Leave vote in the Referendum, a claim CA denies. What it doesn't deny is that it was involved in psychological operations in non western countries. Cadwalladr's investigations suggests it is likely that the PsyOps techniques are in use in the west in the most recent elections, an act that is illegal in both the UK and the US.

Clearly, the results of the UK General Election in 2017 demonstrate that they are not yet infallible – and that they can be countered by intelligent use of social media by the progressive parties offering an eco-socialist agenda. What we need, therefore is to understand how the messaging works, how political views are formed, honed and shaped: how language works at its deepest level. Section III delves deep into the neurophysiology of language.

## SECTION III

### DIVING DEEP

#### The Neurophysiology of Political Discourse

*“Politics is the art of the possible.”*

Otto von Bismark remark, 11/8/1867

Politics may be the art of the possible, but when it comes to the electoral cycle it is the art of human persuasion: my ability to convince you by word or deed that my internal framing, metaphors and narratives align sufficiently closely with yours that you will vote for me and my party. Or not. Our political affiliations, our propensity to vote, how often, and for whom, are a product of our society, our familial influences and our current cultural narratives at the time of any given election, very little of which is open to short term change within the course of a campaign.

Nonetheless, as evidenced by the UK general election of June 2017 (GE17), change occurs against all the odds, polls and predictions. If the relative success of the progressive parties is to be repeated on a greater scale, we need to examine those areas of political communication that can change voting habits. As previously discussed, the choice and structure of words, both spoken and written are central to this, and ideas expressed in visual form as info-graphic, internet meme and YouTube video are having a significant impact on voter turnout and reaction.

To understand the mechanisms at play, we must study language: what it is, and how it works, from the innermost workings of the brain to the ways by which words trigger core emotions, to how those emotions shift – and why.

Four core neurophysiological theories underpin the human response to the internal and external environment. All are broad-brush models, with the strengths and weaknesses this implies, and each has its detractors, but they are effective at the level we need, they work synergistically and are key to the understanding of the brainstem race.

In the order presented here, they are:

- the Triune Brain model
- the concept of differential transit times
- Hebb's postulate
- Skinner's behavioural model of operant conditioning

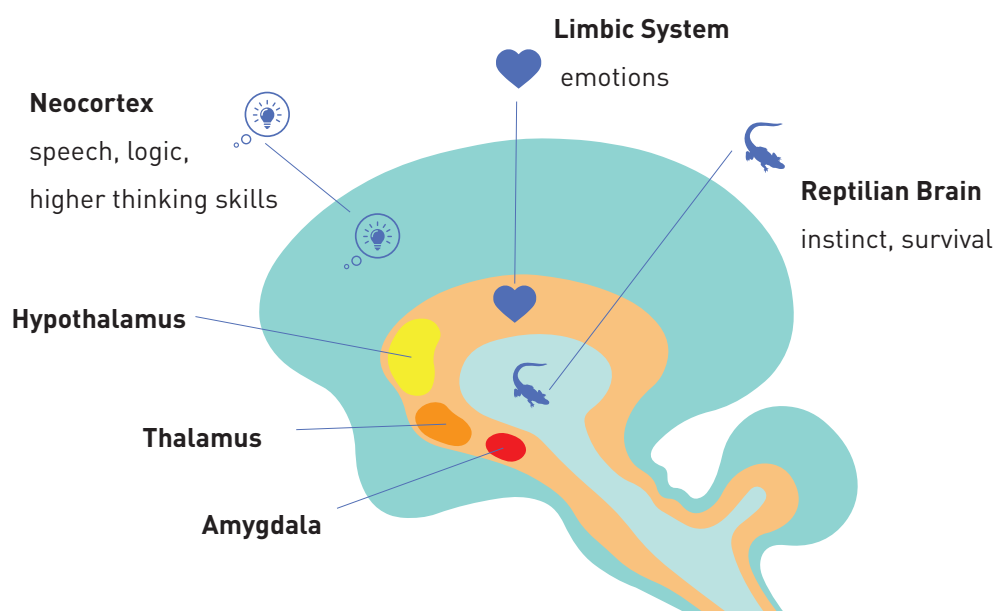
## THE TRIUNE BRAIN MODEL

*“We have become used to thinking about politics in terms of Red States and Blue states. But it’s easy to forget that the states that really determine elections are voters’ states of mind.”*

Drew Westen, *The Political Brain*. 2007.

The Triune Theory of brain function, first proposed by Paul D MacLean (1990), states that ontogeny repeats phylogeny in the developing human brain, giving rise to three broad anatomical and physiological areas. In order of development, these are:

- the Reptilian brain, or brain stem,
- the Paleomammalian brain (aka the Limbic system or emotional brain)
- the Neomammalian brain or (aka the neocortex or frontal cortex)



These three parts develop in evolutionary order within the growing organism. Thus in *Homo sapiens*, the healthy neonate arrives into the world possessed of a fully functional *brain stem* which controls basic respiratory, digestive, cardiovascular, thermoregulatory and primitive musculoskeletal functions (grasping, blinking, vocalising), but little else. The human neonate is not uniquely helpless in the world of mammalian neonates, but it is unquestionably unique in the length of time for which it is dependent on a caregiver for survival. The dependent period lasts until the remaining two parts of the triune brain develop and begin to function, however long that takes.

As the infant grows, the *limbic system* comes online, bringing with it a broadening range of emotions. This area is crucial in shaping, framing and directing our responses to environmental stimuli.

In anatomical terms, it is composed of a series of structures clustered around the thalamus, including the olfactory bulbs, the hippocampus, hypothalamus, cingulate gyrus – and the amygdala (aka the amygdaloid body/ complex/system, LeDoux 2007).

Together, these parts of the limbic system attend to internal and external sensory stimuli across the full range of sight, sound, smell, taste and touch, as well as the more mood-based sensations of hunger, discomfort and cold. The limbic system, and the amygdala in particular, becomes concerned primarily with differing levels of safety and security, with wellbeing and harmony, or their lack. It is here that danger is parsed and action initiated. At adolescence, these areas respond to gender-based sex hormones and convey sexual desire.

As the infant develops, the *Neomammalian brain* (aka the neocortex) which makes up the frontal lobes of the cerebral cortex, grows towards relevance, bringing with it the ability to reason, to assign meaning to events, to conceive of identity within space and time.

This is what makes us human and what (we believe) sets us apart from other species: our ability to step outside of the present moment and to engender hypothetical futures and alternative versions of the past. This is where we calculate and imagine, where we design everything from the wheel to Bitcoin to parliamentary democracy; where we languish (or not) in our fear of the future and bitterness of the past. It is fair to say that an individual's sense of self as a human being is constructed here (Stevens, 2012). Certainly, this is the site of higher thought and learning.

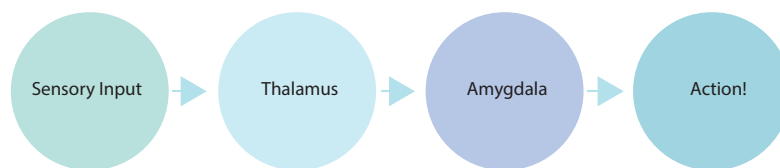
It is not, however the area which controls actions, emotions, or even core reasoning. These take place in the older, faster areas of the brain. To understand the mechanisms that apply to electoral decision making, we need to examine the **limbic system** in more detail.

In his description of limbic function, Bessel van der Kolk (2014) describes the thalamus as the ‘cook’ of the emotional system which “stirs the input from our perceptions into a fully blended autobiographical soup, a coherent experience of *‘This is what’s happening to me’*.” (my emphasis).

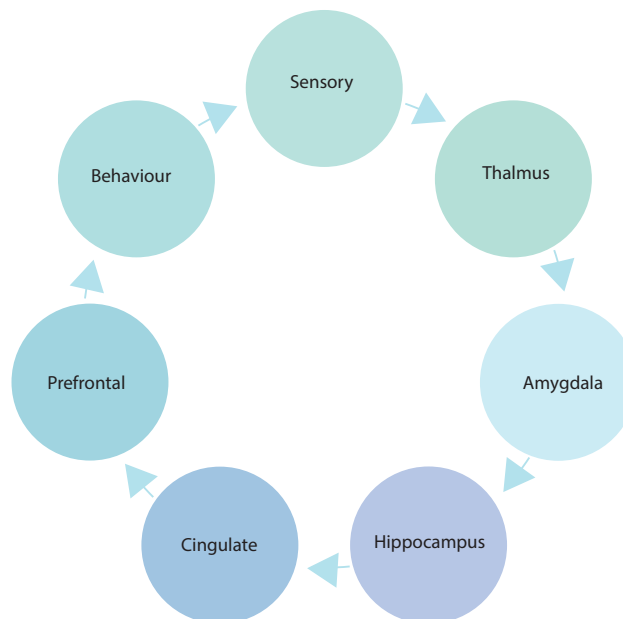
What happens next is key to our voting behaviour and to understand it, we will incorporate the Human/Chimp metaphor expounded by Professor Steve Peters, consultant psychiatrist to the successful UK Olympic Cycling team and author of ‘The Chimp Paradox’ (Peters, 2012).

In this model, the thalamus as Cook passes the *mélange* of subconscious soup in two directions – via what van der Kolk terms the ‘*Low Road*’ to the *Chimp* (amygdala), who sits directly beside the *Cook*. And via the ‘*High Road*’ through a chain of sous-chefs and waiters to the *Human* (neocortex).

#### THE LOW ROAD



#### THE HIGH ROAD



Each of these parts acts differently. As Peters says, the Chimp and the Human have

*“...independent personalities with different agendas, ways of thinking and modes of operating. Effectively, there are two beings in your head! It is important to grasp that only one of these beings is you, the Human.”*

Thus, the Chimp acts swiftly and powerfully and has little by way of social conditioning. If it needs to throw the soup at the wall, it will do – and it will have done so *long before the Human is even aware that soup is on the menu.*

This is the crux of the argument of this paper and bears deeper exploration.

## ANATOMY OF A CHIMP

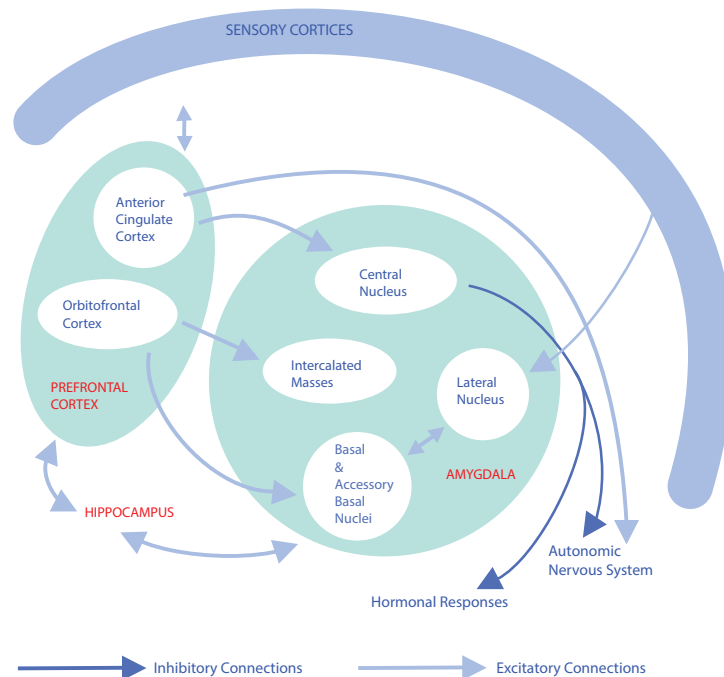
### The Amygdala: Inputs, Outputs and Actions

*You are not responsible for the nature of your Chimp, but you are responsible for managing it.*

Steve Peters. “The Chimp Paradox”

Named after the Greek word for the almond it vaguely resembles, the amygdala is a small cluster of nuclei which grow out of the olfactory portions of the brain (the cortico-medial areas) and the neocortex (the baso-lateral region,) (LeDoux, 2007).

For its small size, it packs a massive punch, playing, “a disproportionately major role in a large and growing list of important emotional and social functions, as well as emotion–cognition interactions.” (Haman, 2011) This is the region in which *novel stimuli* are evaluated and *emotions, emotional behaviour, emotional memory and motivations are generated and/or modulated* (LeDoux, 2007, 2012). (my emphasis)



## INPUTS

Breaking this down, we have ‘novel stimuli’ feeding into the amygdala, not only from the thalamus, but also directly from the five external senses and from internal visceral afferents - mostly the gut. There are also bi-directional links from areas of the neocortex associated with complex functions such as language processing and the sense of Self: the larger, constructed self that each of us takes to be our identity.

Thus, the thalamic Cook is not only gathering ingredients from the surrounding countryside, some of them are cooked up in the kitchen and their ingredients are sourced from our family, colleagues, bosses and enemies – and the various sub-parts of our Selves.

This is a central point. In the days of our primate ancestors, threats were existential: fire, thirst, starvation, cold, falling trees, and predators, human and otherwise. Added to these, social threats were evaluated on the same scale as the existential threats: upsetting the alpha male in a gorilla group may be just as dangerous to life and limb as failing to notice the tiger in the undergrowth.

In the western world, particularly those nations that still have a functioning social safety net, the immediate existential threats are less pertinent, but have been substituted by a complex spectrum of social threats, ranging from date rape to social exclusion, to the threat of losing our jobs, our homes, our children, our sanity, our safety...our status as members of a nation at peace with itself and the world.

Added to these are the internal threats, the self-judgments that bedevil our modern

society, many of which have roots in our childhoods, and which can destroy us as effectively as the external and existential threats (van der Kolk, 2014).

Our sense of Self may be fragile, but it is what makes each of us different even from our twin, our triplet, our octuplet or (almost certainly) our clone. It is a product of our genes, our epigenetic gene expression, the environments of our embryonic and foetal life, and every moment of our lived existence in a set of systems that express the very definition of complexity and, because it is *not the job of the amygdala to evaluate the origin of the apparent threat*, danger may be perceived to emanate as much from a political speech, statement or Facebook meme as from a tiger in the undergrowth.

This last cannot be stressed too highly. Our amygdalae are equal opportunities threat assessors: they do not discriminate between mortal threats to the body and threats to our sense of Self which may be wholly constructed and have no bearing in the outer world, but which are protected every bit as savagely.

This explains why the Right's targeting of our fears is so effective. The 'immigrants' who are coming to 'steal our jobs' or 'swamping our NHS' or being terrorists: each of these threats, while having no basis in objective reality, is processed as if it were a snake in the grass. The intellectual explanations are layered on afterwards, as shall be shown in the discussion on post-hoc reasoning.

Clearly, we are capable of stepping beyond these limitations. Finding a place whereby all parts of our selves have voice, agency and mutual respect, and we can find compassion for our fellow travellers, is arguably the role, goal and lesson of humanity. But there is no doubt that un-reflexive reactions to perceived threats-to-self spark everything from domestic arguments to murder to global war. The un-restrained Chimp of the amygdala lives at the heart of this. We need therefore to examine its actions, and will do so below.

The final consideration when examining the amygdala's core role in defense, is that it extends beyond the Self to the Tribe, however that may be defined. We are, at least in part, tribal beings who thrive in groups and for whom social connection gives meaning to our lives.

Continuing the primate metaphor, Jonathan Haidt (2012) maintains that humanity is ninety per cent Chimp and ten percent Bee, so that while we are 'selfish hypocrites who are so skilled at putting on a show of virtue that we fool even ourselves,' we are also designed to express our bee-like nature and co-operate in our tribal groups. We have the ability, "under special circumstances, to...become like cells in a larger body...working for the good of the group. *These experiences are often the most cherished of our lives.*" (my emphasis)



A vast body of recent literature records the primacy of social connection on wellbeing (see e.g. Miller: 2014; Wrzus et al, 2013) and, in our quest for wholeness we are encouraged to expand our social networks. There are clear limitations, however.

As Joshua Greene (2013) states,

*“Biologically speaking, humans were designed for cooperation, but only with some people. Our moral brains evolved for cooperation **within** groups... [they] did not evolve for cooperation **between** groups (at least, not all groups).”*

Herein lies one of the central challenges for those of us who care about a sustainable future. Political tribalism is legendary, and personal experience suggests the inability of many left/progressive activists to step beyond tribal boundaries is one reason the Progressive Alliance movement in the UK failed to gain more ground (or win more seats) during the election of June 2017.

In the wider population, the combined tribalisms of ethnicity, race, sexuality and religion give power to the populist Right and fuel the terror attacks that trigger massed amygdaloid responses.

To conceive of change, we must either dismantle our tribal boundaries, or step beyond them. The problem is that the binding glue which holds any group together is exactly that which splits it from its nearest neighbours – and, by and large, *we enjoy our differences*. Our partisan politics are addictive (see below) presumably because there is an evolutionary adaptive advantage to being strongly tribal.

Greene’s answer is that we need a ‘metamortality’ which will bind differing groups together in one giant alliance in the way that our ordinary morality binds individuals into groups. Finding the language of that metamortality is one challenge of future political movements as we strive to bring about a paradigm shift in human awareness.

In the meantime, if our capacity for meta-mortality hinges on our ability to ‘manage our Chimps’, then we need to understand what the Chimp does with the soup that is fed to it. We will examine first, the output afferents – the emotions generated by the amygdala - and then the actions that arise from these.

## OUTPUTS

In simplistic terms, we can say that the Chimp takes in data, and outputs feeling. The exact mechanism by which feeling is generated remains a source of study and dispute, but the well-supported theory of ‘discrete basic emotions,’ (Vytal and Hamann, 2010)

suggests that we are each capable of expressing a limited palette of basic feelings: Fear, Disgust, Anger, Sadness and Happiness, which have individual and separate neuro-physiological characteristics. All are modulated by the amygdala.

They are not relayed equally, however. On receipt of any input, whether from the external or internal environments, the earliest, fastest and strongest responses are *fear* and *disgust* (Lindquist al, 2012).

In evolutionary terms, it is easy to understand why these two might be prioritized. Rage might be expected to be high on the list of early triggers but anger is complex and there is an argument that it is, in fact, a range of separate emotions, each of which behaves slightly differently and many of which are grounded in fear (Ekman and Cordaro, 2011).

For our purposes, under normal political circumstances, it is clear that fear and disgust rank high in the list of emotions that sway voters and Tristan Harris is clear that the engineers vying for our attention have long since learned that outrage (a particular mix of disgusted delight, or delighted disgust) is the key (Harris, 2017, lic cit).

In the political field, it has been shown that highly partisan US Republican supporters, (whose concepts of fear and disgust, we might assume, are stimulated by a diet of xenophobia, homophobia, misogyny and conspiracy theories on talk radio, cable news and Breitbart blogs), have a larger right amygdala than their progressive peers, suggesting a chronic activation of these traits (Kanai et al 2011). In the same study, progressive partisans, by contrast, were found to have a larger volume of grey matter in the anterior cingulate cortex.

Given the relentless diet of anti-immigration threat-based narratives spread across the UK's legacy media for the past decade, it is not hard to imagine a similar result obtaining here. If this results in a widespread increase in amygdalar size and sensitivity across the population, then it makes sense of voting patterns whereby different demographics (the working class elderly, ethnic minorities) routinely vote against what would seem to be their personal interests.

In the meantime, if we take this as broadly likely, the question becomes: how does fear/disgust manifest in the political arena?

## ACTIONS

As we have seen, the actions sparked by the amygdala are not necessarily proportionate, but are what it deems to be necessary. Steve Peters' admonition that we have a responsibility to manage our Chimps is easier said than done when lived experience shows us that much of society does a poor job of managing unconscious reactions to events: examination of a political Tweet thread, or a Facebook timeline will find ample

evidence of fear, disgust and outrage.

In most circumstances, however, the actions of the amygdala in preserving the Self from perceived threat are more subtle and often come in the form of denial. This manifests in a situation in which a statement, event or 'fact' is either not seen, or ignored, and the neocortex then layers on what Weston (2007) terms 'Psychological defence' (aka 'motivated reasoning' Leviton, 2007, and 'post-hoc reasoning', Haidt, 2012) as a means of avoiding the pain of recognition.

If, for instance someone tells us that global warming is a reality when our internal construct requires us to believe that it isn't...we will simply fail to see the data/sentence/image that contravenes our world view. On the converse side, if we hold a particular belief and wish it to be reinforced, we require remarkably little data – sometimes none at all - to confirm our existing conclusions. (see e.g. Frey and Stahlberg, 1986).

Thus we have our confirmation biases, and we enjoy them – more than this, we may actually be addicted to them. In an elegant series of functional MRI studies, Westen et al. (2006) gave politically charged statements to thirty committed partisans during the US Presidential election of 2004. They discovered that, when presented with conflicting evidence regarding the basic integrity or coherence of their preferred candidate, individuals of the right and the left,

- made decisions with their limbic systems, not their frontal cortices
- felt innate, deep (threatening) discomfort when faced with conflicts to their views
- when their views were ultimately vindicated experienced dopamine release at centers associated with addiction *of the same magnitude as the dopamine hit experienced by cocaine and heroine addicts.*

These studies would bear repeating in the UK, where the partisan nature of politics is not yet quite so toxic, but there is nothing in the neuropsychology to suggest the results would be different, only that they might not be quite so pronounced.

Thus far, we can say that

- political partisanship is an integral part of a complex, constructed sense of Self which the amygdala will strive to protect against the 'threat' of assault.
- partisan belief systems are resistant to change
- *political partisanship is addictive, even while it may also be unconscious*

This last point makes a difference to how we might approach the crafting of political messages. Weaning people from addiction is hard, particularly if they are not on board with the weaning process. Weaning people from their addiction when they are (for instance) journalists and broadcasters of many years' standing whose 'rational' internal

narrative tells them that they are offering an entirely balanced view, will be an uphill struggle. *Changing the focus* of their addiction may be easier, but it will have to contend with the phenomenon of psychological defense to achieve anything useful. In this regard, it would be useful also to make use of positive emotions. We will examine these next.

## THE ROLE OF THE POSITIVE

The amygdala is not limited only to ‘negative affects’: with appropriate inputs, it engenders positivity as well: happiness is one of the core affective outputs, manifesting as optimism, compassion, empathy and the ability to find joy in the small things during the days (Fredrickson, 2013).

In terms of ‘positive trait affects’, it has been shown that individuals with ‘trait happiness’, display a balanced amygdalar response to both positive and negative stimuli. (Cunningham and Kirkland, 2014) suggesting that the ability to see the glass half full does not in any way impair our ability to see the tiger in the undergrowth.

Crucially, however, recent studies have also shown that when positive and negative stimuli exist side by side, *negative stimuli carry greater weight* (Stillman et al, 2015). This is of enormous relevance when striving to reach the amygdalae of our voters: if one party has a positive message of hope, empathy, compassion, fairness and optimism, and the opposing party is hammering the supposed terrors of immigration, terrorism and the fear of destitution in a second banking crash, the negative stimuli will hit our brainstems harder, faster and for longer.

Nonetheless, positive emotions play an important role in our vision for a transition to sustainability – they are, potentially, our key to transformation. In her 2013 work, ‘Positivity’, Barbara Fredrickson maintains that there is an evolutionary benefit to the resilience offered by increasing the emotions associated with wellbeing: joy, gratitude, awe, delight, pride, and love of self, other and surroundings: those features grouped in neurophysiological studies under the umbrella of ‘trait happiness’. She also suggests that there is a cascade effect by which (up to certain maxima), positive affects will be self-generating: a small amount of happiness today allows for a greater amount tomorrow.

If she is right, these are not merely short-term ‘rescue’ survival adaptations, but instead allow the possibility of discovery, of play, of imagining a future that is better and brighter: all features that are necessary to the creation of a world beyond the current one, and essential if political discourse is to be lifted up from the levels of toxic assault common in our modern campaigns. The party that can both assuage fears *and* draw a brighter future will trigger more amygdalar responses than the party that succeeds in only one of these.

We can say, therefore, that in general terms, those emotions which ensure survival are induced fastest, strongest and can be triggered most readily, although positive traits are open to conscious expansion and with repeated practice (conscious or otherwise), become faster and stronger. (see Hebbian plasticity, below)

To summarise the relevant points thus far, the role of the amygdala is to:

- evaluate the nature of a novel stimulus (regardless of origin), particularly for its potential threat
- if threatened, to generate an appropriate *level* of fear/disgust response
- set in motion *actions* appropriate to the level of fear/disgust as fast as possible. These actions may be physical (run from the tiger), or internal/emotional/rational (deny the rising global carbon dioxide levels, or the reality of a totalitarian-Libertarian takeover of US government institutions).

Note that when responding to a perceived threat, the ‘appropriate level’ of fear response is defined by the Chimp of the amygdala as that which is necessary to ensure safety. The response may be neither socially acceptable, nor proportionate: these two features are evaluated later by the neocortex and are dictated by social norms. The first response is about raw survival: the amygdaloid circuits are designed for specificity and speed.

To enable them to function, they are protected and privileged. In times of danger, other, slower, less life preserving circuits are slowed or closed and those devoted to survival are heightened and, by virtue (probably) of less clutter, and the physiology of sympathetic nervous arousal, become faster (Tooby et al, 2006). In its simplest terms, this is the universally known ‘flight or fight’ response – and it is *fast*.

When in danger, speed and power of response are the over-riding priority. This gives rise to the real world implication of *differential transit times* which we examine next.

## THE SUPERCHIMP VS THE MERE MORTAL

### A Theory of Differential Transit Times

In evolutionary terms, the individual who cannot respond to the presence of a snake faster than the snake can respond to the presence of the individual is unlikely to survive long enough to reproduce. By all neurophysiological standards, van der Kolk’s ‘Low Road’ therefore, is incredibly fast. Waturu et al (2011) noted speeds as fast as **20ms** from

perception of the fear-inducing stimulus to first measurable response compared to **100ms** response time to neutral stimuli.

By contrast, the response times for conscious thought, the ‘High Road’, by which the thalamic soup of sensory awareness is passed via the hypothalamus up to the cerebral cortex can take orders of magnitude longer. The frontal cortex is a late evolutionary adaption that allows us to function in complex societies. There is no survival benefit in refining for speed. Here, the priorities are accuracy, repeatability, access to memory and to the constructions of selfhood. The normal time lag for functions such as word encoding is **600ms**. (Indefrey, 2004.). Thus, when faced with a threatening stimulus, even the average individual has made a decision *and acted on it* in **one thirtieth** of the time it takes to become aware at a conscious level that the threat exists. In our lived experience, we have snatched our hand from the hot plate before we have registered that the heat is switched on.

Expressed in comparable orders of magnitude, this is the difference between an hour and a day, or a day and a month and it means that the Chimp has hurled the soup at the wall long before the Human even knows it’s on the menu. If the Chimp practices soup-hurling often enough, moreover, the circuits that facilitate it become stronger and faster. This is the phenomenon of Hebb’s plasticity, explored below.

## “WHAT FIRES TOGETHER WIRES TOGETHER”

### Hebb’s Postulate

Hebb’s postulate, aka Hebbian plasticity, was first proposed in 1949 by the Canadian physiologist Donald Hebb. Laid out in full, his thesis states:

*“Let us assume that the persistence or repetition of a reverberatory activity (or “trace”) tends to induce lasting cellular changes that add to its stability.... When an axon of cell A is near enough to excite a cell B, and repeatedly or persistently takes part in firing it, some growth process or metabolic change takes place in one or both cells such that A’s efficiency, as one of the cells firing B, is increased.”*

(Hebb 1949)

Given the (lack of) facilities available to Hebb at the time, this is a visionary concept that has stood the myriad tests of neurophysiologists for the past seven decades. (For a review, see Martens et al, 2015) Long and short term memory are a result of Hebbian actions, both at a conscious and an unconscious level, as are such diverse functions as language learning, facial recognition and the tendency to take sides in a moral argument. The entire principle of metaphor, frames and creation of narrative, explored below, hinges on Hebbian plasticity coupled with our tendency to group moral affects together.

In terms of the amygdala and its affective responses, the implications of Hebb's postulate are as follows:

- repetition of an experience induces a faster and stronger response over time as additional neurons are recruited into a pathway, and their interconnections increased (LeDoux 2012).

As a result of this:

- recognition of something as 'dangerous' occurs more swiftly after the first response but *this can be reinforced or suppressed by subsequent conditioning* (see below).

That is to say:

- conditioned responses to adverse stimuli can be reframed using basic Skinnerian techniques. Not all responses are permanent. Change is possible and is, to some extent, under conscious control. The leopard can choose to change its spots.

This brings us to the final stake in our tetralogy of physiology: Skinner's theories of classical and operant conditioning.

## IF I RING A BELL, WILL YOU DRIBBLE?

### Classical and operant conditioning

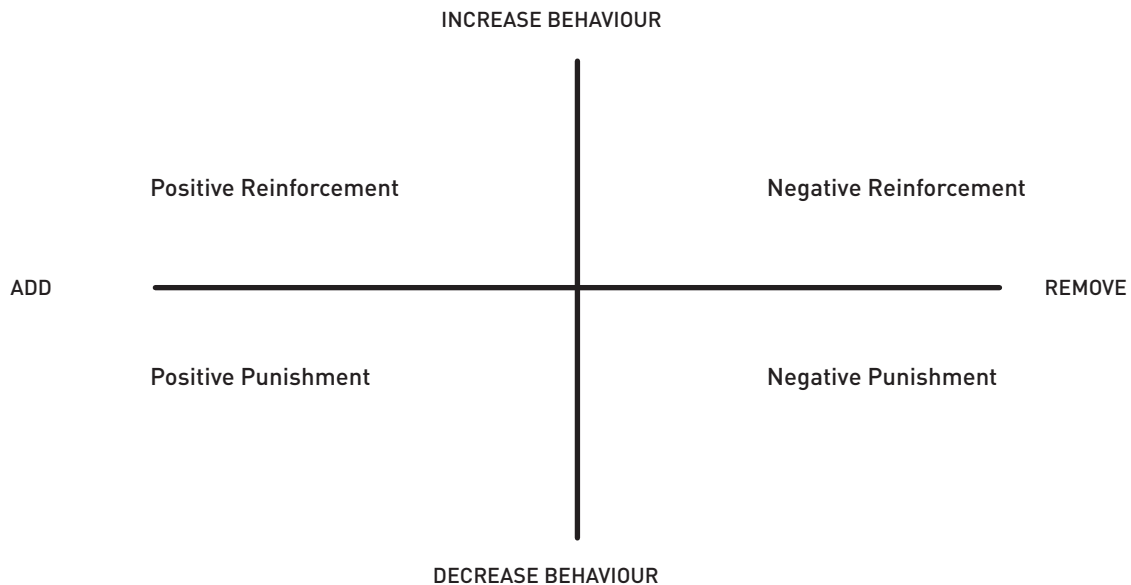
Neurophysiologic responses to stimuli can be divided as follows:

- Unconditioned
- Conditioned
  - Classical
  - Operant

**Unconditioned responses** are hard-wired into the amygdala at phylogenetically ancient levels and often reflect core survival processes. The flinch response to heat, electric shock, trauma; the sight of a snake/spider/tiger/shark; salivation at the scent of food are all unconditioned responses mediated by the amygdala for primary preservation of life or self. By definition, they are innate, fast, repeatable and reinforceable (LeDoux 2012)

**Conditioned responses** were first detailed by Pavlov (1929) who famously paired the ring of a bell with the presentation of food to dogs and was able rapidly to link the bell to the food such that the dogs would salivate in the presence of the sound, but the absence of food. The link becomes hard wired remarkably fast – ten bell-food pairings can be enough under the right circumstances. In broader terms, we can say that by repetition and reinforcement a neutral cue can become indivisibly linked with an innate, unconditioned stimulus: this is *CLASSICAL CONDITIONING*.

*OPERANT CONDITIONING* takes this one step further with Skinner’s quadrant of reinforcement (Skinner 1953). in which a neutral cue’s link to a stimulus is either *reinforced*, in which case the response becomes stronger and faster and lasts longer, or it is *inhibited*, in which case it will ultimately extinguish.



*Reinforcement*, according to Skinner, is provided by either the application of something desired (positive reinforcement +R) or the removal of something undesired (negative reinforcement –R).

*Inhibition* occurs by the application of something undesired (positive punishment, +P) or the removal of something desired. (negative punishment -P).



It is important to note that the ‘positive’ or ‘negative’ detail is linked to the application or removal of the agent, not the subjective assessment of its desirability, and also that if reinforcement is random in either size or frequency, the behaviour will be enhanced to a greater extent than if reinforcement occurs regularly on a fixed schedule. This is why gambling, which pays out random amounts on a random schedule, is so addictive; why computer games designers pay psychologists to ensure that their games trigger similar centers (Seidman, 2017); and why the ‘guys on the other side of the screen’ of social media applications seek the holy grail of random dopamine triggers to keep us going back for one last look.

Operant conditioning has applications in everything from the training of Olympic cyclists to police sniffer dogs to child gymnasts, to lab rats...to voters. If a previously neutral word or phrase – say ‘strong and stable’ – becomes paired with an emotive image or concept, (for instance, that of a Prime Minister taking charge after a terrorist attack), then with repetition, the cue phrase *takes on the same emotional affects as the original image or concept*. This is how frames are built and narratives woven.

Conversely, if something ‘poisons’ the cue, such that the original link is tainted, even by something as relatively trivial as robotic overuse, or the cognitive dissonance of obvious weakness displayed by the purveyor of the phrase, then the cue may come to be a source of ridicule that is more damaging than productive. An example of this may be arising in the word ‘Austerity’. Until recently, it was associated with strict-father frames (see below) suggesting a necessary, but ultimately useful, harshness, administered by a caring, and competent guardian. The catastrophic fire at Grenfell towers gave rise to the new image below, which may, with repeated use, be sufficient to trigger an entirely novel set of frames such that the word ‘Austerity’ takes on new connotations, more associated with deliberate underfunding by a moneyed class, of an impoverished underclass. Time will tell.



To summarise:

- Our brains are hard-wired for survival, with those circuits that respond to danger designed for the fastest response.
- The limbic system, and in particular the amygdala, mediate the response in a way that bypasses our rational minds and is not subject to conscious consideration and the resulting post-hoc reasoning until long after the initial impact has been felt and actions taken
- The perceived threat may be to the physical body, the constructed Self, or the Tribe: all are evaluated equally and the internal circuits respond with equal alacrity and power
- Fear and disgust are privileged over all other emotions, particularly ‘happiness’
- Repetition of responses causes those responses to become faster, stronger and last longer.
- If previously neutral images or phrases become linked to emotional cues, then these images or phrases take on the emotional baggage of the original cue however seemingly innocuous they may be to an outsider. (A cue is an event that triggers a response).

We have established that it is the role of the limbic system to evaluate an incoming threat and respond accordingly. A great many modern cultural threats are mediated by spoken or written language, either in person, in the legacy media, or, increasingly, in social media echo chambers that seem almost exquisitely designed to amplify amygdaloid chaos.

In order to understand these, we must study the routes by which linguistic and cultural threat is mediated. Section IV, therefore, explores the mechanisms of language, what it is, how it works, and how it is harnessed to political activism.

## SECTION IV

### MIGHTIER THAN THE SWORD

#### The Power of Language

*“I know you believe you understand what you thought I said. But I’m not sure you realize that what you heard is not what I meant.”*

Robert J McCloskey (State Department Spokesperson 1964 – 1973) (Attrib).

I speak. You listen. Alterations in the flow of air through my larynx and oropharynx create a pattern of sound waves that reaches your cochlea and stimulates the auditory areas of your brain.

So far, so simple. This applies whether you are a sheep, a dog or a shepherd: in any (non-deaf) land-based vertebrate organism, physical processes set up waveforms which become action potentials firing along and between neurons which are subsequently perceived as sound.

And yet sound is not language. Jeremy Corbyn quoting Shelley at Glastonbury does not evoke the same response as Theresa May outlining her deal with the DUP on the steps of Downing Street. Similarly, the black marks on a white background may as easily be a Trump tweet as Shakespeare. Both are nothing more than a series of action potentials until they reach our neo-cortex and are processed.

The processing of language and its subsequent comprehension is an area of intense and complex study currently undergoing exponential growth as the relatively novel technologies of PET (Positron Emission Tomography) and fMRI (functional Magnetic Resonance Imaging) scans permit examination of the brain-in-action. These, coupled with attempts to produce artificial intelligence that can parse language, have led to models of linguistics and semiotics that are advancing year on year and from which the single obvious takeaway is that language processing is enormously complicated, that it probably arises both in parallel and in sequence, and that there is a vast array of modulating factors (Friederici, 2011).

George Lakoff and his colleagues at the Institute for Cognitive Brain Studies (in collaboration with the International Computer Science Institute) have evolved NTTL, the neural theory of thought and language (Lakoff, 2012). Their research shows that, in the comprehension of language, neurons are grouped in *nodes* which are linked together to form coherent *circuits* which display Hebbian plasticity (that is, increased use increases connectivity, conversely, lack of use causes its decline).

Circuits are subject to cascading action (DeHaene, 2009) in which a single neuronal action potential initiates a handful of others, each of which in turn initiates further handfuls in an exponential spread of activity. Thus a relatively minor cue may trigger a response that has ramifications beyond all proportion to its origin. This cascading action may also be responsible for the phenomenon in which *imagining* an object or an action activates *the same circuitry as actually seeing or doing it*. (Farah, 1988). This has relevance in the understanding of metaphor, where the emotional/emodied frame of an object or action triggers the same neural pathways as the object or action itself.

This is easy to imagine when it comes to playing/imagining playing the piano. It's harder to conceive in conceptual terms, but the implication is that if the odour of dog faeces triggers a disgust response in the majority of the population (which it does), then a campaign which successfully links the *imagined stench of dog faeces* to an opposing candidate or message will have a far more powerful inhibitory effect on that candidate's/message's popularity than simply arguing logically against it. (note: I'm not advocating this, simply acknowledging that it would work. Almost as powerful would be the image of, say, Theresa May holding Donald Trump's hand and both trailing mud and filth across a damaged Union Jack).

In terms of language propagation, NTTL assumes that thought, ideas and language spread along the neural cascades down 'best fit' paths which meet the least resistance, or require the least energy use in any given situation. Notably, Lakoff (2012) states, 'What is *activated nearby also influences overall synaptic strengths*, and thus also "guides" spreading activation'. This becomes crucial in the concept of activating frames, dealt with below.

Of equal importance is the work of Robert Zajonc, (1980) who neatly demonstrated that repeated exposure even to meaningless pictograms, makes them become more 'popular'. Repetition works. Familiarity does not, in the case of words and images, necessarily breed contempt. This supports the theory that conceptual and linguistic learning is mediated by Hebbian plasticity such that circuits which fire regularly will be physically enhanced, increasing the numbers of connections and thus the speed of connectivity. Lakoff's group refers to the resulting effect as Spike Time Dependent

Plasticity (STDP) in which those circuits which fire first and fastest are both enhanced *and recruit neighbouring circuits*, a feature termed, 'Recruitment Learning' (Song et al. 2000).

The impact of this is that we have a tendency to become stuck in mental ruts in which we obsess about our fear of the future or bitterness of the past, rehearsing endlessly familiar thoughts and triggering endlessly familiar feelings. On a personal level, our conversations become a repeating cycle of, '...and another thing!' as we entrench in our rehearsed positions.

In political terms, the implication of STDP is that similar *groups of concepts* have a tendency to be become embedded, strengthened, and speeded up until they coalesce into a unified conceptual block: Corbyn is compassionate; May is robotic – both of these arose as a result of a steady drip feed of instances which coalesced into coherent concepts.

Thus, as political parties and movements create narratives, this coalescence of ideas is the means by which metaphors, deliberate or accidental, aggregate together to form frames. Each of these - metaphors and frames - is key to the development of relevant narratives and will be investigated in order.

## IT'S LIKE THIS

### Metaphors as linguistic stepping stones

*"Our words are bound by an invisible grammar that is embedded in the brain."*

Jonah Lehrer (from: Proust was a Neuroscientist)

It is nearly forty years since Lakoff and Johnson wrote their seminal work 'Metaphors we Live by' (1980), which detailed their Conceptual Metaphor Theory (CMT) and gave rise to the new science of cognitive linguistics. While not without its critics (McGlone, 2007, 2011), CMT has been broadly accepted within the linguistic corpus.

Their premise centres around the PRIMARY METAPHOR, a language unit which evokes concepts so universal that they are understood without need for further explanation.

Primary metaphors are those which:

- Do not decompose (i.e. cannot be broken down into smaller metaphorical units)
- Arise in pre-lingual children
- Tend to be cross cultural

Lakoff does not add, but in my view should, that these:

- Often display an embodied component (see below)
- Exist in all major language groups (Yu, 2003)
- Are often so deeply embedded in the language of a culture as to pass unnoticed.

Examples of Primary Metaphors include:

- Affection is Warmth, while Rejection is Cold (but Anger is Hot)
- Important (i.e. academically/legally/emotionally Valuable) things are Heavy while Trivial things are Light
- Political opposition is War
- Clean is Good (and Godly) while filth is Evil
- Upwards is Good, desirable, fun while Downwards is Bad, depressing and to be avoided
- Understanding is Seeing and Light while Confusion is Blindness and Dark
- Relationship is a Journey

Primary metaphors can give rise to creative extensions which arise from the base metaphor. Thus, 'She walked naked and unarmed into the Brexit conference chamber,' relies on the primary conceptual metaphor of Political Opposition as War, which is sufficiently broadly understood that it does not need to be restated for the secondary metaphor to make sense.

A great deal of political messaging relies on primary metaphors and the frames that arise from them.

The *conceptual* metaphor, for which the theory is named, exists beyond language: it is a primary metaphor that becomes so deeply embodied (or arises from its embodied component) that language is no longer necessary. The corollary to this is that a conceptual metaphor can be 'primed' by physical cues.

So, for instance, individuals given a hot beverage to hold are more likely to consider a hypothetical stranger as 'warm and friendly' than those holding mug of cold tea. (Williams and Bargh, 2008).

Conversely, subjects asked to recall a time when they were greeted warmly, are more likely to judge their ambient surroundings as warmer than those who have been invited to remember a time when they were rejected (Zhong and Leonardelli, 2008).

Thus the 'Kindness is Warmth' primary metaphor has become embodied such that the experience of warmth and the experience of kindness become interchangeable and interlinked.

This applies beyond merely temperature and the kindness of strangers: individuals who are told a book is of academic worth are more likely to just it as heavier than those who are told it is trivial and those who are asked to think about morally ‘unclean’ concepts such as adultery, are more likely to accept the offer of an antiseptic hand-wipe afterwards, than those who have entertained ‘purer’ thoughts. (Shong and Liljenquist, 2006; Jostmann et al, 2009, respectively).

Finally, subjects who filled in a questionnaire while the smell of flatulence was in the air made harsher judgements of hypothetical situations than those for whom there was no ‘contamination’ of the environment (Schnall et al, 2008).

In this last study, the conclusion of the team was that *disgust increased the severity of moral judgements*, and that *disgust had a greater effect than sadness*. From the earlier work cited, it is likely that disgust would have a greater effect than any other primary afferent except fear, but this has not yet been tested.

The key take-away from this is that our responses to the embodied component (warmth, heaviness, smell) are often entirely unconscious. After Zajonc (1980), this is termed the **affective primacy effect**.

To summarise:

- metaphors are not merely linguistic, but have an embodied (physical) component which may be triggered deliberately or - more often in the realm of political discourse - by happenstance
- these embodied responses can have a profound impact on our subsequent behaviour

If we examine this, three obvious questions arise:

- what kinds of inputs can cause this affective priming effect?
- how does it work? (where is it mediated in the brain?)
- how long does it last?

The answers to the first and third of these are under current investigation at <http://www.ProjectImplicit.org> (still running on line as of mid-August 2017) developed by Greenwald and colleagues to test their ‘Implicit Association Test’ (Greenwald et al, 2003). In these tests, words are paired either with other words or symbols and an action is required of the test subject, usually the pressing of a key. In cases where there is a negative primary affect (disgust or dislike) the key takes measurably longer to press.

To date, societally relevant negative primary affects have been shown for:

- skin colour/race/ethnicity
- gender
- political affiliation
- body weight
- age

That is to say, that even amongst those who feel themselves to be ‘colour blind’ to race and gender, unaffected by professed political stance and equally accepting of all ages, weights and ethnicities, *judgements are being made*.

We make these judgements in less than 100ms, supporting the obvious inference that this is primarily an amygdalar response (Ballew and Todorov, 2007) while Knutson et al (2006) in a series of fMRI studies found that the amygdala and fusiform gyrus were activated, and that amygdalar activation was directly associated with the strength of emotion evoked.

The real-world impact of this is that however much we want to think of ourselves as not-racist, not-ageist, not-sexist, these biases exist. In our approach to political narratives, we must be aware of them, even if only to break them.

Further, we must know that primary and conceptual metaphors are in constant use in political framing and we need to understand their value and their potential pitfalls.

We do not yet know how long the priming effect lasts. If a political party successfully linked the leader of the opposing party to a sense of cold and a feeling of disgust, if s/he were labelled ‘lightweight’ and it stuck - how long would this taint the minds of voters?

Sadly, this has not yet been established, particularly if we are moving to real world examples where anything of note is likely to be recycled in both legacy and social media and competing frames may dull any but the largest responses. Work with Google to establish the responses to world events may provide useful data and this work needs urgently to be done (See Seth Stephens-Davidowitz, v.i.).

What we can say is that, as with any other language, metaphor processing exhibits Hebbian plasticity so that ‘what fires together wires together’ and the function of local cascades means that operant conditioning applies: with repetition, familiar metaphors have the potential to activate entire frames.

Next, therefore, we examine the concept of frames and framing.



# FRAMES

## Herding the metaphors together

*“We can have everything we want, as long as what we want is a life spent searching for exhausting work that doesn’t pay enough, shopping for things we don’t need and sticking to a set of social and sexual rules that turn out, once you plough through the layers of trash and adverts, to be as rigid as ever.”*

(Penny, 2014)

Framing theory was first outlined by Bateson (1955) who proposed that no statement has any particular meaning, but gathers it from the environment, drawing significance from “processes of interaction, interpretation and contextualization” which exist as ‘social frameworks’ offering relevance and meaning in the context of existing belief systems.

In other words, our complex, ever-changing environments take the primary and embodied metaphors that fill the world around us (Money is dangerous: avoid it. Thin people get better jobs. Women are inherently weaker than men. Tories can be trusted to take care of the economy.), and weave them into the frames that shape our lives and most of the time we never question them.

Whether we like it or not, frames define our sense of Self, which, as we have established, is fiercely defended by the amygdala. Our inner judgements are predicated upon the frames fed to us by society from infancy of what it is to be a perfect (or even adequate) daughter/son, sister/brother, woman/ man, wife/husband/partner, worker/ creator/home builder. These cultural frames tell us what dimensions our bodies should be, how we should style our hair, what we should eat, where and how we should live, what books or blogs we should read, what television we should watch, what opinions we should to hold - and how we should vote.

But frames do not exist in isolation, and while they may compete, they do so incompletely. A significant adjunct to this theory is the fact that “*during any one moment of activity an individual is likely to apply several frameworks.*” (Goffman,1974).

This becomes relevant when we investigate political frames. As Lakoff notes (2014), within any general population, some will cleave to reactionary/right wing frames, others will hold to exclusively to progressive/left wing views, but the majority in the center *will hold both competing frames simultaneously*. These will obey all the laws of Hebbian

plasticity and metaphor cascading, such that a single trigger may activate the entire frame and repetition will strengthen it.

Central to political communication, therefore, is a clear and deliberate use of metaphors/triggers which activate the preferred political/conceptual frame, but equally vital is making sure *one never activates the opposition's preferred frames*. As Lakoff notes in the title of his book, those exhorting others 'not to think of an elephant' are doomed to failure.

Thus, if my frames and your frames compete, and I wish to win, *I cannot do so by repeating your frames*, even to dismiss them. Hillary Clinton did not enhance her own frames when she explained to her audiences why a wall could not possibly keep out Mexicans, and that only she could truly 'Make America Great Again'. She is not the current President of the United States.

Similarly if our opponent has branded our party leader a terrorist sympathizer, simply stating 'our leader is not, never has been and never will be, a terrorist sympathizer,' is not only a waste of breath, it *actively helps the other side*. Whatever the truth of the statement, the words, 'terrorist sympathiser' have already activated the entire 'fear of terrorism/craving for safety' frame at the level of the brainstem in ways that are not susceptible to immediate change.

This concept is central to the thesis of this paper, repeated for clarity:

- Elections are won or lost in the amygdala
- The amygdala responds to a palette of frames which are readily triggered by conditioned cues
- It matters that we never, *under any circumstances*, advance the frames of the opposition verbally, linguistically – or *visually*.

So how are frames created and how might they be transformed?

In general terms, as we have said, an individual's interpretation of and understanding of the world in which she lives is a product of her environment, which means, increasingly, of the news and media she and her peers consume. These offer,

*"principles of selection, emphasis and presentation, composed of little tacit theories about **what exists, what happens and what matters.**"*

(Gitlin, 1980, quoted in Vliegenthart and van Zoonen, 2011).

Thus we are constantly bombarded by images and ideas which will impact on our existing frames and either strengthen or weaken them. This micro-adjustment is the fare of PR, marketing and politics and leaving aside the difficulty of establishing objective facts in

a world of fake news, a series of elegant studies has demonstrated that an individual's decisions can easily be swayed simply by altering the language in which a problem is framed. For instance, in a hypothetical situation in which money or human life is at stake, the majority of respondents could be manipulated by a minor linguistic intervention to favour a certain small gain over a larger, but riskier gain. (Tversky and Kahneman, 1981).

In political terms, reviews of past events have demonstrated that a society's concept of reality is framed by the language used in the media consumed by the majority.

From US news coverage of the student unrest in the 60's (Gitlin, 1980) to the differing responses in social media and legacy news outlets, to the actions of Edward Snowden (Qin, 2015), to the choice of language by the UK rightwing press when describing police clashes with a student demonstration (Hart, 2016), the language chosen is designed to create an impact with the target audience and it largely succeeds.

In the real world, the legacy media are owned by those who believe in neoliberal free market capitalism, and their framing of politics and events, has become society's norm.

But this is not the only reason why the right has long been considered to have a natural advantage. The relative frames of left/progressive and right/conservative are believed to confer inherent advantages on the right (Lakoff, 2014, Haidt, 2012, Westen, 2007). To establish a viable progressive narrative, therefore, we need to examine specific political frames: what they are, how they work and how they might be shifted.

## LEANING THE ELEPHANT

### Frames of Left and Right

Three broad sets of frames that have been defined in the political sphere, those of Lakoff, Haidt and the Common Cause foundation. We will examine them in order.

#### LAKOFF: THE FAMILY MODEL: STRICT FATHER VS NURTURING CAREGIVER

George Lakoff (2004, updated 2014), proposes that all political frames can boil down to two basic, competing narratives, each of which is predicated on the view of state/government in the role of parent to the populace-family. These are:

- Strict Father
- Nurturing Parent

The *Strict Father* narrative assumes a population which believes in male, adult dominance in which:

- The world is a dangerous place, and always will be. What's 'outside' is dangerous and can only be seen off by a strong, righteous man (with his deity behind him).
- The world is competitive. This is good because strong competitors can succeed, and the weak will lose, activating a kind of social faux-Darwinism in which to be rich equates with being good and poverty is evidence of evil.
- Absolute right and absolute wrong exist.
- Children are born weak and evil. It is the role of a strict father to teach the child self-discipline by imposing physical/psychological discipline in order that the child may thrive in a difficult, competitive world full of evil and danger.

This narrative is clearly predicated on a particular Judeo-Christian world view and is, apparently widely espoused by the Christian right in the US. Certainly there is a section of the US Republican party which believes a man who has sons is more capable than one who has daughters. In an infamous op-ed published in the *National Review*, published during the 2012 Presidential election, Kevin Williamson wrote:

*“You want off-the-charts status? Check out the curriculum vitae of one Willard M. Romney: \$200 million in the bank (and a hell of a lot more if he didn’t give so much away), apex alpha executive, CEO, chairman of the board, governor, bishop, boss of everything he’s ever touched. Son of the same, father of more... [Romney] is basically a tribal chieftain. Professor Obama? Two daughters. May as well give the guy a cardigan. And fallopian tubes.”*

(Williamson, 2012)

This suggests that Lakoff is right in his strict father model, at least as far as it applies to the white US reactionary right, and that this gives rise to a widely held belief system in which weakness and poverty are conflated with evil or godlessness, in which competition is lauded and a 'winner takes all' mentality is considered not just a heaven-sent right, but a prerequisite for decent living.

This basic concept – that wealth = good and poverty = evil - underlies the worldviews of both the Leninist-Libertarians (who were largely radical atheist), and the Evangelical Right, which seems to be at least one reason why these two disparate forces have

managed to swallow their differences and join forces to such profound effect.

The countervailing frame proposed by Lakoff is the *Nurturing Parent* frame, the key points of which are:

- Gender neutrality: in the NP worldview, both parents have equal responsibility for care of the offspring
- Children are born good and if encouraged/supported, can be better
- The job of the nurturing parent is to raise their children to nurture others
- ‘Nurturance’ is empathy, responsibility for self and others, commitment to do the best for Self, Others and the planet.

Lakoff does not include in this frame, but, in my view, should, the following beliefs:

- Humanity is evolving towards a higher evolutionary state and we can help to achieve that: in fact, it is our moral duty so to do
- At this higher plane, humanity will take better care of all species, including humanity, and the planet will exist in a new balance
- Every human has the capacity to reach this new evolutionary plane. Co-operation is the key to achieving this.

This frame can be seen in the environmental movement and, to an extent, in the Bernie Sanders surge in the US and on-going Corbyn-led movement in the UK. The desire to move towards solidarity within and between communities and within and between nations has begun to shift the narrative from the ‘austerity is necessary, and within that the good people thrive while the rest are destined to live in misery’ towards something more collegiate, socially equitable and sustainable on a planetary basis, with the emphasis on decency and co-operation: ‘For the many, not the few.’ This shift is by no means complete, and may easily be snuffed out, but it is stronger than it has been for decades.

One further point from Lakoff’s frame that bears repeating is that only the extreme partisans at either end of the scale hold exclusively to one frame. Most of the electorate holds partly to the concept of self-determination and competition while simultaneously caring for family and tribe; they seek safety and security in strong government, while wanting there to be a safety net in times of hardship. We will never shift those frames, but we can slide individuals further along towards one polarity or another.

In this regard, it will be useful to break political frames down into smaller units. Helpfully, Jonathan Haidt has done exactly this.

## ONE TO THE LEFT, FOUR TO THE RIGHT. AND A SPARE

### Haidt's 'moral frames'

In their investigations of the innate frames of left and right, Jonathan Haidt's group developed the Moral Foundations Questionnaire (MFQ) based on their proposed model of five broadly agreed sets of moral intuitions (Graham et al, 2011). Adding libertarians into the mix created a sixth and it is worth at this juncture pointing out that not all libertarians are on the right: there is an increasingly libertarian left, as evidenced by the success of the Novara Media broadcasting platform which self-identifies as libertarian-left.

Divided into balanced opposites Haidt's moral pairings are:

Care vs Harm

Fairness vs Cheating

Loyalty vs Betrayal (aka Ingroup or Tribal loyalty)

Authority vs Subversion (aka Respect vs Disrespect)

Sanctity vs Degradation (by which the authors mean profanity/blasphemy/  
godlessness)

Liberty vs Oppression

Haidt's belief is that at least the first five of these have an evolutionary basis, the first in the essentials of human reproduction and nurturance of the young, and the remainder in response to the increasingly complicated needs of tribal cohesion. His further contention – echoing Lakoff – is that the left is aligned most strongly/coherently with the Care/Harm duality (we have a duty to care for the weak and avoid harm at all costs) while the right is aligned to the next four. In many ways, the ideals of fairness, loyalty, authority and sanctity can be seen as subsets of the Strict Father model, each being a requirement of a wrathful father-god.

Based on the relative poverty of the 'moral palette' of the left compared to the right, Haidt's contention is that the right has an inbuilt advantage when it comes to triggering a cascade of active right-supporting frames. In more colloquial terms, they have more triggers, they are all more easily pressed, and they tend to home in on the 'fear/disgust' buttons in the amygdala rather than the slower, less potent areas of affection and positive affect.

Until June 2017, that was a view widely held in the UK, as much as in the US, wholly supported by the narrative of the mainstream media which predicted a Tory landslide. As already discussed, the election result broke apart the narrative.

If we look at it in more details, it seemed that those below the age of fifty voted more for a left/progressive manifesto (Collier, 2017) with the younger cohorts voting in increasingly larger proportions. Britain is now split by age more than by class.

If this is the case, it suggests that both Lakoff and Haidt may have generated theories peculiar to the heavily neoliberal political battleground of the US. Certainly, Bernie Sanders' failure to win the backing of the Democratic party in spite of his widespread support in the country stands in direct contrast to Jeremy Corbyn's ability to take leadership of the Labour party and hold it for long enough to deliver his message to the electorate for the ultimate opinion poll.

This paper contends, therefore, that the Lakoff-Haidt frames, generated in a particular time in the US, are not wholly applicable to the UK in 2017 and beyond.

If we seek more nuanced set of frames, with a basis in the UK, then the work of the UK's Common Cause Foundation (CCF) is of value. This posits two sets of mutually exclusive values:

- **Intrinsic values** which are inherently rewarding: tribal/family affiliations, connection with the natural world, self-transcendence
- **Extrinsic values** which are contingent on social approval and the self judgements that arise from them and include material success, image, social power and authority.

The frames arising from these are similar to the framing pairs described by Haidt, but rather than existing in pairs of polar opposites, these are spread across a more nuanced array in which the extrinsic values of Achievement, Power, Security and Attachment to Tradition are balanced by the more Intrinsic values of Enjoyment, Stimulation, Self-direction, Humanity and Kindness. (The figure on the following page arises from the Common Cause Handbook, 2011).



- The CCF concept of values matches what we have already discussed regarding frames, that they are universal;
- they can be engaged by partial triggers;
- there is a 'bleedover' effect from adjacent metaphors and frames – in other words, triggering intrinsic frames will enhance other intrinsic values. (and diminish extrinsic ones).

Humans rarely exist in polar opposites, we are all a mess of contradictions, but on the whole, if we can enhance one part of an intrinsic value set, we will trigger those around it. In political terms, it is clear that the progressive left is more aligned with Intrinsic Values, in which case, we need to find ways to enhance the frames that stimulate intrinsic mind sets throughout an electoral cycle. Section IV examines the ways we can begin to do so.



## SECTION V

### FRAMES, VALUES AND REALITY

If we bring the concept of metaphors and frames out of the realm of theory to the actual living world, a number of obvious questions arise:

- To what extent do the frames/values apply in the world of 2017 *in the UK*?
- What are the electoral implications of these frames?
- If we wish to win the next election, what can we (must we) do to activate frames that support our belief systems *without triggering opposing frames*?
- How can we most usefully assess the efficacy of our messaging?

Taking these in order, the narrative that obtained prior to the exit poll on June 8<sup>th</sup> was that the British public was inclined to be selfish, sectarian, racist, anti-immigrant and easily bought by paltry governmental bribes. Conversely, it was averse to concepts of fairness and decency when it came to government, preferring ‘strength’, stability and Trident to sustainability, justice and nuclear disarmament.

This narrative was supported by the British Social Attitudes Survey. Begun in 1983, this annual survey is conducted by a charity, the National Centre for Social Research, which purports to offer the ‘gold standard’ in social attitudes and as such is relied on by policy makers and the press. Until 2017, the general trend across the surveys – and the narrative arising therefrom – was towards a greater individualism, an increasing disdain for those on benefits and a decline in (political) party loyalty.

The thirty fourth annual report was released in June 2017 under the title, ‘Britain wants less nanny state, more attentive parent.’ A more expansive summary states that the population is leaning towards greater social liberties (LGBT rights, abortion rights, euthanasia) but fewer civil rights. There was support, for instance for indefinite detention without charge of terrorist suspects (Philips et al, 2017).

This contrasts entirely with the results of the CCF ‘Perceptions Matter’ report of 2011, which found that 74% of respondents placed greater importance on compassionate values than selfish ones. The contrast between these two suggests that *either* NatCen and the CCF were sampling entirely different cohorts of the population, *or* the questions asked skewed the answers and that those questioned were holding both intrinsic and extrinsic frames in a degree of balance, *until a question elicited a shift to left or right*.

Herein lies a central point to the building of narrative: *leaving aside the hyper-partisans at either end of the scale who are not open to change, most people exist in a place where their frames can be swung one way or the other.*

***This is not the same as saying that most people exist in the centre, and that moving towards that centre will garner their votes.***

This cannot be emphasised enough. *Moving to the centre is never the answer.* Quite the reverse: by moving towards a perceived middle ground, the Overton window (Lehman, undated) shifts in whatever direction the move is made, and makes the general popular narrative less conducive to policies that they perceive belong to the poles. Thus when New Labour shifted onto the ground previously occupied by Thatcher, leaving the Tory party free to shift to the libertarian, anti-EU right, the UK's entire cultural narrative shifted rightwards and progressive policies backed by an intrinsic value frame of care, compassion, empathy and social justice, became less likely.

If we are to create and maintain a progressive narrative grounded in intrinsic values, we must shape it from those values. To do so, we must understand the basic neurophysiology of language, metaphor and frame outlined above, and learn to apply it. Having done so, we must assess our results.

## ASSESS. ASSESS. ASSESS AGAIN

Having created our frames and disseminated them, we must find ways to assess their impact. In an ideal world, assessment would be immediate, large scale and would target the relevant audience.

Until recently, surveys and focus groups were the gold standard of assessment. They may have questioned relatively small samples of often self-selected groups and they may have done so in time frames no longer relevant, but they were the best we had and we believed them. The UK Referendum, Trump's election in the US and GE2017 in the UK all demonstrated quite how wildly wrong could be the results.

However, recent work on the use of Google data may prove more accurate if ways can be found to apply it. In 2014, Seth Stephens-Davidowitz published a paper in which he had used a combination of Google Adwords and Keyword Planner, combined with state by state voting records to assess the impact of Obama's election (Stephens-Davidowitz, 2014).

His contention is that each of us tells lies when answering surveys face to face: we want to appear our best. We are marginally more honest if the survey is conducted by phone, and more honest still if it is an anonymous internet survey, but even so, we have a tendency to present our better selves. The time and place when we are entirely honest is

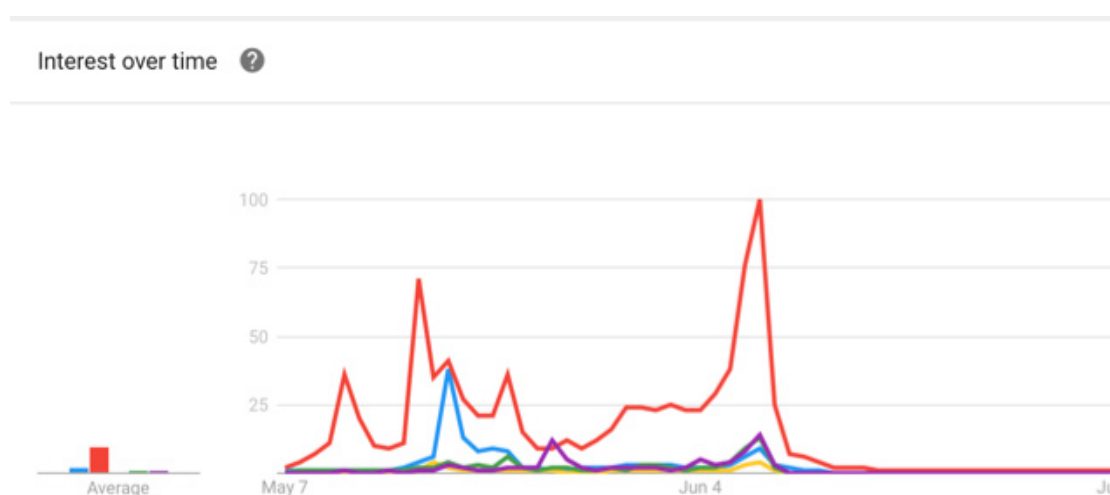
when we type a query into the Google search bar. Thus large portions of the US electorate may deny being racist, but if, on Obama's election, they are typing queries looking for the best N-word jokes (and they are typing the actual word, not the coy version), then they are very likely lying to the surveys. The data Stephens-Davidowitz unearthed showed that,

*“continuing racial animus in the US appears to have cost Obama roughly four percentage points of the national popular vote...The estimates using Google search data are 2.5 to 3 times larger than survey-based estimates.”*

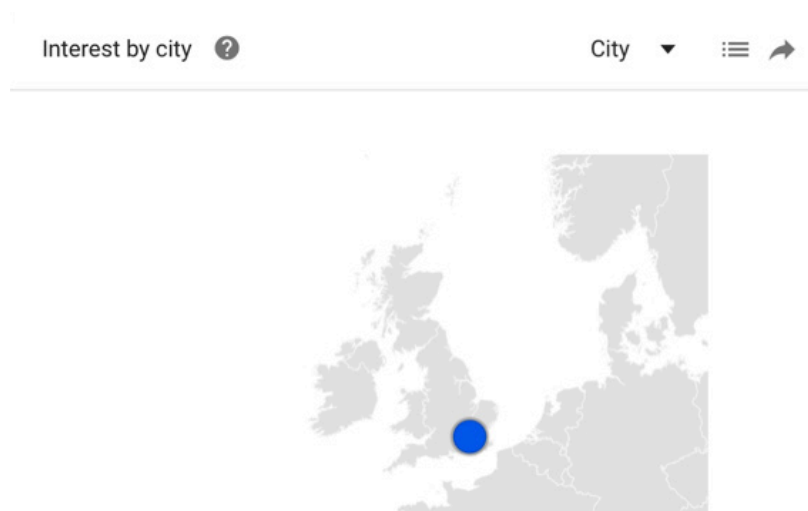
He discovered that racist searches increased when Obama gave speeches, even those lauded as masterly by the mainstream media. The only time the searches decreased was when the then-President referred to Muslim sports stars and serving soldiers in the military, when searches for these facts rose to the top of the Google rankings and remained that way for a day. When an essay based on his findings was published in a national newspaper, the President's next speech referred almost exclusively to Muslim sports stars and military heroes. The Google rankings responded accordingly.

This technique is in its infancy, but almost all of the work undertaken to date has been in the US. There is a gold mine of potential data in the UK if search terms and localisations can be refined.

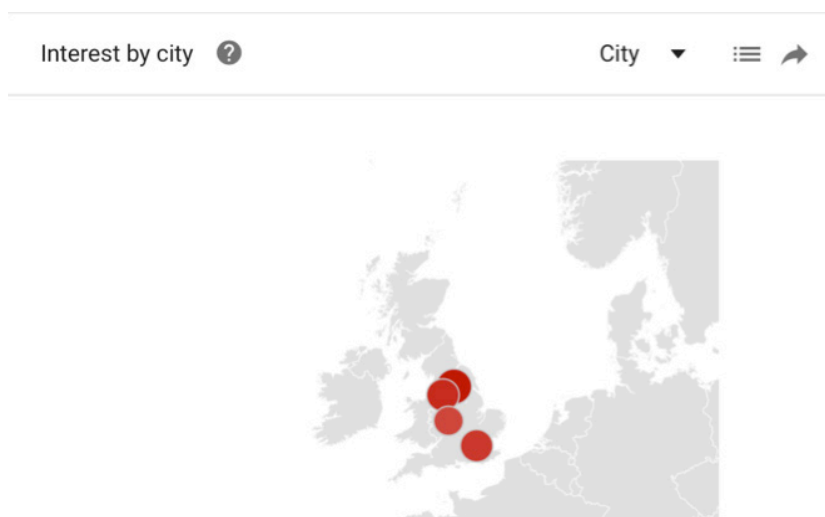
As an example, searches for the Labour manifesto (red in the graph below) compared to the Tory manifesto (blue) around the time of the June general election shows relative interest, *not* absolute quantitative numbers, but clearly interest in the Labour manifesto was higher at certain times. (yellow: Liberal Democrats, green: Green Party, purple:UKIP). In theory, quantitative figures would have been available at the time using data from Google's keyword search facility.



Interest by city shows that the Google searches for the Tory manifesto were almost exclusively in London.



Search interest for Labour manifesto was largest in Leeds, followed by Manchester, London, and then Birmingham. (relative size of the circle implies scale of searches)



Sadly it is not possible at this point to achieve greater granularity in the UK, but if Google is prepared to increase its release of data, the potential is there and if search terms were refined to relate specifically to specific speeches and/or internet memes, then there is a real-time test-bed available. This bears a great deal more investigation.

# TARGET, ACT, ASSESS, REPEAT

## Rules of Frames and Memes

In the creation of a narrative, Lakoff (2014) notes that there are two frequent errors made in the discussions around political frames. These are that:

- framing is all about finding clever slogans
- raw facts, if presented ‘correctly’ will be sufficient to shape the national frame.

It should be obvious by now that these two do not apply. Instead, we have a new set of rules for framing our narrative:

### **THINK OF THE AMYGDALA**

Our message must resonate at deep, primal levels of the brainstem. It is useful if it also works at a rational level, but the amygdala comes first. Bear in mind that fear and disgust are the deepest and fastest triggers (with outrage as an extension of these), but that the intrinsic values of empathy, compassion and fairness will resonate deeply as long as they aren’t over-ridden.

### **REPETITION WORKS**

(Hebbian plasticity) but recent evidence demonstrates beyond all doubt that simply saying ‘Strong and Stable’ for seven weeks doesn’t work at all – so repetition works within sane boundaries. We might say instead: **A repeated frame works if it is congruent with the remainder of the narrative.**

### **GOOD FRAMES BUILD ON EXISTING FOUNDATIONS**

Easy, oft-repeated frames will grow and develop. A new frame may take time to take hold. “For the Many, not the Few” did not grow out of nowhere. It gained traction because it existed in a fertile environment where many other subframes of fairness, justice, loyalty and pride could build it.

### **EMBODY YOUR METAPHORS WHERE YOU CAN**

Embodied, primary metaphors carry more weight than any others - if you can link warmth, weight and the ‘odours of intelligence and authenticity’ to a candidate or an idea, they will anchor frames more deeply. Conversely, if you can attach the senses of cold, lightness of weight, foul odours and the annihilation of pride to your opponent, they will prove sticky and hard to remove.

### **NEVER TRIGGER THE OPPONENT'S FRAME**

Never, under any circumstances, repeat the slogans of the opposition, however bad they are. Do not repeat their longstanding ideas, even to rubbish them. (Unless something poisons the cue of an entire frame as in the current poisoning of the word, 'Austerity'. This is as yet uncertain and the attempted poisoning of a frame embedded in the national consciousness carries the risk of abject failure).

### **KNOW YOUR FRAMES**

Our own frames should grow out of our own visions and ideals, and be straightforward enough to emerge with integrity, authenticity and clarity. Knowing numbers will get you through a Radio 4 interview, but it won't win the election. (Just as not-knowing will not lose it. Unless, like Dianne Abbott, you already trigger racist, misogynist, extrinsic frames).

### **CONSIDER THE POSITIVE AND THE NEGATIVE**

Any vote is won by getting out our own vote and reducing the turnout of the opposing vote. Not all frames support our candidate. Some simply undermine the opponent. It's a sad fact – but it *is* a fact – that triggering fear/disgust of the opponent is often easier than triggering enthusiasm for a candidate.

### **CHECK THE RESULTS**

Watch what's happening on the ground and assess the response to your output. Change it if necessary. Flexibility wins elections. Use Google searches as a real time reflector of results.

### **CONSTRUCT THE METAMORALITY OF A MOVEMENT**

Joshua Greene's contention that we must find a metamorality that will bind together disparate groups has never been more timely. Winning the next election is not enough. If we are to avoid Owen Jones's theory of a new 'Very British Coup' (Jones, 2017) engineered by the establishment in the event of a Corbyn-led government gaining power, we need to build a massed movement that has unequivocal support through all layers of society.

With these in mind, it is valuable to examine certain trends within the recent UK General Election for their adherence to these Rules.

## SECTION VI

### FRAMES IN ACTION

#### Analysis of the UK General Election, June 2017 – and Beyond

*“We will measure our economic success, not by the number of billionaires, but by the ability of our people to live richer lives.”*

Labour Party Manifesto, 2017

There seems little doubt that, had the UK general election campaign of June 2017 lasted another week, and certainly had it lasted beyond the horrific fire at Grenfell Towers, Jeremy Corbyn would currently be the Prime Minister, albeit leading a minority government.

And yet at the start of the campaign the odds against such an eventuality were rated in triple figures. The change in fortunes was an object lesson in frame shift. Viewing the campaign as a series of brainstem-targets and frame shifts, gives us real-world insight into what constitutes good (and bad) campaigning.

The tone was set by the campaign slogans. The Tory slogan, **Strong and Stable**, was targeted directly and unambiguously at the electorate’s fear of economic instability. This is a powerful message which plugs into one of the major fears of the overwhelming majority the voting public: that of financial hardship. The UK has a recent narrative history going back to the 2008 crash and the shock doctrine (Klein, 2008) budget that followed in 2010. It doesn’t matter that austerity was an ideological choice: it was presented clearly and cleanly as a necessity: a ‘strict-father’ (Cameron/Osborne) offering harsh but necessary medicine and promising stability as a result. This narrative, supported by all the legacy media, has been the Tory baseline since 2010, continuing a core narrative going back into the early twentieth century. The Conservative party, as its name suggests, is the party of authority, of fiscal probity (a piece of spin that ignores the facts on the ground), of militarism and - since Thatcher’s election in 1979 – of the neoliberal brand of capitalism.

The Brexit vote threatens extreme economic instability and calling an election in the teeth of Article 50, with negotiations not yet begun, and with the stated intent of shoring

up a small majority, was always risky. In the DoubleThink world where appealing to the brainstem trumps any appeal to rational logic, the Tories needed a slogan to dispel fears that the election itself might be destabilising.

Thus ‘Strong and Stable’ triggered frames of competence across the board, and was backed up by the image of May as a careful parent, with deliberate echoes of Thatcher, the ultimate nanny-figure.

Where it is weak was that this is a statement presented as fact, and thus open to question, particularly if the image begins to crumble as May’s did. Robotic repetition on this occasion failed – it became too obvious and the cognitive dissonance overwhelmed any Hebbian advantage that might have accrued. The fatal poisoning of the brand occurred in the U-turn on the social care plans (Hughes, 2017) which, in a moment of amygdaloid-stimulating genius, was dubbed the Dementia Tax by the Labour party.

This last triggered a wave of very clear brainstem responses in the legacy media and online. It hit particularly hard in the core Tory constituency of the over-fifties. Few things are more guaranteed to target the fear centres of voters nearing or in retirement than the threat that their homes might be used as a capital sink by the state, but if anything is worse, it is the implication that we are all heading for dementia.

Thus, fear of destitution, fear of financial instability, fear of a failure to provide for subsequent generations, fear of a slow and shame-filled death – all came into play and May’s swift U-turn did nothing to dispel the damage.

This was a clear example of merging of frames (Lakoff) and a tipping of the intrinsic/extrinsic balance (CCF). By associating both dementia and unfair taxation with the Tory party, and with Theresa May in particular, Labour fatally undermined her brand.

There was a belated – and wholly transparent – attempt to wrest the frames back when May suggested to journalists that should Corbyn be elected, he would walk ‘alone and naked’ into the Brexit negotiations. (Rayner, 2017).

She explicitly urged the assembled lobby ‘not to imagine Corbyn naked’ which, as with Lakoff’s injunction ‘Don’t think of an elephant’, is guaranteed to achieve its opposite. If this had succeeded, had the media taken up ‘Corbyn naked’ as a useful image, it could potentially have triggered disgust/disdain as a brainstem response. As it was, May was overly transparent in her attempt, and by this stage in the electoral cycle, the obvious rejoinder was that she had no more friends in the conference chamber than did Corbyn. The gambit backfired.

By contrast, Labour’s frame of **‘For the Many, Not the Few’** is a values-based statement arising from an aspirational, inclusive sentiment which triggers loyalty frames in those with a socialist leaning and can trigger fairness/compassion in those with no party



affiliation. Nobody wants to identify as ‘the few’ particularly when the background to the frame sets this group as privileged autocrats draining value out of the populace. The brand was anchored in authenticity, arising as it did from Corbyn’s well-publicised socialist background and it was supported by his evident ability to engage with the media and the public.

Corbyn also avoided Lakoff’s cardinal sins of repeating the opponent’s frames. When he was categorised as a terrorist sympathiser for his early connections to the IRA, he pivoted to the need for peace, and his role as an attempted peacemaker. “What I want everywhere is a peace process. What I want everywhere is decency and human rights.” (interview with Andrew Neil, recorded in the Guardian: Sparrow, 2017). He made use of repetition and shifted the frames to fairness, justice and decency, reinforcing his narrative without at any point referring to terrorists (which would have reinforced the Tory brand). As a means of shifting the Intrinsic/Extrinsic balance, leading people more towards fairness and away from fear, this was highly effective, even in the face of an almost universally hostile legacy media (Cammaerts et al, 2016).

As stated above, in the process of the election, the greatest shift took place after the details emerged of the so-called Dementia Tax. In terms of framing, this was masterful on the part of the Labour party: left alone, it could potentially have won the election. But it wasn’t left alone and the one thing more frightening than the idea that the government is going to sell your house out from under you to pay for your dementia nursing, is the thought that a terrorist is going to blow you to pieces before you are old enough to care about the size of your pension: immediate physical threat hits the amygdala far harder than a hypothetical future financial threat.

The terrorist attacks in Manchester on May 22<sup>nd</sup> and London on June 3<sup>rd</sup> were potential game changers. In theory, any one of these ought to have shifted the general voter-inclination back towards the party of militarism, police and the hard edges of the State. Certainly, the immediate suspension of political campaigning and the decision by the government to bring the army into the streets after the Manchester attack, had the potential to play straight to the ‘Strong-and-Stable’ brand (Hope and Raynor, 2017).

That it did not obviously shift the polls could conceivably be seen as evidence of terror-fatigue in the minds of the UK electorate. Alternatively – and more probably - it may be that Corbyn’s responses swayed the nature of the debate in his favour.

His first political response was to link the attack in Manchester to UK foreign policy and particular to the support of the Saudi regime, which in turn sponsors terrorism (Cockburn, 2017). In the aftermath of the assaults on London Bridge and Borough Market, Corbyn pointed out that austerity-led cuts had reduced the capacity of the police

to cope. Each of these strengthened the framing of the Labour leadership and the widely anticipated poll swing towards the Conservatives did not occur.

Whichever it was, the election did not produce a three figure majority for the Conservatives, and instead allowed Labour to record its biggest rise in vote share since the election of 1945 (Agerholm and Dore, 2017). The current government is unstable, although early predictions of a rapid Conservative meltdown appear to have been stabilised by their fear of a Corbyn-led government (Jones, 2017).

Be that as it may, Corbyn continues to move the Overton Window to the progressive end of the spectrum, and has dragged much of the discourse with him. In the response to the Grenfell fire, and in the £1bn ‘bribe’ paid by the Tory government to the DUP, the deficiencies of neoliberal policies have been highlighted, austerity named as an ideological choice and issues of fairness given hearing in sections of the media previously wedded to neoliberal discourse. When right wing commentator, Matthew d’Ancona, writes, ‘The election was not an endorsement of the way the economy is run. Nor was it a vote for unbridled capitalism, nor a call for a smaller, less interfering state.’ (d’Ancona, 2017), it is hard to imagine a more resounding repudiation of the Libertarian Right’s policy arguments.

Of Haidt’s original frames, Fairness, Loyalty and Liberty are now clear cornerstones of the progressive parties, supporting the CCF concept of the UK’s tendency towards intrinsic motivators.

Given all of this it is useful to structure a strategy for the near and medium term that will shape Progressive campaigning as we work towards winning the next election. Section VII does just this.

## SECTION VII

### WHISPERING TO THE AMYGDALA

#### Strategic Planning

*“Being wired for tribalism does not mean being HARD-WIRED for tribalism.  
Brains can be rewired through experience and active learning.”*

Joshua Greene, ‘Moral Tribes’

As we move forward in exceptional times, the need for a progressive movement centered on sustainability and on Greene’s meta-morality is more necessary than ever. In our efforts to create and sustain a narrative that would support this, certain steps are obvious.

#### **PERSUASIVE TECHNOLOGY LABORATORY AT STANFORD UNIVERSITY**

<http://captology.stanford.edu> If humanly possible, we need to send two or more bright, committed individuals to the PTL to engage in research at the center and/or the Labour party in the UK needs to hire one or more of its graduates. These are the engineers at the leading edge of the race to the bottom of the brain stem. If we are either to win the race *or* lift our culture out of the running, we need to know how it works. This is the fastest and most comprehensive route to doing so

#### **RESEARCH GOOGLE ADWORDS AS FEEDBACK**

On a similar basis, the progressive parties must, as a matter of urgency, sponsor research into the use of Google as a real-time feedback monitor. There is work under way in the US, although the bulk of the research is into racism or sexual habits, rather than polling habits or responses to political realities on the ground – and ever were it to be done, it would be highly locally specific. The UK is an untouched gold mine of potential data and the party that fails to tap into it will be at a serious disadvantage.

#### **MICRO-TARGETING OF SOCIAL MEDIA MESSAGES & DUMMY ACCOUNTS**

The capacity to micro-target depends entirely on the data available and the capacity to monitor feedback. It may well be that the data available to Cambridge Analytica is either

no longer available or that the price is beyond sane reach, but an effort should be made to micro-target our messages and to test them in real time (See Google research above).

It is necessary also to gather and analyse the messages being broadcast to potential voters by the opposing party(ies). A suite of accounts should be established, spread across likely demographics (age, race, gender, occupation, reading and viewing habits) to sweep up the micro-targets being sent by the parties of reaction and neoliberalism. If funding is available, it would be useful to set up a company as a direct progressive counter to Cambridge Analytica.

### **CONSISTENCY OF MESSAGE – AND A SOLID ECONOMIC PLATFORM**

In our memes and our messages, we need consistency of underlying values. The overwhelming success of the Corbyn message - of a shift in economic priorities from profit to people – has proved its value. We can, and must, continue this at every available opportunity. If Paul Mason is right that the ‘global order is dying’ then it is essential that we have a robust economic platform from which to make the transition to a sustainable, equitable, socially just society. While people are in debt, while they fear for their homes, their lives, their health, they cannot and will not engage with the need to change our lifestyles in pursuit of a sustainable future. This is the heart of everything: sort the money, and the rest will follow.

## SECTION VIII

### REFLECTION

*“The interplay between lofty dreams and earthly victories has always been at the heart of moments of deep transformation.”*

Naomi Klein, ‘No is Not Enough.’ (2017)

Throughout the first five months of 2017, as the scaffolding of this thesis was being erected, the future looked bleak across the world for the politics of sustainability, equity and social justice. When the UK’s election of June 2017 was called, it seemed likely that the Tories would gain a majority sufficient to push through the kinds of swingeing reforms outlined by James Buchanan: the harshest form of neoliberalism: full-on, unredacted privatisation, deregulation and no government support for anything beyond the police and the military. With that in mind, it felt necessary to go right back to basics, to work out how the human mind functions and to build up a set of working structures for the creation of a new narrative that might hope to gain traction.

But I, like everyone else, underestimated Jeremy Corbyn and the team around him. I underestimated the impact it would have when the broadcast media of this country were forced to give him equal, unfiltered air time. I underestimated the impact his authenticity would have on the doorstep – my personal experience of canvassing in Plymouth, in Ludlow and in Telford, is that people who had no previous intention of voting Labour were impressed by what they had seen of him – and appalled by the antics of certain aspects of the media. Most of all, I underestimated the ability of Corbyn’s team to turn out the youth vote. This began with an increase in voter registration estimated at 1.4 million 18 – 24 year olds in the weeks after May called the election (Turner and Sturgis, 2017). It moved on to Corbyn’s well-documented appearances at pop concerts and the active use of social media. The viral videos were seen by millions. A Whatsapp message sent out on polling day, saying ‘Go and vote - and send this message to five of your friends!’ was seen by 400,000 people and it is said that SnapChat played a significant part in reaching those under thirty (Labour activist, pers comm).

Certainly there is a widespread view that if the election had been confined to the under fifties, Labour would have won handsomely (Turner et al, 2017). If Jonathan Haidt is

right that many of us cement our voting patterns in our youth (Haidt, 2012), then we have an entire generation- or two – who are now more enamoured of the parties of progress than of the parties of neoliberal reaction.

We cannot – must not - become complacent. But we can build a political movement with real hope that was lacking even three months ago. We may have the beginnings of a Meta-morality founded in decency, equity and sustainability, which can only be good.

In the seventh century AD, Mayan astronomers inscribed a Codex in which they described the five ages of humanity. The first four, they said, had been destroyed by each of the earth's elements in turn: by fire, by earthquake, by storm/tornado and by flood. The fifth, according to their predictions, would be destroyed by humanity itself, and they set the mid-point of this destructive cycle as 21<sup>st</sup> December 2012.

From the perspective of 2017, this looks remarkably prescient. But there is no reason to believe that we cannot step beyond the destructive nature of our selfishness towards a genuinely sustainable future.

By exploring our own minds, by finding the pathways to our own brainstems and by halting the capture of our attention, each of us individually can make a difference in the way the world is built. It is my hope that this thesis contributes to our ability to do so.

*“And so we call on all those seeking political office to ... embrace the urgent need for transformation. This is our sacred duty to those...harmed in the past, to those suffering needlessly in the present and to all who have a right a bright and safe future.  
Now is the time for boldness.  
Now is THE TIME TO LEAP.”*

The Leap Manifesto. Canada. 2017

/ends

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## REFERENCES

Abadi, Mark. (2017), DEMOCRATS AND REPUBLICANS SPEAK DIFFERENT LANGUAGES – IT HELPS EXPLAIN WHY WE'RE SO DIVIDED. *Business Insider* August 11<sup>th</sup>, 2017 Available online at: <http://uk.businessinsider.com/political-language-rhetoric-framing-messaging-lakoff-luntz-2017-8> (Accessed: 6/8/17)

Agerholm, H. and Dore, L. (2017) JEREMY CORBYN INCREASED LABOUR'S VOTE SHARE MORE THAN ANY OF THE PARTY'S LEADERS SINCE 1945. *The Independent* June 9<sup>th</sup> 2017. Available at: <http://www.independent.co.uk/news/uk/politics/jeremy-corbyn-election-result-vote-share-increased-1945-clement-attlee-a7781706.html> (Accessed 30/6/17)

Ballew, C. C., & Todorov, A. (2007). PREDICTING POLITICAL ELECTIONS FROM RAPID AND UNREFLECTIVE FACE JUDGMENTS. *Proceedings of the National Academy of Sciences of the United States of America*, **104**:46, 17948–17953.

Bateson G (1955) A theory of play and fantasy. *AP. Psychiatric Research Reports* **2**: pp39–51

British Social Attitudes (BSA) Survey, 2017, *National Centre for Social Research* Available at: [http://www.bsa.natcen.ac.uk/?\\_ga=2.9183478.218976480.1498653931-410110037.1498653931](http://www.bsa.natcen.ac.uk/?_ga=2.9183478.218976480.1498653931-410110037.1498653931) (Accessed 29/6/17)

Brown, Wendy. (2015) UNDOING THE DEMOS: NEOLIBERALISM'S STEALTH REVOLUTION. *MIT Press* 20<sup>th</sup> March 2015. Kindle Edition.

Cadwalladr, Carole. (2017a) Robert Mercer: the big data billionaire waging war on the mainstream media. *The Observer*. 26/2/2017. Available at: <https://www.theguardian.com/politics/2017/feb/26/robert-mercero-breitbart-war-on-media-steve-bannon-donald-trump-nigel-farage> (Accessed 8//8/17)

Cadwalladr, Carole. (2017b) Cambridge Analytica affair raises questions vital to our democracy. *The Observer*. 4/3/17 Available at: <https://www.theguardian.com/politics/2017/mar/04/cambridge-analytica-democracy-digital-age> (Accessed 1/8/17)

Cadwalladr, Carole. (2017c) The Great British Brexit Robbery: How Our Democracy was Hijacked. *The Observer*. 7/5/17 Available at: <https://www.theguardian.com/technology/2017/may/07/the-great-british-brexit-robbery-hijacked-democracy> (Accessed 1/8/17)

Collier, Hatty, 2017. Age divided UK at General Election more than any vote since 1970s. *Evening Standard* June 20th 2017. Available at: <http://www.msn.com/en-gb/news/other/age-divided-uk-in-general-election-more-than-any-vote-since-1970s/ar-BBCW72H> (Accessed 29/6/17)

Common Cause Foundation (2011) Common Cause Handbook. *PUBLIC INTEREST RESEARCH CENTER*. July 18th 2011. Available at: <http://valuesandframes.org/downloads/> (Accessed 28/6/17)

Common Cause Foundation (2016) Perceptions Matter: The Common Cause UK Values Survey. *CCF* February 11th 2016. Available at: <http://valuesandframes.org/survey/> (accessed 28/6/17)

Cammaerts, Bart, DeCillia, Brooks, Magalhaes, Joao, Jiminez-Martinez, Cesar. (2016) Journalistic Representations of Jeremy Corbyn in the British Press: From Watchdog to Attack dog. *LSE Media Reports*. 1st April 2016 Available Online: <http://www.lse.ac.uk/media@lse/research/pdf/JeremyCorbyn/Cobyn-Report-FINAL.pdf> (Accessed: 1/8/17)

Cockburn, Patrick (2017). Manchester Attack: It is pious and inaccurate to say Salman Abedi's actions had 'nothing to do with Islam'. *Independent*. 24/5/17 Available online at: <http://www.independent.co.uk/voices/manchester-attack-salman-abedi-salafi-jihadism-wahhabism-isis-al-qaeda-islam-muslim-suicide-bombing-a7754301.html> (access 11/8/17)

Cunningham, WA. Van Bavel, J.J. Johnsen, IR. (2008) AFFECTIVE FLEXIBILITY: EVALUATIVE PROCESSING GOALS SHAPE AMYGDALA ACTIVITY, *Psychological Science*, 2008. **19** 152

Cunningham, William A, Kirkland, Tabitha. (2014). The Joyful, yet Balanced, Amygdala: Moderated Responses to Positive but not Negative Stimuli in Trait Happiness. *Social Cognitive and Affective Neuroscience*. **9**:6 pp760 – 766.



D'Ancona, Matthew. (2017) THE TORIES NEED FRESH IDEAS: WITHOUT THEM, THEY RISK ELECTORAL OBLITERATION. *TheGuardian*. 6/8/17. Available at: <https://www.theguardian.com/commentisfree/2017/aug/06/tories-fresh-ideas-risk-electoral-obliteration-thatcherite-doctrine-nick-timothy> (Accessed, 6/8/17)

DeHaene, S. (2009). Reading in the brain. New York: *Penguin Viking*.

Dews, S., & Winner, E. (1999). Obligatory processing of literal and non-literal meanings in verbal irony. *Journal of Pragmatics*, **31**, pp1579–1599.

Diffenbaugh, Noah S. ; Singh, Deepti ; Mankin, Justin S. ; Horton, Daniel E. ; Swain, Daniel L. ; Touma, Danielle ; Charland, Allison ; Liu, Yunjie ; Haugen, Matz ; Tsiang, Michael ; Rajaratnam, Bala. (2017) QUANTIFYING THE INFLUENCE OF GLOBAL WARMING ON UNPRECEDENTED EXTREME CLIMATE EVENTS. *Proceedings of the National Academy of Sciences*, 05/09/2017 114:**19**, pp.4881-4886

Ekman P., Cordaro D. (2011). WHAT IS MEANT BY CALLING BASIC EMOTIONS?. *Emot. Rev.* October 2011 **3** 364–370.

Entman R (1993) Framing: Towards clarification of a fractured paradigm. *Journal of Communication* **43**(4): 51–58

Fredrickson, B. L. (2013). UPDATED THINKING ON POSITIVITY RATIOS. *American Psychologist*, **68**: 9, pp. 814-822.

Frey, D., Stahlberg, D. (1986) Selection of Information after receiving more or less Reliable self-Threatening Information. *Personality and Social Psychology Bulletin*. **12** pp 434 – 441.

Friederici, Angela D. (2011) The Brain Basis of Language. *Physiological Reviews*, The American Physiological Society. 2011 **91**:4 pp1357 – 1392.

Gibbs, Raymond W. Jr. (2011) Evaluating Conceptual Metaphor Theory. *Journal of Discourse Processes* **48**:8 August 2011. pp529 – 562

Gitlin T (1980). *The Whole World is Watching: Mass Media in the Making and Unmaking of the New Left*. Berkeley: *University of California Press*.

Graham, J., Nosek, B. A., Haidt, J., Iyer, R., Koleva, S., & Ditto, P. H. (2011). MAPPING THE MORAL DOMAIN. *Journal of Personality and Social Psychology*, **101**: 2, August 2011, pp366-385.

Greene, Joshua (2013). *Moral Tribes: Emotion, Reason and the gap between Us and Them*. *Penguin Press* (2013). Published in the UK by *Atlantic Books*, London, 2015, paperback edition.

Greenwald, A. G., Nosek, B. A., & Banaji, M. R. (2003). UNDERSTANDING AND USING THE IMPLICIT ASSOCIATION TEST: I. AN IMPROVED SCORING ALGORITHM. *Journal of Personality and Social Psychology: Attitudes and Social Cognition*, **85**:2 pp 197-216.

Greenwald, A. G., Banaji, M. R., & Nosek, B. A. (2015). STATISTICALLY SMALL EFFECTS OF THE IMPLICIT ASSOCIATION TEST CAN HAVE SOCIETALLY LARGE EFFECTS. *Journal of Personality and Social Psychology: Attitudes and Social Cognition*, **108**:4, pp553-561.

Haidt, Jonathan (2012). *The Righteous Mind: Why Good People are Divided by Politics and Religion*. *Penguin Random House*, paperback edition. 2013. Pp 219 – 255

Haman, S. Blagov, P, Harenski, K, Kilts, C, Westen, D (2009) Political Party Affiliation Affects fMRI Responses to Emotional Social Stimuli *NeuroImage*. July 1<sup>st</sup> 2009. S39 – S41.

Haman, Stephan. (2011) Introduction to the Special Issue on the Human Amygdala and Emotional Function. *NeuroPsychologia* **49**:4 March 2011 pp585 – 588.

Harris, Tristan, (2017) TED talk: THE MANIPULATIVE TRICKS TECH COMPANIES USE TO CAPTURE YOUR ATTENTION. Available online at: [https://www.ted.com/talks/tristan\\_harris\\_the\\_manipulative\\_tricks\\_tech\\_companies\\_use\\_to\\_capture\\_your\\_attention](https://www.ted.com/talks/tristan_harris_the_manipulative_tricks_tech_companies_use_to_capture_your_attention) (Accessed 1//8/17)

Hart, Christopher. (2016) Event-Frames Affect Blame Assignment and Perception of Aggression in Discourse on Political Protests: An Experimental Case Study in Critical Discourse Analysis. *Appl Linguist* June 9<sup>th</sup> 2016

Hebb, D. (1949) *The Organisation of Behaviour*. New York. Wiley & Sons.

Hope, C and Rayner, G (2017) Theresa May Launches Strongest Attack yet on Jeremy Corbyn amidst Fears her Strong and Stable Mantra lacks Bite. *The Telegraph*. May 26th 2017 Available at: <http://www.telegraph.co.uk/news/2017/05/26/jeremy-corbyn-making-excuses-terror-attacks-theresa-may-says/> (Accessed 30/6/17)

Hughes, Laura, (2017) Theresa May announces Dementia Tax U-Turn. *The Telegraph* May 22nd 2017. Available at: <http://www.telegraph.co.uk/news/2017/05/22/theresa-may-expected-announce-dementia-tax-u-turn/> (Accessed 30/6/17)

Indefrey, P. Levelt, W.J.M. (2004) The Spatial and Temporal Signatures of Word Production components. *Cognition*. **92**:1-2 May – June 2004 pp101 – 144.

Issenberg, Sasha, (2015). Cruz-Connected Data Miner Aims to Get Inside US Voters' Heads. *Bloomberg*. 12/11/15 Available online at: <https://www.bloomberg.com/news/features/2015-11-12/is-the-republican-party-s-killer-data-app-for-real-> (Accessed on 8/8/17)

Jacobin Radio Podcast (2017). BEHIND THE NEWS: CHINA, CLIMATE, AND THE PARIS CLIMATE ACCORD. NANCY MACLEAN ON THE RIGHT'S WAR ON DEMOCRACY. *JACOBIN RADIO* 20/7/17 Available online at: <https://www.jacobinmag.com/2017/06/democracy-in-chains-review-nancy-maclean-james-buchanan> (Accessed 4/8/17)

Jones, Owen, (2017). Prime Minister Corbyn would face his own very British Coup. *The Guardian*. 9th August 2017. Available online at: <https://www.theguardian.com/commentisfree/2017/aug/09/prime-minister-corbyn-very-british-coup-establishment-backlash> (accessed 9/8/17)

Kanai, Ryota, Feilden, Tom, Firth, Colin, Rees, Geraint. Political Orientations are Correlated with Brain Structure in Young Adults. (2011) *Current Biology*. **21**: 8 April 26th 2011. Pp 677 – 680.

Kandler, C., Bleidorn, W., & Riemann, R. (2012). LEFT OR RIGHT? SOURCES OF POLITICAL ORIENTATION: THE ROLES OF GENETIC FACTORS, CULTURAL TRANSMISSION, ASSORTATIVE MATING, AND PERSONALITY. *Journal of Personality and Social Psychology: Personality Processes and Individual Differences*, **102**:3, pp633-645.

Kenrick, DT, Griskevicius, V, Neuberg, S, Schaller, M. (2010). Renovating the Pyramid of Needs. *Perspectives on Psychological Science*. May 18th, 2010. Pp 292 – 314.

Klein, Naomi (2008) Shock Doctrine: The Rise of Disaster Capitalism. *Penguin*. London. 1st May 2008.

Knutson, Kristine M., Wood, Jacqueline, N., Spampinato, Maria V., Grafman, Jordan. (2006) Politics on the Brain: An fMRI Investigation. *Social Neuroscience*. February 7th 2006. **1**: 1 pp 25 – 40.

Klein, Naomi, (2017), No is Not Enough. *Allen Lane*. (London) 1st Edition. 13th June 2017.

Kurzweil, Ray. (2006) The Singularity is Near. *Gerald Duckworth and Co. Ltd.* (London) 1st Edition. 9th March 2006.

Labour Party Manifesto (2017), Available online at: <http://www.labour.org.uk/page/-/Images/manifesto-2017/Labour%20Manifesto%202017.pdf> Accessed: 6/8/2017.

Lakoff, George (2012). Explaining Embodied Cognitive Results. *Topics in Cognitive Sciences*. **4**: 4 7th September 2012 pp773-785.

Lakoff, George (2004, updated 2014). Don't think of an Elephant. *Chelsea Green Publishing*. Vermont.

Lakoff, G., & Johnson, M. (1980) Metaphors we live by. Chicago, IL: *University of Chicago Press*. [Updated version, 2003].

Leap Manifesto, (2017) Available online at: <https://leapmanifesto.org/en/the-leap-manifesto/> (Accessed: 6/8/17).

LeDoux, Joseph (2007). The Amygdala. *Current Biology*, **17**:20. pp R868 – R874

LeDoux, Joseph (2012). Rethinking the Emotional Brain. *Neuron*. **73**: February 2012 pp 653 – 676

- Lehman, J. (undated) A BRIEF EXPLANATION OF THE OVERTON WINDOW. *The Overton Window: The Mackinac Center*. Available at: <http://www.mackinac.org/overtonwindow#top> (Accessed: 30/6/17).
- Lindquist, KA, Wager, TD, Kober, H, Bliss-Moreau, E, Barret, LF. (2012) THE BRAIN BASIS OF EMOTION: A META-ANALYTIC REVIEW. *Behavioural and Brain Sciences (2012)* **35** pp 121 – 202.
- Luntz, Frank. (2007). WORDS THAT WORK. IT'S NOT WHAT YOU SAY, IT'S WHAT PEOPLE HERE. *Hachette Books*, New York. Trade edition, 2015.
- MacLean, Nancy. (2017) DEMOCRACY IN CHAINS: THE DEEP HISTORY OF THE RADICAL RIGHT'S STEALTH PLAN FOR AMERICA. *Scribe UK* (London) First Edition 27/7/17.
- MacLean, Nancy (2017b). *Interview on Jacobin Radio*, 20<sup>th</sup> July, 2017, Available at: <https://itunes.apple.com/gb/podcast/behind-news-china-climate-paris-climate-accord-nancy/id791564318?i=1000390112579&mt=2> (Accessed 2/8/17)
- MacLean, PD. 1990. THE TRIUNE BRAIN, *Plenum Press*. New York.
- Martens, M.B., Celikei, T., Tiesinga, P.H.E., (2015) A DEVELOPMENTAL SWITCH FOR HEBBIAN PLASTICITY *PLOS Computational Biology* July 14<sup>th</sup> 2015. <https://doi.org/10.1371/journal.pcbi.1004386> (Accessed 21/6/17)
- Mason, Paul. (2017) DEMOCRACY IS DYING – AND IT'S STARTLING HOW FEW PEOPLE ARE WORRIED. *The Guardian*. 31<sup>st</sup> July 2017. Available online at: <https://www.theguardian.com/commentisfree/2017/jul/31/democracy-dying-people-worried-putin-erdogan-trump-world> (Accessed 2/8/17)
- Mayhew, Peter J., Jenkins, Gareth b., Benton, Timothy B., (2007) A LONG-TERM ASSOCIATION BETWEEN GLOBAL TEMPERATURE AND BIODIVERSITY, ORIGINATION AND EXTINCTION IN THE FOSSIL RECORD. *Proc Biol Sci*. January 7<sup>th</sup> 2008 275:**1630** pp 47–53.
- McGlone, M. S. 2007. What is the explanatory value of a conceptual metaphor? *Language & Communication*, **27**: pp 109–126

McGlone, M. S. 2011. Hyperbole, Homunculi and Hindsight Bias: Alternative Evaluation of Conceptual Metaphor Theory. *Journal of Discourse Processes*, 48:8 pp 563 - 574

Miller, Anna. (2014) Friends Wanted. *American Psychological Association: Monitor on Psychology* **45**:1 January 2014, p54

Milman, Oliver. (2017) Planet has just 5% chance of reaching Paris climate goals, study says. *The Guardian*. 1/8/17. Available online at: <https://www.theguardian.com/environment/2017/jul/31/paris-climate-deal-2c-warming-study> (Accessed 1/8/17)

Milman, Oliver. (2017b) US Federal Department is Censoring use of the term Climate Change, emails reveal. *The Guardian*. 7/8/17. Available online at: <https://www.theguardian.com/environment/2017/aug/07/usda-climate-change-language-censorship-emails> (accessed 7/8/17)

Pavlov, I.P. (1927) *Conditioned Reflexes: An investigation into the physiological responses of the cerebral Cortex*. London. Oxford University Press. 1927 (trans by G.V. Anrep). Available at: <http://psychclassics.yorku.ca/Pavlov/> (Accessed 11/6/17)

Penny, Laurie (2014) *Unspeakable Things: Sex, Lies and Revolution*. Bloomsbury Paperbacks, 2nd edition, (2015), pp 7.

Peters, Steve (Prof) (2012) *The Chimp Paradox : The Mind Management Programme for Confidence, Success and Happiness*. Vermillion Press.

Philips, Miranda, Taylor, Eleanor Attar, Simpson, Ian. (2017) British Social Attitudes Survey. *NatCen*. Available at: <http://www.natcen.ac.uk/our-research/research/british-social-attitudes/> (Accessed 28/6/17)

Pullvermüller, F. Shtyrov, Y. Hauk, O. (2009). Understanding in an instant: Neurophysiological evidence for mechanistic language circuits in the brain. *Brain and Language* **110**:2 2009. pp81 – 94.

Qin, Jie, (2015) Hero on Twitter, Traitor on News. *The International Journal of Press/Politics* **20**:2 7th January 2015 pp 166 – 184.

Rayner, G. (2017) Jeremy COrbyn would be ‘alone and naked’ in Brexit talks, says

Theresa May. *The Telegraph*, May 30th, 2017. Available at: <http://www.telegraph.co.uk/news/2017/05/30/jeremy-corbyn-would-alone-naked-brexit-talks-says-theresa-may/>. (Accessed 30/6/17)

Regel, Stephanie, Gunter, Thomas C, Friederici, Angela D. (2011) Isn't it Ironic? An electrophysiological Exploration of Figurative Language Processing. *Journal of Cognitive Neuroscience* **23**: 2 February 2011 pp 277 - 293

Schnall, S. Haidt, J., Clore, G., (2008) Disgust as Embodied Moral Judgement. I *Personality and Social Psychology Bulletin* May 9th 2008 **34**: 8 pp 1096 – 1109.

Schiller B, Gianotti LRR, Baumgartner T, Nash K, Koenig T, Knoch D. CLOCKING THE SOCIAL MIND BY IDENTIFYING MENTAL PROCESSES IN THE IAT WITH ELECTRICAL NEUROIMAGING. *Proceedings of the National Academy of Sciences of the United States of America*. 2016 **113**: 10 pp2786-2791

Schwartz, S.H. (1992). UNIVERSALS IN THE CONTENT AND STRUCTURE OF VALUES: THEORETICAL ADVANCES AND EMPIRICAL TESTS IN 20 COUNTRIES. In M.P. Zanna, ed. *Advances in Experimental Social Psychology*, 25. Orlando: Academic Press, pp. 1–65; Rokeach, M. (1973). *The Nature of Human Values*. New York: The Free Press

Sebesteyen, Victor. (2017) Bannon says he's a leninist: that could explain the White House's New tactics. *The Guardian*. 6th February 2017. Available at: <https://www.theguardian.com/commentisfree/2017/feb/06/lenin-white-house-steve-bannon> (accessed 6/8/17)

Seidman, Max, (2017) The Psychology of Rewards in Games. *Most Dangerous Game Design Blog*. Posted March 1st 2017. Available at: <http://www.mostdangerousgamedesign.com/2013/08/the-psychology-of-rewards-in-games.html> (accessed 26/6/17).

Skinner, B.F. (1938) *The Behaviour of Organisms*. Republished 31/12/91 by Copley Press, US. Kindle Edition downloaded 2017.

Snricek, Nick and Williams, Alex, (2016) *INVENTING THE FUTURE: POSTCAPITALISM AND WORLD WITHOUT WORK*. *Verso Books*, (London) 1<sup>st</sup> Edition. 4<sup>th</sup> October 2016.

Song, S., Miller, K. D., & Abbott, L. F. (2000). Competitive Hebbian learning through spike-timing dependent synaptic plasticity. *Nature Neuroscience*, **3**, 919–926.

Sparrow, A. (2017) GENERAL ELECTION. JEREMY CORBYN INTERVIEWED BY ANDREW NEIL: AS IT HAPPENED. *The Guardian*. May 26<sup>th</sup> 2017. Available at: <https://www.theguardian.com/politics/live/2017/may/26/general-election-2017-terror-corbyn-may-g7-sicily-politics-live> (Accessed 30/6/17)

Stephens-Davidowitz, Seth. (2014) THE COST OF RACIAL ANIMUS ON A BLACK CANDIDATE: EVIDENCE USING GOOGLE SEARCH DATA. *Journal of Public Economics* October 2014. 18 pp 26- 40

Stephens-Davidowitz, Seth. (2017) EVERYBODY LIES: WHAT THE INTERNET CAN TELL US ABOUT WHO WE REALLY ARE. *Bloomsbury*, London and New York. First Edition. 2017.

Stevens, P. THE CHIMP PARADOX: THE MIND MANAGEMENT PROGRAMME TO HELP YOU ACHIEVE SUCCESS, CONFIDENCE AND HAPPINESS. July 5<sup>th</sup> 2012. *Vermillion*. London.

Stillman, PE., van Bavel, JJ., Cunningham, WA., (2015) VALENCE ASYMMETRIES IN THE HUMAN AMYGDALA: TASK RELEVANCE MODULATES AMYGDALA RESPONSES TO POSITIVE MORE THAN NEGATIVE AFFECTIVE CUES. *Journal of Cognitive Neuroscience* **27**: 4 April 2015 pp.842-851.

Swanson, Larry W, Gorica D. Petrovich (1999). What is the Amygdala? A comparative approach. *Trends in Neurosciences*, **22**:5 1st May 1999 page 207.

Thomas, Chris D., (2011) A Sixth Mass Extinction? *Nature*. 15th November 2007. 450:**7168** pp349 (1).

Turner, Camilla, and Sturgis, India. (2017). How young people swung the election for Labour. *The Telegraph*. 9/6/2016. Available online at: <http://www.telegraph.co.uk/news/2017/06/09/young-people-swung-election/> (accessed. 11/8/17)

Tversky, Amos, Kahneman, Daniel. (1981). The Framing of Decisions and the Psychology of Choice. *Science*. January 30th 1981 **211** pp453 – 459

Tooby, J. and Cosmides, L. (2006) The evolved architecture of hazard management: Risk



detection reasoning and the motivational computation of threat magnitudes, Behavioral and Brain Sciences. *Cambridge University Press*, **29**:6 pp. 631–633.

Van der Kolk, Bessel (2014). *The Body Keeps Score: Mind, Brain and Body in the Transformation of Trauma*. Penguin Random House paperback edition, 2015, pp61.

Vliegthart, R. van Zoonen, Liesbet. (2011) Power to the Frame: Bringing Sociology back to Frame Analysis. *European Journal of Communication* **26**:2 2011 pp101-115.

Vytal, K, Hamann, S. (2010). Neuroimaging Support for Discrete Neural Correlates of Basic Emotions: A Voxel-Based Meta-Analysis. *Journal of Cognitive Neuroscience*. December 2010. **22**:12 pp 2864 – 2885.

Westen D , Kilts C , Blagov P , Harenski K , Hamann S (2006) The neural basis of motivated reasoning: an fMRI study of emotional constraints on political judgment during the U.S. Presidential election of 2004 . *J Cogn Neurosci*. **18** : 1947 – 58 .

Westen, Drew (2007). *The political Brain: The Role of Emotion in Deciding the Fate of the Nation*. Perseus Book Group. (Loc 262 of 9249 on Kindle Edition).

Williams, L. E., & Bargh, J. A. (2008). Experiencing physical warmth promotes interpersonal warmth. *Science*. **322**, pp606–607.

Williamson, K.D., (2012) LIKE A BOSS. *National Review* August 27<sup>th</sup> 2012. Available at: <https://www.nationalreview.com/nrd/articles/313504/boss> (Accessed: 27/6/17)

Wrzus, Cornelia; Hänel, Martha; Wagner, Jenny; Neyer, Franz J. (2013). Social network changes and life events across the life span: A meta-analysis. *Psychological Bulletin* **139**:1 Jan 2013 pp53-80.

YouGov (2017) HOW BRITAIN VOTED AT THE 2017 GENERAL ELECTION. *YouGov*. Available at: <HTTPS://YOUNGOV.CO.UK/NEWS/2017/06/13/HOW-BRITAIN-VOTED-2017-GENERAL-ELECTION/>. (Accessed 29/6/17)

Zajonc, R.B., (1980) FEELING AND THINKING: PREFERENCES NEED NO INFERENCES *American Psychologist*. **35** pp 151-175

Zhong, C. B., & Leonardelli, G. J. (2008). Cold and lonely: Does social exclusion feel literally cold? *Psychological Science*, **19**, 838–842.

Yu, N. 2003. Chinese metaphors of thinking. *Cognitive Linguistics*, **14**: pp41–165.

Zhong, C. B., & Liljenquist, K. (2006). Washing away your sins: Threatened morality and physical cleansing. *Science*, **313**, 1451–1452.

Zito, Salena. (2016) Taking Trump Seriously, Not Literally. *The Atlantic*. September 23<sup>rd</sup> 2016. Available at: <https://www.theatlantic.com/politics/archive/2016/09/trump-makes-his-case-in-pittsburgh/501335/> (accessed 18/6/17)



