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How to Construct a Narrative Pathway through Climate Chaos

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Abstract

This thesis highlights the importance of narratives for Human experience and its connection to the climate using a methodological and epistemological standpoint of Hermeneutics. Using the categories of economics, the unknown and psychology an argument is laid out for the likelihood of increased future chaos as a result of Climate Change. Then the flood myth is explored with its cultural significance along with Jung's theory of archetypes. In the final stage of analysis these elements are put into discussion with the hope of finding a narrative pathway through Climate Chaos.

Table of Contents

List of Figures

‘A man is always a teller of tales; he lives surrounded by his stories and the stories of others; he sees everything that happens to him through them, and he tries to live his life as if he were recounting it. — Jean-Paul Sartre, Nausea’ (Kreiswirth 2000, p.293).

Introduction

Human experience is a passage through time, and to make sense of this pathway Humans have strived to tell stories, to narrativise the phenomenology; narratives are condensed representations of lived Human experience (Bruner 1987). In addition to passing through time, Human experience is characterised by a pathway through space. Evolutionary pressures have lead Humans to develop and utilise stories in the chaos of experience, establishing dynamic mechanisms to predict, evaluate and explain reality, suggesting pathways through spatial and temporal categories (Kreiswirth 2000). Narrative has been defined in numerous different terms depending on context and discipline, but Kreiswirth states that narrative comes from the Sanskrit gna via the Latin gnarus and it signifies the passing on of knowledge by one who knows (2000).

For one to go out into the unknown, discover something and then return to one's co inhabitants and share the salient information in a way that others may comprehend it, within the context of time and space is to narrativise the information, requiring a mutual understanding between the speaker and the listener (Paschen & Ison 2014). Narratives are a tool for knowledge creation and dissemination, an attempt to convert chaos into order and share that experience with one's kin.

The creation of stories or narratives requires creativity, an understanding of one's audience and imagination; 'imagination here is understood as a way of seeing, sensing, thinking, and dreaming the formation of knowledge, which creates the conditions for material interventions in and political sensibilities of the world' (Yusoff & Gabrys 2011, p.516). Both space and time need to be fabricated together with some sort of beginning, middle and end to enable the recipient to make sense of the narrative being explained to them. It is a process, the creation and organisation of

knowledge; an emergent property coming from the context and social interactions of Humankind (Paschen & Ison 2014).

There are some mutual premises that are inherent in narrative creation and understanding, certain plots, themes or archetypes that have been developed over generations to facilitate this type of knowledge development and distribution. According to Paschen & Ison (2014) narrative theory has two central premises: firstly that Human experience, cognition and values are arranged into culturally specific narrative structures, plots or archetypes and secondly that relating experience through storytelling is creating knowledge through the reflective development and reworking to distill some knowledge from reality. To enable information transmission, successful narratives must have a structure or plot, information to share in a salient format and express Human experience over a time frame.

Research Problem

Narratives are the tool with which Humanity uses to navigate time and space understand themselves, the world, the past and the future. Climate Change is an issue of global magnitude, with complexity, uncertainty and the unknown over spatial and temporal dimensions. It is a problem that is hard to understand, narrativise and predict meaning Humanity has no clear pathway or direction through this epoch of increased Climate instability. The likelihood of Climate instability leading to an increase in ecological degradation, societal pressures and therefore, Human suffering, is high.

Aim

The aim of this thesis is to explain the importance and meaning of narratives to Human experience and why Climate Change is likely to lead to increased levels of instability and chaos. It will then look into the significance and utility of an ancient narrative of 'the flood', particularly looking at it through Jungian archetypal theory. Finally in the analysis the intention is to bring together the material presented to hint at the potential for an aligned narrative and therefore a narrative pathway through the next epoch.

Relevance

Climate change is a huge and existential problem that shall require a plethora of angles, viewpoints and suggestions of solutions. It is set to produce unseen rapid climatic changes that Humans have not experienced for thousands of years. Narrative is one of the oldest tools available to Humanity and therefore could be a remarkably useful way of understanding the nature of the problem and then constructing a pathway for Humanity through the likely struggles set to come into fruition. As highlighted later in the paper, the time frame for change is small and closing therefore this is a contemporary issue that needs discussion and ideas now, in this time period in an attempt to prevent future problems from arising.

Not only can narratives highlight problems, solutions, moral responsibilities, heroes and villains but they are also an important factor in understanding and communication. Quantitative work by Jones has shown that narrative communication has an important role in developing Climate Change perceptions of risk and policy preferences (2013). However often the issue of understanding Climate Change has been understood as a problem of scientific communication (Jones 2013). Jones has

found that narrative structure plays ‘a prominent role in shaping many of the climate-change-opinion-related dependent variables examined in this research, including policy preferences and character affect’ (Jones 2013). The stories that Humans tell themselves are remarkably important in how they interact with the outer environment.

There is a real need for collective understanding and comprehension of a narrative of Climate Change, as Eisenack writes ‘comparative, actor-centred and time-sensitive approaches promise an improved understanding that would help transfer knowledge on adaptation among places and sectors’ (2014, p.870). This approach would also facilitate change at numerous levels, individual, societal and institutional, hopefully enabling decision and policy makers to align with one collective narrative. O’Brien highlights this further stating in his concluding remarks that ‘it becomes clear that the majority of the research in geography focuses on adapting to changes that are under way or expected, rather than on research that helps us to understand how to deliberately transform systems and society in order to avoid the long-term negative consequences of environmental change’ (2011, p.673).

Finally the fact that greater and greater numbers of individuals are talking about Climate Change in apocalyptic terms and there are more and more frequent and numerous protests and demonstrations upon the Climate catastrophe suggests that there is more discourse required on this contemporary issue from numerous angles and perspectives. The narratives of the past have created this problem, this ecological imbalance, new ideas and narratives are required.

Research Question

How to construct a narrative pathway through Climate Chaos?

Methodology

The scientific process that shall be used to investigate the research question shall be qualitative and coming from a hermeneutic methodological standpoint. Hermeneutics stresses the understanding and interpretation of meaningful processes and phenomena (Hunter 2004). The standpoint highlights the importance of interpretation, subjective understanding and meaning of art, texts, social phenomena and culture (ibid 2004). Throughout the thesis I am to use this methodology to understand and unpack the meaning and significance given to narratives, in particular the archetype of 'the flood', the meaning that Humans have ascribed to this narrative over time and what that in turn means for one at this crucial moment in time. Therefore I believe this methodology to be a good fit with my aims as it can look into the meaning ascribed to narratives over time, cultural importance and representations of the flood and the meaning surrounding modern contemporary representations of the process of Climate Change.

Furthermore due to the scope of Climate Change and the universality and dissemination of 'the flood' myth it is necessary to use the Hermeneutic circle as an approach to the literature review. This approach understands that no article or material is created in isolation but has been developed in a context of other thoughts and beliefs and therefore needs to be interpreted in the same manner (Boell and Cecez-Kecmanovic 2010). There needs to be an understanding of the parts that make up the whole, to develop a deeper understanding of processes and phenomena (ibid 2010). The circle is a constant process of searching, sorting, selecting, acquiring, reading, identifying, refining before going back to searching again (ibid 2010). This is key as I shall try to highlight the remarkably layered, complex and far reaching connections that narratives, 'the flood' and Climate Change exhibit.

The majority of the process will be descriptive (finding out how things are, or have been) whereas some of the final parts of the analysis will be normative (stating how things could be) (Routio 2007). The predominant method for the research is that of a literature review. Baker (2000) asked authors to determine why they thought doing a literature review would be better than doing their own research. He stated that a literature review needs to be shown to be important to an advancement on the topic and that the author should justify the method through their expertise on the topic and ability to create a good and credible literature review (Baker 2000). Any literature review will inevitably require some analytical choices to be made by the author in choosing the material and disregarding other material (Toracco 2016). In this format I have attempted to read widely, over different disciplines and timeframes in the hope of picking the artefacts that connect together coherently to form some representation of a Hermeneutic circle. Due to the theoretical and abstract nature of the research area I would argue that a literature review is important to begin to start understanding the information, knowledge and thinking already in existence over the themes presented.

The material gathered is mainly secondary source scientific and literary material. This was found through searching keywords in google scholar and LUB search. These keywords varied throughout the research process however the commonalities were that of ‘Climate Change’, ‘narratives’, ‘the flood’ and ‘apocalypse’. This could be said to have been part of a normal bibliographical process with the target to discover and condense important material while removing superfluous content (Routio 2007). Additionally there are some secondary artistic and cultural representations of ‘the flood’ that have been included to again highlight and understand their significance and meaning.

The secondary method of analysis during this procedure shall be that of document analysis in the hope of extracting meaning, knowledge and understanding from the material collected. This shall attempt to find connection, corroboration and

convergence through different data sources and methods (Bowen 2009). Documents can provide context, background information and historical insight, they can also highlight questions that need answering, they can map change and development over time and finally documents can be analysed to corroborate theoretical ideas or other research (Bowen 2009). Of course the documents had to be selected for their authenticity, usefulness and application. It is part of the aim that after some descriptive analysis, some of the knowledge and insights gleaned from the documents may be put together to create a normative analysis on narrative creation for the future. And this will use my own thoughts and connective ability. I believe document analysis fits well with the research question, aim and scope of the study, especially its theoretical and abstract nature. A more empirical approach would require a large scale change in the foundation and structure of the research.

Epistemology

In combination with the methodological direction the epistemological standpoint I wish to take through this research is that of hermeneutics. The linguistic derivation of this theory of knowledge is connected with Hermes the messenger of the Olympian gods, who attempted to understand and interpret the language of the Gods and translate and articulate the meaning to mortal beings (Demeterio 2001). Hermeneutics sees Human action as intentional and therefore the action and its results have various layers of meaning (ibid 2001). Knowledge is seen as a continuous process which interpretation and knowledge creation are constantly in flux and therefore must be renewed (ibid 2001). Demeterio defines the standpoint as

> ‘Hermeneutics can be understood as a theory, methodology and praxis of interpretation that is geared towards the recapturing of meaning of a

> text, or a text-analogue, that is temporally or culturally distant, or obscured by ideology and false consciousness' (2001 p.1).

As this research aims to look back into the history of narratives it is important to come from an epistemological starting point that understands and aims to unpack the relationships and context between phenomena and their social developments and status at that time in history (ibid 2001). Therefore again I believe this epistemology matches well with the methodology, aim and research question and should lead to some knowledge creation.

Philosophy

Throughout this piece I intend to take Andreas Malms' philosophical standpoint around the difference between Humanity and nature. It should be noted that I shall not be using his epistemological marxist standpoint of historical materialism. Malms' philosophical position is not one of pure constructivism, that nature and the natural world did not exist until Humanity socially constructed them or that nature and Human society is one and the same, hybridisation (2018). Constructivism states that nature did not exist until Humanity appeared to witness and understand it, whereas hybridisation compiles Human society as part of nature (ibid 2018). Whereas Noel Castree states that nature is a product of Humanity, in particular through the processes of capitalism - the nature of produced nature (2000).

However Malms' philosophical stance states that Humanity is not separate from nature, it developed and came from within mother nature's bosom however Human society has fundamental distinct properties and emergent characteristics that make it unique (2018). 'Hybridism denies that there is anything qualitatively different between UN climate negotiations and the process of photosynthesis, but not only *is*

there an evident difference — one constructed by humans, the other not — denial of it also whisks away the significance of the combination' (Malm 2018, p.74). If there was not a fundamental difference between these two aspects of reality then changes in policy surrounding emissions would not have an effect on the C02 makeup of the atmosphere (ibid 2018). There are interactions between the natural world and the Human world but there are some differences in the makeup of natural processes and the emergent properties of the Human social world.

Humans evolved from apes, in the savannas of Africa, they have biological processes, they are born and eventually die, they are of the 'natural world' (Larsen 2014). However they possess language, imagine the future, create environments to better suit them, understand suffering, develop culture, all, I would argue, using the emergent tool of narrative.

Delimitations

Climate Change is a wooly mammoth of a problem. It has great amounts of matted fur interconnected together from which a Human hunter cannot isolate particular strands. It has many aspects of form and being that require interpretation and explanation; tusks, trunk and methane production. This paper cannot go into all the parts of the mammoth in great detail. One must isolate and examine one part of the issue. Throughout this paper I have approached the mammoth with a particular analytical lens and with a particular aim, and in doing so I am sure to miss many of the other important nuances, intestines and even narratives that make up the beast. Eisenack (2014) discusses a number of other factors or barriers involved with the mal adaptation surrounding Climate Change; these include institutional, financial, political, conflicting timescales, strategic uncertainty, lack of awareness and lack of resources. These are all important details in the makeup of Climate Change however

for reasons of comprehension and brevity not all of these factors can be discussed throughout this thesis.

This paper shall cover narratives, Climate Change and archetypal theory, there shall be connections between these elements however there must be boundaries and limits to the scope of the piece so some other important factors (politics, technology, regional and national specific information and in depth economic framing) will not be included. Furthermore, there are different methods and standpoints that could be taken on the subject that could lead to differing interpretations and understandings of the problem. One previous idea was that of performing discourse analysis, noting how and when contemporary artists, policy and decision makers use apocalyptic narratives and to what effect.

Further research, discussion, specificity and strategy clearly needs to be included in an attempt to develop holistic and prescient strategy to combat one of the biggest problems Humanity has had to grapple with.

Language

A language semantic side note to be made at this juncture, throughout the thesis Humanity, Human and Homo Sapiens are all capitalised. This is a choice made by the writer to highlight not only the importance of this epoch to Humanity as a whole but also the level of existential danger that the problem of Climate Change threatens each member of the species and the collective. Using similar reasoning Climate Change is capitalised to highlight its significance and hazardous nature.

Furthermore, later on in the thesis I shall argue that Climate Change may require a name change. Climate Change is a process and there are likely to be different levels of intensity and instability and these epochs should be labelled differently as to aid the understanding of the severity and scale of the process.

Why are Narratives Important?

The infamous and eminent contemporary psychologist Dr Jordan Peterson from the University of Toronto believes that Humans experience reality through a narrative lens in an attempt to understand how we should act in the world (1999). He sees the fundamental makeup of reality as the process of good vs evil in the context and on a canvas of chaos vs order (ibid 1999). Human experience is along these axioms, weaved into the dimensions of time and space. Narratives are the tool used to understand one's place in reality, and the direction one desires to take (Bruner 1987, Peterson 1999, Kreiswirth 2000). To consider oneself, one's past, one's memories are condensed into a linear description of events happening over time which can then have deductions and inference made about events so that they can be understood. A narrative can tell one where one has been, and how one got to where one stands today. This narrative also gives some suggestion or direction as to where to go in the future.

Narrative is one of the oldest tools available to Homo Sapiens. It is also one of the ancient but invaluable tools that has enabled Humanity to continue to this day. Therefore there may not be some credence in the belief that narrative structure may have also had an effect upon the structural makeup of the brain. Peterson argues that there is an a priori structure cognitive structure that has evolved to understand the world (Humans are not tabula rasa) and that this a priori structure is narrative in nature (1999). Furthermore these narratives layer meaning onto reality, and this process of layering meaning goes back an immense space of time, prehistory, perhaps close to the creation of language.

Narratives and the Climate

However narratives and Humanity have not evolved in a vacuum; narratives have always been situated within the climate in some sense. Mike Hulme is a Professor of Human Geography at the Department of Human Geography at the University of Cambridge and has written widely and extensively on climate and culture. He states

> 'our physical evolution was forged through amplitudes of climate change – through dangerous encounters with climate – unknown to modern humans, while our cultural evolution has involved a variety of ways of mythologizing and taming the out-workings of Nature's climate' (Hulme 2008, p.5).

Through this evolution within the environment and climate Humanity has developed culturally and psychologically; climate has also interacted with the Human psyche and culture in less material but more imaginative means (Hulme 2008). The relative size and complexity of the climate has prevented a large amount of understanding of it; until the enlightenment and scientific revolution the climate and its natural powers were the work of the gods. Human cultures have always had the capacity to construct narratives of fear around their direct and indirect experiences of strange, hazardous or unknown climates (ibid 2008). Climate and Human narratives have always been interwoven and connected in an infinitude of different modalities and processes.

Narratives of climate catastrophes are not new to the modern lexicon, there are narratives of archaic climate disasters deep within various cultures; 'the trail of the flood myth, for example, can be traced through many early cultures, most notably in the monotheistic tradition of the Biblical Flood of Judaism, Christianity and Islam' (Hulme 2008, p.5). The continuity of these narratives and current relevance is worth accentuating and unpacking. If these events and subsequent stories have been

experienced by Humans past, are there lessons and knowledge to be learnt from their strive and struggle? Are the narratives of climate catastrophe destined to repeat themselves immemorial alongside the human experience?

Climate Change is a behemoth that requires a great deal of knowledge and understanding. It has complex temporal and spatial dimensions with monstrous levels of uncertainty and future consequences to consider. Narratives can also help to define problems, highlight cause and effect, potential solutions in addition to representing moral responsibilities (Fløttum & Gjerstad 2016). Fløttum & Gjerstad go on to further highlight the importance of framing and narrativizing Climate Change; 'choosing a single plot line when imagining the future can thus lead to a singular narrative, which disregards conflicting causes and outcomes' (2016, p.2). Other narratives and solutions need to be explored, however Humanity requires narrative that highlights the problem, offers a pathway to solutions with moral responsibility.

It is time to consider Climate Change narrative of all types in historical-geographical perspective, the context of knowledge produced, distributed and interpreted at particular times and places, with all their ideas and imaginations upon past scenarios and future prospects (Daniels & Endfield 2009). The necessity for a widely understood and accepted narrative of Climate Change is required at this moment in time, to enable a pathway and continuity for progress towards preparation, adaptation and mitigation to prevent unnecessary Human suffering in the not too distant future.

Why is Climate Change likely to lead to Chaos?

Climate Change is an existential, internal, environmental, ecological, atmospheric, cultural, individual, collective and metaphysical dilemma. The civilisation and culture that has been developed has so many of its foundations, processes and faculties tied together. It is hard to imagine, hard to understand and perhaps it is because of these factors hard to narrativise. These elements could be understood as barriers to understanding Climate Change as a narrative, some of the most prominent and important factors shall be unpacked below.

Chaos is a hard term to define. It can be characterised as instability, uncertainty, a space or time where one's place in the world and direction are not clear (Peterson 1999). It is a primordial fundamental element, ceaselessly in relationship and friction with order as is represented in the dualism of the yin and the yang symbol.

Economics

One of the various created processes that has muddied the waters of understanding of Climate Change is that of economics. The famous 20th century economist John Maynard Keynes stated “practical men, who believe themselves to be quite exempt from any intellectual influence, are usually the slaves of some defunct economist” (1936/2007 cited in (Kinnvall & Nesbitt-Larking 2011, p.383). It’s importance to the human world and the majority of the interactions that take place within it cannot be overlooked.

The contemporary capitalist system has become a vital part of the Human experience for a vast majority of the world's populace. Everything is a commodity to be sold, traded and economically valued (Webb 2012). Even one of the fundamental

aspects of the Human experience, time, has been commodified, with the well known maxim: time is money. A great number of Humanity have tied their own personal narrative to the dollar, their meaning in life is to accumulate. One cannot forget or disregard the current systems evolution and context, the poverty that it has eradicated, the standard of living one now takes for granted or the system processing power that has enabled societies to thrive and populations to soar. But the explosion of development since industrialisation has been constructed and built upon fossil fuels; 'modern capitalism, and its forms of technical knowledge and organization, is fundamentally geared to accelerating consumption of energy from fossil fuels' (Webb 2012, p.109).

Neoliberalism

As capitalism became the world dominant economic model a further hybridisation developed within some states named neoliberalism. Campbell defines neoliberalism as 'a rejection of Keynesian economic theory, which posited that the state must play an active role in a capitalist economy in order to level out the inevitable boom and bust cycles' (2011, p.12). Neoliberals argue that deregulation, privatisation and limited government involvement is the best way to grow and develop economies and increase individual freedoms (ibid 2011). This laissez faire market has allowed demand to lead financial markets with very little coercion or redirection from governments with an emphasis on free trade (Campbell et al. 2011). This shift in policy and economics promoted economic growth but did not contain much in the way of environmental consideration.

According to Brisman, in the neoliberal era we have witnessed: a reduction in corporate regulation, a dismantling of the public sector, a move away from general social welfare and an increased emphasis on individual responsibility and accountability (2013). All of these aspects have allowed for greater environmental

extortion while the responsibility for extraction, pollution and damage lies with the market or the individual at the end of the supply chain; capitalist globalisation sped along by neoliberal policy has increased the scale of environmentally destructive activities (Brisman 2013). The idea that the government should take responsibility, control or liability for the protection of the environment, nature and ecosystems has been rejected; ‘’the market' has come to be viewed as a providential force of nature rather than a set of social relations that require regulations and moral restraint’ (Garland cited in Brisman 2013 p.275). Of course this is a Western, specifically, US centric view however it has come to dominate many international policies, institutions and has been emulated across the globe.

Meanwhile the solutions to environmental degradation and pollution have also been tarred with the same neoliberal brush. The contemporary and neoliberal view of reality as all aspects being economically valuable makes every problem and solution an issue of economics, for example the term ‘market environmentalism’ used by Liverman (2009). One such solution initially proposed by the US was that of Carbon trading, cap and trade schemes to control emissions, allowing the invisible omnipotent hand of the free market to solve the problem of pollution and Climate Change (Liverman 2009). This pathway enabled the responsibility of fixing the problem of Climate Change to go onto the market, further away from individuals, businesses and governments. Additionally power relations came into play with the great amounts of money at stake, the richer and more powerful countries enabled to set their own targets or sell their carbon taxes to other nations using ‘carbon credits’; ‘the commodification of carbon emission reductions within the international climate regime has immense theoretical and practical implications’ (Liverman 2009, p.293). This neoliberal narrative of Climate Change requires very little change to the status quo, very little responsibility to any body or organisation, simply expecting the invisible hand of the free market to pay our collective environmental mortgage.

Randall mentions this narrative, the attractive and aspirational view of changing consumer habits to come a part of the current consumer lifestyle, requiring little change of the current system and understanding of the problem (2009). Here once again the responsibility is on the end of the demand chain and the system itself: the individual and the market. The notion that consumerism itself will get Humanity through this tough time alone without other changes or narratives is a tough pill to swallow, but a reassuring and cheap (momentarily) pill to those sitting comfortably.

Morality and responsibility has been reduced in this model of economics with the sole factor being that of demand, if there is demand then the market requires it and it should be facilitated. There is no questioning of whether the demand or process is for the good of Humanity, the planet or anything else. Governments leave their responsibility to the consumer, to big business, the free hand of the market or to the will of the people through democracy.

Consumerism

Yuval Noah Harari has written 'money isn't a material reality - it is a psychological construct' (2014, p.201). Money has become part of the collective imagination using trust as a facilitator of transactions which in turn has allowed systems to become more complex and greater levels of processing power for societies (Harari 2014). As part of the collective imagination of the vast majority of humankind, it is in a way a narrative that one shares with others. The narrative of neoliberalism has put greater responsibility on the individual and the invisible hand of the market; society is reduced to rationally self interested choices that look to maximise the short term gain for the individual (Webb 2012). The neoliberal paradigm shift has been characterised by a change of shared citizen responsibility of welfare to one of short term self interest (ibid 2012). Furthermore governments align the self interest of the consumer not only with short term gratification, but with some form of long term responsibility

for the risk of the market, debt, poor health and Climate Change (Webb 2012). Again any questions of morality and responsibility are conspicuous by their absence.

The narrative of consumerism has also got itself tied in with narratives of freedom and individual rights, with power and security, with promotion from governments that growth is good (Webb 2012). These narrative strands intertwined with consumption leave moral and ethical responsibility on the individual. There is a mental splitting of the public mind; the short term hedonistic gratification vs the responsible carbon considerate citizen, governments requiring and expecting consumerism and growth on one hand while placing responsibility and obligation for the fate of the earth on the other (Webb 2012). This splitting creates confusion, segmented knowledge and denial;

> 'Cohen (2001) argues that denial of uncomfortable knowledge is particularly likely in the context of a culture where epistemic and moral relativism are the norm such that all truths become rhetorical accounts, and are treated as negotiable' (ibid 2012, p.120).

Contemporary consumerism and confused consumption directed at Climate Change are far from being aligned in a collective or all encompassing narrative that the Human on the high street can contemplate before purchasing a carbon cutting cake cutter.

Economic Growth

Empirical findings from Arrow et al. have been quite clear on the linkages between economic growth and the environment (1995). Economic growth may be associated with improvements in some environmental activities however economic growth is not sufficient to improve the environment in general and certainly that Earth's resource

base is not capable of supporting infinite economic growth (Arrow et al. 1995). There are two narratives jarring against one another here, one of the necessities for economic growth indefinitely into the future and one of the finite nature of the planet with certain planetary boundaries that can not be surpassed without serious complications (Becker 2014).

Economic growth alone will not magically improve ecological systems; 'economic growth is not a panacea for environmental quality; indeed, it is not even the main issue' (Arrow et al. 1995, p.93). Making environmental degradation, pollution, Carbon Dioxide level rise a narrative of economics is to miss the mark, removes responsibility and simplifies the narrative into ones and zeros, dollars and pounds. Economic reform is a tool but it is not the leading character in the narrative of Climate Change. Furthermore framing Climate Change as purely an issue of economics does not take into account time, continuity or lived experience preventing one from understanding it as a narrative. If a narrative is the passing of knowledge, what is the knowledge to be gleaned from the economic narrative, to pass on responsibility to the market?

When Climate Change begins to threaten global economics perhaps then there shall be a requirement for other narratives and ideas rather than allowing the market to take responsibility, the consumer to take responsibility or the rapacious need for constant economic growth to be curtailed. One needs to remember that economics and the idea of money is a relatively recent creation and that it is of our own making, it is not of the natural world. Therefore in some ways it is a narrative humanity has developed between ourselves, it can be altered and aligned in different directions.

In addition Economics can not be narrativised. How many stories do humans hold about the plucky lived experience of a five pound note or the hero's journey of a Carthaginian shekel. Money is not Human's lived experience over time - it is not narrative. What knowledge is there to be transmitted? What is the current narrative of

Climate Change viewed through economics? That Humanity has become richer and through no one's responsibility Carbon Dioxide and environmental degradation is rising while the Climate suffers various disturbances and catastrophic events? Furthermore it is the consumer and the invisible hand of the market that shall magically sort out the problem before the finite resources and carrying capacity of the planet are caput…

It is hard to argue that the current state of the global system of economics is in alignment with a stable global environment and climate. The argument is far easier to make that neoliberalism, consumerism and economic growth are processes that with time are fueling the rapid degradation and destruction of the planet. The narrative of money and the capitalist system is one of all problems being reduced down to money. At the collective level economic growth is the panacea for all Humanity's ills and at the personal level the myth of consumerism is the medicine to assuage any negative feelings (Harari 2014).

There is an old saying that if you have a hammer then everything you see is a nail. Climate Change is interwoven with the current economic system and economic power has been elevated to such a level that every problem has but one solution, throw money at it. However the processes that have lead Humanity to the current ecological dilemma rapaciously continues day by day. It is a problem of economics, but not only, reductively economics, there are other aspects to the problem that need addressing to prevent the march towards Chaos.

The processes of economics, fossil fuel burning and consumption continue, the population grows, expectations upon standards of living rise day by day. The processes that have created the current frame of Change Change progress march forward, increasing the likelihood of future instability and degradation. Without change Humanity shall step into realms of the unknown.

The Unknown

The Human penchant for narratives are examples of knowledge creation and distribution from the dark tapestry of the unknown. Climate Change is certainly characterised as a large lump of the unknown, it consists of complexity, uncertainty and chaos across temporal and spatial dimensions.

Complexity

The planet is made up from a number of different systems. Francis Heylighen defines a system as an interconnected set of elements or parts coherently organized in a way that achieves something (2017). It is greater than the sum of its parts, with numerous actors, parts, relationships, feedback loops and interactions (Heylighen et al. 2017). The global system of economics is an example of such a system, with an unfathomable number of interactions and relationships that make it up. These complex systems can be said to have emergent properties; 'properties that cannot be reduced to the properties of the parts' (Heylighen et al. 2017, p.5).

Francis Heylighen goes on to highlight a conceptual tool from complexity science, that of the multi agent system; 'agents can be conceived as autonomous individuals who try to achieve some personal goal or value ("utility" or "fitness") by acting upon their environment—which includes other agents' (Heylighen et al. 2017, p.11). The actors within these multi agent systems each have their own goals and objectives, often competing with other actors to reach their desires egocentrically, however these actions are often short sighted without a full understanding of the rest of the complex system or actors or of the potential emergent properties over time (ibid

2017). Additionally with social systems it is difficult to assign boundaries and limits between systems with great overlap between one another (ibid 2017).

It is of importance here to note that emergent properties develop from increasing complexity. I would argue that narratives are such an emergent property. They are not found outside of Homo Sapien interactions in the natural world. As Human societies grew, complexity increased and larger and more complex narratives were required to ensure shared myths, identities and direction within groups. This would link well to the historical materialist standpoint of Malm (2018) in that Humanity has evolved properties that have separated them to a certain extent from nature. Furthermore these properties have attributes of their own - Human narratives are only situated in the realm of the psyche and imagination.

The nature of Climate Change is that it is planetary, the globe is made up of an incredible number of complex systems, from the economic, to the social, to the biological, to the chemical, to the atmospheric… Each of these systems interact with one another producing emergent properties and adaptations to changes but what characterises the systems is that although agents have an effect on systems while no one controls the system (Heylighen 2017). This complexity prevents a simple explanation for Climate Change and therefore a simple narrative for one to comprehend. Certainly a purely economic, or consumer habits solution to the issue is remarkably reductive and pernicious (Webb 2012, Arrow 1995). Furthermore narrative with a sole villain of Carbon Dioxide is also a reductive poor man's understanding of the current situation. Humanity is yet to fully understand the invisible interdependence that makes up reality.

Uncertainty

Due to this complexity there is great uncertainty of the effects of climate change. On both dimensions of time and space the effects of altering climate are unsure. Furthermore these effects can affect differing complex systems in remarkably distinct ways. Therefore observable impacts of Climate Change are uncertain where and when exactly they shall strike; 'natural variability that makes it difficult to detect and attribute climate changes will also prevent observations from doing so' (Hallegatte 2009, p.246).

Scientists have attempted to model Climate Change to reduce uncertainty and create credible predictions to guide decision making. Hallegate highlights that one of the problems arises from the speed of expected changes (2009). There have been numerous timescales and predictions made upon the rate and rise of changes in climate. Webb states that many predictions seem distant in both time and space, with effects to be worried about in a far away future or a land away from oneself (2012). Climate science is science of uncertainty, however consistently the results are far worse than the scientific predictions and the evidence continues to be robust (Webb 2012).

Additionally within many of the complex systems alluded to earlier there exist a plethora of tipping points; nonlinear shifts in the shape or scale of natural processes at different locations and time scales or the frequency of extreme events (Lenton 2011). For example the tipping of Greenland's ice-sheets, dieback of the Amazon rainforest, sudden disruptions to the Gulf stream, the melting of Siberian permafrost releasing methane or a volcanic eruption (Lenton 2011) (see Figure 1). All of these events are difficult to predict and due to the nested nature of the complex systems the potential permutations are even harder to interpret.

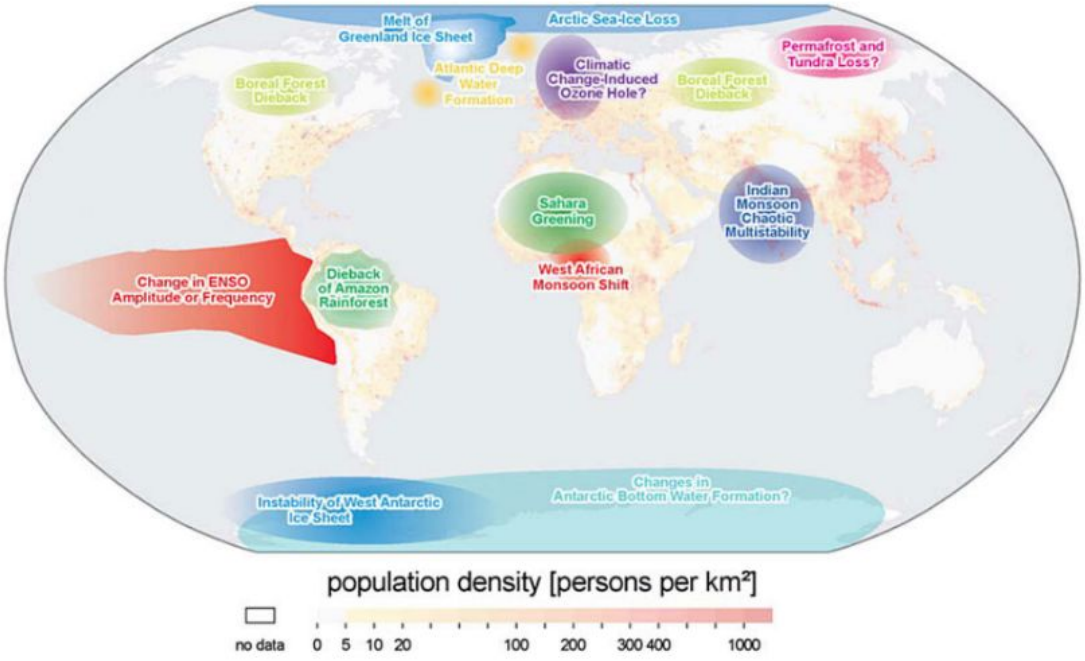

Figure 1. Tipping Points in the earth system from Liverman *Journal of Historical Geography 35 2009, page 288*

There have been attempts to reduce complexity in terms of discussing the threat in terms of a global mean temperature. This appeared in the 1980's as a means for multiple actors to fathom changes in the climate system (Hulme 2010). However as Hulme highlights this is a reductive and impotent method of communication; 'it is psychologically sterile: no-one experiences or witnesses global-mean temperature and it requires extraordinary efforts of the imagination for it to acquire purchase in the practices of everyday living' (Hulme 2010, p.560). There is a disconnect between a rise in global mean temperatures and one's lived experience; with research from Stoknes showing that people's perception of Climate Change is highly related to recent weather (2014).

With the uncertainty of Climate Change and the distance in space and time the human mind uses imagination or other psychological methods to fill the unknown; 'the uncertain futures of climate-change impacts have had profound effect on the public imagination of and engagement with climate change' (Yusoff & Gabrys 2011, p.518). The standard evolutionary Human response to the unknown is that of fear, fear producing inaction - the fight or flight action. However this fear and unknown requires confronting and understanding, as Green states 'change is the killing of fear' (2016, p.34).

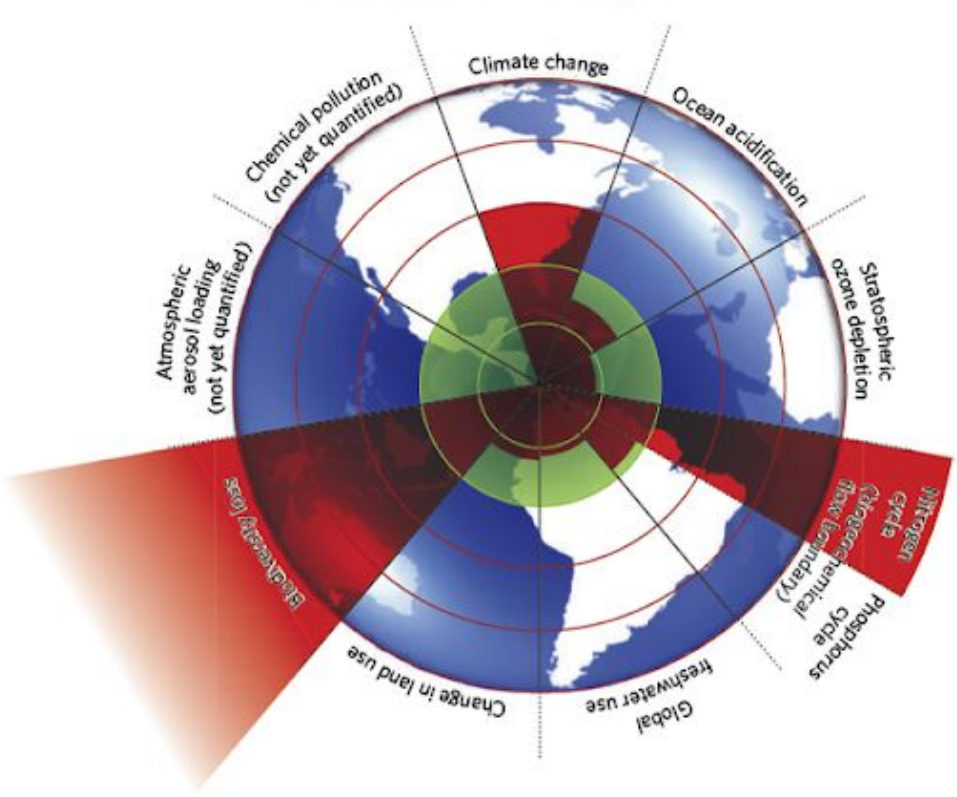

Figure 2. Planetary boundaries for sustainability. From Becker 2014 *Sustainability Science: Managing Risk and Resilience for Sustainable Development*, Newnes page 51.

Chaos

Despite the complexity and uncertainty around the Chimera of Climate Change however one aspect that has some accepted validity is the increase in chaos that shall be brought upon its wings. Becker (2014) further highlights the nested nature of the global sustainability matrix that Humanity finds itself within at this moment in time. Building on work by Rockström et al. he visualises a number of different planetary boundaries that need to be respected to maintain a safe habitation zone for Humanity (Figure 2). This representation is of course a simplification with certain areas of the globe experiencing more and less of these issues at any one time and Becker goes on to build upon this model to consider the social foundations also required to develop and improve the lives of those in need and poverty (Figure 3) (2014). The balance between environmental protection and societal development is a fine one, with greater pressure upon the environmental ceilings the likelihood of greater deterioration of the social foundations.

Figure 3 A safe space for Humanity. From Becker 2014 *Sustainability Science: Managing Risk and Resilience for Sustainable Development*, Newnes page 55.

The Intergovernmental Panel on Climate Change (IPCC) was formed to scientifically assess and monitor Climate Change and its many implications and potential future risks. From one of its most recent special reports on warming above 1.5°C, stated below are some of their headline statements (IPCC 2018) (See Figure 4 for graphic representation of the Reasons for Concern).

> Human activities are estimated to have caused approximately 1.0°C of global warming above pre-industrial levels, with a likely range of 0.8°C to 1.2°C. Global warming is likely to reach 1.5°C between 2030 and 2052 if it continues to increase at the current rate. (high confidence)
>
> Warming from anthropogenic emissions from the pre-industrial period to the present will persist for centuries to millennia and will continue to cause further long-term changes in the climate system, such as sea level rise, with associated impacts (high confidence), but these emissions alone are unlikely to cause global warming of 1.5°C (medium confidence).

The IPCC assessments make for worrying reading. Especially with the understanding of just how connected ecological systems are to one another, and with the understanding that we don't know how one system collapse may affect others. The likelihood of increased environmental instability, is high.

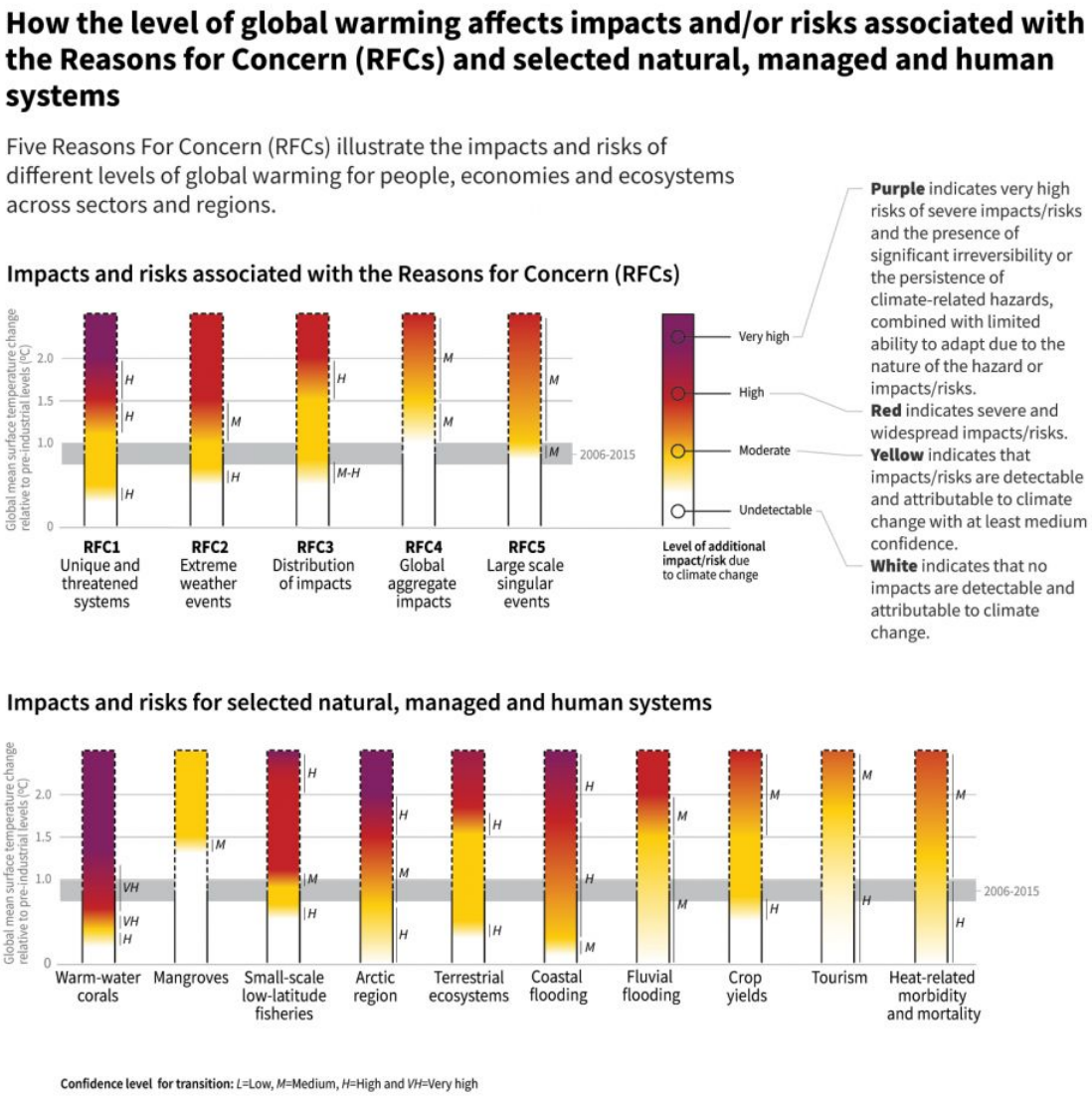

Figure 4. Reasons for Concern from the IPCC special report 2018 to be found at https://www.ipcc.ch/sr15/chapter/summary-for-policy-makers/

These changes will have a remarkable effect upon all the systems that make up the planet Earth. The graphic and the report highlights the number of converging and simultaneous impacts occurring concurrently which will each affect one another.

Wallace-Wells released a book recently named the uninhabitable Earth, it is an alarming read. He expects the natural world and environmental systems will be placed under greater and greater levels of stress without suitable time to adapt or evolve with the changes; 'in just the past forty years, according to the World Wildlife Fund, more than half of the world's vertebrate animals have died; in just the last twenty five, one study of German nature preserves found, the flying insect population declined by three quarters' (Wallace-Wells 2019, p.59). With each degradation and weakening of one actor within a system other processes and agents are disrupted and unbalanced.

Some of the threats to Humankind that have been locked away by time and ice shall have new likelihoods of re-emergence. Changes in temperature and Climate shall affect the incidence and distribution of diseases, as tropical diseases migrate further globally North and South and ancient viruses and bacteria locked away in glacier ice melt into water systems (Brisman 2013). There may even be subtle changes in the bacteria and microbes that make up the Human gut and biology (Wallace-Wells 2019).

Changes in the environment may make areas of the world unlivable through drought, heat, flooding or war. Millions of people displaced by drought, flooding, social and economic collapse; there could be tsunamis of displaced people heading to the gates of Europe and other affluent nations (Bettini, 2013). It is likely that those already in poverty without the resources and means to prevent large scale collapse shall be most affected, Wallace-Wells uses the term 'climate caste system' to describe this future inequality and potentially new world class system (2019).

Climate Change may also act as a 'conflict multiplier' (Homer-Dixon 1994). 'Evidence is fast accumulating that, within our children's lifetimes, severe droughts,

storms and heat waves caused by climate change could rip apart societies from one side of the planet to the other. Climate stress may well represent a challenge to international security just as dangerous-and more intractable-than the arms race between the United States and the Soviet Union during the cold war or the proliferation of nuclear weapons among rogue states today' (Homer-Dixon, 2007a p. A25). Conflicts over resources may become common place, particularly disagreements over freshwater; the World Banks landmark study of water and Climate Change named 'High and Dry' found that the impacts of Climate Change will be mainly channeled through the water cycle (Wallace-Wells 2019). The past epoch of relative global peace must be understood in the context of widespread levels of satiation - hungry and thirsty societies are far less likely to be peaceful.

In Jared Diamond's book *Collapse: How Societies Choose to Fail or Succeed*, he described 12 sets of problems that have led to societal collapse throughout history, all of which are playing out currently in some parts of the globe: destruction of habitats, loss of biodiversity, soil degradation, freshwater depletion, pollution (2013). Attempts to simplify global sustainability problems into a straightforward cause and effect is pernicious; Diamond stresses 'the single most important problem is our misguided focus on identifying the single most important problem!' (2013, p.498). The worry is the sheer number of interconnected and progressing problems associated with Climate Change are coalescing and multiplying.

Climate Change is a hydra with multiple heads requiring action, Carbon dioxide level rise and global warming is one piece of problem; IPCC reports have outlined a plethora of probable climate shifting effects on natural systems, sea level rise, more severe flood and droughts and increased occurrence of natural hazards which will all in turn affect Human activities (Gleditsch and Nordås, 2010). The complexity and connectedness of the systems compounds and exacerbates stress and strain upon other natural and Human systems in subtle and unexpected ways. The

earth may be dying a death of a million cuts. The complexity, uncertainty and unimaginable chaos entangled within the hide of the beast of Climate Change does not give one the continuity or knowledge to create a coherent narrative. The likelihood that the average lived Human experience and narratives of the future are set to contain greater levels of instability, turmoil and of suffering all set within the backdrop of Climate Change (figure 5).

I would argue that somewhere in the not too distant future the process of Climate Change will undergo a epochal name change. There will be an era, no longer known by Climate Change, but instead known as Climate Chaos.

Figure 5. Kerala floods, UN chief says climate change nearing point of no return
https://s3.ap-southeast-1.amazonaws.com/images.asianage.com/images/aa-Cover-bsnudco08r3igtj44duecnr7m4-20180824120446.Medi.jpeg

Psychology

There is another important nested factor connecting narratives and the potential chaos of Climate Change: Psychology. Due to the aforementioned contradictions in neoliberal contemporary world and the large levels of uncertainty the Human mind contains numerous psychological processes available to it to assuage unwanted negative feelings or confusion around the subject of Climate Change. Intertwined within the phenomenology of climate runs threads of anxiety and fear; the human experience of climate is capable of releasing powerful emotions which can be benign and threatening (Hulme 2008).

Stoknes termed the growing discrepancy between climate science and decreasing concern as the climate paradox (2014).

> 'A number of tentative explanations of the climate paradox have been proposed, including: climate change perceived as distant in both time and space, the lack of a global treaty and political action, the quest for economic growth, the financial crisis, the complexity of the problem leading to numbing and helplessness, cultural filters, cognitive dissonance, limited individual responsibility, an active counter-campaign and denial as a fear-avoidance' (2014, p.161).

There are aspects of Human psychology that are interacting with the information and understanding of Climate Change that are reducing the ability of Humanity to change course and adapt. The scale, scope and time frame of the problem is not something that Humans have evolved to deal with.

Time

One of the largest and most intangible obstacles to a psychologically valid narrative of Climate Change is that of time. The Human brain has evolved through direct contact with their environment, creating immediate responses to immediate threats and opportunities; Humans have evolved a biological predisposition to react to stimuli that reach our five senses, we have not evolved to respond to stimuli that are beyond our personal experience of time and space (Johnson and Levin 2009). The lag time experienced with Climate Change makes for learning difficulties with behaviour. Prior to the development of agriculture, our ancestors were mainly concerned with immediate stimuli: their tribe, predators, prey, danger, food and their local environment (Gifford 2011). The current feedback loop of Carbon release into the atmosphere or 'slow' deforestation or steady acidification of the oceans does not relay stimuli back to the contemporary Human in real time. This combined with the complexity and size of the systems mean that there is often too great a gap in time or locality between action and reaction preventing cognition (Johnson and Levin 2009).

Stoknes supports this major psychological barrier: the perceived distance in time and space and influence of Climate Change (2014). This psychological distancing lessens urgency in any need to change current habits, systems and lifestyles - the issue being far into the future, to be dealt with by someone else, with effects to be experienced somewhere else (ibid 2014). Evolutionary psychology states that threats perceived as remote or distant lead to far less concern or visceral response (Stoknes 2014). Humans have not evolved to deal with existential threats such as Climate Change.

Furthermore much of the negativity and anxiety surrounding the narrative of Climate Change is predicted far into the future. Why should one sacrifice something in the present to prepare for an eventuality that may occur far into the temporal sphere; this is shown by the confusion and lack of coverage by many media

producers, a distant future threat does not sell, it does not interest the individual at this moment in time (Johnson and Levin 2009). It is hard to comprehend changing behaviour in the present because someone has told you that something you don't fully comprehend may or may not happen in the future, especially if this goes against the status quo (Gifford 2011, Johnson and Levin 2009).

Psychological Biases

Johnson and Levin mark out five well established psychological biases that have been known to cause 'decision-making failures in politics and economics: positive illusions, cognitive dissonance, the fundamental attribution error, prospect theory and in-group/out-group bias' (2009, p.1596).

Positive illusions are the presupposition or belief in greater abilities than one obtains, greater control over future events, leading to perceptions of lower risk, invulnerability and negates the need for any change; Positive illusions mean that people are likely to overestimate their ability to cope with environmental instability or downplay the likelihood that they will be affected - 'it won't happen to me and if it does I'll be able to sort it out' (ibid 2009, p.1596). Furthermore research has shown that positive illusions may be exacerbated in 'situations of ambiguity, lack of feedback, and threat' (ibid 2009, p.1596), all of these aspects characterise Climate Change with its high levels of uncertainty.

Cognitive dissonance is a psychological mechanism that occurs with the attempt to understand and align new contradictory information. To prevent psychological discomfort an individual may try to make the new information fit their beliefs or avoid situations that promote feelings of dissonance (Johnson and Levin 2009). This is often done subconsciously and although subtle it can prove to be powerful; we are often completely unaware that we are excluding or disregarding uncomfortable information (ibid 2009). New information on the environment or

Climate Change may be adjusted to suit one's pre existing knowledge or narrative eg. ‘it’s China’s fault, they do all of the polluting’ or ‘Climate Change is deployed as part of a leftist media agenda’.

Fundamental attribution error is a bias that attributes the behavior of others as their personality or intent whereas one’s own behaviour is attributed to situational causes, such as limited choices or necessity (Johnson and Levin 2009). Fundamental attribution error often works in combination with in group out group bias; ‘social identity theory describes this as a process by which group members seek self-esteem through favourable comparisons with other groups’ (ibid 2009 p.1598). These two mechanisms prevent narrative coherence with the opportunity to assign blame and motivation away from oneself to another individual or group.

Stoknes also states how information is filtered through cultural identity; ‘the “cultural cognition of risk” refers to the tendency of individuals to form risk perceptions that are congenial to their values’ (2014, p.165). Cultural identities can build upon confirmation and assimilation bias leading to individuals only intaking information that fits with their current worldview, lifestyle and identity, meaning that those who are already sympathetic to environmentalism accept narratives of Climate Change however those whose identity is connected to finance or fossil fuels will distrust any message of ecological degradation (Stoknes 2014).

Gifford takes a slightly different view on what he calls the ‘Dragons of Inaction’ grouping psychological barriers into 7 ‘Dragons’; ‘limited cognition, ideologies, comparison with others, sunk costs, discredence, perceived risks and limited behaviour’ (2011, p.292). Within one of the ‘Dragons of inaction’ subphylum, is the psychological mechanism of denial; ‘uncertainty, mistrust, and sunk costs can easily lead to active denial of the problem’ (ibid 2011 p.292). This can manifest itself as denial of the very existence of Climate Change, that humans are responsible for the effects or that the individual oneself has had some role to play (ibid 2011). Gifford

highlights that fear has a large part to play with triggering denial, and argues that; ‘more research about the emotional elements underlying the denial of climate change and its human connections is needed; it would help in the design of more effective ways to communicate about climate change’ (Gifford 2011, p.296).

The behemoth that is Climate Change contains matted within its hide many obstacles to understanding, imagining, changing and preparing. The nested nature of the current economic system, the complexity and uncertainty of its future and the evolutionary idiosyncrasies and mechanisms that make up the Human psyche. With these obstacles and narratives running in the direction of chaos is there a universal and accessible narrative to inspire a change in Humanities collective destiny…? The obstacles of Psychology, need to be understood and aligned together in a collective positive narrative, as in times of Chaos narratives can be hijacked for one’s own desires.

Us vs Them

A narrative requires conflict, good versus evil, a hero and a villain. As set up previously Climate Change is born and entangled within Humanities source of societal development and historical context, it’s characterised by complexity, uncertainty and chaos plus neurological evolution has left Humankind with a tool with many trap doors to prevent total focus and holistic understanding of such an all encompassing problem. There is a narrative that many groups within Humanity’s rich and varied history have turned to in times of stress, confusion or resource scarcity, it can be covered by the term ‘us vs them’.

Homo Sapiens evolved in tribes or groups that shared collective narratives, culture and myths around their own standing in the world. Often these narratives were defined by their difference and opposition to other tribes or groups. There are an infinitude of groupings possible to make one in to ‘the other’; nationality, age, gender,

language, sexuality, ethnicity, wealth, class, eye colour, religion, football team, tribe, family, skin colour, ideology, etc.

A horrific example of the us vs them narrative combining with environmental instability can be found in the aforementioned book collapse authored by Jared Diamond (2005). Before his analysis a little context and background is provided by Staub (2006) upon the Rwandan genocide. After many years of Belgian colonisation, us vs them narratives between two ethnic groups; the Hutus and the Tutsi, were institutionalised and normalised into society despite the groups having a shared language and largely shared religion (catholicism) (Staub 2006). During the 1950's sporadic tribal conflict and violence began to occur between Hutu and Tutsi climaxing in a civil war from 1990 to 1993 (Staub 2006). In 1994, a plane containing the then president was shot down leading to an eruption of 100 days of violence, in which, 'Hutus killed 700,000 Tutsi and 50,000 politically moderate Hutus' (Staub, 2006, p.869). 'This was an "intimate genocide", neighbors killing neighbors, and people in mixed families killing family members and occasionally even their own children' (Staub, 2006, p.869).

However Jared Diamond indicates that the us vs them component for the chaos was only part of the cause for such an outpouring of ethnic animosity, as there were mixed ethnicity families and violence against members of the same ethnic group (2005). There were other elements that fabricated the situation, notably, 'Rwanda's average population density is triple even that of Africa's third most densely populated country (Nigeria), and 10 times that of neighboring Tanzania' (2005, p.313). In addition to this Rwanda had been suffering from droughts and soil erosion that damaged a society that relied heavily upon agriculture (ibid 2005). Furthermore global coffee prices had fallen and austerity imposed by the World Bank had further destabilised the Rwandan economy (ibid 2005). The chaos that was produced was more nuanced and contextual than solely narratives of us vs them, although it played

a role; ‘it is not rare, even today to hear Rwandans argue that war is necessary to wipe out an excess of population and to bring numbers into line with the available land resources’ (André and Platteau, 1994 cited in Diamond, 2005). Us vs them narratives exist in societies everywhere, however when environmental, societal or economic unrest starts to operate in a population then the Human penchant for tribalist violence is never far away.

The narrative of ‘us vs them’ has been deployed in a plethora of epochs and levels. In modernity and in connection to Climate Change it can simply be used to blame another group for the problems one is aware of, for example fossil fuel industry, the US or China, the rich elite 1%, meat eaters, refugees etc. However when taken to the narrative extremes, ‘us vs them’ can morph into militarisation, genocide or persecution. It is an ‘easy’, comforting and productive narrative for those in power who wish to remain so, allocating fault and labelling the other as the villain of the story. However this narrative is incredibly reductive and rarely produces any other result than increased Human suffering, uncertainty and chaos; ‘old gods are rearing their heads, and old answers: revolution, war, ethnic strife’ (Kingsnorth and Hine 2009 p.8). Narratives of Us vs Them when combined with other stressors, for example resource scarcity usually head down one direction, that of increased Human suffering and an increase in chaos.

This is temporal dimension Humanity finds itself, going through a rapid global interconnected climatic alteration process, with the evolutionary hangover of intersubjective groups defined by collective identities or as the eminent anthropologist Frans De Waal concisely puts it; ‘Globalisation by a tribal species’ (2005, p.54). It is my personal worry that these elements of environmental instability would combine with the fragility of an all encompassing economic structure and some archaic and barbaric narratives based upon tribalism that would only serve to lead Humanity of a path to chaos.

'Apocalypse is the single most powerful master metaphor that the contemporary environmental imagination has at its disposal. Of no other dimension of contemporary environmentalism, furthermore, can it be so unequivocally said that the role of the imagination is central to the project; for the rhetoric of apocalypticism implies that the fate of the world hinges on the arousal of the imagination to a sense of crisis' Lawrence Buell cited in (Yusoff & Gabrys 2011, p.520).

‘The Flood’

So as alluded to previously, there are a number of different factors that may prevent one from compiling a coherent and contemplatable narrative of Climate Change. It is a phenomenon that is characterised by large amounts of uncertainty, developmentally established systemic economic context, Human proclivities to hide from the issue and of course the dimension of time and the future. All of these aspects make it tremendously hard to create a narrative with continuity, knowledge transmission and moral guidance for a pathway through the ensuing chaos. However there are Human stories that have existed around a similar plot and narrative structure, known through their archetypal name - the flood.

The Flood Myth

The oldest narrative known to man is the Mesopotamian poem known as the Epic of Gilgamesh dating as far back as possibly the third millenium B.C. (Lorey 1997). The epic has been persevered and remained part of the Human lexicon through the survival of clay tablets (Figure 6) that represent some of the earliest forms of writing with Sumerian Cuneiform (ibid 1997). After some adventures and exploits the hero of the poem Gilgamesh meets Utnapishtim who has become immortal through building a great ship to protect himself, his family and animal species from a great flood or deluge sent from ‘the gods’ to deal with Humanity's overpopulation and sins (Lorey 1997).

Figure 6. Neo-Assyrian clay tablet. Epic of Gilgamesh, Tablet 11: Story of the Flood. Known as the "Flood Tablet" From the Library of Ashurbanipal, 7th century BC. https://upload.wikimedia.org/wikipedia/commons/thumb/7/7a/British_Museum_Flood_Tablet.jpg/800px-British_Museum_Flood_Tablet.jpg

The flood myth also can be found in genesis, where the hero Noah creates an ark to protect himself, his family and two of every kind of animal against a flood to wipe away the sins of Humanity (ibid 1997). This story has huge importance for the bible and it has been represented a plethora of times in art highlighting its impact on multiple generations of culture (see figures 7, 8, 9, 10). There are multiple similarities between the two stories, and although evidence suggests that the epic of Gilgamesh is older than genesis, it has been suggested that Noah and the ark may have been part of an oral tradition that precedes the Epic of Gilgamesh (Lorey 1997).

In Hindu mythology there are stories of a great flood, within texts such as 'Satapatha brahmana' and 'Matsya Purana' dated back to 6th Century B.C. (Witzel 1995). The hero, Manu, is warned of the flood and advised to build a boat (figure 7) (ibid 1995). The derivation of the narrative may be of the same origin however the widespread and cross cultural traditions of flood narratives do give weight and perhaps evidence of a historic great flood that had such an impact on those who experienced it that the myth was indelibly marked onto the Human experience (Lorey 1997). Eliade notes the fact that 'the flood myth is almost universally disseminated; it is documented in all continents (though rarely in Africa) and on various cultural levels' (1979, p.169). He goes onto to state that the flood, in its many forms, usually represents the cosmic rhythm of death and rebirth and is often a narrative tool that washes away the sins or overpopulation of Humanity (ibid 1979).

Figure 7. Matsya-avatara of Lord Vishnu pulls Manu's boat after having defeated the demon from https://en.wikipedia.org/wiki/Flood_myth#/media/File:Matsya_Avatar,_ca_1870.jpg

There is increasing scientific data that collaborates these narratives, such as the effects of rapid global warming and post glacial sea level rise having a large impact upon Human dispersals in Southeast Asia around 15,000 to 7,000 years ago (Soares et al. 2008). Furthermore there is Geological evidence for large flooding around the black sea around 17000 to 10000 years before the present (Chepalyga, 2007). In his book the worldwide flood: unifying science with the Human narrative tradition, Jaye sets out the mounting geological evidence for mass, global flooding occurring approximately 13,000 years ago that must have had a heavy effect upon the Humans that survived such an event (2017). Together these myths and geological evidence provide a strong case that Humanity has experienced large scale apocalyptic flooding and it has had a profound impact on culture and storytelling.

The flood has not only had an effect on archaic culture but also on contemporary narratives. Perhaps an obvious and recent example is the documentary 'Before The Flood' where Leonardo Dicaprio narrates an apocalyptic future for the planet, set to images of the heavenly garden from Hieronymus Bosch (figure 8 and 9) (Before the Flood 2016). The documentary filmmakers make the link between the past representations on canvas and what is currently taking place across the globe. Towards the end of the film, Dicaprio mentions the need for 'a new collective consciousness' over the threat to Humanity (Before the Flood 2016).

These narratives have survived many generations of Humans and continue within the lexicon to this day, such is their power, impact and perhaps importance, as Hulme states 'we need a deeper cultural and historical reading of climate and its meaning for human society' (Hulme 2008, p.6). The artistic representation highlight the meaning and importance allocated to the narrative over many epochs and cultures.

Figure 8. The Garden of Earthly Delights Hieronymus Bosch

http://the-easel.com/essays/bosch-renaissance-artist/

Figure 9. Hieronymus Bosch : Hell and the Flood

https://www.artbible.info/art/large/144.html

Figure 10. The Flood of Noah and Companions, by Léon Comerre, c. 1911. Oil on canvas. Fine Arts Museum of Nantes https://upload.wikimedia.org/wikipedia/commons/thumb/5/52/Le_d%C3%A9luge_-_mus%C3%A9e_de_beaux_arts_de_Nantes_20091017.jpg/1280px-Le_d%C3%A9luge_-_mus%C3%A9e_de_beaux_arts_de_Nantes_20091017.jpg

The Jungian Archetype of the Flood

These flood myths in all their different forms share many narrative threads and plot lines. Apocalyptic events dealt by mother nature for Humanity's moral divergences leading to catastrophic scenarios with chaos and catastrophe. Carl Jung developed an archetype theory in the 20th century whereby narratives, symbols and metaphors that reemerged time and time again in cultures, dreams and stories have some form of archetypal backbone that exist in both biology and metapsychics (Jones 2003).

Jung believed that certain symbols are archetypal to the Human experience and that they have evolved and developed alongside Humanity, also labelling the symbols 'primordial images' (Jones 2003). For example the proverbial Hero's journey, the basis for so much culture, narratives and knowledge. It occurs hundreds of thousands of times across generations and cultures, and Humanity continues to retell the story in a multitude of ways (Campbell 2008). Jung thought that this narrative had become an archetype within Humanity, ever since the first Human went into chaos and defeated a serpent or a dangerous monster for the good of the tribe or group, the narrative was retold in the hope to inspire similar virtues of courage and sacrifice in others. There was knowledge to be passed onto to others for the good of the collective using the tool of narrative.

As a psychologist Jung theorised that these narratives were not only within culture but evolved as part of Humanity's psychology and method to make sense of chaos and give meaning to the world and environment one inhabits. He thought that archetypes were the narrative extremes, a story at the limit, nothing greater being able to be imagined - the apocalyptic flood certainly being one of these examples. Other examples of archetypes are the wise old man, the divine mother, the child, the shadow, the labyrinth and the serpent (Jones 2003). These images, genres, plot lines are recurring and Jung claimed that they are also within one's unconscious, aiding understanding and creating meaning to understand reality. Each individual may have

their own interpretation of the symbols and narratives but due to their ancient nature, a collective understanding of the archetypes exists within Humanity as part of what Jung called the 'collective unconscious' (Jones 2003, p.654).

His evidence for the archetype theory came from not only the recurrence of similar symbols and narratives cross culturally and generationally but empirical examples of the archetypes within dreams (Jones 2003). Jung thought that especially when dealing with the unknown the Human psyche would use archetypal imagery and symbolism to provide meaning to Human experience. In his view the Human psyche is not tabula rasa but made up of cognitive pathways evolved generationally that gives meaning to reality; 'symbol systems create 'paths' in human perception—paths that 'not only establish new possibilities and potentialities for a physiological system (the brain) to use, but simultaneously provide the "notational" system that eases the "discovery" of those things that are implicit in them'' (Jones 2003 p.663). The psyche has evolved concurrently within the environment, with some acts and scenarios being so important to the continuity of the Human experience that they were retold over and over until the narratives become almost distilled and seared into the pathways of the mind and within culture.

Jung believed that when the psyche could not fully comprehend a situation it would rely on the old pathways of the archetypes. Imagery of serpents within dreams were for him symbols of something deep within the psyche that Humans had once experienced, when snakes were a real threat to those early Homo Sapiens living in trees. It can represent an existential threat or something requiring awareness. The imagination uses its ancient tools and understandings to hint to the conscious mind of threats and issues within one's environment.

This viewpoint meshes well with the philosophical standpoint of Malm (2018). Humanity is part of nature, it evolved and developed in the planet's many environments, however through Humanity's striving to understand themselves and the

world, certain symbols, archetypes and narratives were cooperatively developed to create meaning and understanding which began to set Humans to a different sphere from the natural, instinctual fabric of reality but instead one of creation and destruction (ibid 2008). Humanity began to separate from the 'natural world' through creating environments that were more suitable to their fleshy fragile anatomy. Furthermore language, symbolism and narratives allowed greater and greater levels of cooperation and development to ensure proliferation. The evolution of Humanity and its levels of understanding and collective creation are examples of emergent properties such as those coming from complex systems as alluded to earlier by Heylighen (2017).

This of course is theory, highly disputed theory which is remarkably hard to validate as it is metaphysical and within the phenomenology of consciousness. There are those that agree with Jung; Jordan and Carpenter state that these images are projections of the Human mind, but 'there is no shadow without a fire, that the very existence of a shadow argues there is a light somewhere' and that 'deep, deep in the human mind there is that burning blazing light of the world-consciousness—so deep indeed that the vast majority of individuals are hardly aware of its existence' (Jordan and Carpenter 1920, p.102). Individual stories must tie in with societies about collective cultural meaning, these in turn need to connect to Humanities 'meta narratives' provided by religion, science and tradition (Paschen & Ison 2014). There are layers of meaning and interpretation for narratives at different levels of analysis, but these are all connected and part of the Human experience.

However perhaps the archetype of the flood, if it can be assumed that it is within 'the Jungian collective Human unconscious' (Jones 2003), could give a pathway, a framework, some knowledge, some passed Human experience that could give narrative clues to navigate the future chaos of Climate Change. Perhaps it is not surprising that if some form of apocalyptic event has occurred in the past that the

narrative would be held onto and passed down through generations as its intensity, destruction and suffering would want to be avoided by Humans who were to come after such events. Further still the dispute upon whether archetypes exist within the 'collective unconscious' however the time and scope of various similar narratives undoubtedly continue. Figure 7 to 10 are examples of 'the flood' narrative immortalized through art and canvas. The motivation for each piece is questionable, was the piece created due because of its relative religious weight, was it an image that the artist saw in their dreams, was it commissioned for a political purpose? Despite these questions the images exist to this day, they are part of culture and have their own narratives running through them. In particular Hieronymus Bosch' views of the flood in figure 8 are particularly emotive and powerful containing narrative plot through the use of triptych arrangement with multiple panels. Most commonly the plot of Humanity's sin and folly and fall into hell or chaos (Eliade 1979).

I had thought about making definitions for what I determine 'the flood', the apocalypse and chaos but this is part of the point I am trying to make from the standpoint of Hermeneutics, that there are many ways of interpreting, conceptualising and layering meaning onto these large metaphysical ideas. Each individual will have their own imagination or representation of such phenomena depending on their time, their context, their experiences. You can test this yourself by imagining your version of the flood, what comes to mind when you imagine the concept, I wager that there will be similarities but also nuance and difference compared to others representation and imagination of the same word or concept.

Basically Jung's theory proposed that Humans are far from a blank slate but have a mirriad of mental pathways, symbols and meaning already etched into our cognitive network that have evolved within our environment. The archetypes are extreme narratives that have had important knowledge to pass onto the next generation and have been retold and retold generationally and this retelling has etched

the stories within one's psyche. When there is an issue beyond one's comprehension the unconscious returns to archaic pathways, symbols and narratives to give form and meaning to the unknown. The archetypes have evolved alongside Humans within their psychology and in the exterior culture surrounding them. Narratives that evolved mutually, existing to pass on knowledge. One Jungian definition of an archetype is a narrative that has been retold and reshared over such a length of time, over so many generations, affected so many individuals that it has started to affect Biology (Peterson 1999).

Humanity has it's old history, evolution and context, built upon previous modes of thinking, being and narrating that have enabled them to get to a position in time, through continuity, that has them at a threshold of power to alter the entire planet for better or for worse. It is only through understanding the tools and pathways that have been built upon may one uses these same tools to prevent previous Human experiences of suffering and despair. With the looming figure of Climate Change on the horizon Wallace-Wells puts it well when he states 'there is simply no analogy to draw on, outside of mythology and theology-and perhaps the Cold War prospect of mutually assured destruction' (2019, p.67).

Cultural Evolution of Narratives such as 'The Flood'

The previous section may appear to be non scientific, with mythical, psychic and fantastical elements that attempt to reason for the existence of archetypes or primordial images. However when considered from the lens of cultural evolution, the development and persistence of narratives can be explained.

The unconscious, the psyche, the imagination are all yet to be fully mapped and empirically tied down with the modern scientific process. However 'the flood' myth, despite its age has remained within the Human social milieu; it has survived the

process of cultural natural selection. Richard Dawkins discusses this idea of cultural evolution in the form of memes (Dawkins & Davis 2017). Heylighen builds upon this idea to define a meme ‘as an information pattern, held in an individual's memory, which is capable of being copied to another individual's memory’ (1998 p.1). Perhaps the concept of ‘the flood’ can also be held in such terms, an informative pattern that can be transferred to another's imagination. This narrative has survived and been copied through individuals from the oral traditions and written narratives such as the epic of Gilgamesh and Genesis up until the present day.

Sugiyama states that ‘narrative is ultimately a product of the mind, which in turn is the product of a long history of evolution by natural selection’ (2001, p.233). She discusses how narratives ‘emerged’ from ancestral environments and can be linked to Heylighens’ emergent properties coming from increasing complexity of systems (2001). The universality of narrative suggest that those individuals who were better able to tell and process stories had a reproductive advantage over those who were less skilled, therefore passing on the ability to he next generation (Sugiyama 2001). However this evolution of the mind does not separate itself from the environment ‘on the contrary, cognitive capacities are strategies that have evolved in response to specific environmental conditions’ (Sugiyama 2001, p.236). Humans require information, skills and cooperation to adapt and survive in distinct and varying conditions and environments (ibid 2001). Narratives can provide information with minimal energy exertion, time can be reduced to deliver the important moments without the long mundane gaps without salient information and narratives can be exchanged without having to experience an event oneself, reducing physical or social risk (ibid 2001).

There are some narratives, themes, folklore that recur and reappear in various cultures; the enduring themes and characters that Jung and the folklorists described and classified could be understood as domain specific information processing myths

(ibid 2001). The narratives that survive to this day have gone through their own cultural natural selection, so why is it that ancient narratives remain within Humanity to this day? What knowledge or adaptation do they possess that has lead them to retold and kept rather than ceasing to exist in an ever changing world?

This notion of cultural evolution does suggest that there is universal 'human nature' and goes against the epistemological standpoint of poststructuralists - that there is no reality outside of text (ibid 2001). However it fits well with Malms' philosophy of nature and the notion that Humanity has evolved from nature but through increasing complexity, emergent properties (such as narratives) have come into existence and are subject to different modes of being than the purely natural processes that make up ecological systems (2018).

'The flood' narrative one of if not the oldest narrative known to Humanity (Sugiyama 2001). It has survived cultural evolution to this very day. It has been a part of the lexicon of many generations of Humanity and therefore it can be argued that it has had an effect upon the cognitive makeup of Homo Sapiens. The fact that it still 'exists' and has not been lost gives it validity. Some narratives are judged to be great, they have been read and judged by thousands of people across generations and these narratives remain in existence (Peterson 1999).

Whether or not the archetype of flood resides in the 'collective unconscious' as Jung calls it can be disputed, although I believe there is plenty of evidence to support it. To return to the definition of narrative used at the beginning of this thesis, if there was no knowledge to be passed on or transmitted from a narrative then there would be no use in retelling it, it would die from its own form of cultural natural selection. The Humans of the past thought the story so 'archetypal' and significant that it was retold, reimagined, re- envisioned over many epochs and cultures. This can be seen in the artistic representations of the flood in figures 7, 8, 9 and 10.

What narratives have died away, have not made it through cultural natural selection? Will narratives of economy continue long into the future? Will the narrative of Us vs Them sustain and evolve or remain? As aforementioned there are set to be some large scale and widespread environmental changes set to occur within the not too distant future. These alterations may have a very large effects on society, Humanity and narratives. There are question marks over whether these changes will have new selection criteria upon narratives, perhaps the modern narrative of capitalism shall not survive, perhaps Climate Change shall be the backdrop for a great deal of societal and cultural evolution. However I believe the earlier Humanity enacts its own decisions, proactively, suffering shall be greatly less than a reactive, panic stricken, undirected narrative that only produces chaos, literal and metaphorical fires to be put out, while numerous individuals suffer the consequences.

Essentially all culture has a root in nature and the environment. All myths and narratives are born in the imagination of Humanity through the connection and interaction with nature. Some of these ideas survive natural selection and remain within Humanity's narratives. Cultural evolution has relevance in this discussion twofold; one it gives support to the archetype theory - that important narratives are held within Humanity, possibly in the 'collective unconscious' and secondly that perhaps narratives that have survived cultural natural selection have knowledge and meaning worth understanding and interpreting.

An Archetypal Pathway through Climate Chaos

Climate Change is an existential threat to Humanity and yet it is characterised by dimensions that make up the fundamental basis of reality. It is a problem that is unsurpassed in its magnitude and scope. However Humanity is a resilient being that has developed tools to understand and remake the world. One of the oldest tools available to Humankind is that of the narrative; 'using language to construct a story of time and space so that knowledge can be passed onto others' (Kreiswirth 2000, p.306).

As Humanity evolved from the natural world that surrounded it, natural selection imbued Humanity with a proclivity for language that enabled cooperation and tribes to develop. Language and imagination enabled Humans to share stories, symbols and myths to understand the world they stepped out from and their own place within that world. The increasing complexity of the Human brain and societies lead to emergent properties that were outside the realm of the natural world (Heylighen 2017, Malm 2018). These narratives were part of a collective imagination of Humanity, stories one told oneself to understand the world. Some of these narratives were retold, distilled and retold, they became 'primordial images' or 'archetypes' (Jones 2003). Such was the importance and knowledge held within these narratives they were passed on through generations and reproduced within culture and their archetypal plots remade in many cultural forms (see Figures 7 to 10). Concurrently the archetypal understandings and symbols were etched into the cognitive pathways of the unconscious. To use a metaphor, imagine water flowing through rock, once the water finds a pathway through the rock, it erodes away lines making it easier to flow through in future iterations. These cognitive pathways, primordial images or

archetypes remain within the ‘collective unconscious’ in a more archaic part of the brain to be utilised when the unknown requires such understanding.

Narratives enabled Humanity to imagine the future, to understand the past, to tell stories about one’s place in the world and how one relates to others. These stories or narratives were constructed by Humanity and resided within the imagination and consciousness of each individual (Harari 2014). They enabled co operation, trade, nation building, industrialisation, capitalism, war, genocide and culture. All of these narratives are outside the realm of nature, they are imagined and brought into reality by the hand of the Human. Narratives could represent an emergent property produced by the complexity within Human societies (Heylighen 2017, Malm 2018).

Meanwhile there are processes outside of the Human narrative structure. Photosynthesis, electrons, death, entropy, plate tectonics, gravity, currents, carbon dioxide are all in existence and can be observed and labelled through the miracle of the scientific process but they are not generated or imagined by any one of the species of Homo Sapiens. These processes will not change their nature for a narrative. The narrative of Brexit will not change the distance of the UK from France, the narrative of the earth being flat shall not squash the poles together, the narrative of infinite economic growth will not change the resources of the Earth into bottomless pits, the narrative of Climate Change denial will not reduce greenhouse gases and prevent ice caps from melting.

Economic narratives have taken precedence over recent centuries, with capitalism as the established global system of trade. The mode of wealth creation was built and developed on a foundation of fossil fuel extraction (Webb 2012). The system of neoliberalism, consumerism and economic growth are all part of the historical context that has placed Humanity in a situation where planetary boundaries are being stretched to their breaking point (Becker 2014) (Figure 2 and 3). Furthermore the scale and complexity of natural processes combined with

psychological evolution and the ambiguous timescale have combined to make the phenomenon of Climate Change very difficult for one to understand and narrativise. With strained ecosystems, overpopulation, sea water rise, rising temperatures, unsustainable food production and increased resource competition, levels of uncertainty and chaos are likely to increase (Wallace-Wells 2018). All of these factors mean it is imperative for Humanity to develop a narrative to bring the society and Human systems into balance and alignment with processes of nature to provide all life on the planet a stable environment to prosper and sustain itself.

To look into the future and imagine the potential risk of the continued degradation of the planet and the knock on effects this could have on the well being on Humanity is not straightforward nor easy; Humans have evolved to respond to immediate threats (Johnson and Levin 2009). However there have been numerous narratives that have been passed down through culture and generations that may hint to previous Human experiences of widespread and rapid environmental collapse. These narratives appear in religious texts and myths across cultures (Eliade 1979) and the fact that they remain in the contemporary lexicon hints at their importance and potential knowledge to be passed onto those who make the connection with the present, the past and the future. The preeminent psychoanalyst Carl Jung hypothesised that extreme narratives were not only in the exterior of culture but within the interior cognitive makeup of Human brain (Jones 2003). He labelled these narratives at the extremes of cognition ‘primordial images’ or ‘archetypes’, one of which characterised as an apocalyptic event is known as ‘the flood’ (Jones 2003). Furthermore there is growing evidence that Humanity has experienced a mass catastrophic event around 13,000 years ago that is likely the foundation of ‘the flood’ narrative (Jaye 2017).

This suggests two things; firstly that there have been apocalyptic events in the previous Human experience that have been narrativised and therefore have some

knowledge to be understood and learnt from. Secondly, if there is an imprint or symbol of this archetype within the collective unconscious it may provide a foundation or a cognitive pathway for one to imagine or communicate the chaotic and potentially apocalyptic future of Climate Change. If one can imagine something, one can prepare for it.

Narrative Construction and the Imagination

So what knowledge is there to be passed on from ancient 'flood narratives'? Eliade and others have highlighted the similarity in plot and point with a large part of Humanity being wiped out due to their collective sins and overpopulation (1979). It links to morality and suggests that Humans who do not respect the natural world eventually face a fate with mother nature. There are surely far wiser and well read scholars on the archaic interpretations of the flood who could read deeper into this area of research.

My point here is that narratives have evolved alongside Humanity as an emergent property of an increasingly complex system (Heylighen 2017). Narratives are one of the oldest tools available to Homo Sapiens to attempt to understand and navigate the chaos of reality. They are clearly of importance for understanding the past, ones present location and to imagine the future. They are unique to Humanity and have their own nature of being, as they are not within nature but are of the Human imagination and consciousness. Furthermore there are some evolved narratives that have made a huge mark in antiquity, preserved within culture to this current day. Not only may they have remained within culture but as Jung theorised they could have made marks in the evolution of the Human mind (Jones 2003). Therefore it is of great importance to not lose one's connection with such narratives, to attempt to read into the narratives, to interpret them and question their credibility, their staying power in such a tumultuous world and what knowledge they are attempting to pass on to those receiving them.

Additionally if it is the case that these archetypes are somehow within the Human 'collective unconscious' they could be used to elucidate, comprehend and

imagine the monstrously incomprehensible issue of current Climate alterations, ecological collapse and societal disruption. It has struck me as very interesting that while doing this research a number of scientific articles upon the barriers to Climate Change adaptation conceptualise the issues as mythological beasts. For example Webb's title is around the 'Chimera of Behaviour Change Technologies' (2012) and Gifford describes 'Dragons of Inaction' that require slaying (2011); 'I use dragons as a metaphor for these obstacles because no matter what their form or shape, Western dragons always seem to be blocking humans from some goal or aspiration' (Gifford 2011, p.292). Some of the smartest academics in this recent field tend use to use mythical beasts that are in the realm of the imagination and unknown to give meaning and clarity to a problem that, is itself, partly in the realm of the imagination and the unknown. Peterson describes this as theriomorphism - to take something unknown and turn it into a beast (1999b). Perhaps it is also a hint at the necessity for heroes to stand up and take on the fight to slay the mythical beast of Climate Change.

So what might an archetypal narrative of Climate Change look like? Firstly it is my opinion that the Malm's epistemological standpoint, Humanity's evolution and the nature of time must be taken into account with the humility that Humans came from nature and are still very much within mother nature's bosom (or talons). There are natural processes far older than capitalism, agriculture and narratives. It is time to reconnect with these processes, with nature and build a future narrative that incorporates nature and allows it to flourish. There are solar energy capture technologies and other renewable energy methods available to Humanity now that do not disrupt atmospheric conditions. The planet is finite with boundaries to resource extraction, pollution and species destruction and these boundaries require respect and protection (Becker 2014).

The finitude of the planet is currently in direct conflict with the current necessity for economic growth and consumerism. One cannot disregard the wonders

that capitalism's history built on fossil fuels has generated for the mass of global population. But it has not come without its problems allowing Humanity's greed and competition to take centre stage while other aspects of humility, compassion and respect for nature have been pushed to the outskirts of any narrative. There are contemporary examples available to witness the unfettered hand of the market in environmentalism. For example the desire for ivory and elephant and rhino tusks, as the numbers of wild animals decrease, the rarity of the commodity drives up the price increasing demand and likelihood of extinction (Milner-Gulland 1993). Neoliberalism and consumerism without morality increase the pressure and demand for whatever resource Humanity deems economically valuable. Furthermore the all encompassing nature of modern day capitalism has led many of its population to align their personal narrative with accumulation bringing with it a dearth of meaning, purpose and connection to each other, oneself and nature.

An aligned narrative alongside natural processes that reforms the capitalist system to work with natural processes and to develop social foundations (Figure 3) will require some responsibility being taken on by Humanity. The neoliberal model of the free hand of the market has no morality built into it and does not provide any sort of moral direction for the consumer. The modern narrative of liberalism and consumerism is vacuous and hollow, whereas an economic narrative tied together with the narrative of promoting a better earth could provide meaning, collectivity and an element for the hero's journey for those who choose to partake in it.

A collective archetypal narrative could also bring groups together and prevent the destructive and lazy narratives of us vs them. An acceptance and responsibility of individuals that they are both the hero and potential villain of their narrative and the wider global narrative may prevent one from looking outside to assign evil to another or a different group (Solzhenitsyn, 2003). Furthermore this may give purpose and agency to one's own life and direction. A wide ranging and collective narrative for

Humanity as a whole may also prevent the worrying hijacking of the Climate Change narrative by any one group or ideology hoping to attempt to subjugate. A global collective narrative understanding would prevent, for example, Neo Marxism or for that matter Alt Right simplistic and lazy us vs them narratives, stating that the problems of ecological and social decline are to blame on the Bourgeoisie class or immigrants or any other chosen social grouping.

The archetypal theory as a basis or foundation for a pathway for the ensuing Climate Chaos could be beneficial as it would be collective and underpinning however it clearly would then require context, cultural, location specific details to bring such narratives into fruition. One communities reading, understanding and requirements of the archetype of the flood are going to differ greatly depending on a number of different factors. It is a framework, an enabling of a collective understanding that could bring groups, people together in one cause and future while still allowing for nuance, specificities and cultural importance to be promoted. As Eisenack highlights in his article, archetypes can be used as the broad context, the pattern and the connection that all socio-ecological systems will face disruption but obviously in a multitude of very distinct and contextual ways (2012). Furthermore there are similarities between the barriers to adaptation of Climate Change and some generalisations could be a good place to start when attempting to address the behemoth that is Climate Change; an application of the archetypal approach can be used as a foundation for local and regional specificity related to social-ecological systems (Eisenack 2012).

Where I think the biggest proponent for using the archetype of the flood is in attempting to overcome some of the psychological barriers highlighted earlier. The complexity and uncertainty that characterises reality, exacerbated in modern times by the wealth and dearth of information available to Humanity has produced numerous

psychological barriers that prevent the sight of metanarratives and the reluctance to change the status quo. There is a requirement to go deeper into cognition in an attempt to illuminate Humanity's past, connection to narrative, connection to one another and Humanity's shared future. If Jung's theorising is correct there is deep symbolism and primordial images available to narrative creators that are like railways to be used to connect to imaginations and discussions of Climate Change.

As highlighted by numerous academics there needs to be inquiry and development into how one communicates the phenomenon of Climate Change (Paschen & Ison, 2014, Jones 2013); if the archetype of the flood is universal across cultures and perhaps as theorised may even being symbolic represented within the 'collective unconscious' of Humanity could this provide the method, pathway or tool to a deeper understanding and imagining of the problem? 'In the imagining of the unimaginable, these extreme scenarios often seek to redefine or challenge the acceptable limits of the discourse of climate change through speculative science fiction or an engagement with what Susan Sontag called the 'aesthetics of disaster'' (Yusoff & Gabrys 2011, p.517). 'The flood' may already be part of the discussion, perhaps consciously or unconsciously, take for example the socio-political group - Extinction Rebellion, apocalyptic terminology exists as part of the contemporary social milieu.

However there may clearly be potential issues with using such metaphors and imagery to elucidate the situation. Bettini highlights the potential pitfalls of using apocalyptic narratives around climate refugees; that such narratives may lead to increased xenophobia and politics of fear surrounding those who are displaced (2013). He goes onto to state that a dramatisation of the issue may not lead to action but in fact a normalisation of the suffering for parts of Humanity and desensitisation (ibid 2013). This connects to the narrative of Us vs Them, and again highlights the

necessity of creating a form of collective narrative destiny for Humanity; the planet being our only boat amongst the cosmic flood of chaos.

Foust and Murphy also discuss the use of framing Climate Change in apocalyptic terms, in particular the difference between tragic apocalypse and comic apocalypse (2009). The frame of tragic apocalypse is one of cosmic, fated and uncontrollable destiny for Humanity where a telos (end point) is outside of the agency available to Humanity (ibid 2009). This frame or narrative is defeatist and connects to psychological barriers that nothing can be done to alter the march of a warming and unpredictable Climate. Furthermore it may lead to feelings of hopelessness and therefore paralysis and inaction at different levels in society. On the other hand Foust and Murphy provide another framing of the narrative: the comic apocalypse (ibid 2009). This narrative is one that cements Humanity's agency and power to control one's collective destiny. The comic frame also 'promotes humanity as mistaken, rather than evil' (Foust & Murphy 2009, p.162) and can prevent some of the ideological separation, heroes vs villains, good vs evil, us vs them or in/out group biases. In addition to this the authors state the importance of balance and careful use of such a narrative; the necessity to create urgency around the issue but not to stimulate fear, confusion and inaction, with the overarching goal to 'promote more action-oriented rhetorical strategies' (Foust & Murphy 2009, p.164).

In connection with a comic apocalyptic narrative that ennoble agency, there should be promotion and connection to the narratives of individuals. To connect to another of the fabled archetypes being that of the hero's journey. If individuals are roused to the narrative of a comic apocalypse, there should be a promotion and opportunity for them to align their own narrative to that of the metanarrative of Climate Change; to have the ability to have one's purpose and meaning in life to be part of the bigger picture of Humanity's struggle rather than other narratives, like for example the narrative of competition, accumulation or status acquirement.

Quantitative research by Jones, states that not only do 'narrative communication structures influence individual perceptions of risk and policy preferences related to climate change' but that in particular emotional perceptions are affected through narratives of the hero (Jones 2013, p.22). Furthermore the quantitative research by Jones can further add evidence to Jung's theory of archetypes, Humans have evolved some proclivity to respond to heroes and their journey, to follow their path and perhaps alter their own narrative to serve a greater purpose.

There are examples of this hero lead perception change within society, with the now famous (or infamous) symbol of Greta Thunberg; the 16 year old Swede who bravely, eruditely and passionately speaks to governments, media and protests over the urgency and scale of the problem of Climate Change. Fløttum & Gjerstad support this use of hero in narrative creation and success; 'the NPF (Narrative Policy Framework) takes the view that a policy narrative has a setting, characters (heroes, villains, and victims), a plot and a moral, corresponding to the policy solution' (Fløttum & Gjerstad 2016, p.3). Any narrative creation should encourage heroes and role models to take leadership roles and set examples for others for follow.

Another problem around narratives of apocalypse is highlighted by Randall and the issue of loss; 'in the narrative about the climate change problem loss is the dominant theme: loss of biodiversity, loss of habitat, extinction of species; crop failure, water shortage, drought; fuel scarcity, resource wars, illness and famine; loss of livelihood, loss of liberty, mass migration, breakdown of civilisation' (Randall 2009, p.119). She explains that this narrative of loss leads to negative emotion, even grief and mourning around what is happening to ecological and social systems (ibid 2009). These negative emotions are not conclusive to action, leading to despair and an assertion of the tragic apocalypse (Foust and Murphy 2009). Stoknes concurs, stating strong representations of disaster and catastrophe can attract people's immediate attention to climate change, although fear is generally an ineffective tool for

motivating sustained personal engagement (2014). As highlighted in the sections before the psychological aspect of understanding Climate Change can not be disregarded and there may be a real possibility that deploying extreme narratives such as the flood may only increase denial, cognitive dissonance and ideological strength.

In addition Kingsnorth and Hine make a worrying note upon the narrative of Human progress and civilisation; 'human civilisation is an intensely fragile construction. It is built on little more than belief: belief in the rightness of its values; belief in the strength of its system of law and order; belief in its currency; above all, perhaps, belief in its future' (2009 p.8). Perhaps the deployment of apocalyptic narratives (especially in its cosmic tragedy format) may lead to some losing the faith or belief in a future for Humanity and an outpouring of ecological nihilism. When coupled with the potential notion of the cognitive pathway already innate with the Human collective, the power and responsibility on the use of archetypal narratives are further accentuated.

There are a great many other articles looking into the use of apocalyptic narratives, their benefit and potential danger. Future research into understanding the use of this narrative, it's connection with the collective unconscious and with the ability to change behaviour would be of importance. Discourse and content analysis into various types of culture that has deployed the flood narrative may also be of use to understand the phenomena further. A global collective narrative must also have space for nuance and intersectionality, it should be a foundation for policy and understanding. Otherwise the complexity of the problem of Climate Change may make narrative cracks; 'knowledge about multi-scalar processes and globally-aggregated outcomes that is insensitive to the peculiarities of place and context opens the way for unitary globalised explanations and predictions of environmental change' (Hulme 2010, p.559). Would the archetypal narrative of the

flood with all its cultural representations enable bespoke regional interpretations of the narrative while still being part of a collective global aligned narrative?

I am of the belief that as stated earlier Climate Change is set to produce uncertainty and chaos - the unknown. When the unknown exists Human psychology rushes to fill the imagination with possibilities about what that unknown is or represents. As Jung argued the brain uses imagination, symbolism and beastly representations for the recipient to understand and prepare for. The earlier Humanity imagines and interprets the archetype of the flood, the better and clearer a construction in the imagination about what to prepare for, and how systems and society may be aligned to reduce suffering. The arts and humanities can play an important role in rethinking and reimagining representations of environmental change outside the constraints of the present (Yusoff & Gabrys 2011). Therefore despite some of the previous authors highlighting the danger in using apocalyptic narratives I believe that 'the flood' could be of some use in communicating the problem of Climate Change. It has existed and survived to this day so therefore must have some importance and relevance. Deploying such narratives may produce fear and perhaps paralysis, however surely this fear is better to confront and imagine now if the science is to be believed that many Humans may experience their own type of Climate related apocalypse in the upcoming decades.

Time is set to be a key dimension in this narrative construction, uncertainty surrounding the time scale of effects, the timescale available to Humanity to realign itself with nature, the time for tipping points to come into effect. In addition to this is the time of a Human life, already there has been arguments between the generations, with claim that future and younger generations are those set to be the ones tasked with the responsibility of preventing widespread ecological collapse. Time is relative and is connected to the Human lived experience. Nature and natural processes could be said to outside of this lived Human experience and may not be under the same relative

measures of modes of being. Geological processes are outside of the Human lived experience of time. For most of history they have been relatively slow but Wallace-Wells mentions a collapsing of time, a speeding up of geological processes in such a way that Humans are able to witness events occurring in understandable time frames (2019). Human experience has been situated in a stable and relatively slow geological time frame, these processes are set to speed up (Wallace-Wells 2019). Time is one of the fundamental dimensions of reality and nature that requires respect and alignment with any constructed narrative Human story of experience and progress.

I would like to promote narratives of opportunity, of change, of reconnection with myths and nature. Although there may be loss, there could be impetus to improve and reinvigorate the natural world to realign society with nature, with higher purposes than capital accumulation, with personal narratives of the hero's journey, with imaginations of being part of the collective shared Human experience, of the struggle cosmic and eternal struggle of Humanity in the backdrop of chaos. In attempting to prevent the suffering, the degradation, the archetypal apocalypse that the science is shouting to us, that ancient narratives and knowledge have partly hidden from us, we could create better systems, better societies and better individuals aligned with the natural world and our own deep nature.

This begins with imagining what narrative we collectively want to tell, understanding and imagining past narratives, asking how future iterations of Humanity responded to the existential threat of Climate Change. This is one of the greatest challenges Humanity has faced; 'we haven't yet discovered the political will, economic might, and cultural flexibility to install and activate them, because doing so requires something a lot bigger, and more concrete, than imagination - it means nothing short of a complete overhaul of the world's energy systems, transportation, infrastructure, and industry and agriculture' (Wallace-Wells 2019, p.295). With the

scale of the problem and the power and responsibility around using such narratives; one must be careful.

However an understanding of ancient narratives are more research into the potential catastrophic historic worldwide flood of antiquity may lead Humanity to feel greater humility and fragility around their position on the planet and that the need for a collective narrative to ensure protection of the species rather than the squabbling over individual narratives and ways of seeing the world (us vs them). This is not to say that Humanity should go backwards in its storytelling, but old narratives should be incorporated and understood, and possibly used as metaphor with the narratives established pathways to create new stories and direction. Humanity requires a global, collective narrative that is in alignment with the natural processes that exist and encapsulate the planet. What may hugely help Humanity in the chaos of Climate Change may be that of social cooperation and a collective shared inclusive narrative shall only strengthen social ties in the face of the perils of mother nature. To understand and imagine the past through archetypal narratives may promote and start discussion over what narrative we want to construct over the next years within the climatic changes that are set to occur.

An Aligned Narrative for Humanity

Takes into consideration our place within the natural world. That there are natural processes beyond our complete control but well within our potential to affect. An understanding that a healthy, rich, abundant, and balanced natural world is the best petri dish for Humanity. The importance of these natural processes being a foundation for any Human narratives to be aligned with.

Connection with the natural world, with respect and understanding. Connection to prior historical narratives related to the environment and nature. An understanding of the chaos of the universe and the fragile and fortunate place we inhabit. Alignment of economic policy and institutional establishments to a finite and fragile world with planetary boundaries while considering the necessity to improve and protect social foundations. This may require a large scale redistribution of the flow of capital towards renewable energy, sustainable development and making capitalism more efficient without a complete system destruction (chaos).

A collective narrative for all of Humanity that works with psychological processes of the mind. Using the collective unconscious and archetypes to aid understanding and imagination of a future that would benefit all, surpassing us vs them narratives. One that allows individuals to develop their own meaningful narratives in pursuit of a collective good. Promoting each individual to go on their own hero's journey in alignment with the collective. The highlighting of role models and leaders in this process.

An ordered narrative that promotes the agency of Humanity in the face of apocalypse (comic apocalypse) that also highlights the moral responsibility to care for and look after the planet of ours, it’s ecology and all people of the species known as Homo Sapiens.

Conclusion

Narratives and storytelling are some of the oldest tools Humanity has developed to understand themselves, the environment and their place in the world; to condense Human experience, time and knowledge into a format that enables others to imagine some part of the world and aid their own struggle within existence. One needs to appreciate and understand the importance of narratives as they are 'the equipment by which we navigate reality' (Kingsnorth and Hine 2009 p.17).

Narratives have always been situated in some temporal and local space, within an environment and often have had interactions from the natural world as key elements within their plots. Narratives however are uniquely Human, and have evolved as emergent properties with the increasing complexity of Human societies. They are the myths and stories to understand the past, to make decisions in the present and to imagine the future. Some of these stories have survived cultural evolution to the present day, and in doing so must have provided the possessor of these narratives some form of benefit to survive reality. One of the oldest and widest narratives spread across time and cultures is that of the flood; an apocalyptic catastrophe that destroyed part of Humanity. Jung theorised that this narrative and other archetypes were not only part of culture but have left cognitive pathways within the collective unconscious of Humanity (Jones 2003).

In modern times exists the global phenomenon known as Climate Change. It is characteristized by a planetary scale, uncertain timescales, incredibly complex interactions of different systems all leading to a high likelihood of increasing environmental and ecological chaos (IPCC 2018). With systems and infrastructure built upon infinite economic growth models and fossil fuels the planet has started to respond to widespread degradation and pollution with erratic and rapid Climate

alterations. This uncertainty and chaos will have knock on effects to Human systems and societies with a high probability of increases in Human suffering. Due to its complexity, historical context and all encompassing nature the issue is multifaceted and interconnected making it difficult to understand, discern problems and solutions and to narrativise for Homo Sapiens.

Perhaps the historical and metaphysical archetype of the flood holds a cognitive pathway key to enable Humanity to imagine the possible future of society within an aggressively volatile environment. It may aid communication of the problem and could have valuable knowledge to be 'passed on' to those who receive the narrative. The next epoch shall be unlike any other; 'no Human has ever lived on a planet as hot as this one; it will get hotter' (Wallace-Wells 2019, p.459). It is time for Humanity to use one of its oldest tools to navigate this future, as Yusoff & Gabrys state 'imagination is the key to pre-experiencing alternative futures' (2011, p.516).

A narrative should go back to the origins of Humanity, to see that natural processes are outside of the realm of narrative and imagination and any narrative pathway should be built from a strong foundation in nature and Humanity's place within it. The planet has certain planetary boundaries that require respect and cooperation (Becker 2014). Systems, economic practises and infrastructure should too have connection and a basis with natural mechanisms. There is also a deep Human nature that requires connection to any narrative and reality. There is a need for alignment across narratives, people and the natural world; 'alignments between ideologies, technologies and cultural movements can change more rapidly than can the physical climate' (Hulme 2008, p.14). A unified narrative that balances aspects of the natural world with the development of society and social foundations is required.

There is great opportunity for a new era of Humanity however the danger of status quo and a continuation of the factors that have lead to this time and space are real. The story of 'the flood' and its many cultural representations exist to give visual

and imaginative depictions of scenes of suffering and destruction worthy of an apocalypse. The next narratives are set to be perilous, with possibilities of old narratives of us vs them hijacking the lead role to provide Humanity with its final days to be spent squabbling over the dwindling resources left available to them. However the use of apocalyptic narratives must be used carefully with the natural Human response to fear and the unknown is that of paralysis.

The hydra of Climate Chaos and its many heads will impact each Human's narrative on the planet. It will be outside of the dimensions of space and time to become part of space and time and therefore part of the fabric of each persons lived experience. To be able to imagine the fire to come from the dragon's throat and to be able to align oneself economically, psychologically and narratively to as great a degree as possible may enable one to construct a boat just in time for the flood.

A narrative usually contains a beginning, a middle and an end. Humanity is yet to put to paper with its' final act of Climate Change. One hopes that the finale is gentler and more forgiving than the archetypal flood of times past. If one was to take the flood as the ending humanity wishes to avoid, what actions could one take now to ensure the collective destiny of humanity is not that of great suffering. Kingsworth and Hine poetically put it that 'the storyteller weaves the mysterious into the fabric of life, lacing it with the comic, the tragic, the obscene, making safe paths through dangerous territory' (2009 p.8).

Human experience is characterised by a passage through time and it shall be time that is the important dimension in the combating of this existential threat to Human experience itself. There is a high likelihood of a new era of Climate Chaos on the horizon, and to combat it Humanity must find increasing order. It is time to use the tool of the narrative, to understand the knowledge of narratives of the past, to imagine stories of the future, in the hope of making good decisions in the present.

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