Strategic Narratives in Climate Change: Towards a Unifying Narrative to Address the Action Gap on Climate Change

Abstract

There is a significant 'action gap' between what scientists argue is necessary to prevent potentially dangerous climate change and what the government, industry and public are doing. This paper argues that a coherent strategic narrative is key to making meaningful progress. It does this by first analysing a number of narratives which have been used to try and create audience buy-in on the need for action on climate change, and those that argue that no action needs to be taken. A framework is then proposed for how compelling and unifying strategic narratives on climate change might be constructed. It is suggested that the unifying strategic narrative could address the complex range of actors who need to be engaged, provide a coherent explanation for government strategy, and harness the drivers of behavioural change needed to meet the challenge. Research into climate change strategic narratives is nascent, but the authors believe that there is much to be gained from pursuing and intensifying this research.

Key Words: Narratives; Climate Change; Behaviour Change; Communication.

1 Introduction

In 2013, the Intergovernmental Panel on Climate Change (IPCC) stated that: "It is extremely likely that human influence has been the dominant cause of the observed warming since the mid-20th century."[1] In December 2015, the Paris Agreement was signed by 197 countries. It includes Nationally Determined Contributions (NDCs), engagements which each country has agreed to undertake to mitigate their impact on climate change.

In spite of these major international scientific and political achievements, there remains a significant gap between the globally accepted targets for limiting global temperature rise to "safe" levels (2°C target, 1.5°C ambition)[2] and the sum of the contributions by individual countries. The NDCs are likely to realise temperature rises of 2.7 to 3.7°C[3]. There is a further gap between these declared contributions and the policy measures that are currently in place[4] (see Figure 1). This so-called 'action gap' presents a serious challenge to policymakers and to humanity[5].[a]

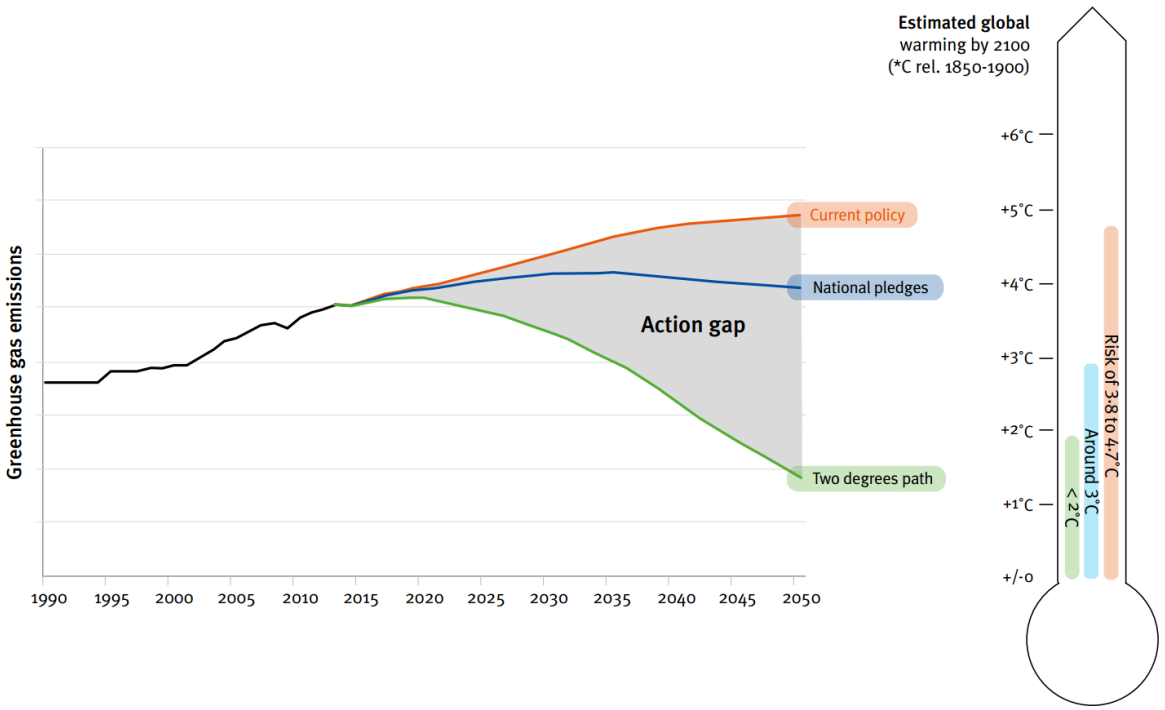

Figure 1 - The action gap on climate change – Adapted from the Grantham Institute for Climate Change Briefing Paper 16[6]

In democracies, creating "buy in" (in other words, the acceptance of an idea by the public as worthwhile) is fundamental in providing the appropriate policy space for more ambitious climate measures to be introduced, and later for the development of greater policy traction on climate initiatives. There has been significant progress in climate communication. The field has become more refined, moving away from a tendency for techno-centric solutions towards seeking to understand in

[a] This action gap should not be confused with the "value-action gap", or more formally the "attitude-behaviour inconsistency", which describes the difference between an individual's stated concerns about climate change or other environmental issues and their behavioural response to the problem[107,108].

depth how publics perceive the problem[7]. However, there has been little exploration of the role of an overarching mechanism – one which brings together and utilises this increasing understanding of how societies can be better engaged, in order to address this action gap.

This paper suggests that this action gap exists due to a number of related sociological, psychological and political problems. Two reasons are particularly notable. The first is the absence of credible national-level strategy for addressing the problem. In the UK, for example, there has been a vast array of different roadmaps, targets and plans to tackle climate change, but without a clear, coordinated strategy. The second is the failure to agree on and articulate the complex range of solutions, and the need to implement those solutions, in a compelling way[8]. This paper specifically focuses on the latter. This is because any strategy, and the policies subsumed by it, have little meaning unless communicated effectively. It is argued that the key to this process, and to coordinating and unifying the multiple actors involved in addressing the action gap, is a unifying strategic narrative.

Narratives are, for the purpose of this paper, defined as stories which can explain the situation, define a problem that disrupts the order of the initial situation and then provide a resolution to that problem, which re-establishes order[95]. This paper begins by laying out the nature and complexity of the climate change problem, explaining why this presents a significant communications challenge (Section 2). In Section 3, the paper seeks to establish what narratives are and how they can be used to provide context and meaning for action on climate change amongst audiences in order to achieve policy goals.

Section 4 then explores the different narratives that have so far been used by scientists, policymakers, environmental organisations and other interest groups to either support or hinder action on climate change. These are assessed as to why they have failed to stimulate a policy response consistent with scientific recommendations or, in the case of climate change counter-narratives, why they have been effective at engaging audiences. Narratives are assessed drawing from a diverse literature from psychology, sociology and International Relations. Section 5 then takes the concepts identified in section 4 to develop a framework which could be used to develop an effective strategic narrative on climate change. The section then justifies the need for a unifying narrative around climate change and how it might mobilise audiences, thereby creating the policy space for more ambitious targets around how to address the action gap.

This work is timely for two reasons. Firstly, there is growing divergence between the rhetoric surrounding climate change targets and the action needed to attain those targets, especially with the 1.5°C goal set in Paris. This undermines the credibility of the international UNFCCC process which is essential to develop co-ordinated action and share best practice around addressing the causes and effects of climate change. Secondly, the means by which narratives might be developed and tested on the scale suggested here are not only becoming increasingly available but are also being adopted, albeit slowly, by researchers in the environmental social sciences.

2 The nature of the climate change problem

Climate change is a "super wicked problem". These problems have certain key characteristics that make them extremely difficult to address[9]. These characteristics relative to climate change are outlined below in the following section.

2.1 Climate change is a long-term challenge requiring action now.

The climate system is prone to both inertia and lags between changes and results. This means that the effects of an increase in CO_2 concentration may not be seen for a number of years, and that even if drastic reductions in CO_2 emissions were made immediately, certain effects will continue to be seen. CO_2 is also invisible, so one cannot see the increasing concentrations of it in the atmosphere.

This presents a challenge because, among other reasons, individuals are inherently sceptical when there is a lack of immediate evidence for carrying out a certain action, or immediate and measurable consequences for that action[10]. Individuals are also prone to hyperbolic discounting: overwhelmingly higher importance is given to events or effects which will take place in the short term compared to the long term[11]. In government the long-term nature of the problem and solutions can also be a challenge: with a (typically) five-year election cycle in liberal democracies, politicians spend significant amounts of their time in office worrying about getting re-elected within the current electoral cycle rather than focussing on long term problems.

2.2 The Climate is a Public Good.

Climate change is a problem that affects every person on Earth. The interdependencies between the "actors" in the climate change space – from governments to businesses to individuals – and their contributions to both the causes and solutions of climate change are unprecedented. The vested self-interests held by certain actors has also had a significant impact on the climate change debate.

2.3 Decarbonisation needs to happen on unprecedentedly rapid timescales.

In order to mitigate climate change, a rapid and far-reaching energy transition is needed within the next 30 years.[b] This will be no easy feat – historically the vast majority of energy transitions have taken between 40 and 130 years[12,13].

Global economies, and the lifestyles to which people worldwide aspire, have developed complex interdependencies that must be completely unpicked before the climate change problem can begin to be solved[14]. This complexity means that proposed solutions might lead to unintended and perverse impacts[9,c]. Importantly, the scale of the issue, and the difficulties involved with conceptualising this

[b] Energy transition: 'the switch from an economic system dependent on one or a series of energy sources and technologies to another'[109].

[c] An example of this is the rebound effect. This refers to the phenomenon of an unexpected behavioural response to an efficiency gain leading to the perverse effect of an overall increase, or at least no change, in energy usage. For example, if a driver buys a more fuel efficient car, the fact that it now costs less to drive per

scale, might not only result in misaligned business and policy design but also marginalise rather than engage society.

The inherently superwicked problem nature of climate change and the way that it is presented play to various features of human psychology and sociology. As a result, we do not feel the urge to act. These sociological and psychological problems include:

- **Cognitive Dissonance**: This describes the mental discomfort that is felt by someone who holds two or more contradictory beliefs[15]. In this context, it could describe an individual who believes that anthropogenic climate change is happening and could have negative consequences and that therefore we should mitigate this problem. They believe that one way of mitigating the problem would be by reducing air travel, but at the same time believe that they should be able to take as many flights each year as they want.
- **"Othering"**: This refers to the mechanism of portraying climate change as someone else's problem. This mechanism may reduce the cognitive dissonance felt by an individual who believes that something should be done about climate change, but due either to the all-pervasive nature of the problem or due to social norms, feels unable to act.
- **Cultural Barriers and Social Norms:** When a problem or concept is unfamiliar, a process of 'anchoring' takes place whereby it is interpreted with reference to more familiar phenomena[16]. 'Unwittingly, the meaning of seemingly similar phenomena is imposed onto a new phenomenon'[17]. This process is amplified by the public's perception of the opinions of others: a recent report found that only 5% of British adults estimated that 'between 75% and 100% of the public support the use of renewables, despite findings showing that 80% of the public support this'[18].

Furthermore, the slowly unfolding nature of climate change, both in its effects and the decisions made to combat it, mean that it is not a naturally "newsworthy" topic. Indeed, Smith has pointed out that 'media representations in the past have more often than not failed to acknowledge that the sciences of global environmental change are not just 'unfinished' but 'unfinishable'[19].

kilometre might lead to an increase in the number of kilometres driven, thereby either reducing, or even eliminating the environmental benefits of the new car [110–112].

3 Narratives

3.1 A working definition of narratives

Narrative, storytelling and communication are vital to how we live our lives[20–22]. The world is constantly 'constructed and reconstructed…by the stories, or "narratives" that social actors construct about it'[23]. They are shaped by us and they shape us and the societies in which we live[22,24,25]. They connect and give meaning to series of events and actions which would otherwise not obviously be connected and in which we would struggle to find meaning and commonality[26,27]. Telling stories is an essential human activity, and one of the first methods of dialogue that we learn[28].

There is little consensus on an exact definition of a narrative[29–31]. However, for the purpose of this work the more important question is what narrative does, or can do with what we presently know about narrative development around climate change. At its basic level, a narrative can explain the situation, define a problem that disrupts the order of the initial situation and then provide a resolution to that problem, which re-establishes order[32]. In the case of climate change, narratives would seek to explain why climate change is important to different audiences, why they should seek to act and change their business-as-usual carbon intensive activities to make the transition to a carbon constrained world; this would help close the gap between climate policy and action.

Narratives turn individual "events" into "episodes" through emplotment, which gives significance to interdependent events over time, rather than simply through 'their chronological or categorical order'[33]. It is through emplotment that we then make sense of future events, which we "test" against our narrative understanding of the present and past. This temporal element is what differentiates narratives from frames. The latter also select and highlight aspects of an issue to promote a given interpretation of it; in this sense, all narratives frame issues in a certain way. Frames, however, can lack the temporal aspect that narrative provides[34]. This makes narratives more useful for climate change communication, since they explain why events are unfolding over time and what people should do to ensure they unfold in a desirable way in future.

Narrative can improve the clarity of climate change communication by coordinating the messages of a disparate range of actors. Different actors tell different stories about what needs to be done to mitigate climate change. These stories portray the central characters involved in climate change in different ways, be it as heroes, victims or villains[35]. These constructions can in turn be interpreted in different ways by diverse audiences. This complicates the communication of climate change policy, because even subtle differences in actors' stories can foster confusion and uncertainty, making arguments for change less convincing. A narrative, strategically designed, can provide a common thread that runs through many different stories told by different people that can be adapted flexibly over time. Rather than a single, static "story" repeated verbatim; it provides a shared framework of meaning to unify and coordinate what different actors say about what needs to be done to mitigate climate change.

3.2 Strategic narratives

There is a growing body of literature around a sub-field of narratives which are specifically designed to convince an audience and influence a particular outcome. This 'strategic narrative' literature typically claims that a compelling story is more persuasive than abstract arguments or statistics[36]. Humans experience the world as narrative, and therefore communicating using narrative can be uniquely persuasive. A unifying, collective narrative could give meaning to events, actions and

underlying truths. Theoretically this gives narratives a unique capacity to both persuade and thereby strengthen cooperative action[26,37].

While all narratives are 'strategic, functional, and purposeful'[38], a *strategic* narrative is consciously developed to achieve a social actor's aims, communicate a desired end state and the means of getting there[39]. In the context of a nation, a strategic narrative could be defined as a system of stories that 'aspires to communicate state policy goals in a way that makes sense and is persuasive to the various audiences against whom that policy goal is defined'[40]. Work in this area explains that they are "a political tool with which one generates public support and buy-in; they are an interface with the public."[6] All of the narratives reviewed in section 3 are strategic, however as we will discuss, those arguing for action have not been effective in catalysing sufficient support for solutions to climate change.

3.3 Narrative process

'[W]hile narratives can be constructed, planned, and promoted by specific actors to achieve desired objectives, they are not simply messages that get "delivered"' to an audience to trigger certain expected (and predictable) behaviours'. They 'do not "spread" like viruses either'[23]. Instead, they are social products that only exist 'through a collective [and continuous] reconstruction and retelling process' by the audience[23]. This process of appropriation, interpretation, retelling and reconstruction helps us organise, shape and interpret the unknown by fitting it into a familiar pattern through which events transpire[42].

An actor can therefore only project a narrative; they cannot fully control how it will be appropriated, interpreted, retold or rejected by its audiences. This is especially true in the 'global and porous information environment' that exists today[23]. One can no longer simply convey a narrative to a single audience – instead it will be commented on, interpreted, appropriated and retold by multiple audiences. In this way, the narratives take on a 'life-on-their-own' once in the public realm[32].

Stories are always constructed and told with the audience in mind[43]. 'The audience, whether physically present or not, exerts a crucial influence on what can and cannot be said, how things should be expressed, what can be taken for granted, what needs explaining, and so on'[44]. This has been evident in communication on climate change, where it has often been assumed that the public audiences will respond well to being given more scientific evidence, communicated in a scientific fashion. But, as will be seen, more information does not necessarily lead to behaviour change.

In the following section, we examine seven prevalent narratives that have been used in communication around climate change, both to support action and to oppose it. By examining these narratives, we assess their effectiveness in gaining traction amongst audiences. This non-exhaustive set of narratives were identified through an extensive literature review and semi structured interviews with 18 interviewees.

Interviewees included:

1) Academics working in the climate change and communications space at a variety of institutions in the US and UK.
2) Representatives of organisations working in the climate change communications space such as Policy Connect, Climate Outreach and Information Network, E3G, WWF/Guardian, and Futerra.

3) Policy Makers from Department of Energy and Climate Change, the Cabinet Office and City of London.
4) Representative from Industry such as EDF, Shell and Boxwood.

4 Existing narratives: analysis

4.1 "Gore" narrative

Smith identifies the "Gore" narrative as '[a] dominant framing of climate change …[that] emerged in the early to mid-2000s'[45]. The main focus of the plot of the Gore narrative is not climate change per se but the evidence for it. The point of the story is to demonstrate that there is now incontrovertible evidence that the release of greenhouse gases into the atmosphere by humans is causing unequivocal changes to the Earth's climate and therefore in future only changing human behaviour will address the issue. The documentary An Inconvenient Truth indeed promulgated the idea that 'the science is finished'[45].

The Gore narrative has worked amongst certain audiences but has not been able to engage the diverse range of audiences needed to further action on climate change. In fact, it could be argued that it has disengaged certain audiences. There are several reasons for this, including its over-emphasis of the certainty of climate science, its reliance on the information deficit model, the messenger used and the misalignment of scales between problem and solution that is presented.

The concept of 'uncertainty' is ambiguous – uncertainty has a different meaning and impact within different audiences. In politics uncertainty suggests a lack of clarity and motivates inaction, whereas to a statistician it is the difference between the precision of an output relative to an accurate reality and will often motivate action[46]. Uncertainty is inherent in all areas of science, including climate science. Predicting the impacts of temperature increases is subject to multiple uncertainties[1,47].Thus, expressing projected temperature levels in terms of ranges rather than values accounts for the unpredictability of influencing factors, making it more accurate, if not more precise.

The "Gore" narrative, as conveyed in the documentary film *An Inconvenient Truth*, sought to overcome the ambiguity of the concept of uncertainty by over-emphasizing the certainty of climate science and promoting the idea that 'the science is finished'[45]. This approach, designed to cope with the narrow spaces of mainstream broadcast media, has been punished in the more plural and discursive spaces of social media[45].

Simplifying the message by emphasising that the science was settled and solutions were available and ready to implement opened the door for other actors to challenge this narrative on scientific grounds, leading to a "scientization" of climate change[48]. Scientization occurs when a problem that is fundamentally political, and should be scientifically unambiguous, becomes an argument between politicians about their different understandings, or interpretations, of the science. It 'undermines the social value of the science itself... Scientific resources end up focused on the meaningless task of reducing uncertainties pertinent to political dispute, rather than addressing societal problems'[48].

For those who see humans as the clear causes of climate change, scientization enables sceptics to blur the line between 'political' uncertainty and 'scientific' uncertainty, by citing exclusively from the minority of research which is not representative of the IPCC consensus on climate change. Given that that the public typically finds differentiation between different types of scepticism (e.g. scientific and that driven by self-interest[47]) difficult, this leads to concern that sceptics can exploit scientific scepticism to advance their arguments.

The film *An Inconvenient Truth* follows Al Gore as he lectures in various places on climate change. This format of communication supports a narrative in which 'experts' successfully convince 'the public' to act

by presenting them with the facts about climate change. The Gore narrative thus adheres to the 'information deficit model', a long-standing basis for scientifically-based public policy and prevalent in traditional science communication[49]. This model "assumes that the public are 'empty vessels' waiting to be filled with information which will propel them into rational action"[50].

A certain level of knowledge is important - Leiserowitz et al found that 'many Americans lack some of the knowledge [about climate change] needed for informed decision-making in a democratic society,' with 75 percent saying they would like to know more about the issue[51]. However, the deficit model has been challenged on the ground that knowledge does not necessarily lead to more appropriate behaviour. Instead, it argues that people see information through the lens of their pre-existing prejudices, morals, norms and values[52–55]. 'Factual information is usually not sufficient to *motivate* behaviour…People are more likely to be motivated by prior beliefs and values'[56]. 'Just using the language of scientific facts when talking about global warming and the environment means that the emotional and moral significance of those facts may not be understood'[57].

Who conveys a narrative is vital – they must be organisations and people who those you are trying to influence trust, and are able to be influenced by. Marshall says that 'people are far more likely to believe people that they perceive as being like themselves'[58].

This is challenging when trying to identify influencers to talk about climate change. Most communication on climate change to the public is done by politicians or scientists. Both are problematic. Firstly, much of the public does not trust the government[59], especially on climate change[60]. Secondly, scientists can give the impression that the issue is one which only they understand and which they must educate others about. This dynamic can create 'an abiding rift between listener and speaker, preventing the listener from truly gaining ownership of the problem because of its alleged purely technical nature and the implicit hierarchy of expert/lay person in which it is approached.'[61]

In the Gore narrative, the key messenger is Gore himself, who may have been a good messenger for a subset of audiences but who was not a good messenger for many. This point was highlighted in the documentary *Years of Living Dangerously.*[d] In the first episode, a meat packing factory that employed 10% of residents in a Texan town closes due to severe droughts, and a local climate scientist tries to communicate the connection between extreme weather and climate change to them. The locals interviewed in the documentary expressed a preference for having climate change explained to them by someone they can identify with – a local climate scientist, who comes from the next town, with the same religious and political beliefs as them, rather than Al Gore – and who communicates to them in a way and on topics that are meaningful and important to them. The importance of the messengers being perceived as someone like the audience is crucial for those promoting action on climate change.

The Gore narrative offered a 'rapid journey…from apocalyptic scenarios to low-energy light bulbs'. [45] The disconnect between the size of the stated problem and the small size of the solutions weakened the narrative. A misalignment of scales made it difficult for potential audiences to understand how the small solutions presented could possibly influence such a vast problem.

[d] *Years of Living Dangerously* is a 9 part series that aired between 13th April 2014 and 9th June 2014 on *Showtime*. See http://yearsoflivingdangerously.com/

4.2 End of the World and Alarmism

Several non-for-profit organisations, such as 350.org, have developed an 'End of the World' narrative to convey the danger of climate change impacts on human and natural systems, and the urgent need to take action to prevent it. The basic plot of such narratives is that past and present human action (or inaction) risks a catastrophic future climatic event unless people change their behaviour to mitigate climate change. The organisation One Hundred Months was for example established in 2008, structured around the idea that from this point on, "we ha[d] only 100 months to avoid disaster". We passed these 100 months and yet audiences feel that life still goes on as normal.

As several studies have shown, alarmism is a generally an ineffective way of creating urgency, and often leads people to disengage instead[62–64]. While alarmist language can attract people's attention to climate change, it rarely leads to 'genuine personal engagement' instead making people feel hopeless, overwhelmed and distanced from the issue. Studies have found that instead linking communication to everyday lives leads to much higher engagement[62].

The alarmist narrative can lead the audience to wonder why, if this problem is so enormous, governments are not mobilising resources on unprecedented scales in order to tackle it. There is a contradiction between the urgency of the problem that is communicated and the actions that are seen to be taken, enabling acting on the problem to easily be dismissed.

This dismissal can then trickle down to the individual's personal relation to the problem. If the danger is so imminent, yet little is being down by perceived sources of authority (such as the government), then the individual might feel sceptical as to their own potential influence on the matter. This creates a potential cognitive dissonance – the mental discomfort that is felt by someone who holds two or more contradictory beliefs[15]. Individuals will try to reduce the dissonance that they feel in several ways. For example, they might change their behaviour. Alternatively, they might change their "knowledge" or beliefs about an issue, such as saying that their behaviour is inconsequential on a global scale, (an example of distancing – see below). Alternatively, they might seek new knowledge that reduces the dissonance, such as evidence that climate change is not happening.

Several authors in the US have suggested that action on climate change might be motivated by a wartime mobilisation narrative, which calls for an urgent nationwide industrial and societal response akin to the mass mobilisation that took place in the Second World War[65,66]. The problem with climate change is that however existential the threat actually is, it seems more distant and less certain than a situation when bombs are actually being dropped, ships are being sunk and countries are being invaded. In that respect, cognitive dissonance is likely to persist between beliefs about the apocalyptic urgency of the climate threat and the emotional drive for immediate action. So while one might frame climate change as a 'total war' between humankind and 'physics', the physical effects of a high explosive bomb are more certain than the effects of increased carbon emissions. In the absence of a climate change 'Pearl Harbour' or 'Blitz', this uncertainty undermines the coherence of apocalyptic climate change narratives, and they are therefore less likely to be persuasive.

4.3 Every little helps and the breakdown of complexity

This narrative echoes the 'light bulb' theme also developed in the *Inconvenient Truth.* It focuses on individual stories of personal responsibility and solidarity, encouraging citizens to 'pitch in'. For example, the British government ran a campaign called *Act on CO_2* in 2010, which informed British

citizens that 40% of the UK's emissions were attributed to individual behaviour, such as driving. It recommended that people drive "five miles less a week" in future to 'Act on CO2'[67,68]. Making individuals the central protagonist of these stories personalises them, in the hope of motivating individual action.

Both the causes and solutions of climate change lie in the hands of a huge and disparate number of actors with divergent and vested interests. This narrative rightly tries to demonstrate the importance of individual actions within this complex space. However, as in the *Gore Narrative*, the journey to individual actions is too large; when people are faced with such a large problem as this, they feel that small changes they make cannot possibly make any difference to the problem[69]. The focus on the individual may lead audiences feeling isolated rather than part of a bigger community working together.

People may struggle to connect how, for example, boiling a kettle has anything to do with the huge volume of CO_2 emitted globally each year. As a result, individual contributions might seem too small and insignificant to change anything on the large scale[69] thereby developing dissonance over how any changes that they make will make a material different to resolving the problem.

These narratives use the messengers of the government, or scientists, to tell the public what they should be doing. These are not effective messengers for many audiences; as discussed in Section 3.1, effective messengers are ones which the audience trusts. In addition, the messages that are conveyed can be inconsistent. A 2015 UK government report 'found little evidence of any significant co-ordination amongst Government, government agencies and bodies at national and local levels to communicate the science to the public…A lack of a clear, consistent messages on the science has a detrimental impact on the public's trust in climate science.'[70] One reason for this may be our inability to tell persuasive stories at the political level. An established preference for statistical arguments, buzzwords and clichés has eroded the Western World's ability to tell effective, memorable stories[71].

Chris Rose sums up the problems as follows:

> 'The UK government might lead internationally on climate ambitions, but its actions have not helped create an effective visual narrative at home, as so much has been invisible. Desire for least-cost, hands-off, market solutions has led to a reliance on things like tweaking the terms of the electricity trading pool, emissions trading and other measures that mean and signal nothing in everyday life: it is all bean-counting jiggery-pokery and policy-speak mumbo jumbo.'[72]

While on the one hand the public is asked to make changes to their lives in order to solve the climate change problem, evidence of the government or the messengers in this narrative making changes, or acting in other ways to solve the problem, are lacking. This leads to a lack of trust and incentives to act. It also suggests the benefit of a narrative in which government and individuals act in concert to address climate issues.

Climate change is also a classic example of the "tragedy of the commons", whereby individuals, by acting independently and following their self-interests, exhaust a common resource, thereby acting against the long-term interests of the group as a whole[73]. The vested self-interests held by certain actors has had a significant impact on the climate change debate (see section 3.2 for examples). Therefore the *`every little helps'* narrative makes for apathy as the public good nature of climate

change lends itself to audiences seeking to free-ride off the actions of others whilst seeking to optimise the utility and benefits that they gain by continuing with their normal `business as usual life styles'.

4.4 Polar bears and Distancing

This narrative revolves around a non-human protagonist: the polar bear. The plot is similar to the aforementioned narratives, in that human action is portrayed as having destructive effects unless behaviour change occurs in future. The difference is that story's victim is the polar bear, with the plot explaining the progressive destruction of its habitat over time as the world warms up and the ice melts. A polar bear peering at the camera through melted ice was for example National Geographic's picture of the year in 2013, adding a visual element to this narrative. Corner et al have shown that polar bears are successful at signalling that a given story is about climate change. They however noted that "they also prompted cynicism and fatigue" among audiences, suggesting that their overuse had rendered them ineffective in terms of motivating new interest and action[74,75].

Overuse and fatigue are not the only weaknesses of the polar bear narrative. Because polar bears are both physically distant and not human subject, the narrative also contributes to the "distancing" of climate change by portraying the agenda as someone else's problem. This mechanism may reduce the cognitive dissonance felt by an individual who believes that something should be done about climate change, but due either to the all-pervasive nature of the problem or due to social norms, feels unable to act.

The perception that others are not "pulling their weight" can also be a barrier to action - whether they be peers, elites or those in other countries[76]. This low sense of political efficacy can be individual or collective, leading people to believe 'that they lack the knowledge skills or capacities to act' – see section 2.

This distancing mechanism helps individuals avoid 'taking any responsibility for seemingly overwhelming problems'[77]. It is also useful for groups or society as a whole as 'it maintains a sense of that which is normal and desirable in a given culture'[17].

This may be heightened, in the case of climate change, by a sense of temporal and spatial distancing: in the presence of perceived immediate threats such as political or financial crises, a problem that is perceived to be about polar bears in distant lands can wait, as we have more immediate problems to worry about, leaving space for those who are not convinced of the need to act to exploit this[78].

4.5 Green Living

We have seen that the 'Every Little Helps' narrative was ineffective because it offered small, seemingly insignificant solutions to a wide-scale, all-encompassing problem. By contrast, the 'Green Living' narrative offers a vision of much more drastic change in lifestyles.[e] The Centre for Alternative Technology has for example imagined a zero-carbon future for the UK. In this future, the protagonists

[e]While most often deployed in the context of developed Western cultures, the 'Green Living' narrative also encompasses a vision for less developed economies to aspire to a similar model, notably through the concept of 'leapfrogging' over a fossil fuel-based industrialisation into more sustainable economic models[113].

– the UK citizens – have agreed that decreasing their society's reliance on carbon was a priority. They have solved the problem by allocating to each individual and business a Personal Carbon Allowance which they may either use on energy services (such as paying the gas bill), or adopt less carbon intensive behaviours and sell their extra quotas to others[79]. This story of a society making common sacrifices for the greater good is reminiscent of the food rationing the UK experienced during World War 2 while adhering to a belief in markets to deliver solutions (see Section 4.7).

Such suggested changes in lifestyles are however met with resistance, most notably because it asks individuals to deviate from the social norm i.e. that which they consider acceptable according to their values, belief system and the implicit rules within which society operates. One study for example found that only 5% of British adults estimated that 'between 75% and 100% of the public support the use of renewables, despite findings showing that 80% of the public support this'[18]. If a given behaviour is perceived as deviating from an individual's perception of a social norm, then psychological research shows that people will be less inclined to consider accepting a given level of consensus[80].

Social norms play a significant role in determining energy consumption. Patterns of consumption tend to stabilize across communities over time, regardless of expressed beliefs about sustainable consumption[81]. For example, changing social norms about cleanliness and personal hygiene have likely been a factor in the threefold increase in the amount of laundry that households wash. Kahan et al conclude that differences in public perception of climate change has less to do with incomprehension of the science, and more with a 'conflict of interest between the personal interest individuals have in forming beliefs in line with those held by others with whom they share close ties and the collective one they all share in making use of the best available science to promote common welfare.'[82] This effect is enhanced by our natural resistance towards changes in our habits and preference for the status quo[66].

4.6 Debate and Scam

These narratives, propagated by those opposed to action on climate change, centre around one of two issues. The first is that the scientific debate on climate change is still open. In narrative terms, while the body of research on climate change has grown exponentially over time, human causation is not yet proven. Significant behavioural change to mitigate climate change may therefore be unnecessary. The second claim is that climate change is a myth propagated by those with vested interests in the climate action agenda. E.g. *The Great Global Warming Swindle*. The plot of this story sees a group of self-interested elites surreptitiously promoting the climate change agenda for their own material or political benefit.

There is of course a policy debate that is still open and will remain open, as there are multiple pathways that can be followed. However, there is a strong enough scientific consensus that this debate can be considered closed (see also Scientization, Section 3.1).

The debate narrative has been promoted by sceptics picking up on either reports that have results that can be used to claim that action on climate change is unnecessary, or on journal articles that have criticised various aspects of the climate science, to suggest that the "debate" on climate change is still open, and that it might not be happening.

As evidence on climate change has grown stronger and this narrative has got more and more difficult to uphold, it has evolved to questioning whether climate change is caused by humans or not. More recently it has evolved further, to simply debating whether we should do anything about climate

change or not. This debate is heightened by media representations of the topic: Boykoff and Boykoff have for instance shown that the journalistic culture of 'balanced coverage' of news topics has led to the over-representation of sceptic opinions in the press[83].

The effectiveness of these narratives can in part be attributed to the influence of social norms. As Kahan explains, 'for members of the public, being right or wrong about climate change science will have no impact. Nothing they do as individual consumers or as individual voters will meaningfully affect the risks posed by climate change. Yet the impact of taking a position that conflicts with their cultural group could be disastrous'[82]. The effect of these social norms (see Section 3.5) explains why it is much easier to accept that climate change might not be something on which action needs taking, or that is a hoax, than it is to take action.

4.7 Carbon-fuelled expansion

The carbon-fuelled expansion narrative positions the economy as the central focus. In terms of plot, this narrative does not necessarily disagree that humans have caused climate change, but instead emphasises that climate change mitigation is expensive and will therefore hinder economic growth over time. Within this narrative the consumer is king, and anything that might increase prices for consumers or slow down economic growth is seen as a barrier to progress.

This narrative seems likely to be particularly resonant in Western economies, as it resonates with their culture and history, in which markets have frequently solved pressing social and economic problems. It also appears to sympathise with individual citizens, since it can be seen as having one of their core interests – economic well-being – at its heart. Policy responses to climate change will almost certainly require government intervention, leading those who dislike government intervention to dismiss the problem in the first place, rather than suggesting other responses to the problem[84].

As argued by Simpson, understanding the role of history and past experiences in shaping audiences' receptiveness to messaging is important for identifying the competing narratives that need to be reconciled[85]. Indeed, it could be argued that narratives such as the Gore narrative have helped to fuel narratives such as carbon-fuelled expansion. The 'martial and nationalist rhetoric [used in the Gore narrative]…set a tone for how society should respond to the science.'[45] This is a comfortable position for people to take, that reduces their cognitive dissonance, but ultimately is not an option when it comes to climate change, which Stern notably described as 'the greatest market failure the world has ever seen'[86].

A summary of the narratives that have been surveyed above and why they have been effective in resonating with some audiences, inadvertently alienating others and avoiding or reinforcing polarisation- is made in Table 1.

Table 1: A non-exhaustive list of existing narratives on climate change. The first five seek audiences to act on climate change and the latter two seek to deter it. The colours red, orange and green respectively indicate low, medium and high effectiveness.

Narrative	Explanation	Assessment of Effectiveness and Reasons
	Narratives supporting action on climate change	
Gore	This is a narrative of scientific discovery which climaxes on the certainty that climate change is unequivocally caused by humans[45].	• Differing interpretations of uncertainty by audiences and use of selective information. • Reliance on the information deficit model. • Inappropriate messengers conveying the narrative. • Substantive cognitive dissonance around the scale of the stated problem and the simplistic nature of the proposed solutions.
End of the world	Past and present human action (or inaction) risks a catastrophic future climatic event unless people change their behaviour to mitigate climate (see organisations such as 350.org and One Hundred Months).	• Use of alarmist language leading to disengagement amongst audiences. • Cognitive dissonance around scale of problem and lack of actions being undertaken by national actors.
Every little helps	Individuals are the protagonists of stories that propose solutions to climate change. E.g. *Act on CO_2 campaign*[67,68].	• Complexity and all-encompassing nature of the problem making audiences feel helpless resulting in disengagement. • Lack of coherent messaging confusing audiences. • An agency problem in that a lack of trust in actors requesting change disengages audiences from acting themselves. • The public good nature of climate change and inclination to `free-ride' off the actions of others.
Polar bear	Polar bears are the helpless victims of this narrative, who are seeing their habitat destroyed by the actions of villainous humans e.g. *Greenpeace*	• Cognitive dissonance around the effect of the problem and the role that audiences had in causing it. • This form of dissonance results in `Distancing' where audiences distance themselves from overwhelming problems.
Green living	This narrative presents a society which has transitioned to a sustainable 'green' way of life e.g. Centre for Alternative Technology[79].	• Seeking a `beyond societal norm' shift in audiences behaviours in an uncomfortable timeframe resulting in disengagement. • Conflict of interest between individuals and their desire to maintain their status within their cultural group.
	Narratives deterring action on climate change	
Debate and Scam	The heroes of this narrative are sceptical individuals who dare to challenge the false consensus on climate change which is propagated by those with vested interests e.g. *The Great Global Warming Swindle*	• Appeals to the tendency for audiences to engage in cognitive dissonance and maintain the status quo. • By framing climate science around man-mad global warming as being unfinishable provides licence for the status quo in the mind of audiences. • The scale of the problem and the relatively small contribution that individuals can make to contributing to the solution results in apathy amongst audiences.
Carbon fuelled expansion	The free market is at the centre of this narrative which presents action on climate change as an obstacle to the freedom and well-being of citizens.	• Appeals to audiences capacity to frame the climate change discourse as a conspiracy by state interventionists whom wish to interfere with a libertarian, market based schools and therefore openly resist the need for action. • Appeals to audiences desire to relate to past social norms in that libertarian, market based systems have been successful in providing welfare and prosperity for society.

5 Discussion

While all the narratives outlined here were specifically designed to motivate audience action on climate change and are therefore 'strategic', those arguing for action have not been effective enough in closing the action gap – see Table 1. This has been demonstrated on an aggregate level where despite increasing recognition of relevant terms, such as climate change,[50] a 2015 Ipsos Mori survey found that 68% of British adults stated they were "fairly" or "very" concerned about climate change, down from 82% ten years earlier[87]. In the United States, only 48% of adults surveyed in 2016 believed that "the Earth is warming due to human activity"[88].

Analysis of the narratives highlights a number of key issues that need to be addressed when designing a strategic narrative around climate change, including (1) the need to address the complexity of climate change in an accessible manner for audiences to comprehend; (2) the need to legitimise policy by presenting climate change more appealingly to audiences; and (3) sociological and psychological issues that need to be addressed to allow for a better understanding of what motivates behaviour change in potential audiences.

5.1 Addressing complexity and the multitude of disparate actors

Climate change is a complex problem for a multitude of reasons. In the past, policymakers have assumed that information will be sufficient to motivate action: 'if we provide the carrots and sticks, alongside accurate information, people will weigh up the revised costs and benefits of their actions and respond accordingly', as in the Gore narrative[89]. However, as we are limited in our decision-making ability by the information and time available to us, as well our own cognitive limitations, we use mental shortcuts and social cues to help make sense of the complex world we live in[58,90,91].

A strategic narrative can help make sense of experiences, actions and observations that would otherwise be difficult to understand, such as the causes and consequences of climate change, and its solutions, but in a way that is more aspirational than the Green Living narrative. It would do this by placing them in the context of other, related, events and experiences, and by providing an interpretive lens through which to view and understand actions. It could allow individuals to develop an understanding as to why they should care about climate change, making the issue more personal and the development of solutions to address the problem having a more tangible benefit – as in the End of the World Narrative.

A strategic narrative can help the individuals understand the stark realities of the potential impacts of climate change, as well as their implications for themselves and their children, what policy options exist, why they are being used, the actions that each individual can take and how those actions will contribute to the wider goals. This is something that all the strategic narratives seeking audience engagement on climate change failed to address sufficiently.

In conclusion, in order to address the complexity of climate change a unifying strategic narrative would need to address a number of issues. Firstly, it should allow all key audiences to engage with climate change in a way that is understandable for them and that resonates with their views of the world. It will help them to understand the benefits involved in mitigating climate change. It must inspire and empower them, allowing them to understand that they can make a difference. It should not seek to engage all audiences in the same way, as one would then be left with a narrative that is too vague to be meaningful. However, it should be sufficiently general to be adaptable to specific target audiences

ideally identified in rigorous social scientific research. Secondly, it would address difficulties with conceptualising the concept of climate change, by anchoring the reality of climate change into the everyday life of the audience: the narrative should allow the public to be convinced that despite the lack of direct, short-term "evidence" of the negative effects of climate change, action is needed now at all levels. It would allow actors to see how their actions, even small ones, will work together to fit into the overarching strategy – not just simply expecting them to make the leap on their own from small action to solution to a truly global problem. An example of a historical success of inspiring people to make changes together for a common good is the "Dig for Victory" campaign during the Second World War[92] – see below.

5.2 Providing a coherent explanation for government strategy

Strategic narratives can help to legitimise and explain government strategy and policy on climate change by using a persuasive means of presenting and communicating climate change. Delivering solutions to climate change requires a number of diverse policy interventions which are far more complicated than the impression given in the Gore and Every Little Helps narratives. It is therefore often difficult to understand why certain policies are being implemented, or why there is a need to, for example, create a capacity mechanism in the UK. A strategic narrative could help explain the government's policies, policy goals and strategies. However, it must allow clear communication of the issues, not alienating audiences as the Green Living narrative does but instead appealing to past social norms as the Carbon Fuelled Expansion narrative does (albeit around the need to be environmentally responsible).

In order to legitimise and explain government strategy on climate change a unifying strategic narrative would need to seek to address the three following issues. Firstly, to overcome confusion arising from differing perceptions of uncertainty, a narrative must separate the science from the politics of climate change in order to ensure that accountability for action is clearly attributed to those whom we have elected to make such difficult decisions on our behalf rather than allowing them to defer making difficult decisions by scientizing the issue. Secondly, the language used must be inspirational. Clement Attlee famously said that to help win the Second World War, what Winston Churchill had done was 'talk about it'. This was not flippant: Attlee meant that Churchill had been tireless in communicating a powerful vision of what the fighting was about, what the enemy was like and what was at stake for Britain and the free world. If, as many climate activists demand, we should be acting on climate change as if facing a wartime emergency, then we should look for similar power and consistency of 'talk' from our leaders.'[93] Thirdly, a coherent strategic narrative, providing the basis of communication from different messengers, can overcome issues of mixed messaging, allowing the public to better contextualise government actions.

5.3 Harnessing drivers of behavioural change

An effective strategic narrative would harness the psychological and sociological drivers which potentially motivate behaviour change in audiences. This, where possible, should be done in a manner that would still allow freedom of choice and would come at a relatively low financial and political cost. In order to achieve the objectives on climate change agreed internationally, many reports have shown that social change of some sort is essential[94]. This behaviour change can only happen if those who

need to change are willing to do so, meaning that a strategic narrative must seek to address the problem of distancing which was particularly salient in the Polar Bear narrative.

Achieving behaviour change is not easy. 'The plain fact is that modern government with its complex laws, access to finance and information technology capacity – as well as the leverage it gets from democratic legitimacy – cannot get a group of citizens to behave differently if they do not wish to do so'[95]. Citizens do not have time to process all the information required to make informed decisions in the complex world we inhabit. Instead, 'they use social cues to help them decide what to do'[95]. People look to others to determine the "rules" of how they should behave in various situations. This is again a major flaw in the top-down narratives seeking action on climate change such as Gore, End of the World and Alarmism.

Therefore, in order to harness the psychological and sociological drivers which can potentially motivate behaviour change in audiences, a unifying strategic narrative on climate change would need to seek to address the following three issues (see also Section 2).

Firstly, cognitive dissonance can be addressed by developing a narrative that helps move people from "distancing" to "owning" the problem[96]. This would generate 'a sense […] of responsibility for the problem, at every level from the micro-level to the international'[77]. An example of the success of a strategic narrative in moving people to owning a problem is the story of President Kennedy's visit to NASA in 1962, when he asked a cleaner what he was doing. The reply came: "I'm helping put a man on the moon". Here was a narrative that appeared to give everyone in the organisation, if not the country, a sense of purpose and a feeling that they themselves were contributing towards the larger goal.

The mechanisms through which this 'man on the moon' example was particularly persuasive still require further research, and the same is true of climate change narratives. What this analysis does imply, though, is that given the cognitive biases that limit how far people 'own' the problem of climate change, emotional identification with the issue is the more important aspect of narrative persuasion to leverage. Theoretically, narratives persuade differently from argumentation not just through the selectivity of their plots but through emotional identification with the characters in the story, whether they be the astronaut taking the 'one small step', the nation, or the 'giant steps' taken by mankind[97]. Clearly, however, characters such as 'polar bears' or 'our grandchildren', however real, have been too abstract to move people to immediate behavioural change.

Secondly, a strategic narratives must be aware of, and make use of if appropriate, existing cultural barriers and social norms, given their effectiveness at influencing attitudes towards climate change policy[98].

Thirdly, the narrative should be developed dynamically, with influencers and with audiences, through a strategic dialogue[99]. This dialogue should be continued for the duration of the policy measures that are being influenced by the narrative. This adaptive approach and constant reflexivity is key for strategic narrative design, especially in an area such as climate change, which has considerable uncertainties[100].

5.4 An effective, unifying narrative on climate change

An effective strategic narrative should provide 'a concise statement of what it is doing, why, and how that links a positive vision of the future with the individual actions of members of its own societies and members of other societies whom it wishes to influence'[101].

Such a narrative for climate change would help address many of the issues identified in this paper. For example, based on the effective use of narratives in International Relations, a good strategic narrative

could "convert" us from "distancing" to "owning" the problem of climate change, which would increase our feeling of self-efficacy. At the national level, Epstein's work on how attitudes to whaling shifted during the twentieth century has shown how nations can be persuaded to adapt environmental policies through the use of compelling strategic narratives. At the community level, the "Dig for Victory" campaign during the Second World War told a story that convinced people that their efforts played an important role in the defeat of fascism, which was extremely effective in engaging audiences. Admittedly with a population suffering stringent rationing, such a campaign arguably had a uniquely receptive audience. Nevertheless, such cases hold important lessons because this community-level mobilisation is vital to achieving the behaviour changes climate change mitigation requires[102].

Those conveying the narrative must be carefully chosen as people whom the intended audiences trust and respect. Others have argued for a reconsideration of the way in which scientists communicate climate change[103,104]. For example, scientists need to be aware of the subtleties of what happens to information they consider 'objective' and 'factual' when it enters the political domain. Arguably a wider range of messengers must be used and communicators must be aware of the nuances of their roles within the overarching picture. Community leaders, faith groups, government and celebrities could all play a role. Coordination between these communicators is vital[105], and an overarching strategic narrative could provide the framework for this coordination.

If a critical mass of the general public started owning the problem, it would become a social norm, thereby promoting further action. Furthermore, creating a strategic narrative through continuous strategic dialogue with relevant audiences could help develop a relevant, flexible and adaptive strategy through a dynamic and iterative process.

6 Conclusion

Climate change is a problem unlike any humanity has ever faced. Given the scale, complexity and all-pervasiveness of the issue, not only is the challenge faced greater than any other, but solving it also presents enormous opportunities. Those opportunities can only be realised by mobilising audiences around a set of interpretative lenses which allows them to understand the impacts of climate change on them and why they should act.

With the significant action gap between what scientists tell the government and public the necessary actions are to prevent substantive climate change, and the limited efforts that are currently happening, the need for these opportunities to be conveyed is more urgent than ever. This would provide the policy environment amongst national constituents for more ambitious climate measures to be introduced and the development of greater policy traction on climate initiatives.

This paper has reviewed existing narratives used to promote action on climate change or that negate the phenomena altogether. From this a set of requirements that might be needed for a unifying narrative around climate change is proposed. The assessment suggests that there are a number of interlinked sociological, psychological and political effects which disconnect people from acting on climate change. It finds that those narratives in the climate change discourse that argue for action appear to be ineffective, and are certainly less effective than many of the narratives which have been promoted by climate change sceptics.

Narratives arguing for action have often disengaged their audiences from the problem, allowing them to believe that climate change is someone else's problem, that it's not important for them or that they are not in a position to make a difference. Narratives promoted by sceptics, on the other hand, appeal to basic human psychology, social norms and our knowledge of past experiences. It therefore explains that the nature of climate change itself and the way it is presented have not been effective in getting "buy in" with national audiences, essential in liberal democracies, for progressing the climate change mitigation agenda.

This paper finds that climate change has not been talked about in the right way and that how people talk about climate change is fundamental to whether people accept the need for the strategy, and help to achieve its goals. It also suggests that climate change is a difficult problem to talk effectively about for several reasons, and approaches to climate change communication have been ineffective to date. The paper then justifies the need for a unifying narrative around climate change.

Research in the field of strategic narratives as applied to climate change is nascent, but the authors believe that there is much to be gained from pursuing and intensifying this research. For example, research has begun to show promise in identifying the values and beliefs that would respond to different climate narratives, but more must be done to understand these responses and how they can be used[106]. Another key research question is that while it is generally accepted that stories are more effective at motivation than facts, it is less clear how this might be applied to climate change and whether it might result in long term social change. The question of who delivers the narrative and the influence that has is also an important one that must be better understood, as is the process of the creation and evolution of a narrative.

Climate change is arguably the greatest threat ever faced by humankind, but also presents opportunities unlike any other. If this threat is to be tackled and the opportunities grasped, a new approach is urgently needed focused on the sociological aspects of the problem. Governments, as well

as business and thought leaders should prioritise the research, development and implementation of a unifying (set of) strategic narratives around climate change.

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