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THE ADAPTATION OF DISCOURSES ON NUCLEAR ENERGY IN TIMES OF CRISIS

MA Thesis

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Authorship Declaration

I have prepared this thesis independently. All the views of other authors, as well as data from literary sources and elsewhere, have been cited.

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Abstract

The following research seeks to answer the question, how did the discourse surrounding nuclear energy adapt to account for the multiple crises present in 2022? To gain an answer to this question, a comparative study of the US and the UK is conducted, and their discourses over the course of January to October 2022 are analysed. This is done via a study of five mainstream media outlets within each state, using a critical discourse analysis (CDA) theory and methodology. Additionally, a conceptualisation of a crisis as an event which generates a dislocation in the hegemonic articulation of nuclear energy, that was previously dominant, is utilised. In a situation where multiple crises are present the different articulations have one crisis placed at the centre as the primary source of dislocation, and thus, as the crisis which a hegemonic articulation should address. In both the US and the UK, prior to the presence of multiple crises in 2022, there was a hegemonic articulation of nuclear energy, which passively supported it, but did not invest much into it and was allowing it to slowly decline. Through implementing a two-level CDA approach to the discourse in both states, first at the level of the text and then at the level of the ideologies these texts are part of, the new articulations can be accounted for. Over the course of 2022 it can be seen that in the US three new articulations emerge, two of these centre the climate crisis as the primary source of dislocation, 'Nuclear Energy Against the Environment' and 'Nuclear Energy for the Environment'. The other centres the security crisis, 'Nuclear Energy for Security'. In the UK four distinct articulations emerge, with two that centre the economic crisis as the primary source of dislocation, 'Nuclear Energy for the Economy' and 'Nuclear Energy Against the Economy'. The other two centre the climate crisis, 'Nuclear Energy for the Environment' and 'Nuclear Energy Against the Environment'. Finally, following the CDA framework, the second level of analysis is utilised to highlight the broad ideologies each articulation is factored into, which construct a reality that conveys the articulation as the most suited to take on the role of hegemonic articulation.

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Introduction

The following research deals with the topic of the discourse around nuclear energy. Specifically, this research is looking at the discourse surrounding nuclear energy in 2022, in the states of the United States (US) and the United Kingdom (UK). For many decades nuclear energy has been a controversial and widely debated technology of energy production. Thus, in studying the discourse concerning nuclear energy, the aim is to ascertain how people perceive the technology. This does not only concern whether people think it is good or bad and productive or unproductive. The discourse surrounding nuclear energy has been shown to factor in much broader constructions of reality, such as the optimistic and sometimes utopian hopes that the technology was part of immediately after World War Two. Alternatively, it has been part of much more negative visions, such as ideas of the apocalyptic failures of humanity's hubris. Which was articulated after the disasters of Chernobyl and Fukushima.

The research puzzle of this thesis concerns what the portrayal of nuclear energy's role is during times of crisis, that are not exclusively about meltdowns or other nuclear accidents. Specifically in 2022, there are numerous crises present within the two states under study, and this research seeks to understand how these crises impact the discourse around nuclear energy. The rise and fall in acceptance for the use of nuclear energy has been previously associated with changes in perceptions of environmental issues, technological progress, and energy security (Doyle, 2011, Gamson & Modigliani, 1989). However, it is unclear from the previous literature how security and economic crises impact the discourse on nuclear energy. Whilst other research has studied how the climate crisis impacts nuclear energy discourse, the impact the presence of economic, security and environmental crises has is unclear.

The objective of this thesis is to map how multiple crises affect different states' nuclear energy discourse. This addresses the research puzzle, as by understanding how various crises are factored into the discourse on nuclear energy, how nuclear energy is portrayed as relevant or irrelevant to solving a certain crisis, and the broader ideologies it is factored into, an understanding of how crises can affect nuclear energy's discourse is gained. The question that must be asked to partially solve this puzzle is: How did the discourse surrounding nuclear energy adapt to account for the multiple crises present in 2022?

To achieve an answer to the above question, and solve the puzzle, there are key theoretical expectations. Firstly, this research implements a theory of crisis, which sees crisis as an event which creates dislocation in a hegemonic articulation, and thus opens up a certain discourse for

contestation among new articulations. In this contestation, hegemony for the articulation is the aim of those who espouse it. Factoring in this conception of crisis means that this contestation between articulations pushed to 'suture dislocation' (Stavrakakis, 2000, p.101) and gain hegemony establishes any articulations which do not share the same central crisis as their understood source of dislocation, as possibly becoming antagonistic in the future. It is a key expectation of this research that any articulations which emerge, and are pushed to gain a hegemonic position in the discourse on nuclear energy, centre a given crisis as the central source of dislocation. This must be done, as the key point in generating an articulation to deal with the effects of dislocation is to cover up the lacking meaning and provide a sense of security to the discourse (Stavrakakis, 2000, p.109).

Secondly, discourse within this research is understood through the work of Norman Fairclough (1992) on Critical Discourse Analysis (CDA). The theoretical expectations formed from the use of this theory relate to the understanding that discourse exists at the level of the text, and it is always part of broader 'social practices' (Fairclough, 1992, p.80). These social practices, importantly for this research, can be ideologies, and the way that certain discourses are part of larger ideologies can be ascertained by studying the discourse at the level of the text. Thus, it is expected that the discourse on nuclear energy in the US and the UK presents articulations on the technology, and these have central elements related to a crisis to defend this position. However, it is also expected that these articulations will be part of broader ideologies which form the construction of reality that supports and influences their articulation.

Studying this particular puzzle is important as the conception of crisis used in this research posits unique findings on how the different articulations are presented to gain a hegemonic role in interpreting nuclear energy. Due to the need to suture dislocation and provide security to the understanding of nuclear energy, each articulation has a certain crisis at its centre, understood as the primary source of dislocation. Thus, even if there are two articulations which support nuclear energy being used more, by positing a different crisis as the primary source of dislocation they may well become conflicting articulations. This underlying tension between articulations, which are seemingly compatible, is an important contribution of this research as it highlights how a further progression of events can drive apart articulations that once seemed like compatible visions for the future of nuclear energy.

The following research takes the form of a comparative critical discourse analysis. The two cases compared are the US and the UK within the timeframe of 10 months, from January

2022 until the end of October 2022. To build a picture of the discourse surrounding nuclear energy in these two states over this time period, five mainstream media outlets from each state are selected. There are a number of reasons for the selection of prominent media outlets. Firstly, the news media is a common place for ‘official government discourse’ to be ‘reproduced and contested’ (Doyle, 2011, p.107). Secondly, there is a ‘ubiquity’ to ‘popular news publications’ (Renzi *et al.*, 2017, p.628), and they very often reflect and help ‘produce so-called ‘common sense’’ (Dunn & Neumann, 2016, p.47). In this way, analysing the media allows for a broad picture of each national discourse on nuclear energy to be constructed.

From each of these five outlets, 15 samples are collected, in the form of articles or videos that are available on the media outlets website. The reason for 15 samples from each outlet being selected is the high level of detail necessary for the CDA methodology used here, as it requires analysing each sample at the level of wording and clause placement. In America over this 10 month period, data is collected from Fox News, CNN, The New York Times, The New York Post, and CBS News. This selection is because they represent the outlets which have been noted as being the main sources for Americans to obtain news, with CNN and Fox News each being favoured more by either Democrats or Republicans respectively (Grieco, 2020). In terms of the sources for the UK, they are the BBC, The Sun, The Daily Mail, The Daily Express and The Guardian. These are all within the top 10 media outlets for audience reach in the UK, with a combined reach of well over half the country (Majid, 2023).

In terms of the methodology for analysing the collected samples, it follows the principles outlined by Fairclough (1992). This means an in-depth analysis is conducted on each sample, highlighting features within the samples that portray how the crises present in 2022 are accounted for when discussing issues of nuclear energy. Features of ‘wording’, ‘word-meaning’, ‘cohesion’, ‘transitivity’, ‘ethos’ (Fairclough, 1992, p.235-236), and many others are highlighted for how they feature in articulations of nuclear energy’s role in response to the dislocating effects of crisis. Once that is completed for all collected samples, then an analysis of the broad ideologies that each identified articulation fits into is carried out. The analysis of ideologies provides an in-depth understanding of how the articulations of nuclear energy are part of larger processes within each state. This provides a complete understanding of how crises impact the discourse as it accounts for the ideologies of each articulation, which are a necessary part of any discourse. Additionally, it provides an important opportunity to compare the two state’s discourses, as the entirety of the discourses, and the impacts crises have had on them, can be analysed and compared.

This thesis is divided into five chapters. The first chapter discusses the theoretical basis for this research, in terms of discourse theory and theories of crisis. This chapter highlights previous studies into the discourse surrounding nuclear energy and how they influenced this research. The second chapter discusses the methodology of this research, highlighting the details of the discourse analysis methodology employed, along with case selection, data collection methods and the other key methodological points. The third chapter is a textual analysis of the 75 US samples, where the details of the textual features are highlighted and a discussion of the three articulations which emerge from these samples is discussed. The fourth chapter consists of analysing the 75 samples taken from the five media outlets in the UK, and highlighting the detail of these samples and the four articulations concerning nuclear energy's role they posit. The fifth and final chapter is a comparison of the different ideologies that the articulations are a part of, and it also compares the different articulations and discourses between the two states.

1. Theoretical Background

1.1 Critical Discourse Analysis and Crisis Theory

Firstly, it is important to elaborate the ontological and epistemological assumptions which underpin the approach to discourse analysis and crisis in use here. A key theoretical concept for this study is discourse, and the understanding of this utilised here, comes from Norman Fairclough's *Discourse and Social Change* (1992). Firstly, whilst this thesis only analyses 'spoken and written language use' (Fairclough, 1992, p.62) discourse is more than this. It is a system, within which spoken and written language are used (Fairclough, 1992, p.63). Beyond its fundamental definition, discourse here is also understood 'as a form of social practice', and not as 'a purely individual activity or a reflex of situational variables' (Fairclough, 1992, p.63).

The form and meaning of a discourse is rooted in a 'dialectical relationship between discourse and social structure' (Fairclough, 1992, p.64). So 'discourse is shaped and constrained by social structure in the widest sense and at all levels' and also 'discourse is socially constitutive' (Fairclough, 1992, p.64). Neither aspect has primacy in its impacts upon the other. Additionally, besides social structures, 'objects' as well as 'social subjects' are also 'shaped by discursive practices' (Fairclough, 1992, p.60). This dialectical relationship between that which is discursive and that which is outside of the discursive, highlights a separation between two functions of discourse, which are 'referring' and 'signifying' (Fairclough, 1992, p.60). As a discourse does 'include reference to preconstituted objects' but also includes 'the creative and constitutive signification of objects' (Fairclough, 1992, p.60). This lays out the central framework for an ontology and epistemology of discourse, in this research. Therefore, following Fairclough this research adheres to the understanding that the discursive and material realms are distinct.

There are also additional theoretical points utilised, from Fairclough's CDA approach, which go beyond the fundamental ontology and epistemology of discourse. These theoretical points come from Fairclough's three dimensional framework for discourse, and whilst they have methodological implications, they are also theoretically important. This breaks discourse down into three fields, which ascend in scale, that are the 'text', 'discursive practice', and 'social practice' (Fairclough, 1992, p.73). Methodologically, these are different levels for analysing the constitution and effects of a given part of a discourse, but theoretically, they are distinct areas in which a discourse may be conducted, constrained, or have an impact.

Discourse as 'text', has been simply defined as 'the linguistic features and organization of concrete instances of discourse' (Blommaert & Bulcaen, 2000, p.448). It is what typically distinguishes discourse from other forms of social practice, and makes it 'specifically discursive', as it is, broadly speaking, 'spoken as well as written language' (Fairclough, 1992, p.71). One way of deepening the ontology of discourse as text comes from Derrida with his concept of the 'generalised text' (Lundborg and Vaughan-Williams, 2015, p.18). Taking the broadest definition possible towards text, Derrida states 'What I call "text" implies all the structures called "real," "economic," "historical," socio-institutional, in short: all possible referents' (Derrida, 1988, p.148). Furthermore, Derrida's idea of the text 'is limited neither to the graphic, nor to the book, nor even to discourse, and even less to the semantic, representational, symbolic, ideal, or ideological sphere' (Derrida, 1988, p.148). However, this ontology goes beyond broadening what we can understand as the text in an attempt to include aspects that are not limited to the linguistic and instead poses a challenge to the ontological division of the discursive and the non-discursive. He is essentially trying to reconcile the material, with the discursive to emphasise their 'mutual imbrication' (Lundborg and Vaughan-Williams, 2015, p.22), but it is not the case that they are mutually imbricated, they are, instead, in a dialectic relationship.

Discursive practice is the second aspect of this framework, and it concerns 'text production', 'text distribution', and 'text consumption' (Fairclough, 1992, p.232). For the purposes of this research, discussion and analysis of the discursive practices are unnecessary. It is true that the reality of how a text is produced, distributed and consumed, is always influenced by social factors and 'social contexts' (Fairclough, 1992, p.78). However, the key aim of this research is to understand how the discourse around nuclear energy has adapted to the crises of 2022. The research deals with five news outlets from two states, and they are all widely read, the nature of how they are produced does not differ significantly, nor does their distribution. Thus, as a level of analysis it would offer no contribution toward answering the research question.

When it comes to the media discourse on nuclear energy, it has been highlighted by other studies that 'media discourse is part of the process by which individuals construct meaning' and journalists use 'public opinion' to help them 'develop and crystallize meaning in public discourse' (Gamson & Modigliani, 1989, p.2). However, to be able to understand how this discourse is articulating understandings of the dislocating effects of crisis, there is no need to account for how individuals construct meaning. Individuals use their 'life histories, social

interactions, and psychological predispositions' (Gamson & Modigliani, 1989, p.2). This leads to a more complex epistemology which must engage certain psychological or psychoanalytic theories and methods to generate similar data on how nuclear energy discourse was impacted by crises over the course of 2022.

The two key aspects Fairclough discusses to elaborate the theoretical points of understanding discourse as social practice are ideology and hegemony. These are of primary importance for this aspect of CDA's theory, as it mostly seeks to analyse 'the ideological effects and hegemonic processes in which discourse is a feature' (Blommaert & Bulcaen, 2000, p.449). They operate within the social sphere and constitute social practices and relations at various levels, from the institutional to the global and national levels. They contain and guide discursive practices, including the product of these, the text. This is certainly the case within the news media. The analysis and comparison of these two cases primarily utilises the role of ideology in cohering an understanding of the broad constructions of reality that articulations about nuclear energy are part of.

Ideologies here are taken as 'significations/constructions of reality' that 'are built into various dimensions of the forms/meanings of discursive practices, and which contribute to the production, reproduction or transformation of relations of domination' (Fairclough, 1992, p.87). In regards to ideology, Fairclough employs, as with other aspects of his theory, a dialectical approach. That is, he states that 'subjects are ideologically positioned', in the way that Althusser posited, as given a subjectivity and a position within institutions and communities based on ideology. However, Althusser's specific focus on the ideological constitution of subjects leaves out 'the capacity of subjects to act individually or collectively as agents', particularly in the way they oppose and challenge 'ideological practices' (Fairclough, 1992, p.90-91). Thus, it is important to utilise a perspective of ideology, whereby 'subjects are ideologically positioned, but they are also capable of acting creatively to make their own connections between the diverse practices and ideologies to which they are exposed' (Fairclough, 1992, p.90-91).

For this research the concept of ideology is the frame for understanding the broader constructions of reality that the articulations of nuclear energy's role are part of. Whilst Fairclough commonly uses the terms social practices, this thesis, by not utilising the concept of hegemony as he does, primarily refers to ideologies and constructions of reality. As this is the type of social practice most relevant to this research. The concept of ideology facilitates

an understanding of the broad constructions of reality implicit within articulations of nuclear energy's role in light of crises. As this level is a key aspect of any discourse, to answer the demands of this research the role this plays in each articulation must be understood.

In summary, the theory implemented here is one of a CDA approach to discourse analysis, mostly modelled on the framework set forth by Norman Fairclough in *Discourse and Social Change* (1992). However, there are aspects of Fairclough's framework which require redress, for this analysis and these will now be addressed, alongside other criticisms of the theory. The aim is to clarify the exact contours of the theory used here, as well as to establish that it is the most suitable theory for such an analysis.

There are a number of other theories which could be implemented for this research. Many early systems for analysing discourse are highlighted by Fairclough when introducing the preceding theories he is building his work upon. Whilst detail is avoided, as what they lack has already been well discussed by others, I will now briefly highlight their unsuitability for this project.

There is the approach of 'Conversation Analysis' developed by 'sociologists' using an approach known as 'Ethnomethodology' (Fairclough, 1992, p.16). However, it is heavily based on the premise that the sequence in which statements are said within a conversation constrains what else can be said afterwards, which is the idea of 'sequential implicativeness' (Fairclough, 1992, p.18). This theory is much better suited to analysis of actual conversation, and this limits the sources that can be gathered to answer the research question. Additionally, 'the effects of sequence' are highly variable based on 'discourse type' (Fairclough, 1992, p.18). In interactions, or texts more generally, many 'discourse types' (Fairclough, 1992, p.18) can be drawn upon to create the text or interaction. Whilst its primary concern is with actual conversation, with its concepts being suited towards this, another key reason is, even if analysis was only conducted on media interviews concerning this topic, this theory negates the role 'of power as a factor in conversation' (Fairclough, 1992, p.19).

One other theory which CDA has built on but must be distinguished from for key reasons is Critical Linguistics (CL). Similarly, to CDA this theory aimed to combine 'linguistic text analysis with a social theory of the functioning of language in political and ideological processes' (*ibid*, p.26). However, CL's theory focuses too much on 'the text as product', leaving 'the relationship between textual features and social meanings' (*ibid*, p.28) as oversimplified, with social meaning being somewhat mechanically attached to certain

structures in the text. It is the contextualisation, gained from understanding the nature of the current crises and the previously hegemonic articulation, which prevents such a mechanical attachment of social meaning occurring in this research. When articulations are understood as having a central crisis, seen as the primary source of dislocation, the connection of textual features to broader ideological positions is mediated by the central crisis. The mobilisation of certain constructions of reality to defend a given articulation and position it as answering the needs of a certain crisis portray the broad ideologies textual features contribute to.

There is additionally a more recent theoretical intervention into the realm of discourse studies which was considered as a basis for this theory, which is the ‘New Materialisms’ (Lundborg and Vaughan-Williams, 2015, p.3) literature. Whilst it is not the basis of the theory in this research, this literature has further emphasised the necessity of Fairclough’s understanding of the relationship between the discursive and material. There is already quite a diverse set of theoretical positions subsumed under the new materialism label, which are not always in sync. However, the key common positions are ‘that human beings are surrounded by, immersed in, and indeed composed of matter understood in these terms’ and ‘the relationship between people, materiality, and sociopolitical life is intensifying’ (Lundborg and Vaughan-Williams, 2015, p.4). Scholars in this field disagree as to what extent material factors have a role to play within the social and political fields. Some grant material objects and forces a certain level of agency and endow them with a ‘vitality’ (Bennett, 2010, p.viii). Others wish to increase the ontological scope for political analysis whilst still questioning whether ‘agentic capacities may be discerned across a broad range of entities’ (Coole, 2013).

Through engaging with the new materialisms literature, it is possible to discern the theoretical position that, rather than privileging either the discursive or non-discursive realm, a dialectical understanding of their relationship must be maintained. The staunch materialism posited in some of these sources does not conform to the findings of this research, where immaterial factors have a clear role. As this research will highlight the varying interpretations of reality, when it comes to nuclear energy discourse, a staunchly materialist theory would go against these findings. Thus, Fairclough’s own position, that there is interaction and feedback between the discursive and the material is well suited to this work.

The final concept which must be explicated here, is in fact the conceptualisation and theoretical understanding of crisis. Whilst this brings in elements of discourse theory and empirical factors, it is best placed at the concluding part of the theoretical section, as its

elucidation is necessary before proceeding. One concept which is stirring debate and reflecting something relatively unique about events of the past few years is the term 'polycrisis' (Tooze, 2021, Wolf, 2022, Zeitlin, Nicoli & Laffan, 2019). This paints a picture of the type of frames of reference people are creating to process the events of recent years. However, they are not concepts which are empirically tested by this research; they are a way to understand what has made recent years, as a context, unique.

2022 has gone down in history as the year Russia invaded Ukraine. However, it was not the only crisis impacting the lives of many people in 2022. Covid-19 was still impacting 'the mental health of children and adults in large parts of the world' (Olf, 2023, p.1). Not to mention as it was only two years since the beginning of the pandemic on a large scale, many states were still reeling from the economic shocks fighting the virus had entailed. The Bank of England in 2022, for example was still attempting 'to unwind the huge portfolio of bonds that it had piled up fighting the Covid-19 pandemic' (Tooze, 2022) when Liz Truss' premiership came to an abrupt end. At the same time her woes were compounded by a 'backdrop' of a 'mammoth energy subsidy bill' (Tooze, 2022). The nature of the many crises operating throughout 2022, is that 'the shocks are disparate, but they interact so that the whole is even more overwhelming than the sum of the parts.' (Tooze, 2022) It is this understanding of the interconnection of the crises that generates terminology such as polycrisis.

Whilst terms such as polycrisis paint a broad picture of the varied nature of crises that impacted the UK and the US throughout 2022, the crises, must be conceptualised for proper utilisation in this research. To this end I refer to the work of Leek and Morozov (2018), which posits that a crisis is a situation where a given event 'lays bare the contingent nature of norms and habits, which in ordinary times is occluded by common sense' (Leek & Morozov, 2018, p.130). More thoroughly, it is a 'structural dislocation in which political routine is suspended, the fragmentation of the self due to the presence of competing hegemonic moves becomes visible and generates the need to re-establish order by restoring or re-articulating the dislocated discursive structure' (Leek & Morozov, 2018, p.130). The dislocation produced by such an event, renders 'hegemonic articulations' open to contestation; with articulations being classified 'as hegemonic when they serve as the basis for formal institutional acts' (Leek & Morozov, 2018, p.133). Accordingly, 'This opens up a terrain for competing hegemonic moves striving to eliminate the crisis by renegotiating the identity of the self' (Leek & Morozov, 2018, p.130).

An important difference for this research, however, is that it does not deal with the concept of the self or identity, but this does not mean that this understanding of crisis and its effects on hegemonic articulations cannot be utilised. It is the understanding of the role nuclear energy should play in energy generation which is being contested, and this research is premised on the fact that the culmination of a number of crises in 2022 dislocated the previously hegemonic articulation of this role.

When crises are understood as dislocating previously hegemonic articulations of nuclear energy, we can study how they ‘threaten identities, ideologies and discourses’ (Stavrakakis, 2000, p.106). Additionally, we can study how they productively ‘generate attempts to rearticulate these dislocated ideologies and discourses’ (Stavrakakis, 2000, p.106). The new articulations emerging to remedy this dislocation seek to gain a hegemonic position, as the dominant construction of nuclear energy’s reality in the face of crises. Studying the discourse surrounding nuclear energy in the UK and the US over 2022 uncovers the dynamics of how these articulations are presented as competing to appear as ‘an administrator of social dislocations’ (Stavrakakis, 2000, p.115) in the case of nuclear energy’s future.

The drive to create a new articulation, in response to the dislocating effects of crises, is determined by an articulation being presented to suture the dislocation and seem ‘capable of covering over the lack of meaning in question and providing the greater feeling of ‘security’’ (Stavrakakis, 2000, p.115). Covering over this lack of meaning, providing a feeling of security, and claiming that a certain articulation effectively deals with the dislocation of nuclear energy’s role are how an articulation can gain hegemony. Analysing these attempts in the discourse shows which crises have impacted nuclear energy’s role and how they are rearticulated and factored in to new articulations of the technology’s role. As the context of 2022 provides multiple crises which could be central to an articulation seeking to gain hegemony in determining nuclear energy’s perceived role, then the crisis an articulation posits as central is important to note. By having different crises at the centre, the articulations highlight what is believed to be the greatest source of dislocation, as it is around this crisis, proponents seek to rearticulate an understanding of nuclear energy.

It is important to elaborate on the previously hegemonic articulation which has been dislocated. Nuclear energy has long been a controversial energy source with contested value and relevance, there was a hegemonic articulation of its role before the crises of 2022. Such as the Russian invasion of Ukraine which inflamed the problems, of an already strained

energy market. The assertion for this articulation as hegemonic also needs to be justified. In the UK, it was the predominant view after Chernobyl that nuclear energy was too risky and so 'policy measures' were 'designed to phase out nuclear capacity' (Renzi *et al.*, 2017). In the US, in the 1990s, it was noted that public perception of the technology was 'that the risks were immense' and issues surrounding it faced 'overwhelming political opposition' (Slovic, Flynn & Layman, 1991).

From the mid 2000's onwards, the governments and populations, began to have a higher tolerance for the use of nuclear energy, particularly when positioned alongside the threat of climate change. This position being termed 'reluctant acceptance' by one study conducted in the UK (Bickerstaff, *et al.*, 2008, p.145). Additionally, the US in 2005 allocated '\$18.5 billion for a loan guarantee program' to incentivize greater investment into nuclear (Koerner, 2013, p.241). So a period of improving perceptions began, but without the practical uptake necessary to support the enthusiastic claims of some that it was a 'renaissance of nuclear energy' (Blowers, 2006, p.167).

The US is still the world's largest generator of nuclear power by a significant margin, but in 2019 they only had two reactors under construction, compared to China's 11 under construction at the same time (Ho, *et al.*, 2019, p.463). This for America was the result after 30 years 'in which few new reactors were built' (World Nuclear Association, 2023a), with those two reactors beginning construction in 2012, thanks in part to 2005 Energy Policy Act to incentivize the industry (World Nuclear Association, 2023a). In the UK, the warming attitudes of public and government also met with little action. The last reactor in the country to finish construction and be connected to the electricity grid was Sizewell B, which was connected to the electricity grid in 1995 (World Nuclear Association, 2023). And whilst a number of government's since 2006 have set about 'streamlining the planning process' (World Nuclear Association, 2023) and reiterating they are committed to nuclear power, there is still just two reactors under construction at Hinkley Point C. Construction has been delayed many times and has run over budget, with the expectation that the first reactor will now be connected to the grid in 2027 (World Nuclear Association, 2023).

In the case of the UK it was insufficient that nuclear use stagnated as reactors continued to close up until the start of 2022. America has, likewise seen stagnation of nuclear energy with reactors getting older and few replacements lined up. Thus, in the case of both countries, the hegemonic articulation was one of a positive image within government, but with limited

attempts to maintain the same level of generation, which failed, and an overall lukewarm approach, with a pragmatic understanding of the technology's uses.

The hegemonic articulation was presented as positing there is a place for nuclear energy in the energy generation mix of both countries, but without any strong politicisation, in either a negative or positive direction. Whilst there was always mild contestation present in a non-dislocating sense for the past two decades, in light of the severe shocks generated by the numerous crises impacting both states in 2022, this state of affairs has been disrupted. It is the response of the nuclear energy discourse to the dislocation of the previously hegemonic articulation of nuclear energy's role in energy generation that this research seeks to investigate.

As many posit, the 'energy shock' was, in part, 'caused by the Russian invasion of Ukraine' (Derbyshire, 2023), but it is not that the shocks across energy markets globally are only tied to the fate of Russia's invasion of Ukraine. For many years preceding 2022, the main crisis for energy production was climate change. This connection is far from gone, and climate change continues to create deep impacts upon the world at large, from 'the population's mental health' via increasingly frequent 'extreme weather events', or the higher 'frequency and intensity of natural disasters'. (Olf, 2023, p.1) Not to mention the potentiality for climate change to ignite conflicts, as certain scholars have highlighted. (Hendrix *et al.*, 2023, Burke *et al.*, 2009)

It is in particular, these climatic factors, and the energy market shocks generated by Russia's invasion of Ukraine which are relevant to the study of nuclear energy discourse in the US and UK. As is highlighted in the following literature review, many studies over the years have posited shocks within the nuclear energy industry, as well as wider shocks in the world can initiate shifts within the discourse.

1.2 Theoretical Contribution

Firstly, as is discussed in the empirical literature review, there are a number of previous studies which have conducted discourse analyses on nuclear energy. Several opt to focus on the media as well. However, the CDA approach adopted here represents a more critical approach to this media discourse and the broader social structures, such as the ideologies. Whilst many other works do posit links between nuclear disasters, or other events, upon the discourse surrounding nuclear energy, and they discuss how the discourse shapes perceptions and impacts social structures, they do not fully account for the ideologies, dominant

structures and worldviews involved. This theory exposes social structures that go unnoticed within the discourse and how the concept of dislocation is fundamental to understanding how certain crises are central to new articulations. However, none of this theoretical work challenges or uncovers factors not previously studied in CDA or in research discussing dislocation, so the primary contribution of this research is empirical.

1.3 Studies of Nuclear Energy's Discourse

To begin with the previous studies conducted on the discourse surrounding nuclear energy, this article within the literature highlights the importance of the mass media's role in communicating a meaning to events which transpire within the nuclear energy sector. Particularly significant shifts, like the Chernobyl disaster, through 'interpretive packages that give meaning to an issue' (Gamson & Modigliani, 1989, p.3). These packages, are 'metaphors, catchphrases, visual images, moral appeals and other symbolic devices' (Mercado-Sáez *et al.*, 2018, p.548) which characterised the discourse on nuclear energy in the US from 1945 until 1989. They also utilise the concept of the 'media frame' (Gitlin, 2003, p.6) which is the central organising factor of an interpretive package. The media frame is not made explicit and often it is not acknowledged, but it provides organisation to the world for the reporter of a story and those who consume such stories.

Importantly, the central organising frame can incorporate 'a range of positions', instead of a single coherent world view, 'allowing for a degree of controversy among those who share a common frame.' (Gamson & Modigliani, 1989, p.3) These media frames 'enable journalists to process large amounts of information quickly', and thus, 'package it for efficient relay for their audiences' (Gitlin, 2003, p.7). This formulation of the media's role via reciprocal interaction with public opinion through the work of Gamson & Modigliani is an important early example of a similar approach to studying nuclear discourse as this study, however, there are key differences this research builds on.

Two findings of their work in particular merit discussion here, firstly, that 'Media discourse and public opinion are treated as two parallel systems of constructing meaning' (Gamson & Modigliani, 1989, p.1). The fundamental issue under investigation here is how the discourse on nuclear energy has accounted for the crises of 2022 and the media is taken as a forum in which many participants and articulations in such a discourse can be analysed. Thus, this cognitive and individual centred approach which focuses on the thought processes of individual journalists and readers is not in line with this theory or research topic. To focus so

heavily on processes within the interpretive capacities of individuals, whether they produce or consume the media, moves away from the focus on dislocation and competing articulations. Additionally, on an empirical level it is not a relationship between media discourse and public opinion this research looks at.

Secondly, Gamson and Modigliani state ‘like every policy issue’, nuclear energy, ‘has a culture’ (Gamson & Modigliani, 1989, p.1). This means that whilst accidents like Three Mile Island (TMI) and Chernobyl give greater purchase to certain articulations of this technology, they do not directly determine the fate of its interpretation. In fact, the system has its own dynamics by which ‘Packages ebb and flow in prominence’ and must be reworked to ‘accommodate new events’ (Gamson & Modigliani, 1989, p.2) which impact their intelligibility and perceived coherence in the public mind, as well as their legitimacy in the media sphere. To Gamson and Modigliani this explains the attention and concern given to TMI and Chernobyl, but no such equivalent uptake in distrust and concern after a ‘serious nuclear accident’ in the Enrico Fermi power plant ‘outside Detroit in the fall of 1966’ (Gamson & Modigliani, 1989, p.14). As the issue culture at the time was one dominated by hope for the positive technological implications of nuclear energy, whereby many had progressive views of its potentialities, and so the story stayed ‘unreported’ (Gamson & Modigliani, 1989, p.14) for a long time.

The Enrico Fermi power plant case certainly displays the power of discourse in influencing our perception of events within the world, but it fails to consider, how this event itself later influences the discourse. As just over 20 years later, when Chernobyl and TMI have occurred, a rearticulation of such an unreported nuclear accident would influence the discourse differently. It would lend itself to challenges of the understanding of nuclear energy as progress which had been dominant, by the very fact it was side-lined and unreported.

There are also many other studies which further Gamson and Modigliani’s work, using newer contexts, frames, and events which influence developments. Such as those who have taken the use of media frames, like Gamson and Modigliani, and applied them to contemporary debates over nuclear energy in countries outside the US (Mercado-Sáez *et al.*, 2018) (Doyle, 2011) (Bickerstaff *et al.*, 2008). This is by no means an exhaustive list and they all in some way alter the original focus and logics of Gamson and Modigliani’s analysis. There are those who have posited it is in fact ‘Politicians’ who ‘play the greatest role’ and that ‘The media are not fulfilling their function to inform the public’ (Mercado-Sáez *et al.*, 2018, p.557).

There are other studies, using media frames, who focus more on the role of government in influencing the media to support their agenda, and evaluate whether the government's approach to nuclear energy was adopted by the media, or if it merely provided 'the discursive context' to discuss these issues (Doyle, 2011, p.122). There are also those who take the concept of frames, but instead focus on 'industrial actors, scientists' and 'a range of senior politicians and advisors', to understand how these actors are attempting to reframe nuclear power as a solution to climate change (Bickerstaff *et al.*, 2008, p.147). Using this, they do not focus on 'the frames citizens use for interpreting environmental problems', as Gamson and Modigliani had done in part, but instead they focus on citizens 'responses to the framing processes of other (institutional) actors' (Bickerstaff *et al.*, 2008, p.147). Based on articles of this nature it was established that the best way to utilise the media discourse on nuclear energy was not to just focus on how the media portrays the issues. Building a complete understanding of how the discourse incorporates different crises dislocating effects, and forms new articulations, also requires analysing the discourse of those who are quoted and represented within the media.

Whilst the stated purpose of this research is to build an understanding of how the discourse surrounding nuclear energy has accounted for the various crises present in 2022, many other works on nuclear energy have been informative. Such as those that take a more traditionally geopolitical perspective to the issues (Kotek & Lau, 2018). Additionally, among the studies of nuclear energy focusing on discourses, there are those who posit a discourse and issue culture has a more causal link with material reality (Blowers, 2006). There are likewise those who root their discursive study of views on nuclear energy in limited and quite distant historical periods with unique circumstances. This includes work such as Choi and Yun's (2022) study of nuclear discourse in post-war Japan from 1945 until 1956. This work has many interesting insights, that deepen our understanding of how material realities factor, or do not factor, into how people view the technology (Choi & Yun, 2022). Even though Japan is the only state in history to have nuclear bombs dropped on it, in the period immediately after this historic attack, many of those who had fallen victim to them believed 'that peaceful (good) use of nuclear technology was necessary to stop the military (bad) use.' (Choi & Yun, 2022)

An additional grouping of other works concerning perceptions of nuclear energy centre around the perception of risk as a calculation made in the minds of those speaking on issues of nuclear energy, and those who listen to them. These studies tend to employ a discursive

analysis to understand how risk is communicated and understood, including via the media (Koerner, 2013) (Palfreman, 2006), as well as via case studies of particular advocacy groups (Katz-Rosene, 2021). There are also those studies which focus in on very particular methods of discursive analysis by emphasising a particular discursive communication tool, such as metaphor. One particular example of this approach from Renzi *et al*, highlights an understanding, that the ‘human conceptual system is fundamentally metaphorical’ (Renzi *et al.*, 2017, p.627). For this research, in the analysis of certain articles, if they employ metaphors to articulate support for, or challenge to, articulations of nuclear energy’s role they are analysed. As stated previously, this analysis is not concerned with the cognitive processes of individuals, like this previous study was.

In terms of the literature that currently exists on the crises of 2022 there is, as yet, no literature which addresses how they are accounted for in the nuclear energy discourse of the UK and the US. There have been some recent studies concerning more geopolitical consequences and motivations around current energy trends, such as Andreas Stergiou’s study of the Eastern Mediterranean’s energy situation following a number of interrelated climate issues. These are issues such as ‘sea-level rise-related risks, land and marine biodiversity losses, risks related to drought, wildfire, alterations of water cycle, endangered food production’ (Stergiou, 2023, p.1). In terms of studies focusing on the energy sector, as focusing on all the work which has detailed the crises effects on many sectors would create too large a list, there are studies, such as the one by Jan Selby, which highlight the dangers to decarbonisation efforts crises, such as the War in Ukraine, present as it appears to make decarbonising more costly and risky (Selby, 2022). There are additional studies which have begun to emerge addressing the context of multiple crises which were taking place across 2022 and how they have affected various international political trends (Olf, 2023, Haine, 2023). Due to the lack of time which has elapsed since 2022, however, there is not an extensive body of peer-reviewed literature which has built up detailing the events of that year.

1.4 Empirical Contribution

Whilst all of these studies and works have informed the research that follows in this paper, whether through providing frameworks to build on or by creating examples and positions to avoid. The contribution to the literature from this research is as follows. Firstly, the following research addresses a new context the discourse around nuclear energy takes place in. That is

the year of 2022, with the various intersecting crises that impact debates around nuclear energy at that time. Thus, this research aims to analyse the discourse across many news outlets to see how they portray nuclear energy, and the events of 2022 that have affected it.

Secondly, this is a study which applies discourse analysis to two countries with diverse histories and relations in regards to nuclear power, as well as very different standings in terms of energy producing capabilities and overall perceived geopolitical influence and power. However, these two states present the most essential cases for a study of this topic as they both shared the same hegemonic articulation of nuclear energy prior to 2022. Their hegemonic articulation was one of a pragmatic but passive approach to nuclear energy. By understanding their relative discourses after accounting for the dislocating effects of various crises, the effects of crises upon the discourse surrounding nuclear energy can be understood clearly. With no serious political capital investments in the technology's future, as cases like France and Germany have, the discourse is centred on rearticulating dislocated elements of nuclear energy's role in response to crisis.

By understanding the discourse surrounding nuclear energy in the US and the UK, a concrete understanding of how nuclear energy fits into a state's energy production mix in light of the crises in 2022 can be ascertained. This provides a more complete understanding of what the present and future conflicts over this technology will be when crises impact states of varying power. The technology will remain a part of policy contestation for years to come so such understandings are essential for analysing nuclear energy policy and how it is represented in discourse.

2. Methodological Chapter

Having outlined the theory of CDA and the understanding of dislocation in use in this thesis, and how these answer the theoretical demands of this research better than alternative positions, it is important to address the methodology. Firstly, it is important to discuss the levels of analysis elaborated on in the theoretical section, to establish their place in the research design. Following that the data gathering methods, data analysis methods, and case selection principles are elucidated.

2.1 Methodology of Analysis

The methodological basis and procedures for analysing the textual samples are based on Fairclough's own methodology for analysing the two levels on which discourse functions, used in this research. These are discourse as text and discourse as social practice. Each of the two levels requires different methods for drawing out the information of its contents. For discourse as text it is 'description', but for discourse as social practice it is 'interpretation' (Fairclough, 1992, p.231).

The first step is to analyse the discourse as text, which in this study is categorised as each sample from a news outlet, there are a number of aspects which require analysis. The text is subjected to a careful reading, and where relevant, any of the following focuses for analyses are implemented to understand what the text articulates, rearticulates, or challenges and what textual mechanisms are used to do so. These begin with focuses on 'wording', which are used to see 'What intertextual relations are drawn upon' to construct the text's linguistic content, and 'word meaning' which allows analysis of the key terms 'which are of a general or more local cultural significance' as well as the words 'whose meanings are variable and changing' (Fairclough, 1992, p.236-237). As well as these, similar attention is paid to 'Metaphor', which would 'characterize the metaphors used in the discourse sample' and, contrasting this with 'metaphors used for similar meanings elsewhere', there can be a determining of what 'cultural, ideological' (Fairclough, 1992, p.237) factors influenced this choice. Additionally, 'Three dimensions of the grammar of the clause' are analysed in this study, which are 'transitivity', 'theme', and 'modality' (Fairclough, 1992, p.235). Which each are linked, 'respectively to the 'ideational', 'textual', and 'interpersonal' functions of language' (Fairclough, 1992, p.235). Finally, there is use, where necessary, of an analysis of the 'cohesion', 'politeness', and 'ethos' (Fairclough, 1992, p.235) within the text. Looking at the texts cohesion shows 'how clauses and sentences are connected together in the text', allowing

for an analysis of ‘its structuring as a mode of argumentation, narrative, etc.’ (Fairclough, 1992, p.235) Finally, the focus on ethos incorporates a focus on ‘the whole body’ of the text, as it is used to analyse ‘the diverse features that go towards constructing ‘selves’’, and thus any of the previously listed categories in this section ‘may be relevant to ethos’ (Fairclough, 1992, p.235).

The importance for utilising Fairclough’s approach to analysing the text samples, as opposed to other options, such as the ‘double reading, or deconstruction, method’ (Dunn & Neumann, 2016, p.109), is for methodological reasons. The methodological reasons being that subjecting the samples in this research to a double reading, one ‘descriptive reading’ and one ‘dialogical reading’, would provide no methodological benefit. The single reading necessary for CDA’s method is just as capable of analysing ‘alternative possibilities that the text is implicitly closing off’ (Dunn & Neumann, 2016, p.110). As this is one key insight of the dialogical reading proposed. Understanding such possibilities can be done through the focus on ethos, metaphor use or word meaning, and other methods highlighted by Fairclough.

When understanding how the discourse on nuclear energy has been impacted by the crises of 2022 the methodological factors which Fairclough highlights for use are invaluable. It cannot be predicted which textual mechanisms are utilised in the samples under analysis; nor can it be anticipated which social practices are impacting the use of these mechanisms. So analysis cannot be limited to a few textual features which may occur. Instead, this research analyses any of the above textual features as they are implemented in the samples.

The stated aim of this research is to analyse how the crises of 2022 have dislocated a previously dominant understanding of nuclear energy and generated contestation over what the new hegemonic articulation should be. These methods allow for analysis of the media samples to highlight how in each article certain processes are highlighted and certain institutions or individuals are invested with greater agency. In the context of articulating a new role for nuclear energy in the state, as a response to the dislocation of the previously hegemonic articulation, such methods portray which crises, and those who can respond to them are prioritised. An articulation emphasising that nuclear energy can, or cannot, be part of the response to a particular crisis in 2022, such as the climate crisis, shows that this crisis is seen as the greatest source of dislocation, thus, it must be addressed to provide the greatest sense of security. However, it is by understanding how samples, which portray a given articulation, highlight key agents, key processes, differing identities, and use certain

modalities to construct the reality of nuclear energy in 2022 that the content of ‘how’ nuclear energy’s discourse has been affected by crisis can be ascertained.

The final aspect of the analysis’ methodology is the study of discourses as social practice. This part of the analysis is carried out, once the preceding aspects of the discourse as text have been analysed in all the media samples from both states. It is not as simple as creating an organised list of requirements for understanding the social practice, as with the previous descriptive section of the analysis. This is because the social practices, in which the discourse of nuclear energy is situated, cannot be known before the textual analysis is complete and a full picture of each state’s discourse is constructed. Thus, expectations of this cannot be included into the methodology, as this privileges the interpretation of the results.

The first concept which is utilised to assess the social practices within either the US or the UK, is the ‘social matrix of discourse’ (Fairclough, 1992, p.237). The idea here is to ‘specify the social and hegemonic relations and structures’ that ‘constitute’ the environment for this moment ‘of social and discursive practice’ (Fairclough, 1992, p.237). The in-depth understanding of how each crisis has been accounted for within articulations over 2022 can be gained via the textual analysis. Through analysing the broader social practices within which these emerging articulations are situated, the comparison between the two states can be fully elucidated. Whilst the US and UK have differing textual analysis results, this alone cannot fully account for the differing situations of nuclear energy in the two countries. However, by analysing the wider social practices in which the contestation to suture dislocation is taking place, the broader implications of the discourse on nuclear energy can be highlighted. Studying the social practices is how the constructions of reality each articulation must posit as being the world nuclear energy finds itself in, where it either does or does not have a role, can be comprehended. By fully comprehending the ideologies being rearticulated to suture dislocation there can be a complete comparison of the two states discourses on nuclear energy, and how they have reacted to crises.

The most important factor to be analysed when it comes to discourse as social practice, is how ideologies affect the discourses reaction to the crises present in 2022. In particular focus is placed upon ‘the systems of knowledge and belief’, the ‘social relations’, and the ‘social identities (‘selves’)’ (Fairclough, 1992, p.238) which are generated, challenged or rearticulated within the discourse. In line with the theoretical framework elucidated earlier, it is not assumed people are always conscious of such ideological investments, nor is it stated

they are overly determined and constrained by them. The broad picture of the discourse on nuclear energy at the national level shows the differing articulations which have emerged to contest for a hegemonic position. It is clear how each one has prioritised or understood the various crises and how it wishes to see nuclear energy understood in light of this, and such articulations entail a conformity or a challenge to given social practices. Understanding what these are builds a much broader picture of how the different states see their role, economy and a number of other factors influenced and determined by factors of ideology and hegemony.

2.2 Case Selection

It has already been shown how the US and the UK both had the same previous hegemonic articulation for the role of nuclear energy within the state's energy production mix. This is an important factor for case selection, as it ensures the two cases, before the crises of 2022, had the same position on nuclear energy. At the centre of the research puzzle is a need to understand how the crises of 2022 affects perceptions of nuclear energy. If this is to be understood, and the effects of the crisis are to be the focus, then both cases should have a previous articulation for the technology which is similar. In this way, the difference in how it involves can be better gauged, and a clearer comparison can be elucidated.

Whilst the US and the UK provide a good start point, from which to gauge the impacts of crises upon nuclear energy's discourse, they also lack the same triviality that other cases do. There are many other Western nations where the strong political investment into nuclear energy's perceived role and nature already determines that their inclusion in this research would lead to a predictable outcome. The cases of Finland, France, Germany and Austria all provide good examples of cases with likely trivial outcomes in this regard. France, is 'the most nuclearized country in the world' (Schweitzer & Mix, 2022, p.505). Their history with the industry 'creates a context that praises, normalizes, and rationalizes nuclear energy while stigmatizing attempts to question or contest the nuclear industry's dominant position' (Schweitzer & Mix, 2022, p.504). The political investments into the technology have rendered 'oppositional knowledge production challenging and the current structure of the nuclear industry makes it difficult for counter-expertise to have lasting impact' (Schweitzer & Mix, 2022, p.520). Therefore, in the case of France, not only would the comparative aspect be weakened but the effects of crises would be contesting alongside long-term political and

economic investments of the technology, diminishing the ability to understand how crises have affected the discourse on nuclear energy.

The status of Finland's nuclear energy discourse is similar to that of France. Although it is not as dependent on nuclear energy, and there is more opposition to nuclear energy, the anti-nuclear 'camp itself is less powerful' (Ylönen, Litmanen, Kojo, Lindell, 2017, p.272). In Finland the nuclear energy discourse has been dominated by an idea of 'Finnish exceptionalism', which sees 'Finland as the safest, most prepared and thus ideal country for the production of nuclear power' (Ylönen, Litmanen, Kojo, Lindell, 2017, p.270). The biggest dent to the hegemonic position of nuclear support came after the 2011 Fukushima disaster, but even then, this period is characterised 'as continued, but to some extent undermined, loyalty' (Ylönen, Litmanen, Kojo, Lindell, 2017, p.272) toward the technology. For the purpose of this research, such a national context for nuclear energy brings in too many other factors which interfere with the discourse and lead to outcomes where the research question cannot be answered properly.

Whilst France and Finland are well known features of nuclear energy debates in the modern west, for their ardent support of the technology, Germany and Austria are also frequently involved in such debates, for their opposition. Germany is the most infamous Western nation in terms of opposing nuclear energy, with this opposition having wide support among the political class and German people (Cho, 2022, p.36). Thus, in the same way that France's overwhelming support for the technology would lead to trivialised results, Germany's widespread opposition to the technology would as well. Austria has also become a staunch critic of nuclear energy, ever since it passed a law which 'completely banned the production of nuclear energy in Austria' (Soder, Niedermoser & Theine, 2018, p.523). Since then this ban 'has become an integral part of Austria's understanding of environmental protection' (Soder, Niedermoser & Theine, 2018, p.523). Therefore, those cases in which there is a large amount of opposition or support, create conditions where the focus on how crises impact the discourse is obscured.

The cases of the US and the UK are the best suited cases to solve the research puzzle, and answer the research question presented here. This is because they both had the same previous hegemonic articulation of the technology, before the crises. This allows for their start points to be comparable, and then the differences emerging within the discourse from this start point make for better comparisons. Additionally, this previous articulation, unlike many other

cases, did not come with same high levels of politicisation and investment that other cases did. In this way the impacts of the crises are more isolated from other factors which could exert influences on the discourse throughout 2022. This allows this research to see how the crises themselves, and their dislocating effects, have been redressed by the articulations which emerge. In this way, these two cases best allow for an answer to the research question ‘How did the discourse surrounding nuclear energy account for the multiple crises present in 2022?’ to be obtained.

2.3 Data Gathering

It is important, following on from the requirements of the method, to outline how the data was gathered to assist in answering the research question. Five online news outlets from the US are studied, and five from the UK are studied as well. The five outlets from the US are Fox News, CNN, the New York Times, the New York Post, and CBS News. The five outlets from the UK are the BBC, the Daily Mail, the Sun, the Daily Express and the Guardian. This is a study of the discourse surrounding nuclear energy, and as a result it is conducted using qualitative methods.

It would not be appropriate to use very large samples of articles and videos from all 10 news outlets. This would certainly provide a broad picture of the state of discourse, but as Fairclough highlighted, the CDA conception of discourse is ‘especially relevant to detailed analysis of a small number of discourse samples.’ (Fairclough, 1992, p.230) However, it is the case that I am looking into articles and videos created by news outlets, and thus a balance must be found between a representative sample, and a sample too large to accommodate the depth of analysis aimed for here. This follows the guidance of other discourse analysis practitioners, that ‘the choice of data should be structured according to the research question posed and the researcher’s ontological and epistemological assumptions.’ (Dunn and Neumann, 2016, p.91) Thus, it was decided that all outlets should have the same number of texts samples, so that a balance was maintained, as certain outlets are more partisan than other and focus on particular crises and articulations more.

A method of text selection was chosen which would randomise the samples obtained from the outlets. This was to make sure that all the samples selected were not intentionally chosen as those which best fit what was expected, or what seemed to be the most conflictual. In the case of Fox News for example, known for their conservative positions on issues around climate change, it would bias the results if all sources were intentionally selected, as this cannot be a

totally objective choice, and it could easily tend towards the pieces which seem most provocative. Another reason for the choice to randomise the sample was that whilst conflict may typically be worthy of attention as ‘politics is conflict’, this can create ‘a methodological problem’ as ‘realities are maintained by the frequent repetition and confirmation of representations’ (Dunn and Neumann, 2016, p.91-92).

A total of 50 articles and videos were taken from each of the five outlets in both states. This was done by using the search bar on each site, with search settings placed on ‘most relevant’ and the phrase ‘nuclear energy’ used to implement the search. All searches were conducted using the phrase ‘nuclear energy’. As ‘nuclear’ and ‘energy’ when combined limit the chance articles come up which are geared towards discussions of nuclear weapons instead of energy. Whilst discussions of nuclear weapons can certainly include nuclear energy, as the plants which generate power through nuclear material, can likewise be used to gain material for nuclear weapons. It was also the case that ‘nuclear power’, when used may seem almost synonymous with ‘nuclear energy’ and although they can be used interchangeably in certain contexts, ‘a nuclear power’ when describing a country concerns weapons again, thus the decided upon term was the clearest one to capture articles which discuss the issue under focus. The type of media, article or video, and category of the news were not limited so all possible results within the time frame could be returned. One website, The Guardian, utilised a search bar which took the user to a google search, which is automatically set to a ‘most relevant’ search parameter.

The choice to gather an initial pool of 50 samples was decided on for a number of reasons. Firstly, it gave a good chance for multiple articles to be collected from each month from January 2022, until October 2022. Secondly, it allows for an understanding whereby if certain months have a significantly higher number of pieces than others, it can be noted as a particularly heightened month in terms of the discourse on nuclear energy. It also maintains the samples ability to be ‘representative’ (Schmierbach, 2009, p.155). However, 50 samples per outlet, and 500 samples in total across both states, is far too many to analyse in the level of detail required by the CDA framework employed here. As data collection was done per country, once all 50 samples for all five US outlets were gathered, the collected samples and their headlines were looked over again, and this time their content was skimmed through and assessed. Based on this, 15 samples from each outlet were selected to be subjected to the in-depth textual analysis. The key features which were used to select samples were, their distribution across the timeframe, so as not to concentrate all the samples in too small a

section of the timeframe. Additionally, their headlines were gauged for relevance towards answering the research question, so, those articles which detail attacks on Zaporizhzhia nuclear plant were left out. Although they were numerous it would not inform any understanding of how crises have been accounted for in the UK and US discourses on nuclear energy. Finally, they were also chosen based on the issue they discuss, so if a number of selected samples from one outlet in the US discuss the case of Diablo Canyon in California, then other stories or cases would be given preference to spread coverage out over a number of issue areas.

As mentioned earlier, the outlets were chosen based on their popularity and accessibility, as well as making sure both groups of samples, have outlets which align broadly to different social and political values. This is to ensure there is a balance between the likely social values the outlets articulate. So any heavily present articulation which is accounting for certain crisis, or crises, can be acknowledged as being a significant part of the discourse whilst controlling for the bias of certain outlets. Additionally, the choice of the most popular media sources to sample from aims for an emphasis on the ‘popular’ rather than ‘official’ discourse’ (Dunn & Neumann, 2016, p.97). The importance for focusing upon the popular side of this discourse taps into the fact that ‘the system of meaning’ which surrounds ‘modern nuclear science’ can generate lots of ‘mystery, potency’ and ‘secrecy’ (Mercado-Sáez et al., 2018, p.548), which inform people’s ‘common sense’ (Kinsella, 2015, p.347) for how they understand nuclear energy. Rather than a system of meaning I would term this as discourse, however, the key point is that there can be a lot of confusion and assumptions surrounding nuclear energy. So it is essential to observe these assumptions and the points of confusion or tension as they manifest in the discourse on nuclear energy, whilst the dislocating effects of the crises are engaged with, to produce new articulations that incorporate these new events.

Popular media outlets, particularly the established organisations under study here often rearticulate and represent official discourse. This allows for an analysis of the aspects of the official discourse rearticulated by these outlets. This shows how particular governments, politicians, or institutions think on this issue, as the news media and its popular discourse reflect more widely held common sense assumptions. Thus, it allows for the broadest picture possible to emerge from each sample, as it is not only how the media represents the quotes and aspects of official discourse, but these quotes and represented aspects themselves, under study. This allows, in analysing their articulations, rearticulations, and challenges, for us to understand what is changing or staying the same on the broadest level.

3. Analysis: The United States

This first chapter of analysis deals with the five selected outlets from the US. That is Fox News, CNN, The New York Times, The New York Post, and CBS News. To maintain the focus on the national discursive spaces, the analysis is conducted by treating all outlets together; building a broad picture of the discourse surrounding nuclear energy across all outlets. It is acknowledged, however, if a certain sample presents an argument or position which can be seen as belonging to the broadly understood ideological leaning of a particular outlet. This is necessary for outlets like Fox News or CNN who have clear political affiliations and a greater tendency for politicising issues.

When it comes to cohering an analysis from the 75 samples, from the five American outlets, a number of competing articulations are present within the discourse. None of them could be posited to be the dominant interpretation of nuclear energy within the discourse, but they are all clearly competing for such a position. Between them there are two crises posited as the central source of dislocation to construct a hegemonic articulation of nuclear energy around; the security crisis, and the climate crisis.

There are three main crises which can be seen to have dislocated the dominant view of nuclear energy as superfluous to overall energy supply. These are the energy crisis, the climate crisis, and Russia's invasion of Ukraine. Issues of inflation are brought up in a cursory manner, but usually only to emphasise that some aspects of the energy crisis are partly economic in origin. For example the rising price of gasoline in America pre-2022, which increased once the invasion of Ukraine began (Post Editorial Board, 2022a, Chasmar, 2022), is highlighted when samples wish to posit that not all of America's energy issues should be blamed on the Ukraine crisis. However, inflation alone does not have a significant impact on the discourse surrounding nuclear energy. The Russian invasion of Ukraine occupies an important but complex place within the discourse. It sits at the intersection between the energy crisis and broader geopolitical and security issues, in how it is mobilised and comprehended within the discourse on nuclear energy. Though the invasion is primarily a matter of security and military significance, its effects are broader than the direct domain of its primary significance. In this case it influences conceptions of energy policy and what its goals should be. This is how it is factored into the discourse on nuclear energy and so, whilst it is a significant crisis in its own right, it is blended with the energy crisis when it comes to this discourse.

These are the key crises which can be observed manifesting their dislocating effects upon the discourse, where steady decline of the industry had long been a mostly accepted articulation. These crises and their effects are referred to many times in support of certain articulations. This can be seen clearly when certain articulations of the role nuclear should, or should not, play are causally linked to a crisis or its effects. Whilst these are the crises which can be seen to have factored into dislocating the previously hegemonic position of allowing the industry to steadily decline, they have produced a number of different, competing, articulations. These are ‘Nuclear Energy for Security’, ‘Nuclear Energy for the Environment’ and ‘Nuclear Energy Against the Environment’.

3.1 ‘Nuclear Energy for Security’

Firstly, in the US discourse there is the articulation of ‘Nuclear Energy for Security’ which emphasises issues, such as the independence of energy supply. A common reason that this independence is claimed as necessary is to avoid dependence on ‘an authoritarian state hostile to the West’ (Lowry, 2022). This state is consistently either China or Russia, with the former being highlighted as the major world producer of elements needed for renewable technologies like solar and wind (Shellenberger, 2022, Izzo, 2022, Agence France-Presse, 2022), and Russia commonly highlighted for its gas and oil products (O’Neil, 2022, Post Editorial Board, 2022). Thus, this articulation commonly posits that by having greater nuclear power in the domestic production of energy the US could become freer from the states that are seen as hostile competitors (Chaffetz, 2022, Chasmar, 2022, Zilber & Barrabi, 2022). This is reinforced by additional cases where outlets articulate the need for energy independence and posit a causal relationship, such as stating that ‘Russia’s invasion has highlighted the importance of energy independence’ (O’Neil, 2022).

It is rarely asserted that nuclear power, alone, should be the primary facet of energy production. With partial statements that nuclear fission as it currently exists is ‘the most climate-friendly electricity known to man’ (Post Editorial Board, 2022c) being an exception more than a rule. This is because this articulation was commonly linked to an ‘all-of-the-above’ approach (Chaffetz, 2022, Gordon & Burgum, 2022, Chasmar, 2022) to energy production. Meaning the safest way to ensure that domestic energy supply is not a threat to the nation’s security, is by using any and all sources feasible domestically. This approach is commonly rooted in an understanding that the US has plenty of potential to produce oil, coal, and gas and that these should be used to maintain energy independence and avert reliance on

imports (Post Editorial Board, 2022b, Pompeo, 2022). Issues of the environment and the climate crisis are commonly overlooked. When it isn't merely implied that the climate crisis is not relevant to an all-of-the-above approach, proponents of this articulation posit that these issues are 'green insanity' (Post Editorial Board, 2022b), the result of ideology (Gillespie, 2022), or simply not as big of a threat as other issues (Lowry, 2022, Pompeo, 2022, Post Editorial Board, 2022c, Chaffetz, 2022). This use of independence is one way that this articulation prioritises the dislocating effects of the security crisis in 2022, over the dislocating effects of environmental or economic crises, on nuclear energy. By asserting that the security crisis is more in need of redress than the other crises, this articulation tacitly posits that it is the dislocation generated by the security crisis which must be administered to provide the greatest sense of stability back into nuclear energy's role.

Within this articulation, independence is also treated as an end in and of itself, and as something America has lost as calls for a 'return to energy independence' (Chaffetz, 2022) indicate to the reader. Independence here can be seen as a tool to advocate for security policy as well as being posited as a goal which a state should aim to achieve. The above discussion of the links to US geopolitical interests and priorities is predominant in the articulation. However, there are still differing views which contribute to the same broad articulation of nuclear energy's role in the provision of national security and that seek to address the dislocating effects of the security crisis. A key example of this is a stronger emphasis on the benefits to be gained by the US through using nuclear energy, its infrastructure and America's expertise for more commercial and financial gain. One example in the samples is the building of reactors overseas, in places like Romania (Reed, 2022), or Poland (Alderman & Reed, 2022), which is argued to have been lacking in recent years giving China an advantage in this commercial-industrial field (Reed, 2022). It is also argued that less typically hostile states, or rather, allies of the US are competitors in the realm of nuclear energy, such as South Korea, France or the UK (Reed, 2022, Penn, 2022) and that America must ensure its economic dominance through greater investment in nuclear energy. This idea of reasserting American dominance emerges within this articulation as a geopolitical solution to the issue of nuclear energy's dislocated role. America's security, its ability to maintain its position free from harm, necessitates a certain level of technological, innovatory and economic dominance. In these samples nuclear energy is articulated as being important to this type of security. That is, the security of America's position as a world leader.

There are more samples focused on the need for energy independence as an issue of national security, in the narrower sense of controlling their own resources and power. However, the financial and economic type of security is still a definite part of this same broad articulation of 'Nuclear Energy for Security'. This is particularly clear when it appears in discussions of the, still non-utilisable technology, of nuclear fusion. Many dreams and hopes become tied up in the discussions of this technology, as all samples discussing it mention its potential for unlimited clean energy (Allen, Tahir & The Sun, 2022, Zilber, 2022, Ott, 2022, Ott, 2022a, CNN, 2022). The ambition to use it to maintain independence and technological and economic dominance in the world also necessarily bleeds through into the discourse. This sees it merging into the articulation of nuclear energy as good for security and requiring further investment, with the need for the US to secure it before anyone else being paramount (Allen, Tahir & The Sun, 2022). A statement from the White House quoted in a sample shows as much. They state that by partnering with US fusion companies 'we have an opportunity to keep these companies growing within our borders and cement U.S. technological leadership on fusion' (White House, 2022).

There are those who favour the West, broadly defined, to gain the technology first, and certain samples that hope for it to simply be obtained by and for 'humanity' (Ott, 2022a). Some of these variations of support for nuclear fusion, and positionings for who should obtain the technology factor into the articulation 'Nuclear Energy for the Environment', as well. As the unlimited and clean potential of nuclear fusion, even the process of how energy is created in a fusion reaction itself, is posited as highly distinct from current nuclear fission, by those whose concerns are primarily with the environment (Ott, 2022). There is a unique discussion of fusion's potential role in the ITER project, which posits this project can help address international security fears. Comparisons are made between the present status of America and Russia, and their status during the Cold War - when the project was established. These comparisons posit that global security can be maintained through the non-political scientific dialogue between nations facilitated by this project (Ott, 2022). However, in the US discourse there is a clear divide between those who see nuclear fusion as a tool for greater international solidarity, and those who see it as 'a race for future global leadership' (Ott, 2022). This view posits that different states are teams and the US must be weary as 'other teams are making advances of their own' (Allen, Tahir & The Sun, 2022). Thus, despite being emphasised as a technology which could be of huge benefit to the environment, even

‘helping to reverse global warming’ (Allen, Tahir & The Sun, 2022), the prospects of such power are still filtered through concerns of security.

The above analysis of discussions of nuclear fusion show how aspects of these articulations are compatible. In the case of nuclear fusion articulations prioritising the security and climate crisis, both wish to see nuclear fusion created and used. However, one sees the dislocating effects of the climate crisis as the lack which a new articulation must be organised around, and the other instead sees the security crisis’ dislocating effects as requiring redress. This shows the centrality of the crises dislocating effects in determining the separate articulations, rather than the compatibility of the actions and policies they seek to enact.

Many proponents of the ‘Nuclear Energy for Security’ position, took on a reactionary position; although an all-of-the-above approach, does include renewables, they are not treated as equal to nuclear energy. It is sometimes due to the connection to Chinese manufacturing (Shellenberger, 2022), but other times it is that they were crucial to the so-called green ideology, which is not only responsible for the falling favour of fossil fuels, but is very commonly positioned as having whipped up fear and anxiety about nuclear energy (Carlson, 2022). Therefore, the position whereby nuclear energy must be used to increase national security, via independent energy production, very often necessitates producing an ‘ethos’, a construction of ‘social identities’ (Fairclough, 1992, p.235), that meant nuclear energy, and those who advocate its security benefits were not akin to the ‘climate alarmists’ (Lowry, 2022, Post Editorial Board, 2022c). This brings up conflictual identities, those rooted in a worldview prioritising security and geopolitics when it comes to what matters for nuclear energy, of which the dislocating effect of the Ukraine crisis is a key component. This opposes those who see concerns for the environment as the primary focus in articulating a position on nuclear energy, commonly focusing on the dislocating effects climate crisis. It leads to a position where, in articulating how nuclear energy is tied to, and benefits, ‘national security’ (Gordon & Burgum, 2022, Chasmar, 2022), those arguing for this not only deride those who push environmental concerns as the most important factor, but they also take issue with the technology they favour: renewables. This articulations predication on the importance of security in light of current crises dislocations means this is primarily from the perspective that renewables lack the kind of security guarantees nuclear brings. However, there are those who bring up some variation of the argument that they only produce energy when the sun shines and the wind blows (Tuccille, 2022, Chaffetz, 2022). This argument posits there is an

unreliability inherent in the technology as a productive apparatus, which they quickly counter is not a problem which affects nuclear energy production (Chaffetz, 2022).

This articulation commonly entails a similar process of ‘transitivity’ being implemented in the writing of such articles, whereby certain ‘process types and participants are favoured in the text’ (Fairclough, 1992, p.235). This means highlighting that the agency in maintaining or increasing nuclear power’s role for security purposes, is rooted in the state. This is because the position was always argued from a geopolitical perspective. This constructs an understanding of the world in which America must utilise nuclear energy ‘to counter Russia's continued dominance over energy markets’ (Gillespie, 2022). Or whereby nuclear energy can play a key role in ensuring ‘energy security’, which is ‘fundamentally linked’ to ‘national security and global stability’ (Gordon & Burgum, 2022). The understanding of security implied by this articulation is one which is the domain and responsibility of the state, and the state alone. So, whilst those espousing this articulation seek to address the dislocating effects of the security crisis, they root the ability to take practical steps towards this articulations espoused aims in the state. This is opposed to the articulation concerning the environmental opposition to nuclear energy, which is shown to invoke the agency of non-state actors.

Another crucial feature of transitivity, consistently invoked in this articulation, is the highlighting of the processes surrounding geopolitics and security concerns, and a simultaneous lack of focus on the environmental processes and the environmental dangers of nuclear energy. One example of the strategy to side-line environmental dangers is the directly represented views of Elon Musk on the matter. He is quoted as tweeting Europe should increase nuclear energy’s ‘power output’ (Musk, 2022). His reasoning is that ‘This is *critical* to national and international security’, and to minimise concerns of radiation’s harm he states people may choose a location typically seen as highly radioactive, and he ‘will travel there & eat locally grown food on TV’ (Musk, 2022). One example of a greater focus on the processes of security and geopolitics, and their essentiality to properly addressing the dislocating effects of the security crisis, is the directly represented view of representative Fred Upton. His argument is first articulated as stating over reliance on renewable energy in Europe gave Putin the ‘the Kremlin’s ‘ace’’ (Upton, 2022) of European dependence on Russian gas. After stating ‘I’m not opposed to clean energy’ (Upton, 2022) his quotes placed in the following parts of the sample detail how America can use an all-of-the-above approach to ensure energy security nationally and internationally, and the need for this following the

invasion of Ukraine (Chasmar, 2022). In this argument the emphasis is placed on the security benefits obtained by a greater use of nuclear energy.

The above emphasis, once again, implies that by addressing the security crisis' dislocating effects, this new articulation of nuclear energy's role is confronting the most destabilising crisis. In doing so, it seeks to provide the greatest feeling of security, for articulators and the people of the state alike. The processes and events concerning nuclear energy which support this interpretation are explored in much greater detail than the ones that could pose a challenge to such a construction of reality. This is very common with the pieces rooted in a more argumentative or expository rhetorical mode, as opposed to the descriptive mode of some basic informative news pieces.

When it comes to factors of cohesion used in this articulation, there are common patterns in how the text is organised which are also present in other articulations but are used within each articulation to assist its arguments. As cohesion has the previously explained connection to the rhetorical mode, commonly, pieces provide the alternative arguments against nuclear power and then follow these statements with what they posit is the reality of the situation. For this articulation this is typically a link to a security issue, connecting sentences and clauses together in a way that supports their articulation. One example of this can be seen when Germany's economy and climate minister is quoted and represented as saying 'by massively increasing renewable energy and accelerating the expansion of the electricity grid' (Habeck, 2022) Germany is showing 'it's possible to shut nuke plants without jeopardizing energy security' (Post Editorial Board, 2022). However, the sample then immediately follows this sentence with 'Oops. Reality turned out different. Over the years, Germany has simply turned to Russian gas' which damaged their energy security as it created 'more vulnerability to a hostile and unpredictable supplier' (Post Editorial Board, 2022). In this way they structure it so that their position is presented as having been more suited to the reality Germany was facing, one of securing their energy security over climate goals. As with many other statements and cases discussed so far, it once again portrays an articulation centred on the security crisis as being the most suited to suturing dislocation, and providing stability.

One final line of argument which was brought up, only in the New York Times samples provides a good segue into the next discussion on 'Nuclear Energy Against the Environment'. This is a line of argument which essentially advocates a dual position against nuclear energy and revolves around the importation and mining of uranium, required to obtain the fuel for

fission reactors. Firstly, the importation of uranium for US fission reactors is primarily from Russia, Kazakhstan and Uzbekistan, and it is highlighted that unlike oil and gas, the White House did not sanction these imports (Montague, 2022). Thus, it is highlighted that as it stands the continuation or expansion of the nuclear energy sector in the US, without increasing domestic production of uranium, would in fact continue to increase America's dependence on Russia, and what the New York Times calls, their 'close partners, Kazakhstan and Uzbekistan' (Montague, 2022). This unique position that nuclear energy is decreasing America's energy independence, and by extension its security, generates a clear othering between the US and its allies and Russia and its allies of Kazakhstan and Uzbekistan. This generates an inseparability between Russia and its partners, implying dependence on either Kazakhstan or Uzbekistan is the same as dependence on Russia. This 'us vs them' dichotomy informs a certain view of the security of nuclear energy. A proposed alternative to this is to restart the long-stagnant American uranium mining industry, which was once the primary source of the American nuclear industry's uranium (U.S. Energy Information Administration, 2022). This proposal is primarily countered in a different long-form, expository piece which details the huge negative effects this industry has on the environment around it, where the workers mainly live (Romero, 2022). In many historical cases these were Native Americans, and the now dormant, but still dangerous mines sit on Native American land (Romero, 2022). Thus, the poisonous spillages and the radioactive working conditions are highlighted as the fundamental issues at stake here when reactivating America's uranium mines.

This argument highlights the dangerous environmental conditions created by processes crucial to nuclear energy production. However, it also highlights historical grievances, of the 'industry's toxic legacy of pollution' (Romero, 2022) and social frictions between Americans. Discussions and attempted political actions aimed at such grievances have dominated domestic American politics for many years at this point. The disproportional effects of the uranium mining industry on a historically marginalised community is a line of argument against nuclear energy with unique relevance for some in modern America. It in turn, constructs self-other relationships between the Native Americans in the areas concerned and the companies who wish to start mining again. This leads to many assertions of the agency of Native Americans in challenging these developments and a more complex agency on the part of the companies involved in uranium mining.

This complex agency can be seen as said companies need government approval to get started again, rooting agency at the level of governmental politics. However, the New York Times

article also consistently asserts that these companies are motivated by a profit-seeking incentive. The article claims they hide this greed-based incentive under their claims for ‘energy security’. This can be seen when the article claims companies are ‘eying uranium prices’ (Romero, 2022) before it describes their plans for reintroducing US uranium mining operations. However, such historical social criticisms are not highlighted elsewhere other than the case discussed in the New York Times, and the dependence issue of uranium imports are likewise not mentioned elsewhere. Whilst it is a uniquely all-encompassing critique of this aspect of nuclear energy and would no doubt be effective on people concerned with social and environmental issues, its singular use leaves it lacking the same clear uptake as the three core articulations. Its environmental concerns fit well in the next section. However, its challenge to the pro-security articulation of nuclear power is an important example of what could be argued by opponents, should further dislocations emerge, producing new reactions and realignments.

3.2 ‘Nuclear Energy Against the Environment’

The articulation ‘Nuclear Energy Against the Environment’ refers to a set of arguments which state that nuclear energy needs to be removed from energy production in America. This is done by taking the dislocating effects of the climate crisis as the central destabilising factor in need of redress through rearticulation. It seeks to dismiss the support for nuclear energy rooted in issues concerning national and international security by either side-lining, or ignoring, the dislocating effects of the security crisis-focused articulation. It also more directly confronts those who support nuclear energy for its purported environmental benefits. This is done by articulating that the climate crisis’ dislocating effects necessitate the end of nuclear power, instead of increasing its use. One of the most frequently outlined issues of nuclear energy that is mentioned is the waste that the process of fission creates (Associated Press, 2022c, Associated Press, 2022d, CNN, 2022a, Alderman & Pronczuk, 2022, Associated Press, 2022e) which remains radioactive for ‘centuries’ (Agence France-Presse, 2022), or ‘millions of years’ (Johnson, 2022) according to some. Many of these same pieces constantly re-emphasise that there is no arrived at solution here. One piece in particular takes the issue of waste as its core focus using an argumentative rhetorical mode, and the cohesive strategy of elaborating any counter-arguments or alternative ideas and then following them up with a thorough rebuttal. In doing so it seeks to undermine and negate any idea that nuclear energy can benefit the environment, as long as the waste cannot be disposed of permanently and safely (Hockenos, 2022).

One key conception of nuclear energy that is brought up in many pieces and quotes, is that there is not enough room for both nuclear and renewable sources of energy to be invested in sufficiently and constructed, as investing in nuclear may ‘slow the push for more wind and solar’ (Walker, 2022). This type of argument is quoted as coming from various experts or activists, and argues along the lines that money spent on nuclear ‘might have been better spent on ramping up renewables’ (Associated Press, 2022). To this end those who propose that renewable sources receive investment, as opposed to nuclear, often cite that the latter is ‘far more expensive’ (Manjoo, 2022) and has frequent delays in construction (Manjoo, 2022). Others assert that the electricity it produces is, on average higher in price than the electricity produced by other sources (Manjoo, 2022). It is usually an implication of such arguments that the millions, and often billions, which is spent on delayed nuclear projects, could instead have gone to renewables, which proponents of this articulation commonly assert are ‘cheaper, safer, faster, and cleaner’ (Hockenkos, 2022). It is in this way, when supporters of this articulation believe the concrete existential threat of climate change is fast approaching, that they construct nuclear as an old and decaying industry, not fit for the challenges of the climate crisis. Such a view is summed up in the quote, ‘It was an incredible zero-emission resource for its day. However, for much of the energy system today, that day has long passed’ (Slocum, 2022a).

The argument nuclear energy is outdated constructs an ethos that nuclear and fossil fuels are more closely related than renewables and nuclear. It is this understanding of nuclear power’s failure to properly meet the needs of the climate crisis upon which proponents of this articulation ground the incompatibility between renewables and nuclear. Not only are the dangers of radiation and its very long-term effects highlighted, but now the very construction and cost of such ideas is a danger. This articulation posits the climate crisis’ worst effects are imminent and existential. In this sense it aims to rearticulate nuclear energy’s role as ill-suited to respond to the crisis properly and in time. The dislocated articulation of nuclear energy’s slow decline being the best course of action, has certain elements rearticulated, such as renewables being better, and nuclear being too long-term to help the environment when it matters. However, these elements are placed into this new articulation which is more assertive that there can be no place for nuclear and to address the needs of the crisis and suture dislocation, nuclear energy must be understood as outdated and unnecessary.

This articulation’s supporters establish a similar dichotomy of right vs wrong, and us vs them, that is established by those who support the use of nuclear energy to address the security

crisis. Although they are on opposing sides of these debates. Each time these two opposed articulations are put forward, their proponents state that it is their understanding of nuclear energy's role which acknowledges and deals with the reality of how things are. By extension this means they believe the crisis they address is the one which needs to be addressed most, and the way they articulate the crisis, is how dislocation can be sutured. Whether it is the 'reality' that a 'nuclear revival' would be 'fraught with problems' (Alderman & Reed, 2022), for this articulation. Or whether it is the opposing security articulations understanding that 'the reality that trading domestic nuclear energy production for reliance on Russian fossil fuels has been counterproductive' (Barnard, 2022). Reality is constantly invested with differing qualities, whether they be of a world determined by geopolitical security matters, or one where the challenges facing the climate are of supreme importance. Utilising the concept of reality allows for the differing sides to assert their articulation regarding nuclear energy's position as truly addressing the needs of the US and, consequently, remedying dislocation. This involves drawing on differing crises and pushing that one is more important than the other, and that nuclear energy is either essential or unnecessary when it comes to confronting the challenge posed by a crisis.

Whilst the articulation of 'Nuclear Energy for Security' commonly facilitates at least a tacit accommodation of renewables, as long as it is secured by a base of fossil fuels and nuclear, there is no such room for accommodation in this opposing articulation. This is because nuclear may be carbon free but it poses its own unique and dangerous problems, as this articulation posits. Whilst none of the arguments within this articulation go so far as to refute that nuclear energy is carbon-free, they nevertheless imply that this does not make up for its dangers.

An additional argument at work within this articulation is an understanding of the demand for electricity. There are some who argue against nuclear energy being a benefit for the fight against climate change as whilst nuclear energy is often touted as necessary to keep up with a rise in 'global electricity demand' (Giang, 2022), the argument is pushed forward that in the US there is no such rise, and 'building nuclear power in a sort of negative demand environment doesn't make a whole lot of sense' (Slocum, 2022). Although, even those who contend that the lack of rising demand in the US does not merit sustaining and increasing nuclear energy's role do not dispute that global demand for electricity is rising. Thus, there emerges a separation, in how nuclear energy's response to the climate crisis is conceived of. On either the national or the global level. As it is stated that it is in countries like China and

India ‘where coal is king’ (Slocum, 2022) and demand is consistently increasing that nuclear energy may be able to help, but not in a negative demand energy market like the US.

However, this line of argument is not left uncontested. In fact, many of the other positions within this articulation do not engage a potential lack of demand as a key factor to assist in rectifying the dislocation of nuclear energy’s role. Instead, many are informed by a presupposition that there is in fact an increase in demand and that investing in renewables alone can meet this rise whilst reducing carbon emissions. Although this is contested by ‘Nuclear Energy for the Environment’.

In regards to the more specific techniques used within this articulation, as with ‘Nuclear Energy for Security’, its cohesion and thematic choices follow the same pattern but for different purposes. All of these articulations come from similar outlets so they use similar structures and sentence and clause positionings to make their case and respond to counter-arguments and criticisms. They position the points they wish to communicate as the most important as a response to the counter-arguments or criticisms.

The features of transitivity in the samples where this articulation is put forth, commonly focus upon the processes of how nuclear energy creates radioactive waste and the inability to address this issue. They focus on the planning times, delays, and extra costs of constructing nuclear power plants, whilst minimising the same processes in renewable energy construction. Only one article out of all 75 US samples, mentions the need for larger quantities of ‘rare earth minerals’ and other resources for renewables to produce equivalent amounts of energy as other sources (Shellenberger, 2022), and this sample falls within the ‘Nuclear Energy for Security’ articulation. So, none of the articles within the ‘Nuclear Energy Against the Environment’ articulation wish to focus on this aspect of the alternatives they challenge nuclear energy with. Whether or not there is a response within the framework of ‘Nuclear Energy Against the Environment’ to assert such issues are not as bad as the problems facing nuclear power plant construction, it is not utilised within the samples.

When it comes to the agents they wish to portray within these processes, they again root a lot of the power within the hands of government institutions, such as the California authorities in the Diablo Canyon case (Agence France-Presse, 2022, Walker, 2022, Associated Press, 2022d, Associated Press, 2022) or the White House when it comes to federal policy (Associated Press, 2022, Associate Press 2022a, Associated Press 2022b, CBS, 2022). Beyond the uniquely discussed case of the Native American groups and uranium mining,

there is no clear connection between opposing nuclear energy and granting greater agentic capacities to citizens or localised communities. Whereas many movements are brought up, there is no real talk of modern protests or collectives, it is all mostly professional activists, lobbying, legal challenges, and consultations. Such as ‘The Platform on Sustainable Finance, a group of green finance experts’ (Pronczuk, 2022), who consulted the EU on changing the taxonomy of green investments to include nuclear and natural gas and opposed the idea. There is also the professional activist, lobbyist and economist (Friends of the Earth, 2023) and ‘Friends of the Earth president Erich Pica’ who is quoted in opposition to keeping Diablo Canyon power plant open (Nilsen, 2022). This is unlike ‘the anti-nuclear power movement, which swept across the political landscapes of America and Europe in the 1970s’ (Kitschelt, 1986, p.57). In certain cases reaching ‘an intensity unprecedented in the history of technology controversies’ (Kitschelt, 1986, p.57). Even in the case of the resistance to a radioactive waste storage site in Nevada, it is the state of Nevada who are quoted, and posited as protesting the move (Associated Press, 2022e). Whilst none of the samples, or those quoted in them, detail that popular anti-nuclear energy movements are happening or likely to happen, they also do not highlight this absence, implying its lack is not notable. There is seemingly very little place for an idea of grassroots opposition and mobilisation against the technology for the environment. This leaves authorities, politicians, and large companies as the crucial agents, contesting this technology’s future, and being presented as those able to suture dislocation.

3.3 ‘Nuclear Energy for the Environment’

The third and final articulation which the samples show being used to try and remedy dislocation and change how nuclear energy is articulated, is the ‘Nuclear Energy for the Environment’ articulation. This in many ways is the direct opposite of the previous articulation, which asserts that nuclear energy cannot confront the problems of climate change, and would in many ways be bad for the environment. As this articulation commonly posits that nuclear energy can act as a ‘bridge’ (Pronczuk, 2022, Izzo, 2022, Alderman & Pronczuk, 2022) technology to keep up with demand whilst more renewables come online. It also commonly posits that the technology needs to remain in the US’s energy mix to reach net zero goals by 2050 (Ataman, 2022, Giang, 2022).

Both the idea of nuclear as a bridge, and as a more permanent feature of energy production posit that based on events over the course of 2022 and ‘recent years’ (Associated Press,

2022f), nuclear energy cannot be taken out of the energy mix for now. However, they both centre their argument on the climate crisis. When it comes to advocates of this articulation, some samples portray the president and the federal government as being a clear advocate that nuclear energy is needed in the long-term to ensure the US reaches net zero emissions (Montague, 2022, CNN, 2022a, Associated Press, 2022). Whereas other, more typically conservative outlets, such as Fox News and the New York Post push the idea that Biden has capitulated ‘to the left on green energy’ (Chasmar, 2022). Although conservative outlets rail against Biden for advocating a switch to ‘clean energy’ (Biden, 2022), they do not highlight his statements that nuclear has a role to play in that (Associated Press, 2022, Associated Press 2022a, Associated Press 2022b).

Governor of California Gavin Newsom’s arguments in favour of nuclear as a bridge technology are almost always quoted as being centred around maintaining California’s electrical grid as ‘reliable’ (Associated Press, 2022d). This is articulated as an important need due to adverse impacts of California’s weather on the grid from issues like ‘heat waves’ (Karlman, 2022) and a long and serious ‘drought’ (Agence France-Presse, 2022, Nilsen, 2022). Thus, the case in California of nuclear as an important bridge technology is posited as causally linked to the effects of climate change on the local environment, but also to the need to maintain their transition away from fossil fuels due to the climate crisis. The idea of nuclear energy as reliable is often utilised in the technology’s favour when addressing environmental issues (Brinkmann, 2022, Lowry, 2022, CBS, 2022).

Within this articulation there is an interesting use of the concept of space. This is the somewhat abstract conception of space within financial and policy arenas that was discussed as a point of contention in previous articulations. Many of the arguments in the US’ ‘Nuclear Energy Against the Environment’ articulation state there is a clear choice between nuclear or renewables and no room for both. However, in ‘Nuclear Energy for the Environment’ there are some who posit that nuclear is ‘competing with’ and displacing ‘not renewables but natural gas’ (Walker, 2022). They state, having renewables and nuclear as the basis for US energy production is the natural solution as nuclear is ‘solar and wind’s best friend’ (Nesbit, 2022). Other positions taken up within this articulation are not so conciliatory towards renewables and whilst they push for using nuclear energy and highlight its carbon-free production process, they also tend to still support fossil fuels. This construction of compatibility between nuclear energy and fossil fuels, whilst emphasising nuclear energy’s carbon-free production, from a perspective where climate change is an existential threat, is a

contradiction. Many of the samples this line of argument comes from are primarily within the ‘Nuclear Energy for Security’ articulation. This is just another reason they add for the technology’s use, even though they still focus on the security crisis as the primary source of dislocation.

The main feature of transitivity, used to support this articulation, is a minimisation of the processes which could question the efficacy of its position. In the same way that ‘Nuclear Energy Against the Environment’ did not elaborate on the processes by which its own proposed alternatives to nuclear energy may not be able to address the crisis entirely, this articulation does the same but for nuclear energy. So, when it comes to those positing that nuclear energy is ‘clean’ and ‘reliable’ they do not engage with the issues of radioactive waste and the number of power cuts French reactors have suffered over 2022. In this way they focus attention within the articulation on why their solution to dislocation suits the facts of the matter; by leaving out the facts which do not perfectly fit their articulation.

For the investment of certain organisations or individuals with agency in this articulation it is, again, primarily the case that the state, and its institutions, are the ones invested with agency. There are some samples which refer to how certain companies and states may act to get nuclear energy benefiting the environment. As PG&E, the operators of Diablo Canyon power plant in California, highlight, they are ‘required to follow the energy policies of the state’ (Associated Press, 2022g). Often the scale of nuclear energy projects requires approval and assistance from the federal government. Hence the interest given to Biden’s \$6 billion loan to keep more nuclear plants open, which was reported by Associated Press and rearticulated with slight variations by a number of outlets (Associated Press, 2022, Associated Press, 2022a, Associated Press, 2022b). Decisions are also reported as being advocated for by governors or senators. As the headline ‘Whitmer Wants Federal Aid To Keep Palisades Power Plant Open’ indicates. This is in reference to Michigan’s Democratic governor appealing for aid to keep a nuclear plant open in her state (Associated Press, 2022f).

3.4 Summary

In summary, analysis of the samples from the American media outlets reveals three distinct articulations which seek to remedy the dislocation of the previously hegemonic articulation. These are ‘Nuclear Energy for Security’, which posits global instability in security matters is the primary crisis responsible for the dislocation of nuclear energy’s position, and so support for the technology is structured around this crisis. The other two articulations within the US

samples have the climate crisis at the centre, as the primary source of dislocation around which a new hegemonic articulation should be centred. These are ‘Nuclear Energy Against the Environment’ and ‘Nuclear Energy for the Environment’. The former of these seeks to articulate the dislocation of the climate crisis as necessitating a removal of nuclear energy from America energy production; the latter seeks to use it to advocate for greater use of nuclear energy.

4. Analysis: The United Kingdom

The second chapter of analysis focuses on the competing articulations found within the 75 samples from the UK. The articulations which can be seen as competing to gain a hegemony over how nuclear energy is understood in the UK are, ‘Nuclear Energy for the Economy’, ‘Nuclear Energy Against the Economy’, ‘Nuclear Energy for the Environment’, and ‘Nuclear Energy Against the Environment’.

4.1 ‘Nuclear Energy for the Economy’

The first articulation to be elucidated appears very frequently in the UK samples and has the economic crisis at its centre as the primary source of dislocation. This articulation is rooted in a widely acknowledged understanding that the UK in 2022 was in the midst of numerous crises, and many felt that worse was yet to come over the winter (Lawson, 2022, Dooley, 2022). A majority of samples discuss the ‘energy crisis’ (Constable, 2022, Buchanan, 2022, Tapsfield, 2022, Groves, 2022) and in doing so they commonly focus on its negative economic impacts. Whilst the Russian invasion of Ukraine is a security and military crisis in its own right, in these samples it is mostly mentioned as having exacerbated the ongoing energy crisis (Jack, 2022a, Campbell, 2022, Paul, 2022, Wyatt, 2022). The commonly used term ‘cost of living crisis’ (Clark, 2022) incorporates the energy crisis mentioned and issues of huge inflation (Jack, 2022a, Clark, 2022, Elsom, 2022b, Daily Mail City & Finance Reporter, 2022). Thus, the articulation of ‘Nuclear Energy for the Economy’ was predicated on remedying the economic burdens on many households and individuals, as well as on remedying the broader economic issues of the UK state and private sector. Although some examples draw on issues that stem from security or political crises, they are posited as related to the economic crisis; leaving the economic crisis as the primary source of dislocation within this articulation.

Many samples rearticulated the government plans over 2022, primarily those of Boris Johnson (Ashkenaz, 2022, BBC News, 2022e, Partridge, 2022). Even though Liz Truss was the one in power by the final weeks of the samples, she was represented as going along with the plans and lines of argument put forward by her predecessor (Paul, 2022b). So, the government was clearly in favour of nuclear energy over the course of 2022. Numerous headlines denote this position, such as ‘PM to chair roundtable on boosting UK’s nuclear power output’ (Partridge, 2022), ‘Brexit Britain to ‘lead EU’ as energy giant after huge wind and nuclear deals – new data’ (Ashkenaz, 2022b), and ‘NUKE PLANT PLEDGE Boris

Johnson vows to slash energy bills by building nuclear reactor every year' (Reilly, 2022). The ambitious language portraying the 'boosting' of output and the possibility of the UK becoming an 'energy giant' thanks to nuclear energy demonstrate one way the economic crisis is factored into this articulation.

A number of samples analysed re-articulate the arguments put forward by the government without following up with criticism or alternative interpretations (Political Editor for the Daily Mail, 2022, Maidment & Groves, 2022, Groves, 2022a). These appear as merely descriptive portrayals of what politicians say, but communicating them in this way indicates the outlet's wish to not question such an articulation. This can be seen when they present a government minister's position and back it up with supporting statements, whilst only including vague cursory comments of opposition, or in some cases, presenting no alternative narratives. One example of this method comes from the article 'BORIS GOES NUCLEAR Boris Johnson promises massive £700m package to shore up energy supplies and blames Tony Blair for huge bill hikes' (Clark & Hoffman, 2022). This article mentions Johnson's confirmation that £700 million will be invested into a new nuclear plant, presupposing this will 'shore up energy supplies' when there is no guarantee the plant will even be built yet. The rest of the article is spent directly representing Johnson's speech where he blames previous governments for the lagging situation of nuclear power, except for previous Conservative Governments. In this way, the only function of this article is to communicate this particular view of nuclear energy's history in the UK. By not adding alternative views, even if this story is news worthy, it fulfils the news media's function of 'effecting the ideological work of transmitting the voices of power' (Fairclough, 1992, p.110).

Other statements, such as those positing nuclear energy is 'the most effective form of clean energy' (Paul, 2022a), are added as comment within articles discussing the technology and developments around it. This more clearly demonstrates there are others who agree with the government's strategy. The choice of wording is of particular interest in that quote, as whilst some in the US tried to argue it produces the 'most climate-friendly electricity known to man' (Post Editorial Board, 2022c), in the UK samples no such claim was made. Instead, to focus on its effectiveness, however this is defined, reflects the current panic in the UK around anything that is an unnecessary cost.

Two other common sources of further support for this articulation come from the energy companies themselves, who emphasise productivity and lower energy costs (Lees, 2022,

Greatrex, 2022, Rossi, 2022), and additionally trade unions (Clancy, 2022, BBC News, 2022g), who focus on job generation (BBC News, 2022b). The strong attachment between building more nuclear power plants, and keeping others running, with having more, and better-skilled, jobs available for the population is a key factor in this articulation.

Additionally, this line of argumentation is never refuted by opposing articulations. The opposing articulation's proponents that posit nuclear energy is not cost-effective or good for the environment, do not focus on the argument concerning jobs. Thus, in a country described in such bleak financial terms where 'fears of recession' (Robinson, 2022) underpin many discussions in the media, talk of job growth always has at least some positive connotations. So whilst 'Nuclear Energy Against the Environment' in the UK may not agree with the centrality of the economic crisis' dislocating effects, they do not seek to challenge the argument that job growth is a benefit to greater nuclear energy use.

A common line of argument within this articulation acknowledges the long build times and large investments required for nuclear power. This arguments states nuclear energy is a 'medium to long-term' (Cran-McGreehin, 2022) investment. Meaning that whilst there may not be immediate benefits, they will emerge in the coming years. This is posited within this articulation as defying the 'short term thinking' (Groves, 2022) of typical political planning, that characterises the failures of past governments on nuclear energy. The critique of short-termism is taken up by the politicians quoted in the media (Paul, 2022b). It is also done by an outlet (Groves, 2022a) in a categorical and objective modality. A categorical modality is typically defined by 'positive and negative assertions' (Fairclough, 1992, p.161). An objective modality is one which leaves the 'subjective basis' of any statement implicit, which obscures whose perspective is being represented' (Fairclough, 1992, p.159).

The construction of a long-term vision functions alongside statements from officials like Boris Johnson, that 'there's a limit to the amount of taxpayers' money we can simply push' (Johnson, 2022a) at the short-term problems. However, this is not entirely effective and this focus on the future, whilst somewhat ignoring the present, is highly contested, primarily by 'Nuclear Energy Against the Economy'. The future-oriented perspective ingrained within this aspect of the positive economic articulation contains a strong orientation towards long-term ambition for the UK. It is a position embodied by Boris Johnson's statement that the UK will be seeing 'nuclear coming home' (Johnson, 2022) and other ministers who wish to see the UK become an energy exporter by the 2040's, as other highlight it was in 2003 (Clark, 2022).

This ambitious argument within ‘Nuclear Energy for the Economy’ relates to views held by a number of people in the UK that there is a greater role for the UK to play internationally post-Brexit. Such views are clearly portrayed by the Daily Express’ references to ‘Brexit Britain’ (Ashkenaz, 2022a, Ashkenaz, 2022b) when referring to the UK’s grand plans for energy policy. It is meant to be a reversal of the stereotype of a decaying UK post-Brexit. As the use of ‘Brexit Britain’ making fusion deals with the US (Ashkenaz, 2022a) shows, or when the UK is stated as on its way to leading Europe (Ashkenaz, 2022b). Of course this hopeful fervour is commonly attached to grand plans and designs, as opposed to results in the sample.

In the sample of US outlets, arguments over issues of security are common when discussing factors of supply, vulnerability and independence for the energy sector. This was usually predicated in strategic terms with geopolitical ambitions at the root of such arguments. However, the ideas of supply, vulnerability and independence in the UK’s discourse on nuclear energy are filtered through a primarily economic framework, demonstrating the strength of the economic crises’ dislocations in the UK. One example which seems to communicate primarily security-based concerns is the investment of Chinese firm CGN in the planned Sizewell C reactor whose involvement in the project is being phased out (BBC News, 2022b, Laville, 2022, Mason, 2022). However, even in this case one of the primary fears in this decision is ‘How much will it pay to ask CGNP to stand down?’ (Wyatt, 2022). As it is never suggested that the British state could take over such a project it is clear that no one believes the British state is capable of taking on more than its current 20% stake (Daily Mail City & Finance Reporter, 2022, Jack, 2022a). No one questions that removing China from ‘critical national infrastructure’ (Groves, 2022a) investments is necessary, but they do fear the UK government’s ability to invest further, or attract others to invest in such projects.

Throughout this articulations use certain types of ethos are consistently invoked. One construction of opposing identities is between those who prioritise the economic crisis and those who oppose nuclear whilst centring the dislocating effects of the environmental crisis. Nevertheless, there is still an opposition between those who are focusing on increasing growth and improving the economy first and foremost (Kwarteng, 2022a). Then those who believe that growth should not come above all else (Blanning, 2022). There is only one sample which utilises what can be termed degrowth arguments, whereby the nature of modern consumption patterns are challenged at their core and such ideas of growth are seen as illegitimate (Blanning, 2022). On the opposite side, there is also a position articulated whereby the solutions to the issue of climate change as ‘medieval’ (Lord Frost, 2022). The

second piece still never positions the responses to climate change as ideologically motivated, as critics in the US do, but instead wishes to see a more ‘pragmatic’ (Lord Frost, 2022) response to the issues. Whilst these represent the outermost edges of these two identities.

Differing identities also emerge between the UK government in Westminster and the Scottish government in Holyrood. The Scottish government position themselves as firmly against nuclear power, refusing to allow any to be built in Scotland (BBC News, 2022, Watson, 2022). Whilst Westminster is described as trying to get them to change this position unsuccessfully (Kwarteng, 2022, Watson, 2022). Consequently, there is discussion of Scotland’s claim that they can rely on renewable energy, even though this sector has actually fallen in output and shrunk in size over the past years (Bosotti, 2022). Thus, samples supporting nuclear energy’s economic benefits portray Scotland’s failures to benefit from renewables alongside, what is called by an opposition Scottish MP as, Nicola Sturgeon’s ideological stance (Kerr, 2022).

Finally, the transitivity throughout the samples where this articulation is present commonly highlights the percentages and raw numbers of how much power nuclear energy generates for the UK (BBC News, 2022b, Jack, 2022a, Davies, 2022). This is reinforced when placed cohesively with clauses minimising, ignoring, or disparaging the contribution made by renewables (Constable, 2022). In this way any argument which seeks to eliminate or phase out nuclear energy, or at least not rely on it more, seems to be cutting a significant supply of energy generation out with little thought for whether it can be replaced. Importantly, when it comes to the economic benefits to be reaped from this technology, stronger emphasis is placed on long-term gains instead of future losses (Wells, 2022, Reilly, 2022). So the processes which create greater economic fortune once these investments are made are focused on. However, even those who support the long-term potential of nuclear energy seem unable to ignore the huge economic issues being speculated on in the short-term (Nanji, 2022, Constable, 2022). This leaves an understanding of these processes as far from idealistic but still tinged with some hope.

A final point on processes of transitivity is that agency in all of these samples, like the two supportive articulations in the US, is rooted in the government(s) of the UK. In the samples where Scotland is mentioned, it’s ability to control its own planning laws is well emphasised and its resistance to Westminster is strongly asserted (Watson, 2022). However, the government in Westminster and its predecessors are held entirely responsible for all actions

taken, and not taken, on issues of nuclear energy. Whilst external factors, such as the invasion of Ukraine are not blamed on anyone but the perpetrator of the action, the ability for the country to withstand such external shocks is determined to be the responsibility of the government.

Many samples highlight that it is previous governments who have created the conditions for the current crisis and the lack of nuclear energy generation capacity to alleviate economic pressure (Nanji, 2022, Groves, 2022a, Johnson, Boris 2022b). In this way the government in 2022 asserted that unlike others it was learning from these mistakes and that by investing now, there would not be the same issues in the future. However, there were also many calls within the samples for them to take control of the short-term issues facing the country. These short-term issues were the key focus of the next articulation.

4.2 ‘Nuclear Energy Against the Economy’

The second articulation which jostled to represent the role nuclear energy should play was ‘Nuclear Energy Against the Economy’. This articulation poses a direct challenge to ‘Nuclear Energy for the Economy’, as it also has the economic crisis at its centre as the primary source of dislocation. However, it does to craft an articulation which seeks to prevent any further construction of nuclear power. This is because it often posits what is most important for the UK economy is addressing the short-term issues. These are the problems of the current costs of energy, with a particular focus on the projections of how much more costs could rise (BBC News, 2022a, Daily Mail City & Finance Reporter, 2022, Partridge, 2022). In this way, the medium- to long-term investment, that nuclear energy is primarily argued as being, is not what the country needs.

This articulation conceives of nuclear energy in a restricted policy space, whereby time and costs heavily impact the decision to construct more nuclear power capacity (BBC News, 2022b, Schneider, 2022, Scott-Cato, 2022). The timeframe is a significant factor, as it is constantly emphasised that bills are already high and damaging families, so it is unappealing to many that nuclear energy provided no short-term help. So, whilst the economic crisis and its dislocating effects are still central, this articulation’s proponents concern for the timeframe and costs of nuclear energy lead it to oppose the technology. The main argument which alleviates their concerns focuses on maintaining the current nuclear plants (Davies, 2022, Lawson, 2022). In this way current nuclear energy facilities are represented as a way to stem the tide of ever growing energy costs, but often with the caveat that there would be large

costs incurred (Burke, 2022, Spencer & Jackson, 2022, Daily Mail City & Finance Reporter, 2022).

There is a particular mechanism proposed and implemented by the UK government to try to attract investors to place funding into the proposed Sizewell C nuclear power plant, which is the Regulated Asset Based (RAB) model (Jack, 2022). This model, ‘typically used for funding UK monopoly infrastructure’ such as gas and electricity, involves an economic regulator granting ‘a licence to a company to charge a regulated price to users of the infrastructure’ (Department for Business, Energy & Industrial Strategy, 2019, p.6). This method for raising capital is often portrayed cynically, and seen as risky and unfair for consumers (Jack, 2022, Davies, 2022a, Dooley, 2022). It is often highlighted that not only would this increase consumers bills now (BBC News, 2022b), as the project is constructed but it would also shift the risk overruns and overspends on to the consumers. Those wishing to highlight the flaws of this particular strategy when attempting to secure investors for a nuclear power plant often highlight the commonly mentioned delays and overspends these projects face (Downes, 2022).

One example of delays and overspends this articulation’s supporters utilise is the Hinkley C reactor, currently under construction by EDF in the UK, and how this is delayed and overbudget already (Partridge, 2022). Whilst defenders of the investment highlighted that lessons would be learnt from the delays and mistakes of Hinkley C for Sizewell C’s construction (Dooley, 2022); this argument does not address the issue of increased bills during construction. This positions this articulation as addressing the reality of the current moment for the UK during the economic crisis. There is a clear element of temporality within the competing articulations that both centre the economic crisis, but take different views on the technology. One seeks to gain hegemony via rectifying the past for a better future, ‘Nuclear Energy for the Economy’, and the other positions itself as addressing the economic needs of the moment, ‘Nuclear Energy Against the Economy’.

When it comes to alternative methods and sources for addressing the economic effects of the energy crisis, many of those who believe nuclear energy harms the economy posit alternatives. There are those who only want to see renewables, and economic factors are usually considered, with the argument represented that they are typically a ‘cheaper’ and ‘safer and better alternative to nuclear energy’ (Gewessler, 2022). Although when it is only renewables which are desired, it is often also backed up with references to the climate crisis.

Two commonly presented alternatives to nuclear energy are improving energy efficiency and home insulation (BBC News, 2022, BBC News, 2022a, Stirling, 2022). This is often pushed as a more economically secure and environmentally safe way to adapt the UK energy market to the ongoing economic crisis. Any detailed proposals of how these efforts would be carried out, how much less they cost and how much higher their benefits are is not elaborated. Without elaborating on the costs and benefits, these alternatives appear as a simple attempt for taking a more financially moderate investment in rectifying the situation.

One particular case that stands out among the samples and highlights a predominance of the economic crisis' dislocating effects within debates around nuclear energy is the case of a Seaside town in Suffolk, where the council had been in talks to have nuclear waste stored nearby (Spencer & Jackson, 2022). Whilst the council states all talks were only preliminary; locals are portrayed as very against the plan. However, unlike the US case in Nevada where the fear is rooted the environmental damage of such sites, there is no environmental concern from the locals in the UK. Instead, their great fear is the fact that it is 'bad for business' (Spencer & Jackson, 2022) and it will kill the tourism industry. Whilst images of local opponents show them with displays of skeletons on toxic barrels, making it clear there is an awareness of environmental dangers, the predominance of economic arguments against it betrays their primary worry. This case reflects the wider trend of contestation within the UK surrounding nuclear energy, which is how it can be factored into an articulation addressing the dislocating effects of the economic crisis.

Another sample brings out the fact that the large amount of radioactive waste already produced by the UK's nuclear power plants has no permanent storage facility selected yet (Laville, 2022a). It then goes into detail over how much the projected costs of dealing with all this waste are, along with how much they could increase by if no site is found, whilst highlighting that further nuclear generation just adds to the costs. This sample implies an underlying environmental issue, as the current site where much of the UK's waste is stored is called 'one of the most hazardous sites in the world' (Laville, 2022a). However, its primary argument thematically focuses on the large financial burden of this technology's waste as the headline 'UK's nuclear waste cleanup operation could cost £260bn' (Laville, 2022a) aims to highlight. This further emphasises the predominance of the economic crisis when it comes to the contestation of the articulations being pushed to gain a hegemonic status in representing the technology.

Looking in more depth at the textual features commonly supporting and progressing this articulation, transitivity certainly plays a role. The agency, again, primarily belongs to the government. A good indicator of this is, even though many samples containing this articulation posit it opposes solutions like the government's RAB model, it is up to the government to fix this issue (Dooley, 2022). Despite the fact it is about placing risk upon the consumers there is no invocation for those affected to write to their MPs. They are functionally portrayed as an object which the government either makes mistakes with or assists, but that can never help itself or act. Whilst mainstream news outlets often do not invoke the agency of communities or individuals and they commonly defer the power of action to the state in energy generation matters. Although in times of crisis this may not always be the case, in this time frame and in this articulation, it is.

The use by the BBC of analysis sections at the ends of descriptive and expository news pieces serves as a good example of how certain processes of costs and delays can be a focus (Jack, 2022, Campbell, 2022, Harrabin, 2022, Wells, 2022). Although, it is the analysis of an individual expert and employee at the BBC, it follows a descriptive news article to provide additional interpretation, whilst maintaining an objective and categorical modality. In this way the doubts, critiques and speculations are spoken as if not by an individual but in the same matter-of-fact way the descriptive news section is. Beyond its objective modality, presenting the analysis of this individual in a universalising manner, the categorical modality denotes even greater certainty that the analysis provided really is the way things are.

The ethos of this articulation is simply the reverse of the ethos within the previous articulation. Those pushing for this articulation to dominate the understanding of nuclear energy in the UK, and suture the dislocating effects of the economic crisis on nuclear energy's role, see it as prioritising the immediate reality of the UK. The articulation contains a view that there are those who understand the seriousness of the current moment and those who believe it can be withstood for a better future once the investments in nuclear energy generate returns for the country. With only the former being correct in this view.

4.3 'Nuclear Energy for the Environment'

The concerns around the economic crisis and its dislocation of nuclear energy's role in the UK stand out in the samples as the primary terrain upon which contestation of nuclear energy's role takes place. However, there is also a role for issues of the environment in the discourse. Although 'Nuclear Energy for the Environment' is used predominantly as a

supplemental argument to advocate for greater use of nuclear energy due to its economic benefits, it must still be noted as its own articulation. As it draws upon the issues generated by the climate crisis' dislocating effects. Whilst it is mostly in a secondary role to the economic support for nuclear energy currently, its predication upon the dislocating effects of a different crisis give it the underlying potential to conflict with 'Nuclear Energy for the Economy' in the future.

The secondary role stems from those who want to posit nuclear energy as important to address the economic crisis' dislocating effects, but tend to secondarily draw upon its carbon-free status as another reason to invest further into the technology (Duell, 2022, Line, 2022). There are examples whereby quotes, clauses, and sentences are organised so that the primary attention is focused upon the economic benefits of nuclear energy. Then its help in achieving Net Zero carbon emission targets is used to add an additional benefit of the technology to back up the argument (Tapsfield, 2022). Although the leader of the opposition and other opposition MP's are quoted in the samples as supporting the technology only for environmental reasons, (Lawson, 2022, Ashkenaz, 2022c), along with other individuals, organisations, and outlets themselves (Ashkenaz, 2022b, Hawker, 2022). These are the only samples where this articulation is present, in some sentences, without being used as a secondary point to reinforce concerns centred on the economic crisis' dislocating effects.

Additional to the factors of cohesion and theme showing the secondary importance of 'Nuclear Energy for the Environment' within the UK discourse, the transitivity features of the samples in which it appears also denote this. When it comes to those who are stating the ways in which nuclear energy can increase the supply of electricity, the number of houses it can power, the projected stabilisation of energy prices and the independence from volatile energy markets it grants, these processes are well documented and detailed. However, the same depth and detail is absent for the environmental benefits of the technology.

Indicative of these uses of transitivity is after detailing the benefits and debates of the economic impact of the governments 'Energy Security Strategy', halfway through, the article indirectly represents government minister Kwarteng insisting 'targets to reduce the climate crisis are not being deprioritised' (Tapsfield, 2022). The need for a government minister to state this, and for the outlet to highlight it, indicate the extent to which climate crisis related arguments for nuclear seemed overlooked. This shows a privileging of the processes of economic crisis related solutions connected to the technology, whilst minimising the

importance of the environmental benefits. These processes of transitivity demonstrate the salience of the dislocating effects of the economic crisis as those which a hegemonic articulation should be structured around. As it is support for nuclear energy focused on these dislocating effects which consistently receives more focus, and clearer support.

There are a few limited examples, as mentioned previously, where environmental arguments for nuclear energy are the focus. However, this purely environmental articulation does not appear frequently enough to denote that it is as present in the current contestation as the other articulations posited here. In this way, whilst there are clear separations within the UK's discourse between the climate crisis' dislocating effects and the economic crisis' dislocating effects used to support nuclear energy's use; the former is often less emphasised than the latter.

4.4 'Nuclear Energy Against the Environment'

The final articulation which competes to create a hegemonic understanding for the role of nuclear energy in the UK during 2022, is 'Nuclear Energy Against the Environment'. This articulation's proponents state that the technology should continue to be slowly phased out due to the dangers it presents to the environment. Unlike the US equivalent, it does not focus so much on nuclear energy's unsuitability to address the climate crisis.

Two lines of argumentation within this articulation, similar to those from the US, are that radioactive waste and the possibility for nuclear meltdowns are problems which cannot be ignored. There are discussions of radioactive waste's economic cost in previous articulations (Spencer & Jackson, 2022, Partridge, 2022a), but it is also treated as a purely environmental negative in certain articles when mentioned (Messenger, 2022, Stallard, 2022). The use of meltdowns to question the technologies environmental credentials (Ploky, 2022), but not its widespread use, can likely be explained by two factors. One may very well be that none of the big nuclear accidents of the 20th century happened in the UK, giving such fears less resonance. The second, is the very local scale at which many of the environmental concerns voiced in the UK are articulated on.

Unlike in the US, a significant amount of those who criticise nuclear energy for environmental reasons almost exclusively root this criticism in the dangers each plant presents to the local area it is in. The common arguments put forward by the Group 'Stop Sizewell C' (Mason, 2022), and other groups of concerned local residents in Wales, demonstrate this phenomenon well (Messenger, 2022). Despite the idea of a meltdown being

well known and understood by many of these groups, it does not factor into their primary issue with the power plants in the first place; that they harm the local community when functioning as they should. It is not that they are unable to conceive of a nuclear meltdown being as dangerous or as deadly as the slowly growing risk of radioactive waste, generated as the site is constructed, disrupting the wildlife and environment. However, the samples where this articulation is present highlight a far greater purchase for inherently local issues among its proponents.

This articulation still has the climate crisis' dislocating effects at its centre but it's proponents deeply localise where they take issue with its impacts. They still invoke the language of typical articulations seeking to address the climate crisis; that those in charge are acting out of a want for 'profit' and 'not out of necessity or consideration for the environment or future generations' (Ciaran, 2022). However, they additionally posit the need for action is focused on local issues, such as stating 'We have to come together as a community of people to protect our valuable Severn and its ecology' (Ciaran, 2022).

Whilst the typical arguments within the articulation are predominantly focused on local issues, there is one interesting case where it is not. This is the argument that, without the world being completely perfect there can be no safe use of nuclear energy (Plokhy, 2022). As well as drawing on the three most infamous nuclear accidents, TMI, Chernobyl and Fukushima, the author highlights how the current war in Ukraine highlights the inherent dangers of this technology (Plokhy, 2022). This is particularly of interest here, as the methodology of this paper explained, a total of 50 samples from each outlet were collected first. Then from this, 15 were selected which would be analysed in detail. However, in the broad collection of 50 articles, no news event is so widely covered as the fighting in Ukraine around Zaporizhzhia Nuclear Power Plant. These articles were not covered in the detailed analyses as right now they do not have an impact upon the discourse in either country. This text represents the only occasion where the fighting there has been factored into an articulation in regards to nuclear energy's future in either state.

This same article also presents another unique perspective on the UK discourse surrounding nuclear energy. This is because it takes Boris Johnson's statement that nuclear is coming home and uses it to prompt a discussion on what the author believes is the real history of nuclear energy in the UK (Plokhy, 2022). He focuses on the Windscale reactor fire and the deaths it led to in the early days of the UK's nuclear power industry. This sets up a latent

memory or history based conflict over what it means to root the nuclear energy policy of the future, on how the past is interpreted. As what Boris Johnson posits as the origins of British nuclear energy to which the UK should return, are what this author posits as leading to its biggest mistakes. Whilst this memory and history conflict remains latent, it certainly has the potential to become more incorporated into the mainstream contestation of articulations within the discourse. Particularly as there is already an articulation opposing nuclear energy and centring the dislocating effects of the climate crisis; this line of argument could more easily factor into this pre-existing articulation.

The textual details of this articulation, in terms of transitivity, differ from the previous articulations highlighted in the UK discourse. This is because, whereas all other articulations are trying to promote actions to be taken by the state, many of these samples highlight the agency of local communities. However, there is a limit to the agency such accounts denote. Primarily it is because these groups are campaigning for the state to not exercise its right to construct the energy generation mix it wishes within the planning laws of the country. Whether it is the unsuccessful legal stand taken in Wales (BBC News, 2022c), or the actions of Stop Sizewell C, which yield no particular result in the sample timeframe (BBC News, 2022f). Both of these cases are described or explained within the samples as communities acting in their interests to demand that the state take actions in their interest. However, there is no mention of wider support beyond the local communities concerned and there are no documented accounts of success in the samples.

As regards the ethos of this articulation, it very often implies that there are those within the local community, who understand its nature and what grants it value, and those attempting to enforce the developments of nuclear energy upon this community. Such as the previously quoted opposition to mud dumping where a local community member posits, they will ‘protect our valuable Severn’ (Ciaran, 2022). In this sense, there are those who understand the community and its nature, and those who do not. Even if the aims of those outside the community, in seeking greater nuclear generation, are to benefit the global environment, they fundamentally understand the climate crisis differently. In this sense the dislocating effects of the climate crisis at the centre of this articulation focus their opposition on a highly localised understanding of this crisis. So even when articulations supporting nuclear energy address more global, or national issues, of climate change, this articulation’s supporters rebuke them, as any disruption to the local environment or risk of future radioactivity issues, outweigh these broader climatic considerations.

4.5 Summary

In total, the textual analysis of the UK samples shows there are four distinct articulations being pushed to gain hegemony over how nuclear energy's role is understood, and suture the dislocation of its position. Two of these articulations have the economic crisis at their centre, 'Nuclear Energy for the Economy' and 'Nuclear Energy Against the Economy'. The former's supporters seek to prioritise remedying the dislocating effects of the economic crisis and crafting a hegemonic articulation to support nuclear energy. The latter's proponents seek to prioritise remedying these dislocating effects whilst opposing any further use of the technology. The other two articulations have the dislocating effects of the climate crisis at their centre, as those that must be remedied by a new hegemonic articulation of nuclear energy's role. The supporters of 'Nuclear Energy for the Environment' and 'Nuclear Energy Against the Environment', like the other two articulations present in the UK, seek to remedy the dislocating effects of the crisis they focus on, to support and oppose nuclear energy respectively.

5. Analysis of Ideologies, Crises, and Comparison

With the descriptive aspect of the method carried out, it is now important to conduct the interpretive analysis. This means situating these contesting articulations within the wider social practices, to understand the broad constructions of reality their supporters draw upon to suture the dislocation of nuclear energy's role. The articulations which were elucidated and posited in the preceding chapters portray understandings of a number of factors. Firstly, they each highlight a certain crisis, and its impacts, that they claim matters most when rearticulating nuclear energy's role. This necessitates that they minimise the effects of other crises, which they view as less important in remedying dislocation. Additionally, it means they prioritise different types of action, different communities, and many other factors, which all necessitate given views of the relations which must persist or change within each state. In the case of different articulations which still either support or oppose the technology, such as those that support it for security reasons and those that support for environmental reasons, there is of course a compatibility in desired outcome. However, the importance of distinguishing between two such articulations is elaborated here.

In both the US and the UK it is clear that certain articulations stand greater chance of gaining a hegemonic position. These are the positions which support continuing and expanding the use of nuclear energy in the face of crises. In both cases this shows they are not going to return to the previously hegemonic and passive articulation. It is important to note that neither case attempted to maintain the old articulation. This shows that the effects of dislocation upon the understanding of nuclear energy were severe enough to generate new competing articulations. Whilst both cases have no new hegemonic articulation, the following analysis shows that there are broad constructions of reality that these articulations are part of. Understanding the broad ideologies that these new articulations are a part of is the final point to be elaborated when answering the research question of how the crises in 2022 affected the discourse on nuclear energy.

Below is a table highlighting the key elements between the two states, and their respective articulations, which address the puzzle at the heart of this comparative study:

Table 1: Crises, conflict and ideologies of each articulation

State	Articulation	Central Crisis	Points of conflict	Broad Social Practices
US	Nuclear Energy for Security	Russian invasion of Ukraine	Geopolitical and hard power worldview	American global leadership
	Nuclear Energy Against the Environment	Climate Crisis	Primarily global view of need to prioritise other methods in fighting climate change	Post-political activism
	Nuclear Energy for the Environment	Climate Crisis	Normative and soft-power worldview	American global leadership
UK	Nuclear Energy for the Economy	Economic Crisis	Prioritisation of long-term economic resurgence	Decline/Ambition
	Nuclear Energy Against the Economy	Economic Crisis	Prioritisation of short-term economic solutions	Decline
	Nuclear Energy for the Environment	Climate Crisis	Side-lined articulation, only used to reinforce economic support of nuclear energy	None as of yet due to its secondary role
	Nuclear Energy Against the Environment	Climate Crisis	Insular and localised view of environmental dangers	'NIMBYism'

Table 1 summarises the key factors which define each articulation. There is no category dedicated entirely to the points of agreement for each articulation, as their points of agreement reside in either the crisis they articulate, or the broader social practices of which they are a part. The key points highlighted in table 1 guide the following comparison of the broader social practices which the articulations are a part of, and facilitate the comparison between the two states discourses overall.

Firstly, there are the two articulations in the US, which are part of the broader ideology advocating for American global leadership. The role for nuclear energy they articulate factors the technology into the energy mix of an America which must stay as the leader of the liberal international order. The noted references in the textual analysis to preserve America's dominance (Pompeo, 2012) in 'Nuclear Energy for Security' and to 'cement U.S. technological leadership on fusion' (White House, 2012), highlight this. The articulation with the security crisis at its centre is one which 'has the ring of hard-boiled realism about it' (Tooze, 2023), and has a primarily geopolitical worldview. Whereas, the two articulations which centre the environmental crisis have a stronger focus on norms and values, instead of

material power. The crisis at the centre of these environmental articulations, and their more immaterial worldview, are the only points of compatibility they share.

The ideology of American global leadership centres on the perpetuation of America's position as a fundamentally liberal world power. Thus, not only is the contested emerging multipolarity a threat to the US' position of World leadership, but the character of emerging world powers which generate the insecurity in America's salience, threaten the liberal aspects of the liberal international order. The ongoing threat of multipolarity seems to be gaining traction with a number of recent news stories, such as the challenge to the dollar's hegemony from Brazil's president (Leahy & Lockett, 2023) and Macron's statement France should not be a 'vassal' to the US over China and Taiwan tensions (BBC, 2023).

The articulations 'Nuclear Energy for Security' and 'Nuclear Energy for the Environment', both seek a fundamentally strong America, with a leadership role at the head of global politics. However, the crises present in 2022 are accounted for differently in them. 'Nuclear Energy for Security' has supporters who take the broad security crisis, generated by events such as Russia's invasion of Ukraine, as the primary source of dislocation upon the discourse of nuclear energy. So the articulation's supporters seek to frame nuclear energy as able to rectify this central crisis, or at least contribute to a solution. Whilst the climate and economic crises create further disruptions to energy supplies, and the discourse surrounding nuclear energy, dislocating the old status-quo, it is issues of security in a conventional sense that this articulation's proponents are accounting for first and foremost. This prioritisation, evidenced by the multiple strategies, such as cohesion and transitivity, employed in the samples, denotes a construction of reality whereby conventional and material security, or dominance, are the key dislocated elements which an articulation of nuclear energy must address.

'Nuclear Energy for the Environment' still articulates that nuclear energy must have an increased role within electricity generation in the US. However, it does so whilst centring the climate crisis as the most pressing source of dislocation, meaning that nuclear energy must be posited as addressing this crisis, to gain a hegemonic position. This means, rather than seeing nuclear energy primarily as a resource to further national security, it sees nuclear energy as a means to reduce carbon emissions and have a greenhouse gas-free energy generation system. Whether this is as a bridge technology to maintain reliable supply to electricity grids, or as a more permanent feature of the US' energy mix, it still centres the climate crisis as the primary source of dislocation.

Despite the compatibility for America's two pro-nuclear energy articulations, in their support for increasing the use of nuclear energy, the differing key sources of dislocation at their centre set them apart. Focusing more on a certain crisis portrays the possibility for future discord between these supportive articulations. The textual analysis shows these articulation's supporters have a mutual interest in increasing the use of nuclear energy. To present their arguments they both reference security and environmental benefits. However, in each case there is always one crisis presented as more pressing than the other, and that is the key crisis to address if dislocation is to be remedied. It is this difference in the crisis they posit as central which leaves a tension beneath their current compatibility. The tumultuous events which threaten the US are far from over, and as these events progress all the factors involved with the climate and security crisis will be subject to further dislocations. This means that merely supporting the technology may not be enough and the crisis you seek to address with nuclear energy may matter more. They desire the same practical outcome of more nuclear energy, and are part of the same broad ideological frame of sustaining US global leadership. However, the source of dislocation that each articulation views as key to portraying this technology, and sustaining global leadership, is the fundamental and potentially divisive separating factor between them.

Whilst neither articulation is hegemonic, they are maintaining their compatibility. If either articulation were to become the hegemonic articulation, and be the basis for nuclear energy policy going forward, then their difference may very well lead to fragmentation. Maintaining conventional security and preserving the climate are not wholly compatible aims for the implementation of nuclear energy, and should one aim come to dictate the priorities of policy, to the detriment of the other, difference will emerge in how their articulations contest for policy space against one another. As each articulations supporters posit only their articulation can fully suture the dislocation at the heart of this contestation.

The two supportive articulations which push for greater nuclear energy generation within the UK, must be understood as distinct articulations, as they have different crises as the central factor for addressing the dislocation affecting nuclear energy. In this way they have the same relationship as the two pro-nuclear articulations in the US do; in that their compatibility is contingent on the events that continue to unfold in regards to these crises. In terms of supportive articulations, the US and the UK both have one termed 'Nuclear Energy for the Environment'. However, this is not as independent as its American equivalent, as many times when issues that centre the dislocating effects of the climate crisis are mentioned, the textual

mechanisms used, denote it as a secondary consideration. Whilst there could be a number of reasons for this, the prevalence for the economic articulation and its subsumption of the environmental articulation can be understood as an effect of the dominant construction of reality in the UK at this time; decline.

The other supportive articulation within the UK discourse is focused on the economic crisis present in the UK during 2022 and is termed 'Nuclear Energy for the Economy'. Huge inflation and what was termed the 'cost of living crisis' were a large focus for a great number of samples. This articulation's supporters posited that nuclear energy is essential for addressing long-term financial issues for the UK. As mentioned already, the different crises at their centre establish these articulations as distinct, even with one mostly being used as a supplementary argument for the other. This subservience and compatibility, like in the US, cannot be relied upon, as what may be best for the economy is not always best to address the needs of climate change. As events progress and dislocations continue, the different crises at the centre of the articulations, pushed by proponents to suture the dislocation of nuclear energy's role, may force them to take a more oppositional stance towards one another.

'Nuclear Energy for the Economy' is tied up in ideas of ambition and hope for how nuclear energy can address the shocks of the economic crisis facing the UK. Despite the possibility for future renewal and a return to a stronger economic position, the framing of these ambitions, within the context and statistics of the UK's current state in the samples show a state struggling with decline. Analysis from historian Perry Anderson in 2020 painted a bleaker trend. He posited Britain was witnessing 'widespread intimations in the media, not so much of competitive decline, but of suicidal self-harm and proximate socio-economic disaster' (Anderson, 2020, p.60). By 2020, following 2008's financial crisis, 'the imposition of austerity to contain it' (Anderson, 2020, p.95), followed by Brexit and the onset of the Covid-19 pandemic, he states the UK 'has been disrupted as never before since 1911-1914' (Anderson, 2020, p.95). With decline perhaps not being accurate enough he questions that maybe it is 'not decline, but downfall' (Anderson, 2020, p.95) which currently pervades and effects all the levels and institutions of the UK's society.

In the UK, the supportive articulation's proponents have little appreciation for how global these crises are in nature. The need for an end to the continuing deterioration of the UK's fortunes is first and foremost how the economic crisis has impacted the discourse in nuclear energy. It is hoped a greater use of this resource which, as recently as the early 2000's helped

the UK to be an energy exporter, can deliver the UK from the depressive atmosphere and material immiseration portrayed in these samples. Therefore the supportive articulations for nuclear energy show that the crises of 2022, primarily the economic crisis, have made the UK very insular, as they seem to have affected the country strongly. Although, 'Nuclear Energy for the Economy' constructs a reality of the UK's current situation as still maintaining the long-term possibility for the technology to assist in delivering the UK from its current state of crisis. Its articulation, whilst supporters aim to make such ambition the hegemonic articulation, persistently implies how desperately change is needed.

The understanding of the UK as experiencing national decline frames the concerns of both the economic support and economic opposition to nuclear energy within the country.

'Nuclear Energy for the Environment' is still an independent articulation by virtue of its distinct central crisis in supporting nuclear energy. However, its constant use as a secondary argument for those who believe the economic crisis is the central issue nuclear energy can redress, leaves it without any clear overarching construction of reality. So it is primarily factored into the same understanding of reality as the articulation it is subordinate to; meaning an understanding of the UK as in decline. This broad construction stands in stark contrast to the main construction of reality used in the US' supportive articulations. It reflects the differing histories of the two states over the past decades, their material capabilities, and the extent to which the crises of 2022 are perceived to have affected them. In the UK, the discourse surrounding nuclear energy paints a grim picture of their perceived position, as nuclear energy is rearticulated as stemming the tide of decline, and perhaps in the future allowing for ambitious hopes. However, in America the articulation's supporters are not as economically fixated as in the UK, and the discourse on nuclear energy is using the crises of 2022 as an impetus for America to maintain its global leadership against current threats.

In regards to the articulations in both states opposing the technology, there is the third articulation in the US discourse on nuclear energy, 'Nuclear Energy Against the Environment'. This articulation is placed in a clear state of contestation against the other two US articulations, due to its status as the only articulation opposed to further use of nuclear energy in the US samples. 'Nuclear Energy Against the Environment', has one form of compatibility with 'Nuclear Energy for the Environment' as they both centre the climate crisis as the primary source of dislocation. Beyond this aspect of agreement between the two, they are otherwise diametrically opposed. This articulation takes the issues that nuclear energy poses to the environment, such as radioactivity and the risk of meltdowns, as still too

much of a threat to people and their environment for the technology to be considered as a solution to the climate crisis.

The focus within this articulation on renewables as a better source for further electricity generation is emblematic of the complete opposition between ‘Nuclear Energy for Security’ and ‘Nuclear Energy Against the Environment’. The construction of reality which posits that the US must stay as the leader of the liberal international order is not the broad ideology that ‘Nuclear Energy Against the Environment’ fits into. Perhaps for certain proponents of the articulation, there is still a wish for America to maintain its position as a world leader via setting a leading example in embodying the norms and values of addressing the climate crisis. However, there is a lack of textual evidence in the samples to support such an interpretation.

‘Nuclear Energy Against the Environment’ stands in contrast to the overarching exceptionalist construction of reality that informs ‘Nuclear Energy for Security’ and ‘Nuclear Energy for the Environment. This can be seen through the processes of transitivity highlighted in this articulation, which forgo any engagement with issues, such as the dependencies on China, greater use of renewable energy may entail. Whether or not such fear is warranted, the construction of the international reality that it posits is one in which security risks created through energy technologies must be a key focus. This is opposed by the way ‘Nuclear Energy Against the Environment’ minimises the role of any such processes within the debate.

Within this articulations use there is another clear construction of reality which broadly frames how the climate crisis is centred in rearticulating nuclear energy’s role. This is that, with the exception of the two New York Times articles highlighting the agency of Native American communities in opposing uranium mining, its opposition to nuclear energy is framed by a reality of ‘post-politics’ (Hochuli, Hoare, Cunliffe, 2021, p.45). Put succinctly, this denotes ‘a form of government that tries to foreclose political contestation’ through ‘eradicating ideology and ruling through managerial technocracy’ (Hochuli, Hoare, Cunliffe, 2021, p.45). This system is reflected in the way that this articulation’s proponents, despite centring the dislocating effects of an existential environmental crisis, speak only of ‘questions of technical implementation’ (Hochuli, Hoare, Cunliffe, 2021, p.45). This can be seen in the samples by who is called upon as the authority in such an articulation, along with the other investments of agency within the samples. Very rarely in this articulation do they refer to local people’s concerns, the role of communities in such issues, or even present those

speaking as citizens. It is always a point articulated by an expert, an activist attached to a professional organisation of some form, a politician, or some other individual with the supposed authority on such a matter.

This broad technocratic frame is in stark contrast to how opposition to nuclear energy development was done previously in America during the 20th century when mobilisations of citizens and demonstrations would be carried out. This is not an entirely absent phenomena in America to this day as actions around many other issues in American society have shown, The Black Lives Matter marches being a well known example of recent times. Nevertheless, this articulations use constructs a notion of political reality where the everyday citizens' views on such an issue are counted for very little, as their absence from such a debate is not lamented. Additionally, with the constant rearticulation of the voices of these authorised subjects in the debate it perpetuates the logic that such views may only be communicated as a legitimate part of the debate, if they occupy the correct social station. Thus, this articulation of nuclear energy's role, with the climate crisis as the central source of dislocation, is 'insulated from popular pressures' (Hochuli, Hoare, Cunliffe, 2021, p.45).

There is also the articulation of 'Nuclear Energy Against the Environment' in the UK's discourse as well. There is only one shared aspect between the US and UK iterations of this articulation. The commonality is that in both cases the articulation does not fit into the same construction of reality that the other ideologies within each national discourse do. In the US case 'Nuclear Energy Against the Environment' is situated within a post-political construction of the reality of politics. This differs from the ideology of American global leadership used by the other two articulations in the US. In the UK case 'Nuclear Energy Against the Environment' is not situated within a broader construction of the UK as pervaded by crisis. Instead, this articulation within the UK necessitates an insular and localised view of the impacts of nuclear energy. Many samples in which this articulation is present focus on local communities who simply do not want the impacts that nuclear energy construction and generation brings in their local area

This articulation's supporters, within the UK, forgo concern with the economic crises and take the climate crisis as the central crisis which an articulation of nuclear energy must address, if it is to suture dislocation. They posit that nuclear energy is not necessary to address the climate crisis. However, they argue this position through highly localised considerations, and they localise where agency is placed in the cases where nuclear energy is

disparaged. Its focus on environmental issues and issues of local community do not contribute to the construction that the UK is currently facing a growing decline of its facets and institutions.

It cannot be directly ascertained from the samples that this articulation's proponents do not perceive the UK's socioeconomic reality as one of decline. Instead it implies a broad aversion to the technology that is rooted at the level of local communities. This all conveys this articulations construction of reality as one that seeks little disruption or development. The environmental reasons they draw on are those centred on the local wildlife and environment disrupted by construction and radioactive risks. They do not draw on the global, or even national, level factors of carbon-emissions. Focusing on this level of impact leads to any large and disruptive projects like nuclear as unnecessary. Thus, their view for what benefits the environment is based on preventing large disruption in the local environment.

Even though this articulation highlights agentic capacities within the UK's local communities, they are capacities which work to prevent further action. The articulation still has the climate crisis at its centre as the primary source of dislocation to be sutured through this understanding of nuclear energy's role. The alternatives they provide to nuclear energy are argued as what is best for the environment locally, and their advocacy for insulation and energy efficiency imply they wish to address the larger impacts of climate change. The term commonly used for such a position, but only mentioned once in the samples in connection with the Liberal Democrat party (The Sun, 2022), is 'NIMBY Syndrome', with NIMBY standing for 'not-in-my-backyard' (Wexler, 1996, p.91). This broad construction of reality typically opposes land use for new constructions in the local community and is characterised 'as an emotional, parochial and self-serving community reaction' (Wexler, 1996, p.91). Citizens more commonly opposing 'power plants, waste dumps, and similar targets' can be seen as 'indicative of a call to greater autonomy for regions', set against 'growing pressures toward internationalization' (Wexler, 1996, p.91).

This localised opposition to nuclear energy, which still centres the climate crisis as the major source of dislocation that an articulation of nuclear energy must suture, entails two diverse positions. One of these is 'a reactionary form of nostalgia for the virtues of property and home', and the other is a 'democratic concern for citizens rights' (Wexler, 1996, p.105). All the media samples containing this articulation within the discourse on nuclear energy speak of locals who wish to assert a greater control over their regions. However, by doing so in the

way they do, the articulation's proponents minimise and side-lines the broader concerns of carbon-emissions and global climate issues. This can be seen in the transitivity and cohesion features, where local concerns are the key focus, and most benefits to the national and global levels of environmental crisis are merely inferred. It is in this way they seek to preserve their community's sanctity and assert the superior virtue of such a desire over global and national concerns; not just of the climate crisis but also the economic crisis.

In both the US and the UK, the articulation which opposes nuclear energy and has the climate crisis as a central feature, does not explicitly conform to the construction of reality shared by the other articulations. Their supporters also both centre the climate crisis as the primary source of dislocation which must be factored in to an understanding of nuclear energy's role in a future hegemonic articulation. However, whereas the US articulation tends towards a post-political understanding of reality, the UK's articulation instead portrays local communities as having greater agency. This shows that the same crisis understood as the primary source of dislocation factors into very different ideologies in the two different states. In the US it pushes a technocratic understanding of how nuclear energy cannot be used to address the climate crisis at the national and global levels. In the UK it is part of a very localised construction of the issues of the climate crisis, which seeks moderate alternatives and side-lines any larger scale implications of the climate crisis.

These two similar articulations from the US and the UK show how the crises of 2022 factor into very different overarching constructions of the state's current reality. Even when impacting the nuclear energy discourse in similar ways by generating an articulation opposed to the technology with the climate crisis at the centre. Accordingly, any account for the nature of nuclear energy discourse following 2022's crises must account for the varying impacts dislocation can have on different states, even when they have previously similar positions on the technology.

The final articulation to discuss is the UK's 'Nuclear Energy Against the Economy', which has no equivalent in the US. This is because in the US, there is not the same broad construction of national decline. In the US economic anxiety is not pronounced enough to generate an articulation opposing nuclear energy. This articulation's supporters take the economic crisis afflicting the UK as the key crisis to address if a new hegemonic articulation is going to be able to suture the current dislocation. Thus, it shares the same broad construction of reality as 'Nuclear Energy for the Economy', and also the same central crisis.

However, it draws the opposite conclusion from these factors and broad understandings of the current social structures in the UK, and posits that nuclear energy is not necessary to address the economic crisis.

This articulation's opposition is predicated on the criticisms that getting nuclear energy up and running is a costly and long process which the UK should not invest in. The ambitions tied into the long to medium-term development of nuclear energy are either ignored or posited as too risky. The UK must focus on actionable and immediate changes to energy generation that provide economic benefits sooner. There are those who posit fossil fuels must be used to such an end, but there are those who focus on insulation, energy efficiency measures, and renewable sources. In this articulation, the focus upon alternatives to nuclear energy is dictated by the costs and benefits entailed. Whilst the proposal of alternative renewable sources implies a wish to address the climate crisis, it is secondary to how much economic benefit is provided.

This articulation's proponents centre the economic crisis in this articulation but in so doing, they disavow the ambitious notions within 'Nuclear Energy for the Economy', that this technology can lead to a long-term economic resurgence for the UK. Additionally, it portrays the discourse in such a way that all fault for the current situation is placed squarely at the feet of preceding governments. Unlike 'Nuclear Energy for the Economy', it highlights these failures to posit that they cannot be fixed with medium to long-term investment in nuclear energy. It instead emphasises the need to for energy generation in the UK to fix the economic crisis now and at a low cost to individuals.

In summary, the broad constructions of reality show that even when two articulation's supporters disagree about which crisis is central to address, in aiming to suture the dislocation of nuclear energy's position, they can be united by common ideology. However, the most important finding generated by this analysis is that the crises are central to how the articulation is posited as able to suture dislocation. This means even those articulations with compatible aims and ideologies cannot be relied upon to always be compatible. As events progress and new dislocations emerge, they can be driven apart in how they seek to implement nuclear technology. In this way a broad and in-depth picture of how the crises of 2022 have affected nuclear energy's discourse in the two states can be understood.

The two states have primarily been affected very differently. The US' discourse, in supporting nuclear energy seeks to ensure America's global leadership. The security and

climate crises have generated concern about the US global leadership within the discourse, but the independence and environmental credentials of nuclear are both advocated to address this. In the UK, support for nuclear energy takes the form of trying to arrest the widely acknowledged sense of national decline. It is most ambitiously hoped nuclear energy can be part of long-term resurgence for the UK, and environmental benefits are used to support this overall drive. The opposition to the technology in the US which centres the climate crisis is global and national in its considerations for opposing nuclear energy. In the UK it is parochial and very insular and it grants much greater agency to individuals and communities in opposing developments. Whereas the US's environmental opposition takes on a broadly post-political understanding of how to achieve its aims. The UK's anti-nuclear articulation which has the economic crisis at its centre is unique to the UK's current perception of its own decline, seeking to construct opposition to nuclear energy on the basis of its failure to fix the economic problems facing the UK when it matters.

Conclusion

The research puzzle that this thesis set out to solve was about what the portrayal of nuclear energy's role is during times of crisis, that are not explicitly about meltdowns or other nuclear accidents. To this end the objective set up to partially solve this puzzle was to map how multiple crises affect different states' nuclear energy discourse. To this end a theory of CDA, primarily using the understandings of Norman Fairclough (1992) was utilised in conjunction with a theory of crisis as dislocation. The key theoretical argument is that when crises, such as the security, economic, and climatic ones highlighted here, are present, then the hegemonic articulation of nuclear energy's role is dislocated. This then leads to a situation of contestation between new articulations which are pushed by various proponents to gain a hegemonic status. Thus, the crises present across 2022 can be seen to impact the discourse on nuclear energy.

To meet the objective of this research 150 samples were collected from 10 different media outlets in the UK and the US. The discourse analysis conducted on these samples allowed for an in-depth understanding of how multiple crises can affect the discourse on nuclear energy in different states. This was done through the methods of textual analysis outlined in the CDA methodology used, which allowed for the samples to be understood as containing distinct articulations which supporters aimed to use to suture dislocation and create a hegemonic articulation. Additionally, the textual features highlight the articulations present in the samples, as well as the crisis central to each articulation. The second level of analysis allowed for the broad constructions of reality that each articulation was a part of to be understood, which also facilitated a complete and thorough comparison of the two cases.

The question posed that this research sought to answer was: How did the discourse surrounding nuclear energy adapt to account for the multiple crises present in 2022? The answer to this question is different for the US and the UK, when it comes to the details of the articulations in each state and the broader ideologies of which they are a part. However, in terms of the broad logics in operation, the use of a theory of crisis as dislocation shows that in both cases the discourse on nuclear energy adapts to crises by producing new articulations which each have a different crisis as the central source of dislocation. In this way, despite the differing articulations and broad constructions of reality, both states' discourse on nuclear energy reacted in the same way to crises, as they both began to see contestation of new and different articulations being pushed to gain hegemonic status.

Beyond the logic of seeking to suture dislocation through new articulations contesting for hegemony, whilst each state's discourse showed a concern in remedying the dislocation produced by the climate crisis, it did so in very different ways. This demonstrates the necessity of including the broad ideological frames in which each articulation sits. Without understanding the parochial anti-development ideology of the UK's 'Nuclear Energy Against the Environment', its compatibility and similarity to the US' more post-political 'Nuclear Energy Against the Environment' would be greatly overstated. This highlights that whilst a certain crisis must be centred to suture dislocation and set an articulation apart in the national context, when the two states are compared the broad ideologies in each context greatly shift the practical and policy ends that the articulation is positing.

It is important to note that in answering the research question, this thesis has highlighted the centrality of the crisis, that is believed to be the key source of dislocation, in each articulation. Much like the broad ideologies that each articulation is a part of, the crisis which is posited as a central source of dislocation sets each articulation apart from the others. This leads to the key understanding that even if two articulations seek the same goal, such as the greater use of nuclear energy, and they are part of the same broad ideology, they are not inherently compatible. Thus, as events progress and further dislocations occur, such compatibility in policy goals should be investigated, as the underlying incompatibility may very well create a rupture between articulations which at this time seem compatible.

In conclusion, it can be seen that the various crises present across 2022 had distinct effect on the discourse surrounding nuclear energy in both countries. It is clear that overall the crises, particularly the economic crisis have had a much stronger impact on the UK, rather than the US. Although the US' articulations are clearly torn between suturing the dislocation of the climate crisis and the instability generated in the global security landscape, these attempts are still broadly framed within an ideology of seeking to maintain global leadership. In contrast the articulations in the UK are mostly framed by broad constructions of a reality where a few are ambitious about long-term resurgence, but many recognise that the medium- to short-term is very uncertain and likely damaging.

This research certainly answers the question posed at the beginning; however, further research would be well suited to fully solving the research puzzle. Whilst these two cases have generated interesting findings, and shown how nuclear energy's discourse adapts to crises, two cases are not enough to understand if this is always the case. Further cases would

be good to understand how crises impact different regions' discourses on nuclear energy. With a sample of states from more diverse regions it would be possible to build up more knowledge of how the crises can impact the discourse on nuclear energy differently. As there are a number of broad ideologies, and crises which can be centred in an ideology, there are many possibilities for distinct articulations which can also be compared to other states where nuclear energy is still contested.

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