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For Good Measure? A Discourse Analysis of Social Value in the UK Nuclear Decommissioning Sector

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FOR GOOD MEASURE? A DISCOURSE ANALYSIS OF SOCIAL VALUE IN THE UK NUCLEAR DECOMMISSIONING SECTOR

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ABSTRACT

The nuclear sector is characterised by large, complex engineering technologies involving a myriad of stakeholders both locally and nationally with oftentimes competing and contradictory needs. As such, the UK nuclear decommissioning programme now must respond to the Public Services (Social Value) Act, 2012, intended to align social objectives alongside the technological and economic.

This paper explores discourse as a space for the emergence and construction of social value. Attention was placed on documentation found in the public domain to examine how 'social value' is presented through its discourse documentation

A total of 294 texts from the UK's Nuclear Decommissioning Authority, consisting of online publications and blog posts, were included in the analytical sample, providing snapshots of discourse engaging with their stakeholders as they undertook work on decommissioning and site remediation.

This work is significant in demonstrating how a megaproject can broaden the understanding of complex social issues with alternative methods, contributing to the understanding of social value arguing it is a discursive practice that existed previously in different forms. The paper raises questions of how organisations navigate through the multiplex of relationships, unpacking the motives behind the actions that reinforce the social value agenda.

KEYWORDS

Social value, megaproject, nuclear, decommissioning, discourse analysis.

INTRODUCTION

The study of megaprojects as complex adaptive systems have grown in prominence in recent times. Studies have typically focussed on characterising and addressing uncertainties and complexities in managing the scale and scope of such projects (e.g. (Salet et al., 2013; Giezen et al., 2015). Yet, scholars have also begun to recognise that the delivery of megaprojects goes beyond the technical. Flyvbjerg (2014), for instance, argued that the study of megaprojects should consider not only the management of timescales and costs, but also their transformative impacts on society.

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Scholars have begun to take heed of such calls to consider the social in megaprojects. For example, there is a growing body of research into issues of stakeholder engagement in infrastructural megaproject settings (e.g. Fitton and Guthrie, 2014; Aaltonen et al., 2015; Erkul et al., 2016; Invernizzi et al., 2017); these studies tend to show the importance for those delivering megaprojects to engage with society (and vice versa) to ensure positive project performance.

In this paper, we join this growing line of scholarship that emphasises the social by reviewing current developments in the nuclear decommissioning sector in the UK. This sector is characterised by large, complex engineering technologies involving a myriad of stakeholders both locally and nationally. The UK nuclear decommissioning programme will take around 120 years, costing around £117 billion (NDA, 2016). Since no other programme has such a long gestation period demanding intense coordination and cooperation across a heterogeneous range of actors governed by a plural landscape of organisational architectures, nuclear decommissioning provides a unique megaproject context to study.

The decommissioning of nuclear power stations also brings the necessity to engage with society. In the UK, this societal engagement is embodied in the Public Services (Social Value) Act, 2012. This relatively new regulatory instrument is intended to drive providers of public services to demonstrate how they are delivering value in terms of economic, social and environmental wellbeing. Since the introduction of the Act in 2012, government review reported that there is a lack of awareness, which in turn creates challenges for defining, measuring and monitoring social value in practice (Cabinet Office, 2015). In this paper, we address this claim by presenting findings from a Critical Discourse Analysis of official documentation from the UK Nuclear Decommissioning Authority (NDA). We have uncovered 294 documents that date back to 2005, which demonstrate the existence of a 'social value discourse' within the NDA before the introduction of the Act.

This paper argues the need to go beyond measurement in the development of social value in organisational practices. The contribution of this paper is in demonstrating the use of discourse analysis in broadening the studies on the already acknowledged social issues of megaprojects, exploring discourse as a space for the emergence of social value.

FRAMING 'SOCIAL VALUE': FROM THEORY TO PRACTICE?

As already suggested, the need to focus on the social aspects of megaprojects is not a new concept but one which is gaining renewed momentum. Zhou and Mi (2016) reviewed the literature on social responsibility of megaprojects and identified four key issues: fragmented knowledge on what constitutes social responsibility, unclear role of stakeholders, ignoring the dynamical features of social responsibility, and lack of quantitative methods for measuring or evaluating. Some recent studies satisfying these gaps investigate the processes and relationships necessary to social responsibility: for example investigating project governance as essential to social responsibility, and highlighting the interconnections between complex stakeholder group needs as need for success (Ma et al. 2016), addressing stakeholder complexity (Mok, Shen, and Yang 2017) and exploring stakeholder management studies(Mok, Shen, and Yang 2015). This study aims to explore social responsibility through the concept of social value, and using organisational discourse can begin to examine the

role of stakeholders in creating the social discourse, how external influences have changed it over time, and allow an expanded view on deciding what can constitute social responsibility.

It is necessary to discuss some measuring systems which have been developed for social value, such as Social Return on Investment (Nicholls, 2016) or Social Impact Assessment previously (Institute For Environmental Studies, 1995), which aim to use comparable, numerical outputs. Social Return on Investment is similar to the idea of cost benefit analysis, putting monetary values against hard to measure concepts, for example wellbeing due to building design (Watson et al. 2016). Whereas Social Impact Assessment formally arose alongside Environmental Impact Assessment as a reflective tool: as a type of monitoring and evaluation often focusing on the negative impacts but then expanded to embrace it as a concept at all project stages (Vanclay 2002; Esteves, Franks, and Vanclay 2012). The different approaches are useful depending on why the information is being created and for who, with flexibility in designing the systems. However, the processes can be resource intensive and geared for smaller, restricted studies so are not widespread in use. There is a need for something to address higher level approaches giving a wider assessment over larger scales and longer times.

There are longstanding issues of measurement in many fields (Stevens, 1946) with the appropriateness of measuring and the outcomes debated, with a need to look at objective and subjective aspects when measuring something possibly intangible. However, the politics behind 'objectifying' is substantial (Porter, 1995). Reviews of performance measurement systems (Balfaqih et al., 2016; DeBusk et al., 2015; Choong, 2014) question to what extent can performance be measured: especially relevant to social value if the act of measuring changes what is being measured.

Social value in itself can be understood as constructed depending on individual and group values (Murphy et al., 2011), and positioning with interpretation of perceived value: social groups will view the same problems differently (Bijker et al., 1987). Social value is one way of categorising these views, and the published materials are manifestations of the discourse spaces within which the social groups interact. It is complicated to define as it is subjective and changing with external influences or assumptions (Walker et al., 2010).

Social value has become prominent with government action from 2012, but first appeared in literature with Joseph Schumpeter, (1909), critiquing it's use in business as an analogy for understanding social impacts. The term then appeared infrequently over the decades (for example, in career choices, (Goss 1914), or economics psychology, (Anderson 1911)). It was seldom seen before an engineering education paper in 1964 (Rhine) highlighting social value as an intrinsic part of all engineering work, then reappearing regularly in academic texts. From academic texts, to political and regulative texts, and then text developed by practitioners to translate into action, social value has been developing across communities co-currently; discourse analysis is a way to unravel how it is talked into being.

Social value is studied both as something which is created by and observed in other processes such social enterprise (Altinay et al., 2016), business models and innovation (Boons et al., 2013; Sousa-Zomer and Cauchick Miguel, 2016), procurement, social impact and CSR (Loosemore 2015), and more. This feeds into other processes such as ecosystem services (Collier, 2014), developed further into

measuring Total Economic Value (Burdon et al., 2015) and methods such as GIS mapping for social value (van Riper et al., 2017; Sherrouse and Semmens, 2014).

Social value can mean different things to different people: an instrument for decision making, a business case, a philosophy, political rhetoric, a numerical measure, an outcome, or more. This study considers social value as the overarching outcome of economic, environmental and social interactions shaping and arising from organisational decisions and processes. But within the emerging themes of the social value field there is a gap in foundational theories. Sinkovics et al., (2015), suggest further conceptual development and theorising is needed, rethinking social value and expanding it to complex adaptive systems such as seen in megaprojects.

NUCLEAR AND SOCIETAL DISCOURSE

Critical Discourse Analysis theory focuses on areas of interest with socially constructed problems and the social groups around an organisation's work. Nuclear power is a complex field which provides opportunities to examine discourse.

Kinsella, (2005) sums nuclear discourse into 4 main themes; mystery, potency, secrecy, and entelechy. Nuclear discourse can be used as a space for various studies: Proops, (2001) rationalised the apparently irrational commercial nuclear development; Pajo, (2016) identified two contrasting discourse paradigms, changing from a scientific perspective to political over time; (Diaz-Maurin and Kovacic, 2015) investigated the unresolved controversy over nuclear power. This study aims to further explore the use of discourse to understand nuclear energy, but this time as an organisational reflexive piece. Considering the external influences on the discourse these identified themes will undoubtedly affect the organisational discourse, with energy controversy, mystery, secrecy and fear being pervasive for the nuclear sector.

CRITICAL DISCOURSE ANALYSIS AS METHOD

Critical Discourse Analysis (CDA) as outlined by Fairclough, (2005) provides a framework that not only systematically examines the content of texts via the structural aspects but also takes into account the broader social concerns behind it. CDA enables us to unpack information about relationships between the authors and their intended audience, as well as the external influences. Other analysis methods, such as content analysis, focus on the linguistic text which would not satisfy the aims of this study.

This study primarily follows the CDA version presented by Fairclough, (2015) in understanding language as a medium of power: social groups have more power if they are able to influence acts of other groups. Within megaprojects this phrasing may conjure contentious issues, but is useful in engaging stakeholders. Although directly analysing these power relations will not be the core focus of this study, it has been approached from this point of view as social responsibility of megaprojects relies on stakeholders and relationships. Taking this starting point is crucial as organisational discourse is produced by one leading social group in response to others, helping explain why the discourse changes.

In this paper attention was placed on documentation found in the public domain to examine how social value is discussed and practised through its inscription in the textual discourse documentation (Joerges and Czarniawska, 1998). Before analysis it was expected that officially produced documentation will be strategically positioned

by the organisation, but respected as a coherent discourse space.

This study will use quantitative approaches minimally to demonstrate a broad analysis. Van Dijk, (1997) outlines the issues with text counting, but appreciates it can add to the analysis with repeatable outcomes. Alternatively, he explains the introspection needed in interpreting and explaining the documents qualitatively. This study looked at text (description of discourse), relationships between utterances (interpretation of text), and local and broad contexts (explanation of texts) following the 3 main levels of analysis outlined by Wodak et al., (2001).

Analysing this text enabled us to examine how social value as a concept has been embodied in the organisational practices of the NDA since inception. In so doing, we take the view that text constitutes a space for productive struggle across a variety of stakeholders (Taylor and Van Every, 1999; Bean and Buikema, 2015) with the power relations embedded within the text.

METHOD

The publications chosen for analysis are published on the official, external facing NDA website. From 2005 to April 2017 there were a total of 294 NDA textual documents collated. This sample of texts makes up all of the official documents published by the NDA on the website, and all of the blog posts. Although seemingly very different types of text the strict security and vetting policies within the nuclear sector and specifically NDA means anything published online with the NDA name will have undergone a rigorous review. The range of formal to informal texts exist in the same organisational, outward facing space.

The NDA blog has been produced as *"a place for anyone with an interest in the progress of nuclear decommissioning in the UK"*. It began in November 2015 and has 64 posts of short, informal pieces around work and events across the NDA estate tagged with categories: Innovation and savings; Socio-economic; Skills; R&D; Supply Chain; Waste Management; International Activities. They all pertain to social value through organisational strategy, with 'socio-economic' being most obvious but 'skills' being the most common.

Of the 230 official, published documents 177 are listed as 'Corporate Reports', including memorandums of understanding, newsletters, and performance and technical reports. The rest are listed as 'Guidance', 'Freedom of Information Release', 'Transparency Data', and 'Promotional Material'. Not all practices across the complex estate are presented, focusing mostly on management or high-level approach to practices.

After collating the texts they were categorised by their NDA description and reviewed to get an overview of the discourse content and how this has changed over time. Broader reading linked to the content, the energy sector and UK policy supplemented the discourse to understand the external context and influences. Extensive academic and grey literature covering public attitudes and nuclear energy developments contributed towards the explanation discourse, with key points of reference cited.

ANALYSIS

This analysis aims to look at who is writing the text, for who, why, and what affect this had on the discourse (Fairclough, 2015), following three overlapping steps

for analysis (Wodak et al., 2001): description, interpretation, and explanation. The explanation provides insight into what shapes NDA discourse, how this discourse agenda plays out, and how has it changed over time.

CDA allows us to trace the social value discourse further back before the Social Value Act in 2012, with previous context affecting the current discourse. This discourse will be examined from 2004, since the establishment of NDA. This sample of documents provided snapshots of the narrative around how the NDA has been attempting to engage with their stakeholders.

DESCRIPTION AND INTERPRETATION OF TEXTS

A significant external factor in shaping the discourse, which cannot be ignored to start, is the growth and maturing of the internet. The accepted norms of what is expected online contribute to transparency and access to information. This has worked in the favour of the nuclear sector acknowledging the importance of stakeholder engagement and contributed to how the discourse physically evolved.

NDA extended its reach with the blog, including other voices and perspectives. It shows a range of activities behind decommissioning, showcasing content which serves many purposes (e.g. equality, gender diversity, events). The authors of the blog pieces are not only NDA staff, but also affiliate or external employees. The authors are named alongside a photo, description of their job role, and links to other writing. Providing this information of personal authorship changes the style of discourse, compared to more formal documentation. Readers can make assumptions of the reasoning behind the writing, along with highlighting the aim of the author and targeting an audience through category tagging.

The contrasting styles of different texts are clear. Legal documents are very formal, newsletters are less so; strategy documents are written in a personal language, putting a face on the organisation; blogs are casually written as would be expected of an open dialogue. Similarly, presentation style can be interpreted to assume who the intended audience is. Plainer text is most likely for interested experts and professionals, whereas colourful text and graphics are more appealing to a wider audience, emphasising certain documents for more attention.

From across the complex work of the NDA estate not all practices appear fully in the documents: those communicated have been deemed significant for sharing in a transparent manner (but that will not compromise security and safety). This demonstrates the prominence of the social value concept changing depending on the intended audience. This may create tensions in how social value is defined if ideologies of different stakeholders have not been addressed simultaneously. For example, a social value discourse can be seen throughout all 22 newsletters which give estate overviews for a general audience.

It is interesting how the NDA often makes the organisation personal e.g. 'write to us', documents such as strategy use 'we' and 'us' a lot. Whereas stricter documents use neutral language (e.g. legal directions). Text refers to sites as 'it' or 'them' removing them as directly part of NDA, which is accurate as they are managed by contracted Site Licensed Companies. A word frequency analysis across all material showed 'site' and 'waste' ranking highly. 'Site' appears as a visual reminder how the work is spread physically. This alludes to social practices across geography and organisational structure, implying ownership to the stakeholders on site. Whereas

'Waste' repeatedly comes up across all types of documents, reiterated by waste management targeted documents: a technical, managerial and social issue at once.

Initial data queries used a simplistic view of 'social' and associated words to get an overview of content. Only 2 documents contain the phrase "social value" (Managing NDA Information, 2015; 5 Year Research and Development Plan, 2013), with neither focusing specifically on 'socioeconomics'. The query showed the Value Framework as the most predominantly 'socially' oriented, and legal directions documents for handover of estate the least. Technical, legal, safety and safety documents appear not connected to social value from this initial search. However, the Value Framework 2016, and Integrated Impact Assessment Report 2016 deal with socio-economic impacts alongside health and safety, security, environment, risk and hazard reduction, finance, environment and enabling the mission. This demonstrates the wider view of what can be deemed as wider social implications.

Documents not focusing on "social" terms do not necessarily have no social value. The overall NDA mission is repeatedly stated over time as a variation on *"Deliver safe, sustainable and publicly acceptable solutions...taking full account of our social and environmental responsibilities, always seeking value for money for the taxpayer and actively engaging with stakeholders."* Clarity and transparency for decision making, design and organisational changes have value in information sharing (Colombo and Femminis, 2014). Considering the fear and apprehension surrounding nuclear works, a transparent approach sets the precedent for fostering trust.

EXPLANATION OF DISCOURSE DEVELOPMENT OVER TIME

The emergence of social value depends on the ideologies and positioning which frame organisational practices. Therefore, it is necessary to uncover what drives this discourse agenda. Following a timeline three phases can be seen shaping the NDA's discourse – moving from a focus on energy security, to safety concerns, and back again to security focused on societal concerns. This reflects the similar contrasting and changing scientific and political discourses identified by Diaz-Maurin and Kovacic (2015) in the US.

From inception the NDA with the Energy Act 2004 (Department of Energy and Climate Change, 2004) there was focus on socio-economic concerns, responding to the requirement to *"benefit[s] the social and economic life"*. This progressed with the debated government push for 'Big Society' and 'Localism' around 2010 (Kisby, 2010; Lowndes and Pratchett, 2012) increasing pressure on infrastructure projects to respond to social concerns, eventually contributed to the Social Value Act 2012 which frames public projects in the UK within unique constraints.

Energy security

The UK's energy landscape before the creation of the NDA in 2004 was influenced by a multitude of political and economic factors. Energy security was brought to the fore through incidents such as the fuel protests in 2001 and electricity blackouts in Europe and North America in 2003, but was then viewed as not taken seriously in a White Paper published in 2003 (Pearson et al., 2010). With rising fuel prices, UK nuclear power companies failing, and the UK becoming a net energy importer in 2004, energy security was becoming a higher priority. This led to the government committing to new generation nuclear in 2005, with the formation of the NDA to deal

with the nuclear legacy. The initial discourse reflects this period, focusing on legal directions, guidance notes and Memorandums of Understanding with government bodies (including stating *"…and public confidence in the process is maintained…"* amongst legal requirements) – ensuring a transparent handover of energy estate in unsure times.

Nuclear safety

The Fukushima Daiichi accident in 2011 (the year before the Social Value Act, 2012) marked a new period of nuclear energy, increasing distrust and fear. This impacted nuclear power providers and governmental plans internationally, and although the UK continued with its commitment to nuclear energy this was the beginning of a phase of increased safety concerns (Wittneben, 2012). Four months after the accident the NDA released a revised version of their Anti-Fraud, Bribery and Corruption Policy stating *"The NDA prohibits and will not tolerate fraud, theft, acts of bribery or any other forms of corrupt behaviour"*. Then in February 2012 the Insight newsletter featured safety, *"2011 saw three of the NDA's sites prove themselves to be at the forefront of health and safety management internationally"*. These were moves of reassurance to stakeholders, a reminder of the NDA's dependability.

Societal security

The nuclear landscape is again moving back to a period characterised by security, now derived from societal issues such as jobs and economic security. With political rhetoric across the UK turning to protecting communities in an uncertain economy, a focus on societal impacts of work has become paramount. A 2016 NDA newsletter now frames Japan's as a business opportunity as *"the Fukushima Dai-ichi site is abuzz with activity and a 'can do' attitude towards the huge clean-up task…UK technology companies are making a valuable contribution, including a number who have received funding from the NDA"*. With further growth of the social value agenda across the public sector and affecting the private sector, the NDA discourse acknowledges the power of this agenda in gaining support. The blog is being used to talk directly to people with strong statements such as *"We have a lengthy mission to deliver and we need people with the right, in the right place at the right time"* or *"It's really important to maintain positive relations with our communities…"*. All documents in the study which resulted as most socially oriented in the text search analysis were published in this time.

DISCUSSION

The most interesting finding is that social value has indirectly been in the discourse since the conception of NDA: the social implications of transformative megaprojects was written into the Energy Act 2004 focusing on socioeconomics. This process of document analysis assumes the social implications of megaprojects become inscribed within the organisation documentation, essentially creating the social value which is observed. (Joerges and Czarniawska, 1998). This inscription reflects the previous and existing social value of megaprojects and the implicit social impacts, presenting social value as a discursive practice. This initial analysis has shown rather than a lack of awareness around social value there has been an ongoing discussion which goes beyond measurement or definition.

A corollary is that much work has been placed on identifying tangible outcomes (e.g. number of people on skills development programmes, employment levels), with much less attention paid to identifying the intangible outcomes. These quantified impacts are often framed in relation to the NDA's socio-economic strategic goals, so there is a conflation between economic and social when discussing social value. What constitutes 'social' seems to be wide and varied, as the term is used in a variety of contexts, from social impacts, to sustainability, to community and stakeholder relations. This relates back to the identified lack of understanding of social responsibility in megaprojects. (Zhou and Mi 2016)

That said, the motives, drivers and demands for social value are different depending on the interests of groups. It was found that it is not convergence of needs that help steer strategy, but divergence that generates resistance which is instrumental to change. Thus, the contestations on what constitutes social value leads to opportunities for productive change (Courpasson et al., 2012) amidst the nuclear discourses of secrecy, fear and more (Kinsella 2005).

Embracing uncertainty can be positive in the long term for decision making in projects (Salet et al., 2013), and responding to this added complexity by integrating social issues into management contributes to performance (Invernizzi et al., 2017). Adaptive capacity of a project can be critical in responding to complexity in megaprojects: reducing complex issues to simplified process and scope does not always serve the best interests of the project, often creating issues at a later stage due to inflexibility (Giezen et al., 2015).

Social value practices are not going to drastically change projects, but take megaprojects beyond the success viewed only as cost and time. It makes them more palatable by bringing transformative impact to the fore: social value is not just a measure, but a symbol for a call to action.

CONCLUSIONS

This work is significant in demonstrating how a megaproject responds to new legislation and increasing calls to demonstrate social value as a concept in their work, navigating through the multiplex of relationships and unpacking the motives behind the actions that reinforce (and in some cases, resist) the social value agenda.

Social value needs to be studied in complex environments to further conceptualise how it is actualised (Sinkovics et al., 2015), as the reductive approach cannot always be applied, with megaprojects as complex adaptive systems providing such opportunities. This analysis helps illustrate text as a space in which complex projects demonstrate and create social value. This can contribute to the understanding of social value in wider literature and how a fluid concept can be captured and defined within complex factors.

This study could be followed with further investigation of social value discourse, contributing towards developing theory of social value construction and the significance of communication infrastructure. An emphasis on engaged versus non-engaged, hard-to-reach (possibly silent majority) of stakeholders is important in understanding what is missing in the social value dialogue. Future work searching documents created and published in different spaces would provide a useful comparison of discourse and the success in creating social value.

By delineating the various positions and ideologies, we have begun to explore the

drivers and demands for social value as interpreted (in multiple ways) by the various stakeholders across NDA. Future work exploring the significance of power balance in relationships and influence on decision making are needed as to which social group's view of social value is most important.

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