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ARTICLE

'Tick the box and move on': compartmentalization and the treatment of the environment in decision-making processes

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Abstract

Legal decision-making processes are contending with increasingly urgent and complex environmental issues. While the importance of treating these issues holistically has long been recognized in environmental law, obstacles seem to exist that block decision makers in the planning system from taking integrated approaches to environmental issues. This article approaches this problem from a grounded perspective. It draws on original empirical research findings from a socio-legal ethnographic research project conducted at a public local inquiry in South Wales (the inquiry into the M4 Corridor around Newport scheme). The article suggests that embedded assumptions in legal decision-making processes might partly account for this often limited response. It proposes that such processes tend to 'compartmentalize' and that this tendency has an adverse impact on the treatment of the environment, holding back efforts within environmental law that seek to embed more holistic approaches to environmental decision making.

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1 | INTRODUCTION

The profile of the environment in popular consciousness, in particular awareness of the scale of environmental challenges and human dependency on the environment, has risen in recent times. Foundational texts in environmental thought explore the interconnected nature of the environment and advocate for the holistic treatment of environmental issues.[1] This is reflected in environmental and sustainable development legislation that recognizes the inter-related nature of environmental issues and human interdependence with the environment.[2] Despite this, however, roadblocks seem to exist that stop holistic approaches being effectively translated into practice in the planning system. This article suggests that embedded assumptions in legal decision-making processes might partly account for this often limited response. It proposes that such processes tend to 'compartmentalize' and that this tendency has an adverse impact on the treatment of the environment, holding back efforts within planning and environmental law that seek to embed more holistic approaches to environmental decision making. These questions grow increasingly relevant as decision-making processes at multiple levels of governance encounter more complex environmental issues. If taken-for-granted assumptions operating within these processes negatively affect the treatment of the environment, it is essential that these assumptions are identified and understood.

This article develops the concept of compartmentalization through an original empirical ethnographic study conducted at a public local inquiry[3] into the M4 Corridor around Newport scheme (M4CAN inquiry) in South Wales between 2016 and 2019. This consisted of participant observation (taking fieldnotes at 20 sessions over the course of the inquiry and attending one site visit) and conducting semi-structured interviews with inquiry participants and planning stakeholders in Wales (22 interviews in total). The M4CAN inquiry was established to consider the Welsh Government's proposed scheme to address traffic congestion on the M4 motorway near Newport. This was a major infrastructure project, the proposed route of which went through the Gwent Levels, including four Sites of Special Scientific Interest (SSSIs).[4] The Gwent Levels are 5,856 hectares of marshland habitat, consisting of a complex drainage system of reens, locks, and grips.[5] In total, 2,755 metres of the reens and 9,373 metres of the field ditches that criss-cross the area would have been lost to the scheme.[6] These are home to a range of rare invertebrates and aquatic species that are reliant on this rich, interconnected system; many of these rare species are particularly sensitive

[1] B. Commoner, *The Closing Circle* (1971); A. Leopold, *A Sand County Almanac and Sketches Here and There* (1949).

[2] See for example the Wellbeing of Future Generations (Wales) Act 2015; Council Directive 2001/42/EC on the Assessment of the Effects of Certain Plans and Programmes on the Environment [2001] OJ L 197/30; Council Directive 2011/92/EC on the Assessment of the Effects of Certain Public and Private Projects on the Environment [2011] OJ L 26/1, art. 5(1)(f).

[3] Public local inquiries are a common feature of UK planning law. They are appropriate for complex proposals where there is likely to be substantial third-party representation. See V. Moore, *A Practical Approach to Planning Law* (2010, 11th edn) 352.

[4] A Site of Special Scientific Interest is a conservation designation in UK environmental legislation.

[5] 'Traditionally, fields [on the Gwent Levels] are drained by a system of ridge and furrow or "grips" (shallow trenches) into the extensive system of interconnected ditches that surrounded each field. The larger of these are known as reens.' Countryside Council for Wales, *Gwent Levels: Whitson Site of Special Scientific Interest: Your Special Site and Its Future* (2008) 3, at <https://naturalresources.wales/media/636520/SSSI_0148_SMS_EN0013223.pdf>.

[6] J. Poole, *Proof of Evidence on the Gwent Levels Sites of Special Scientific Interest of Jessica Poole on Behalf of the Natural Resources Body for Wales* (2017) 17.

to changes in habitat.[7] This inquiry was hugely significant for the area's inhabitants, both human and non-human. Environmental objectors interviewed for this project felt that it was likely that the scheme would be approved. While the inspectors did indeed recommend that the scheme be approved, the First Minister disagreed with the inspectors and did not approve the scheme. This surprising turn of events further underlines the unique and significant nature of this case study.

This inquiry has additional significance for the Welsh legislative context, as it was seen as a test case for the Wellbeing of Future Generations (Wales) Act 2015 (WFGA), a landmark act that sets a progressive approach to sustainable development.[8] The scheme proposers at this inquiry contended that congestion on the M4 by Newport was a serious problem that affected regional economic development, and that this scheme was the solution. This framed the inquiry as a conflict between economic development and environmental protection – exactly the kind of trade-off between economic, social, and environmental priorities that the WFGA aims to address.[9] The WFGA seeks to embed a holistic approach to decision making in Welsh public bodies;[10] therefore, examining the impact of compartmentalization on the treatment of the environment in a decision-making process in Wales is of particular relevance to this piece of legislation.

The dangers of managing environmental issues in isolation have long been recognized in environmental thought. Compartmentalization as a harmful product of rationalist philosophy has been explored by ecofeminist and environmental justice theorists. Bosselmann, for example, has examined the damaging impact of compartmentalization among other reductionist tendencies in environmental law.[11] Similarly, Plumwood, among other ecofeminists, has identified and critiqued the impact of rationalist philosophy in society, which includes compartmentalization.[12] These theorists have considered compartmentalization as one of a suite of issues engendered by the dominance of rationalist philosophy; their work is primarily a critical theoretical engagement with rationalist philosophy and its impact on the environment. This article approaches the concept from a more grounded perspective; it considers compartmentalization in a situated decision-making process and investigates how it interacts with and affects the other forces at play in that process. It focuses on compartmentalization as the way in which decision-making processes organize themselves to consider specific issues within discrete compartments.[13] This article contends that compartmentalization shapes how legal decision-making mechanisms treat environmental issues, and that this can inhibit the progress of integrated approaches to the environment. Through a socio-legal ethnographic study of a landmark inquiry with significant environmental implications, it brings a grounded understanding of compartmentalization to academic and policy debates that seek to assess the effectiveness of novel approaches in environmental and sustainable development legislation. It contributes to the field of environmental justice scholarship by examining the processes and techniques through which compartmentalization plays out at the level of

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[7] Id., p. 14.

[8] J. Davidson, *#futuregen: Lessons from a Small Country* (2020) 176.

[9] A. Davies, Wellbeing of Future Generations Stage 3 Deb, 10 March 2015, 16:13; A. Pigott, 'Imagining Socioecological Transformation: An Analysis of the Welsh Government's Policy Innovations and Orientations to the Future' (2018) 6 *Elementa: Science of the Anthropocene* 1.

[10] Wellbeing of Future Generations (Wales) Act, s. 5(1).

[11] K. Bosselmann, 'Losing the Forest for the Trees: Environmental Reductionism in the Law' (2010) 2 *Sustainability* 2424.

[12] V. Plumwood, *Environmental Culture: The Ecological Crisis of Reason* (2002).

[13] M. A. de Matteis and C. Wilson, 'Compartmentalization' in *Brenner's Encyclopaedia of Genetics*, eds S. Maloy and K. Hughes (2013, 2nd edn) 106. Cell membrane processes have been substituted for decision-making processes.

an individual decision-making process, and further contributes to the literature within environmental law scholarship that investigates issues affecting environmental decision making.[14]

This article first outlines compartmentalization as it is understood in environmental thought and as a process of rationalist philosophy. It then describes how processes of compartmentalization played out at the M4CAN inquiry. It is proposed that processes of compartmentalization at the inquiry fell into two categories, epistemic compartmentalization and legal compartmentalization, and that these processes had a negative impact on the treatment of the environment at the inquiry. Epistemic compartmentalization denotes how inquiry processes tended to prioritize technical knowledge over testimony speaking to wider concerns and values; legal compartmentalization denotes how legal techniques and arguments tended to reinforce isolated treatment of environmental issues. The final section explores the response of participants to compartmentalization and their impact on the broader context.

2 | COMPARTMENTALIZATION AND ITS IMPACT ON THE ENVIRONMENT

2.1 | Compartmentalization as it sits within environmental legal thought

Compartmentalization, or 'lumping' and 'splitting' as Zerubavel terms an approximate process, is a common mode of thinking that enables us to make sense of our social world.[15] Dividing information gleaned from a messy, interconnected reality into discrete compartments is part of producing what Jasanoff terms 'serviceable truth', the kind of knowledge required by regulatory systems.[16] While a sensible tool for understanding our lived reality, this approach can be problematic when conducted by structures of governance. Scott argues that the state's tendency to simplify the social world can have negative consequences, in that features that do not fit into the schema, such as informal knowledge and improvisational practices, are ignored or devalued.[17] Analysis of these complex forms of knowledge construction and legitimation form a rich strand of science and technology studies (STS) and environmental legal scholarship.

The potential risks associated with compartmentalization are explored in foundational environmental texts, notably in the work of Barry Commoner. *The Closing Circle* not only underlines the necessity of developing a holistic understanding of the environment, but also identifies that the tendency within industrial science to specialize constrains its ability to respond appropriately to environmental challenges.[18] As Egan states, paraphrasing Commoner,

> [b]y concentrating things down to their smallest elements, we reduce our scientific peripheral vision, limiting our capacity to consider – never mind recognize – the potential for multiple causes and effects … [Ecology] has amply demonstrated …

[14] See M. Aitken, 'Wind Power Planning Controversies and the Construction of "Expert" and "Lay" Knowledges' (2009) 18 *Science as Culture* 47; M. Lee et al., 'Public Participation and Climate Change Infrastructure' (2013) 25 *J. of Environmental Law* 33; B. Wynne, *Rationality and Ritual: The Windscale Inquiry and Nuclear Decisions in Britain* (1982).

[15] E. Zerubavel, 'Lumping and Splitting: Notes on Social Classification' (1996) 11 *Sociological Forum* 421, at 422.

[16] S. Jasanoff, 'Serviceable Truths: Science for Action in Law and Policy' (2015) 93 *Texas Law Rev*. 1723.

[17] J. Scott, *Seeing like a State: How Certain Schemes to Improve the Human Condition Have Failed* (1998) 6.

[18] Commoner, op. cit., n. 1, p. 180.

> that living systems are subject to a multiplicity of intricate relationships on macro and micro scales that defy definitive specialized explanations.[19]

This perspective on environmental policy informs the principle of environmental integration in European Union (EU) law, which establishes an obligation to integrate environmental protection concerns beyond environmental policy and into other EU policy areas.[20] This understands the integration problem in environmental planning in terms of a need to consider environmental protection beyond traditional environmental policy areas, recognizing that a wide range of policies can have significant negative effects on the environment and therefore the need to consider the environment in their planning. This is a little different from the integration problem as set out by Commoner, which recognizes that a focus on the functioning of isolated processes and elements of the environment leaves us unable to account for the complex effects and interrelationships that make up living systems, and the possible consequences of actions on these systems. This notion is closer to the idea of cumulative effects present in Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA).[21] These regulatory frameworks oblige developers to consider cumulative environmental effects as part of their environmental assessment. These principles and mechanisms place duties on decision makers and developers; they provide a top-down approach to the problem of integration. This article contends that these efforts to promote integrated approaches to environmental protection are hampered by forces that embed compartmentalization at the grounded level of individual decision-making processes. Compartmentalization, it is suggested, is embedded in decision-making processes as it is a feature of rationalized work systems; in particular, it is encouraged by the prevalence of economic rationalist approaches to decision making. The connections between rationalization and compartmentalization are explored in the following section.

2.2 | Compartmentalization as a process of rationalization

Compartmentalization can be described as the way in which decision-making processes organize themselves to isolate specific issues for consideration within discrete compartments. It is a trait of rationalized work structures,[22] one identified by Weber in his work on the dominance of formally rational techniques in society, which he termed 'rationalization'.[23] Work processes can be compartmentalized to make them more efficient; evidence can be compartmentalized to make it more readily available for analysis. Patterns of work that exhibit a high degree of formal rationalization are highly compartmentalized and rule bound. Weber notes that rationalized processes are essential to a capitalist society. The market requires predictable behaviour and thus encourages other sectors of society to adopt these kinds of behaviours. Weber contends that legal institutions have been shaped by rationalization; the law is supposed to be as calculable as a machine, logically

[19] M. Egan, 'Why Barry Commoner Matters' (2009) 22 *Organization & Environment* 1, at 14.

[20] Treaty on the Functioning of the European Union [2012] OJ C 326/47, art. 11.

[21] Council Directive 2011/92/EC, op. cit., n. 2, art. 3(5) (annex II, art. 2); Case C-392/96 *Commission* v. *Ireland* [1999] ECR I-5901; Council Directive 2001/42/EC, op. cit., n. 2, art. 5(1) (annex IV, art. 4); Case C-295/10 *Valciukiene* v. *Pakrujo rajono savivaldybe* [2011] ECR I-8822.

[22] M. Weber, *Economy and Society: An Outline of Interpretive Sociology*, *Vol. I* (1968) 85.

[23] R. Brubaker, *The Limits of Rationality: An Essay on the Social and Moral Thought of Max Weber* (1991) 2.

ordered and reliant on formal procedures.[24] Evident in the relationship between rationalization and capitalist societies, rationalizing processes fit well with economic rationalist perspectives on human action that see people as rational actors seeking to maximize their utility in any given situation.[25] Economic mechanisms in environmental law compartmentalize environmental harms and benefits. This is particularly evident in risk-based environmental regulation. Such regulation tends to view harm in measurable terms, thus encouraging a compartmentalized treatment of environmental harms.[26] The roots of risk assessment highlight the parallels between risk-based regulation and economic policy; environmental regulation framed in terms of risk is easier to align with market-based mechanisms within environmental law.[27] Heyvaert notes that compartmentalization, as opposed to integration, is the prevailing trend within EU risk regulation.[28]

The beginning of this section proposed that the environment needs to be understood holistically. This would suggest that compartmentalization, in hampering these holistic responses, has a negative impact on the environment. Specifically, this article contends that this is the case because compartmentalization does not account for the interconnected nature of the environment, and because it limits the range of perspectives considered in the decision-making process. These impacts are explored below.

2.3 | The interconnected nature of the environment is not accounted for

Several environmental theorists contend that interconnections between humans and nature are dismissed in prevailing Western philosophies,[29] and that the dualist human–nature relationship established in prominent strands of Enlightenment rationalist thought underpins environmental legislation. Bosselmann contends that modern environmental legislation has developed in an anthropocentric manner and claims that this particular conception of the human–nature relationship engenders a fragmented treatment of nature in law.[30] Rationalist philosophy is criticized by some theorists for promoting an instrumentalist view of nature that prioritizes economic progress

[24] A. Eisen, 'The Meanings and Confusions of Weberian "Rationality"' (1978) 29 *Brit. J. of Sociology* 57, at 61. Weber's analysis draws on the civil law tradition, more rationalist for Weber than that of the common law. Weber's critics term this his 'England problem', as he links formal legal rationality to capitalism, and yet views English common law as irrational, despite England's long relationship with capitalism: see S. Ewing, 'Formal Justice and the Spirit of Capitalism: Max Weber's Sociology of Law' (1987) 21 *Law & Society Rev*. 487. This debate lies beyond the scope of this article; however, it is helpful to consider that the legal system in England and Wales has a number of traditions and influences on its development. It has an 'anti-rationalist' influence, but also a growing rationalist influence, whose growth is noted with concern by Gee and Webber: see G. Gee and G. Webber, 'Rationalism in Public Law' (2013) 76 *Modern Law Rev*. 708.

[25] H. Simon, 'Rationality as Process and as Product of Thought' (1978) 68 *Am. Economic Rev*. 1, at 2.

[26] A. Ross Brown et al., 'Toward the Definition of Specific Protection Goals for the Environmental Risk Assessment of Chemicals: A Perspective on Environmental Regulation in Europe' (2017) 13 *Integrated Environmental Assessment and Management* 17, at 33.

[27] K. Morrow, 'Rio+20, the Green Economy and Re-Orienting Sustainable Development' (2012) 14 *Environmental Law Rev*. 279.

[28] V. Heyvaert, 'Governing Climate Change: Towards a New Paradigm for Risk Regulation' (2011) 74 *Modern Law Rev*. 817.

[29] Plumwood, op. cit., n. 12. p. 4; E. Grosz, 'Bodies and Knowledges: Feminism and the Crisis of Reason' in *Feminist Epistemologies*, eds L. Alcoff and E. Potter (1993) 187; A. Grear, 'The Vulnerable Living Order: Human Rights and the Environment in a Critical and Philosophical Perspective' (2011) 2 *J. of Human Rights and the Environment* 23.

[30] Bosselmann, op. cit., n. 11, p. 2431.

and fails to recognize environmental value.[31] This makes it more difficult to envisage and therefore to protect the environment as an irreducible whole.[32] O'Brien and Guerrier contend that setting up separate compartments of values and categorizing them under terms such as 'cultural value' is a way of defining and thus controlling what is valuable about the environment.[33] This supports the argument made by Jackson, who claims that compartmentalization assumes a level of equal treatment between the discrete elements under investigation.[34] This assumption of equity can obscure inequalities in treatment, thus making them harder to identify and address.

Commoner argues that an ingrained tendency to understand a problem by focusing on its component parts, exacerbated by the rise of industrial science, underlies our inability to appropriately respond to the environmental crisis.[35] The impacts of this tendency on the environment can be seen in myriad ways. While specific species' extinctions are starting to be linked to these cumulative impacts, the complexity of these processes makes them difficult to capture.[36] The dominance of a compartmentalized view of nature makes it harder to account for cumulative impact. While instruments such as the EIA Directive attempt to ensure proper consideration of cumulative impacts on the environment,[37] several authors suggest that effective consideration of such impacts in the EIA process in the United Kingdom (UK), EU, and North America has proven challenging, with some studies recommending improved guidance and definitions and others arguing that systemic issues account for unsatisfactory treatment of cumulative impact.[38]

2.4 | The range of acceptable responses to the environment is limited

It is a central argument of public participation scholarship that such participation can enrich the understanding of environmental value in decision making, because 'publics do not adhere to the logically consistent reasoning of philosophers, but intuitively construct and reconstruct their environmental value positions in the light of personal experiences, relationships and events'.[39] Davies suggests that plans relying on 'expert-led designatory systems' can feel abstracted from the public; public participation in decision making allows for a more diverse and holistic understanding

[31] E. Gudynas, 'Buen Vivir: Today's Tomorrow' (2011) 54 *Development* 441, at 447.

[32] Bosselmann, op. cit., n. 11, p. 2425ff.

[33] M. O'Brien and Y. Guerrier, 'Values and the Environment: An Introduction' in *Values and the Environment: A Social Science Perspective*, eds Y. Guerrier et al. (1995) i, at xiv.

[34] S. Jackson, 'Compartmentalising Culture: The Articulation and Consideration of Indigenous Values in Water Resource Management' (2006) 37 *Aus. Geographer* 19, at 26.

[35] M. Egan, 'The Social Significance of the Environmental Crisis: Barry Commoner's *The Closing Circle*' (2002) 15 *Organization & Environment* 443, at 446.

[36] C. J. Johnson et al., 'Witnessing Extinction: Cumulative Impacts across Landscapes and the Future Loss of an Evolutionarily Significant Unit of Woodland Caribou in Canada' (2015) 186 *Biological Conservation* 176.

[37] Council Directive 2011/92/EC, op. cit., n. 2.

[38] E. Masden, 'Cumulative Impact Assessments and Bird/Wind Farm Interactions: Developing a Conceptual Framework' (2010) 30 *Environmental Impact Assessment Rev*. 1; A. Scott et al., 'Evaluating the Cumulative Impact Problem in Spatial Planning: A Case Study of Wind Turbines in Aberdeenshire, UK' (2014) 85 *Town Planning Rev*. 457; L. M. Cooper and W. R. Sheate, 'Cumulative Effects Assessment: A Review of UK Environmental Impact Statements' (2002) 22 *Environmental Impact Assessment Rev*. 415.

[39] A. Davies, 'What Silence Knows: Planning, Public Participation and Environmental Values' (2001) 10 *Environmental Values* 77, at 98.

of environmental value.[40] Implicit in this notion is the idea that a diversity of voices in decision making benefits the environment.[41] This echoes approaches within environmental justice scholarship that seek to relate global environmental concerns to local environmental issues,[42] which recognize that decision-making processes need to be responsive to interrelated global and local environmental impacts. However, decision-making processes that consider the environmental impact of particular schemes do not tend to recognize interrelated global- and local-level environmental impacts; neither do they make much allowance for emotive responses. Tarlock contends that an over-reliance on technical knowledge in environmental decision making is partly to blame; he argues that environmental law relies too heavily on science, and that there is a need to recognize the value issues present in environmental decision making.[43] An over-reliance on scientific knowledge encourages a compartmentalized treatment of the environment. Scientific research generates valuable information but does not always provide the environmental decision maker with everything that they need. This is expanded upon in *The Closing Circle*, where Commoner notes that 'the separation between science and the problems that concern people has tended to limit what most people know about the scientific background of environmental issues'.[44] He contends that environmental scientists have an ethical duty to make their fields of expertise more accessible to the public, as decisions concerning environmental harms and benefits are political in nature; they need, therefore, to be made by an informed public.[45]

3 | COMPARTMENTALIZATION AT THE M4CAN INQUIRY

The preceding section proposed that compartmentalization is a process of rationalization present in legal decision making, and that it can obstruct integrated approaches to environmental issues. This section identifies and explores two processes, epistemic compartmentalization and legal compartmentalization, that encouraged a compartmentalized treatment of environmental issues at the M4CAN inquiry. As highlighted in the introduction, this article draws on ethnographic research. The following analysis thus develops from ethnographic fieldnotes and interviews from the M4CAN inquiry.[46] In line with ethnographic methodology, this research takes an iterative-inductive approach to data analysis. It draws on insights emerging from the data and developed in continuous reflection between data and relevant theory. This research benefits from a methodology that can capture the situated, shifting dynamics and processes present at the fieldsite. Ethnography is suited to this kind of investigation as it is concerned with 'thick' descriptions of the social world in all of its complexity. Ethnography illuminates the mundane, material behaviours and

[40] Id.

[41] L. Kørnøv et al., 'Mission Impossible: Does Environmental Impact Assessment in Denmark Secure a Holistic Approach to the Environment?' (2005) 23 *Impact Assessment and Project Appraisal* 303, at 313.

[42] G. Di Chiro, 'Living Environmentalisms: Coalition Politics, Social Reproduction, and Environmental Justice' (2008) 17 *Environmental Politics* 276, at 294.

[43] D. Tarlock, 'Is There a There There in Environmental Law?' (2004) 19 *J. of Land Use & Environmental Law* 213, at 243.

[44] Commoner, op. cit., n. 1, p. 193.

[45] Egan, op. cit., n. 35, p. 452.

[46] Consequently, the style of the article shifts somewhat, ethnographic analysis having at times more personal style than theoretical analysis.

practices that make up the lived culture of a particular social world,[47] in this case the M4CAN inquiry.

The M4CAN inquiry was a highways inquiry, which are covered by the Highways (Inquiries Procedure) Rules 1994.[48] They follow a similar process to other forms of public local inquiry.[49] The Secretary of State (in this case, the Welsh Minister for Economy and Infrastructure) calls for an application for a highway and then holds a public local inquiry into the proposal.[50] The inspector reports their recommendations to the First Minister. Should the First Minister disagree with the inspector's recommendations, they must notify people likely affected of their disagreement, and must afford them the opportunity to make written representations.[51] In highways inquiries, the government is typically the scheme proposer and the decision maker.[52] The M4CAN inquiry commenced in February 2017 and closed in March 2018. It was led by an inspector and an assistant inspector. The Welsh Government team was led by a Queen's Counsel. They presented evidence from 23 expert witnesses, and 47 other parties gave evidence, either written or oral. These were a range of residents, interested parties, supporters, and objectors. The most prominent objectors were the Association of British Ports (ABP), the Gwent Wildlife Trust (GWT), and Natural Resources Wales (NRW). The inquiry provided parties with the opportunity to present their evidence; the inspectors listened to the evidence and made their recommendations.

While the public local inquiry is a common mechanism through which the public can participate in planning decisions in England and Wales, some of its characteristics seem inimical to public participation. It is quite a formal procedure; any person taking part in the inquiry is entitled to have representation,[53] and evidence is open to cross-examination.[54] The inquiry heard a considerable amount of complex evidence. The scale of the scheme and of the evidence being considered was daunting, evidenced by the length of the Inspector's Report (561 pages). For many people attending the inquiry, the evidence presented was dense with jargon and difficult to understand. This inaccessibility was mirrored by the inquiry's court-like nature. Yet, while the inquiry was formal, it was also mundane. It was characterized by policy documents and men in suits, big screens, and blue office chairs. For the majority of the time that I sat in the public gallery, the inquiry was taken up with administrative duties: checking on amendments to inquiry documents, updating the inquiry library, making changes to the timetable, and so on. It sometimes felt dry; the importance of the matters being considered seemed at times detached from the everyday running of the inquiry.

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[47] J. Van Maanen, *Tales of the Field: On Writing Ethnography* (2011, 2nd edn) vii.

[48] The Highways (Inquiries Procedure) Rules 1994, s. 3(1)(a)(i).

[49] The Highways (Inquiries Procedure) Rules 1994, s. 24 and Town and Country Planning (Inquiries Procedure) (Wales) Rules 2003, s. 15 both concern 'procedure at inquiry' and have a few small differences. Planning is predominantly an area of devolved legislation. Therefore, this article tends to focus on Welsh planning and sustainable development legislation.

[50] *R (Alconbury Developments Ltd and Others)* v. *Secretary of State for the Environment, Transport and the Regions*, House of Lords, 9 May 2001 [2001] UKHL 23.

[51] The Highways (Inquiries Procedure) Rules 1994, s. 26(4).

[52] P. McAuslan, *The Ideologies of Planning Law* (1980) 55. In the case of this inquiry, the Welsh Government proposed the scheme and the decision on the scheme was taken by the First Minister.

[53] The Highways (Inquiries Procedure) Rules 1994, s. 22(3).

[54] Id., s. 24(3).

3.1 | Epistemic compartmentalization

3.1.1 | General and scheme-specific knowledge

This article proposes the concept of epistemic compartmentalization to identify processes at the inquiry that encouraged a compartmentalized treatment of knowledge, such as processes that prioritized technical knowledge and devalued broader understandings of environmental value.[55] Evidence presented at the inquiry was often treated in ways that encouraged compartmentalization. Expertise of generalist witnesses was typically dismissed in favour of witnesses with scheme-specific knowledge. Lack of specific expertise was repeatedly highlighted during cross-examination, with comments such as 'You're not a qualified architect, are you?' and 'You're not a lawyer?'[56] This was illustrated in the evidence of the sustainable development expert witness for GWT. Welsh Government counsel started their cross-examination of this witness, focusing on the section of their evidence that concerned the economy:

> 'So, you're an economic expert?'
> 'Yes', the witness replied, 'I see myself as an interdisciplinary scholar.'
> Counsel for the Welsh Government then asked the witness whether he had read the documents regarding the scheme's economic impact submitted by the witness for the Welsh Government, and highlighted the documents that the witness said he had not read. Counsel seemed to attach great weight to this, explicitly linking expertise and academic rigour to having read these documents.
> 'It doesn't matter if you're the best sustainability expert in the whole world, you didn't do that. You didn't read these documents. Collaborating means reading people that you don't agree with.'
> Counsel then moved on to transport planning, noting that the witness did not identify himself as an expert in transport planning.
> 'Sorry, you're not a transport specialist, so your opinion here is the opinion of someone who lives in South Wales and uses the roads?'
> 'No, I'm an expert in spatial planning. This scheme needs an interdisciplinary taskforce and that's what I have expertise in.'[57]

In this cross-examination, expertise is first isolated from its broader field to a specific knowledge of the scheme; from there, it narrows further to a knowledge of inquiry documents. Throughout the inquiry, witnesses were pushed to be specific in their testimony. Particular aspects of their evidence were focused on in cross-examination. Frequently, counsel would ask a direct yes/no question regarding their evidence;[58] witnesses' reluctance to answer these kinds of questions

[55] This echoes trends identified in work on constructions of knowledge in law: see K. Knorr Cetina, *Epistemic Cultures: How the Sciences Make Knowledge* (1999).

[56] Fieldnotes, 26 April 2017; fieldnotes, 28 March 2018.

[57] Fieldnotes, 26 September 2017.

[58] This focus on detail seemed at times an attempt to corral the witness, a legal technique that illustrates the adversarial nature of this inquiry.

would be cast as unreasonable behaviour.[59] In the Welsh Government's closing statement, objectors' witnesses were described as not having 'appropriate expertise' and their submissions as prevaricating and unspecific.[60] It is typical for cross-examination to challenge witnesses' expertise; what is significant about this approach to cross-examination in this instance is that it illustrates the kinds of knowledge that were valued. It demonstrates how knowledge that sought to keep a broader view of the scheme was discredited and more scheme-specific knowledge was preferred.

3.1.2 | Residents and experts

Lay-person[61] testimony sometimes felt somewhat out of place at the inquiry. The first resident whom I saw give evidence powerfully evoked this sense of awkwardness. From the start, she was emotional in her response to the inquiry. Speaking to the inspectors from the witness chair, she stated, 'I'm finding this inquiry awesome.' Throughout her testimony, she appeared defeatist, convinced that the inquiry would favour the scheme and that there was little value attached to her testimony. This suggests that for this resident, testimony was a tool for protest rather than part of a process of information gathering. The generalized nature of her objection did not conform with the assumption within planning law that residents provide the public local inquiry with local-specific information.[62] In presenting testimony that was emotional and broad in its scope, this resident foregrounded the 'out-of-place' nature of much lay-person testimony at the inquiry.[63] Testimony that promoted the intrinsic value of the environment rather than economic value sometimes felt less relevant. Not all residents provided such testimony and not all such testimony was provided by residents; however, there was a significant overlap between these two groups.

There was concern that expert testimony was the focus of the inquiry. This supports findings of differential treatment of lay-person and expert knowledge in public participation literature.[64] Shrader-Frechette argues that this differential treatment is based on an assumption that assessing environmental risks requires technical knowledge, to be provided by experts; these assessments are not perceived as affecting normative concerns that would require public involvement (echoing

[59] This echoes the directive role played by counsel in Cammiss' study of magistrates' courts: S. Cammiss, '"I Will in a Moment Give You the Full History": Mode of Trial, Prosecutorial Control and Partial Accounts' (2006) January *Criminal Law Rev*. 38, at 48.

[60] Fieldnotes, 8 March 2018; M. Ellis QC on behalf of the Welsh Government, *Closing Submissions on the Behalf of the Welsh Government, M4 Corridor around Newport, Newport Public Local Inquiry* (2018) 144.

[61] A 'lay person' in this article refers to someone who participates in an inquiry not in a professional capacity or as a recognized expert in the field, but in a personal capacity as a local resident of the affected area or as someone who for other reasons feels invested in the issues raised.

[62] C. Forsyth and W. Wade, *Administrative Law* (2014, 11th edn) 806.

[63] This touches on issues of framing, in particular the idea that lay people and policymakers might have different understandings of risk, as they have different perspectives on the issue to which the risk relates – in other words, whether it is a 'justice-related' risk or a 'science-related' risk. The conflicting framings of risk held by lay people and experts are explored by Vaughan and Seifert: see E. Vaughan and M. Seifert, 'Variability in the Framing of Risk Issues' (1992) 48 *J. of Social Issues* 119.

[64] B. Wynne, 'May the Sheep Safely Graze? A Reflexive View of the Expert–Lay Knowledge Divide' in *Risk, Environment and Modernity: Towards a New Ecology*, eds S. M. Lash et al. (1996) 44; Aitken, op. cit., n. 14; M. Lee, 'Knowledge and Landscape in Wind Energy Planning' (2017) 37 *Legal Studies* 3; L. Natarajan et al., 'Participatory Planning and Major Infrastructure: Experiences in REI NSIP Regulation' (2019) 90 *Town Planning Rev*. 117.

Commoner).[65] It suggests that the issues that the inquiry was considering were seen as 'technical' issues and not 'value' issues. At the inquiry, evidence was presented in a language with which many members of the public were not conversant.[66] One resident powerfully described the challenges of participating in the inquiry and of engaging with technical expert evidence: 'I'm not an expert and am relying on experts to fill in the picture.'[67] Lay people frequently attempted to present their evidence in specialized language despite sometimes demonstrating a lack of confidence with it.[68] Evidence presented by lay people was littered with phrases such as 'I'm not an expert'.[69] This suggests a fear that there was a gap between the level of a person's knowledge and the level of knowledge required of an inquiry witness. This article contends that this fear was exacerbated by the sense that a witness would be attacked on any statement that went beyond what they could say with confidence.[70] There was a feeling at the inquiry, evident in the defeatist attitude of the resident whose evidence was described above, that lay-person testimony was treated as being of lesser value.[71] At points, lay-person testimony was directly compared with expert testimony. This was highlighted by one interview participant: 'I mean, I lost track of how many times I heard … a phrase which would go something like "Thank you for your opinion, but the national expert on this, Dr So-and-So …"'[72] Framing resident testimony as emotional further served to devalue it, as evidenced by the Welsh Government's closing statement:

> Cadw have been consulted; they do not oppose the listed building application and have not commented on the proposed relocation. Mr Smith asserted the opposite and, whilst the strength of his feeling of course cannot be denied, his disagreement with the expert witnesses was not supported by analysis.[73]

This devaluing of lay-person testimony was not uniform, however. There were several moments at the inquiry when lay people's participation was encouraged. The inspectors in particular went to great lengths to encourage residents' participation. They did not seem to dismiss lay-person testimony out of hand, even when it contradicted the testimony of an expert.[74] Nevertheless, this discussion of epistemic compartmentalization at the inquiry reveals that scheme-specific

[65] K. S. Shrader-Frechette, 'Evaluating the Expertise of Experts' (1995) 6 *Risk: Health, Safety & Environment* 115, at 117.

[66] MW interview, 14 December 2017; AP interview, 8 January 2018; RW interview, 9 November 2018.

[67] A. Picton, *OBJ0203 Mrs Picton Closing Statement of Evidence* (2018) 8.

[68] This insight echoes Aitken's findings in her 2009 study: see Aitken, op. cit., n. 14.

[69] Fieldnotes, 27 June 2017.

[70] The limiting character of the adversarialism at the inquiry is explored in Section 3.2.2 below.

[71] MW interview, 14 December 2017; IR interview, 23 January 2018; RB interview, 13 August 2018. This tendency is not unique to the M4CAN inquiry; indeed, it is a phenomenon recognized by Aitken and Rydin and colleagues: Aitken, op. cit., n. 14; Y. Rydin et al., 'Public Engagement in Decision-Making on Major Wind Energy Projects' (2015) 27 *J. of Environmental Law* 139.

[72] RB interview, 13 August 2018.

[73] M. Ellis QC on behalf of the Welsh Government op. cit., n. 60, p. 54. 'Of course' was said; it is not in the written closing statement.

[74] Fieldnotes, 27 June 2017. When a resident discussed the problems of the Brynglas tunnels, the inspector seemed very interested and took notes.

evidence tied to particular inquiry documents was preferred to more general evidence.[75] Moreover, residents sometimes felt that the inquiry was geared towards experts speaking on particular issues, rather than residents speaking about impacts on their local area.

3.2 | Legal compartmentalization

3.2.1 | Legal protections

Echoing the previous section, this article proposes the concept of legal compartmentalization to describe how legal techniques and arguments tended to reinforce the isolated treatment of environmental issues. Environmental objectors worried that the inquiry focused on legal protections of specific protected species rather than the wider at-risk habitats.[76] The stronger the legal protection, the greater the amount of inquiry time a species would receive. The NRW coordinator at the inquiry noted that dormice, which are covered by the Habitats Directive,[77] excited a 'massive amount of activity behind closed doors', as the Welsh Government sought to ensure that NRW were satisfied with dormice mitigation measures and would withdraw their objections.[78] The focus on protected species inevitably resulted in some species being ignored. This tendency was exacerbated by limited resources, highlighted by the NRW coordinator:

> We had to prioritize the areas we get involved in in a big scheme like that, and that's why we stick to statutory duties … We have to be focused on what we have got the resources to deal with, but for a lot of the protected species we're then looking at their wider habitat requirements so it's not purely on the numbers, it's that sort of wider connectivity … [W]e're advising in relation to statutory requirements very specific to protected species, and therefore looking at impacts in a particular way, rather than looking at the wider, holistic environmental impacts.[79]

The inquiry tended to focus on protected species and on particular aspects of the laws that enshrined those protections. It became challenging, then, to consider broader issues. Arguments were tied to specific legal requirements and elements of nature protected by particular legal requirements carried greater weight. In a forum where resources were limited and everyone was motivated to put forward their most persuasive case, these legal requirements geared the inquiry towards a narrower consideration of nature.

[75] For example, this was the difference between evidence that raised concerns that the scheme would exacerbate Wales' sharply falling levels of biodiversity (Wales has seen a 56 per cent species decline in the last 50 years (NRW, *A Summary of the State of Natural Resources Report: An Assessment of the Sustainable Management of Natural Resources* (2016)) and evidence that focused on the effectiveness of strategies to mitigate the scheme's impact on protected species.

[76] RB interview, 13 August 2018.

[77] Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora [1992] OJ L 206.

[78] JP interview, 8 November 2018.

[79] Id. The coordinator here recognizes the focus on protected species but disagrees with the notion that this undermines the protection afforded the wider habitat. They argue that in considering the species' requirements, the wider habitat is accounted for. I suggest, however, that assuming that the wider habitat is considered through particular species' requirements is not the same as viewing the wider habitat, or nature more broadly, as a value in and of itself.

3.2.2 | The adversarial nature of the inquiry

Reflecting on the M4CAN inquiry seven months after it ended, the NRW coordinator voiced a frustration echoed in several interviews:

> I was sometimes frustrated … because the inquiry was a proper public inquiry with cross-examination … I wonder if that actually is the best way for the inspectors to find out what they need to know … I think it would have been useful to have had some roundtable discussions … like, 'OK, this week, we are going to discuss impacts on the Gwent Levels as a whole rather than in different boxes.'[80]

The coordinator highlighted that the adversarial procedures of the inquiry seemed to inhibit holistic approaches to issues, entrenching the compartmentalization of different kinds of knowledge. The impact of adversarialism on the treatment of scientific knowledge is of particular relevance. Several interview participants were concerned by this treatment at the inquiry; it was seen as something to fight over.[81] It was highlighted that experts typically stuck to their 'side' and would not acknowledge the validity of a point made by the 'other side'.[82] This jars with the idealistic view of science as underpinned by communality proposed by Merton,[83] and points to the influence of outside factors, such as the 'win or lose' culture of the inquiry.

At one point, frustrated by the defensiveness of one of the witnesses, Welsh Government counsel exclaimed: 'I am simply trying to ensure we get the facts accurate.'[84] This claim obscures the fact that the role of counsel was not to identify accurate facts so much as to lead the Welsh Government case. Further, it postulates that there are right and wrong facts and that it was the purpose of the inquiry to identify the right facts. It highlights that both sides often presented their arguments as if scientific knowledge were black and white. In areas of scientific uncertainty, this black-and-white treatment of scientific knowledge can be problematic.[85] Many factors affecting the scheme's environmental impacts were unknown. This is fairly common in ecology, acknowledged to be an imprecise science.[86] Despite this uncertain knowledge, both sides sought to assert the validity of

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[80] Id.

[81] RB interview, 13 August 2018.

[82] Fieldnotes, 26 September 2017.

[83] R. Merton, 'The Normative Structure of Science' in *The Sociology of Science: Theoretical and Empirical Investigations*, eds R. K. Merton and N. W. Storer (1973) 223. There is considerable debate around the norms that underpin scientific research and what constitutes proper scientific method. While they sit beyond the scope of this article, an interesting introduction to these debates can be found in M. Motterlini, *For and Against Method Including Lakatos's Lectures on Scientific Methods and the Lakatos–Feyerabend Correspondence* (1999).

[84] Fieldnotes, 29 June 2017. It is interesting to consider this claim against Shapiro's analysis of the role of law in constructing the modern understanding of 'fact'. She notes that in the early law courts, 'fact did not carry an intrinsic connotation of truth but was rather a matter whose truth was in contestation'; in other words, facts were assertions to be argued, not truth statements: B. Shapiro, '"Fact" and the Proof of Fact in Anglo-American Law (c.1500–1850)' in *How Law Knows*, eds A. Sarat et al. (2007) 25, at 60.

[85] S. Jasanoff, *The Fifth Branch: Science Advisers as Policymakers* (1990) 11. Concerns about law's use of scientific knowledge, in particular in terms of the rise of the economic-focused empirical risk assessment approach to environmental legal regulation, are explored in D. Kysar, *Regulating from Nowhere: Environmental Law and the Search for Objectivity* (2010).

[86] J. Houlahan et al., 'The Priority of Prediction in Ecological Understanding' (2017) 126 *Oikos* 1, at 2.

their scientific approach.[87] The adversarial nature of the inquiry affected the treatment of scientific knowledge; it discouraged a nuanced approach and encouraged a dismissive attitude towards the testimony of experts on the 'other side'.

4 | COMPARTMENTALIZATION AND ITS IMPACT ON THE TREATMENT OF THE ENVIRONMENT AT THE INQUIRY

The section above has identified epistemic and legal compartmentalization as processes that shaped the treatment of evidence and mode of argument heard at the M4CAN inquiry. The article now considers how these processes negatively affected the treatment of the environment specifically. It explores this question in line with the negative impacts identified above – namely, that compartmentalization makes it difficult to account for the interconnected nature of the environment, and that it limits the range of perspectives considered in the decision-making process.

4.1 | Compartmentalization and the interconnected nature of the environment

The GWT reserves officer met with me a few months after the inquiry closed. It was a warm August day, and so we walked the land under the footprint of the scheme. Reflecting on the inquiry's treatment of the environment, he noted that mitigation strategies addressed elements of the affected environment individually and did not recognize that these elements co-exist:

> I was disappointed that … there was a separation of where they were doing mitigation for reens from mitigation for grazing marsh – you see what I mean, it was almost like taking separate units. Here we have reens in amongst a grazing marsh habitat, but [at the inquiry] it was almost like you could mitigate for reens here, you could mitigate for grazing marsh somewhere else.[88]

The species in the reens and the species of the grazing marsh are entangled with one another, and yet the inquiry treated them separately. The GWT reserves officer feared that this isolated approach would undermine the success of the mitigation strategies.[89] Some participants felt that while environmental impacts were considered, they did not seem integral to the scheme's success or failure. Mitigation strategies were a key constituent of this. While it was important that a mitigation strategy was prepared, the success of that strategy seemed less important. Mitigation as a 'tick-box exercise' was repeatedly raised in interviews, including in the conversation with the GWT reserves officer. He noted that there had been a greater focus on the mitigation

[87] This was done in the Welsh Government closing statement, where the Queen's Counsel contended that the methodologies used by Professors Kevin Anderson and John Whitelegg, witnesses for the environmental objectors, were different from each other, and submitted that the methodology employed by Mr Tim Chapman, a Welsh Government witness, was correct: M. Ellis QC on behalf of the Welsh Government, op. cit., n. 60, p. 259.

[88] RB interview, 13 August 2018.

[89] This echoes concerns raised by Heyvaert where he suggests that the EU needs to develop integrated and systematic climate change policy, moving away from the current approach to risk regulation, which is to '[carve] up risk into discrete manageable segments': Heyvaert, op. cit., n. 28, p. 823.

strategies for certain protected species. He worried that, while invertebrates were more sensitive to the impact of the scheme and were in many ways the characteristic species of the Levels, they did not receive adequate attention.[90] Mitigation strategies by this account were shaped by legal compartmentalization; understanding of the scheme's impact on affected species was constrained by the procedural requirements of mitigation strategies. Moreover, the consideration of impacts on species present in inquiry documents was thus different from, and seemingly less accurate than, the situated understanding gained from knowledge of the local area.

The impact of the compartmentalized nature of mitigation strategies was intensified by the fact that scheme objectors employed them in different ways. Mitigation strategies were treated by some objectors as a mechanism through which they could hold the Welsh Government to a higher standard;[91] others refused to enter into negotiations about mitigation strategies. As a statutory body, NRW's principal aim was to find common ground with the Welsh Government over mitigation strategies as it is their duty to ensure that the Welsh Government adheres to environmental legal obligations. This meant that a considerable proportion of NRW's time and resources was spent on reaching an agreement with the Welsh Government. NRW noted in their closing statement that their objections to the scheme had considerably narrowed; there had been 68 bilateral and multilateral meetings between the Welsh Government and NRW over the course of the inquiry.[92] This underlines that NRW was not in a position to object to the scheme on principle; their role was to consider the scheme's individual environmental impacts. The mitigation strategies proposed by the Welsh Government were a key mechanism through which they did that.

Environmental objectors challenged the compartmentalized nature of mitigation presented at the inquiry and the likely success of these strategies.[93] Demonstrating epistemic compartmentalization, debates around mitigation strategies often turned on the validity of the science underpinning the strategy. The Welsh Government expert witnesses on ecology, in response to their mitigation strategy being dismissed as 'no more than an aspiration', countered that it was 'based on good science and professional judgement'.[94] Objectors expressed frustration with subjective assessments such as 'professional judgement'. The ambiguity allowed in mitigation strategies seemed to reflect inequalities present in the system,[95] where decision makers seemed to place greater faith in the validity of expert knowledge because it was framed as such.[96] GWT's closing statement reiterated their concerns regarding the Welsh Government mitigation strategies. GWT counsel argued that mitigation measures demanded confidence beyond reasonable scientific doubt and that the expert opinion of GWT witnesses demonstrated the existence of such doubt.[97] Mitigation assumes a comprehensive knowledge of the species or habitat. If this knowledge is not comprehensive, the mitigation strategy is less likely to be successful. The NRW coordinator described their objection to the reen mitigation strategy in particular:

[90] RB interview, 13 August 2018.

[91] JD interview, 1 November 2018.

[92] Fieldnotes, 21 March 2018.

[93] Fieldnotes, 27 June 2017.

[94] Id.

[95] JD interview, 1 November 2018.

[96] Rydin et al., op. cit., n. 71, p. 146. Indeed, one of the reports examined in this article stated that disagreement 'fell within the realm of professional interpretation', a framing notably similar to that of the expert witness in this inquiry.

[97] Fieldnotes, 27 September 2017. Summarized in the words of GWT's principal ecological expert witness Sir John Lawton, 'we agree that the mitigation strategy is comprehensive; it is just not effective'.

> We've got experience of developments on the Gwent Levels [and have seen] how hard it is to replace reens; you can do it from an engineering point of view, but we still don't know quite how to get the ecology right. … It was a tricky one because we're not saying we're sure it won't be successful, but we can't say that it will be so. That's a difficult one to balance up, I guess.[98]

This would suggest that the inquiry did not always effectively manage scientific uncertainty. Regulations around mitigation require confidence in the success of mitigation strategies;[99] objectors argued that this was out of step with the levels of scientific uncertainty demonstrated at the inquiry. It seemed that doubts concerning individual mitigation strategies, while numerous, were treated as separate and unrelated areas of scientific debate. There was no space to consider the aggregate impact of these uncertain mitigation strategies on the environment as a whole.

4.2 | Compartmentalization and the range of acceptable responses to the environment

In the months following the close of the inquiry, I spoke with several participants about their experiences. Two environmental objectors shared their frustrations with the inquiry process:

> Take an example of the camel. If I was holding up a piece of straw and saying 'Is this going to harm that camel?', you'd have to say 'No'. You would have to say 'No' for every piece of straw I demonstrated to you as I piled them up. 'Is this going to hurt the camel?' 'Well, no, this one won't.' But eventually, you will break the camel's back … [Y]ou might get some warning signals – the camel's knees are starting to totter a bit – but it's that critical thing that each of those individual ones you look at and think 'This isn't a problem in its own right'.[100]

> The challenges are about putting it into perspective – that it isn't just this M4 case, it's not in a silo. It's about the cumulative and in-combination losses, the continual losses of 'death by a thousand cuts'. And then they'll say 'That's not our business, this is just this case', but it's not just this case. … [T]hat's ridiculous![101]

These comments approach compartmentalization from different perspectives. The first objector describes a form of epistemic compartmentalization, where issues were treated in isolation to the extent that individual problems were treated separately and detached from their impacts. The second objector describes a form of legal compartmentalization, where the scheme's potential impacts were detached from future cases and from the broader environmental context. Both perspectives are discussed below, with the challenges related to epistemic compartmentalization considered first.

[98] JP interview, 8 November 2018.

[99] European Commission, *Guidance Document on the Strict Protection of Animal Species of Community Interest under the Habitats Directive 92/43/EEC* (Final) (2007) 48.

[100] JD interview, 1 November 2018.

[101] JB interview, 18 October 2018.

The importance of designing holistic responses to environmental challenges was raised repeatedly at the inquiry, such as in evidence concerning climate change, a global environmental issue that requires a systemic approach.[102] Interconnectivity issues specific to the Gwent Levels were also mentioned.[103] While these issues were frequently raised, it was felt that they were not adequately recognized at the inquiry; interview participants frequently highlighted their frustration with what they saw as a lack of recognition of the complex, interconnected nature of the habitat.[104] Environmental issues were addressed individually; this potentially had the consequence of making them look less significant. Interview participants noted that objections were tied to specific issues that the Welsh Government would then seek to address.[105] Inherent in this approach was the assumption that all environmental issues could be individually identified and addressed; it further suggested that these individual concerns could co-exist with the scheme. This reflects a concern raised by Jasanoff about the compartmentalizing approaches to environmental issues prevalent in risk-based regulation; she contends that they can minimize issues and make them seem manageable, noting that it is harder to ask radical questions about 'underlying philosophies of development, consumption, or resource use' within this framing.[106] The Welsh Government had a clear argument for this scheme. There was a problem – namely, traffic congestion on the M4 by Newport – that hampered economic development in South Wales; the proposed scheme would be a solution to this problem.[107] This firmly positioned economic development in South Wales as the key priority for decision makers. Environmental objectors to the scheme had limited opportunities to advocate for the intrinsic value of the environment as the key priority. Reflecting Shrader-Frechette's argument discussed above, it seemed that there were limited opportunities for more diverse understandings of value to be considered at the inquiry, and that technical expert evidence sat more comfortably in the inquiry decision-making process.

The second objector argued that the scheme's broader environmental impacts were not captured when detached from its wider context, the historic and future development of the Gwent Levels. Environmental objectors were keen to situate the scheme in the context of excessive development already affecting the integrity of the Levels. While the Welsh Government sought to allay these fears,[108] objectors highlighted the risk of future development attached to the scheme, arguing that it was inevitable that the northern section of the Levels, which would be cut off from the larger southern section and sandwiched between the M4CAN and the 'old' M4, would be soon be lost to development, as its environmental integrity would be compromised by the scheme.[109] It was challenging for objectors to raise these concerns within the inquiry process. It was also challenging for them to make a case for the intrinsic value of the

[102] Fieldnotes, 27 September 2017.

[103] JP interview, 8 November 2018.

[104] JD interview, 1 November 2018.

[105] AP interview, 8 January 2018.

[106] S. Jasanoff, 'Law' in *A Companion to Environmental Philosophy*, ed. D. Jamieson (2001) 331, at 336.

[107] 'It is clear that Wales needs a new road to address the problems on the M4 around Newport and this Scheme is the best option. We invite the inspectors to commend it to the Welsh Ministers.' M. Ellis QC on behalf of the Welsh Government, op. cit., n. 60, p. 275.

[108] 'The nature of balanced decision-making required here means that the Scheme would not create a precedent for further development if approved because of its unique nature': id., p. 222.

[109] Fieldnotes, 26 April 2017. Environmental objectors contended that the appropriate assessment of significant effects on the integrity of the Levels was out of step with the Habitats Directive, an argument that the Welsh Government strongly, and successfully, rebutted: GWT, *Legal Note* (submitted to the inquiry on 5 April 2017) 2.

environment, as noted above. In part, these opportunities were limited by the reactive position of the environmental objectors. The objectors' case was constrained by the case of the proposing side, a form of compartmentalization engendered by the legal procedure in which their case was heard. Objectors responded to individual elements of the scheme, making it difficult to construct an alternative narrative to that proposed by scheme developers.[110] The environmental objectors' reactive role was further determined by the scale of the scheme and the short timeframe of the enquiry process,[111] which meant that they were forced to focus only on aspects of the scheme where they could respond with sufficient expertise. This underlines that opportunities to consider the scheme's wider environmental impacts were limited.[112]

5 | ENVIRONMENTAL OBJECTORS' RESPONSE TO COMPARTMENTALIZATION

5.1 | The unique response of environmental objectors

This article has drawn on empirical research on the M4CAN inquiry to suggest that processes of compartmentalization adversely impacted the treatment of the environment at this inquiry. It is important to recognize, however, that these processes are not rigid and impassive, and that environmental objectors at the inquiry were not pawns, trapped in a process over which they had no control. On the contrary, environmental objectors were aware of the challenges posed by these processes and sought to disrupt them. GWT consistently advocated for a holistic, integrated approach to environmental impact at the inquiry. This was a deliberate strategy to counter compartmentalization.[113] In interviews, the GWT coordinator noted that the purpose of their closing statement was to introduce broader perspectives into the inquiry, such as global and Wales-specific biodiversity loss. Many interview participants considered the approach taken by GWT in this inquiry to be quite unique; it certainly seemed to sit outside the typical inquiry process. For many environmental objectors, the decision to emphasize the scheme's wider context was a moral one. They often underlined connections between this scheme and the global environmental context.[114] A sense of urgency engendered by the present context came through in many of the interviews:

> There's a lot more to play for than just whether or not they plant X metres of hedgerow or dig X kilometres of ditch in mitigation for what they destroyed. I think the context for everything is of course the biodiversity crisis. If you look at the *State of Nature* reports, what's obvious is that the good stuff that's left is now isolated and under threat, so in a way, we have to fight tooth and nail for what we've got.[115]

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[110] JD interview, 1 November 2018.

[111] MW interview, 14 December 2017.

[112] JP interview, 8 November 2018.

[113] While they did not use the term 'compartmentalization', environmental objectors did refer to the isolated treatment of environmental issues, describing it as 'silo-ing' or with the use of examples.

[114] B. Morehouse on behalf of Gwent Wildlife Trust, Friends of the Earth, CPRW, and the Woodland Trust, *Closing Statement in the Matter of: Public Local Inquiry into the M4 Relief Road around Newport: The Effects of the Proposed M4 Extension across the Gwent Levels* (2017) 4.

[115] IR interview, 23 January 2018.

5.2 | The Wellbeing of Future Generations (Wales) Act 2015

GWT strategy was inspired by the context of the global environmental crisis. It was further enabled by the WFGA. The Act aims to move Wales towards a more sustainable future and to re-envision the way in which policy priorities are balanced.[116] The principles enshrined in the WFGA were repeatedly cited in NRW and GWT evidence.[117] The Act seeks to refocus the work of public bodies in Wales to be more economically, socially, environmentally, and culturally sustainable.[118] This approach recognizes that humans and the environment are interconnected, that human communities rely on the environment for their survival, and that the environment has its own intrinsic worth.[119]

Given that tensions between environmental value and economic forms of value were central to the balancing exercise conducted at the inquiry, it is hardly surprising that the Act became a focus of attention, with the environmental objectors seeking to establish that the scheme was not compliant with the duty to carry out sustainable development under the Act.[120] The contested interpretation of the Act was evident during the evidence of the GWT expert witness on sustainable development. The witness described the WFGA as a response to the fact that ‘problems are becoming (a) much more urgent and (b) much more complex’. He highlighted that the global context could not be extricated from the local context of the scheme: ‘Wales is a small country; the UK is a small country; the globe is small, and getting smaller.’[121] The witness described the scheme as an ‘interesting test case for implementing a framework for sustainability in Wales’. In their cross-examination, Welsh Government counsel asked the witness whether he thought that the Welsh Government was ‘in breach’ of the Act. Uncomfortable with this phrase, the witness stated that he did not think the scheme adhered to the ‘spirit, goals, and ways of working of the Act’.[122] He argued that the Act could be understood both as a ‘set of regulations and as a change in perspective and mission’, and he spoke more to this second aspect.[123]

Whether by providing hooks for a legal argument, or by setting out a new approach to sustainable development, the WFGA was described as a valuable tool by several environmental objectors.[124] However, while the Act provided an opportunity, it was vague and untested. It was a new addition to an existing environmental legislative context; inquiry actors were adept at using existing mechanisms and unsure how to use the Act:

[116] S. Howe, *Letter from Sophie Howe, Future Generations Commissioner* (submitted to the inquiry on 13 September 2017). It is worth highlighting that Howe was an objector to the scheme; though she did not attend the inquiry, she gave written evidence.

[117] JP interview, 8 November 2018.

[118] Wellbeing of Future Generations Act (Wales) 2015, introductory text.

[119] This perspective is demonstrated in the Welsh Government Sustainable Development Scheme, which confirms sustainable development as the central organizing principle of the Welsh public sector: Welsh Assembly Government, *One Wales: One Planet: The Sustainable Development Scheme of the Welsh Assembly Government* (2009) 44.

[120] B. Morehouse on behalf of Gwent Wildlife Trust, Friends of the Earth, CPRW, and the Woodland Trust, op. cit., n. 114, p. 7.

[121] Fieldnotes, 27 September 2017.

[122] Id.

[123] Id.

[124] IR interview, 23 January 2018.

> The WFGA brings in wider considerations, but because all this primary legislation that we were still working with requires us to advise very specifically, that's what we were focused on … and that sort of wider consideration, because it's new legislation, those kind of ideas, those Welsh Government requirements haven't really been tested, and I guess this was a test … I can't remember the wording … [T]hat sort of wider ecosystem consideration – I had something in my evidence about that, but I was nervous of getting questioned on it.[125]

This comment suggests that in the two roles of the Act outlined above, as a 'set of regulations and as a change in perspective and mission', environmental objectors were better able to use the Act in the latter respect.

The WFGA aims to change how priorities are evaluated in decision-making processes; in particular, it seeks to prioritize the environment where in the past it has been undervalued.[126] While this change in values was not reflected in the Inspector's Report, one could argue that it was evident among the greater public. The inspectors made their recommendation in September 2018 (the inquiry having closed in March 2018); the First Minister Mark Drakeford announced his decision in June 2019. The inspectors recommended that the scheme should go ahead, but the First Minister decided against the scheme.[127] The First Minister stated that even were it not for the scheme's funding issues, he would have decided against it on the grounds of the unacceptable environmental impact on the Gwent Levels:[128]

> I attach greater weight than the Inspector did to the adverse impacts that the Project would have on the environment … Ultimately, whilst I agree with the Inspector that '[t]here are valid and strong competing interests at issue here' [IR8.480], my judgement as to where the balance between the competing interests lies is different to that of the Inspector's.[129]

This indicates that both the inspector and the First Minister conducted a balancing exercise between economic benefit and environmental harm. The First Minister did not object to the reasoning of the inspector, only to the value that he placed on the environment.[130] The NRW coordinator noted that the information available on environmental damage between September and June had not changed that much; the First Minister, for example, cited in his decision the *State of Nature* report that was included in NRW inquiry evidence.[131] It was the weighing up of that information that changed.

[125] JP interview, 8 November 2018.

[126] Howe, op. cit., n. 116.

[127] The previous First Minister, Carwyn Jones, supported the scheme. This is relevant to the discussion below on the unique set of circumstances that affected this decision.

[128] M. Drakeford, *First Minister Mark Drakeford, Speech to Assembly on M4CAN Decision* (Senedd Debate, Cardiff, 4 June 2019), at <https://record.senedd.wales/Plenary/5662#A51504>.

[129] M. Drakeford, *Letter re: Various Schemes and Orders in Relation to the M4 Corridor around Newport* (4 June 2019) 6–7, at <https://gov.wales/m4-corridor-around-newport-decision-letter>.

[130] While it is not in his written decision but in the speech to the Welsh Assembly defending his decision, the First Minister noted that he did not disagree with the inspector's interpretation of the WFGA: Drakeford, op. cit., n. 128.

[131] JP second interview, 9 July 2019.

5.3 | Disruption as a public participation tactic

One could argue that compartmentalization had a negative impact on public participation at the M4CAN inquiry, considering how it shaped the inquiry's treatment of evidence and its adversarial nature. The inquiry seemed to have two roles: to be a mechanism for public participation in decision making and to gather and evaluate a vast amount of complex information. These two roles, I suggest, were at odds with one another at points. This was demonstrated in the differential treatment of lay people and expert witnesses, and in how the inquiry sometimes struggled to deal with evidence that did not address technical details. While members of the public were encouraged to take part, some felt intimidated when they attended and decided not to participate.[132] This suggests that the two roles did not always work in harmony. The inquiry was a long and complex process that concerned a decision of real significance for many of its participants. While certain elements, such as the processes of compartmentalization explored above, limited public participation, and while the inspectors in their report did not seem to find the unique approach of the environmental objectors especially persuasive, it is necessary to take a wider perspective and consider the inquiry in its broader context to get a clearer idea of the impact of their approach.

Several participants, when reflecting on the success or failure of the environmental objectors' approach, argued that public participation at the inquiry had to be viewed in the light of wider public involvement. Those in the GWT inquiry team described a two-track strategy that involved lobbying Welsh Assembly members as well as submitting evidence to the inquiry. While the public local inquiry is a mechanism for public participation in the planning system, the structures in which it operates means that it is ultimately less responsive to public voice than the Assembly, the mechanism of representative governance. As noted by one environmental objector,

> [s]ocial movements and the way in which they interact with organs of democracy – it's a much more dynamic relationship than someone standing up in a public inquiry and making a point about their community … Mark Drakeford had to reflect what was going on in the broader picture – he couldn't duck it.[133]

This comment foregrounds the shifting public environmental values and the policy objectives that sat outside the inquiry remit that influenced the decision of the First Minister. It is important to underline that this was not a case of one strategy failing and another succeeding. It was the two strategies working in combination that were, in this instance, effective.[134] An inquiry is a mechanism of public participation. It is a piece of machinery that has a set of functions, some intended by its developers and some not. The M4CAN inquiry was used as a means of public participation in ways that those who called it did not intend. Assembly members were lobbied while the inquiry was in session; arguments made in the public inquiry were reiterated in talks

[132] AP second interview, 5 September 2019.

[133] IR second interview, 15 August 2019.

[134] The timing of the inquiry, the political and personal crises that beset Welsh Labour during this time, and the developing climate emergency movement were all factors that affected the outcome. It is impossible to say whether the same result would have been achieved in another context. S. Morris, 'Carwyn Jones Acted Unlawfully over Carl Sargeant Inquiry, Court Rules' *Guardian*, 27 March 2019, at <https://www.theguardian.com/politics/2019/mar/27/carl-sargeant-widow-wins-high-court-challenge-over-sacking-inquiry>; L. Griffiths, 'Cabinet Statement: Written Statement: Welsh Government Declares Climate Emergency' *Gov.Wales*, 30 April 2019, at <https://gov.wales/written-statement-welsh-government-declares-climate-emergency>.

with Assembly members and in the media.[135] For some environmental objectors, as long as the inquiry process was not an embarrassment, it would help their advocacy.[136] Moreover, as noted by GWT counsel, 'if there wasn't an inquiry process, the road would have been built years ago'.[137] Calling an inquiry acknowledges the right of the public to be heard on an issue that affects their locality. It initiates a typically slow-moving process that 'gives you the time to build the voice against the people who've got the money, who drive these changes, who usually arrive very well prepared and ready to deal'.[138] It serves as a beacon for argument and for protest, providing an opportunity for a broader range of values to be heard and acknowledged.

6 | CONCLUSION

Environmental legal principles and legislation exist in EU, UK, and Welsh legal systems that recognize the importance of understanding and treating environmental issues in a holistic and integrated manner. While integration has been recognized as a key environmental legal principle for some time, its translation into planning decision-making processes such as the M4CAN inquiry can seem incomplete and inconsistent. Environmental issues can still seem somewhat peripheral, a combination of singular issues to be managed that are separate from human concerns. This seems to be the case even in participatory decision-making processes, which are supposed to take into account a more diverse range of views and to better reflect environmental value.

Drawing on the findings of socio-legal ethnographic research on the M4CAN inquiry, this article has proposed that processes of compartmentalization, embedded in decision making as a consequence of rationalization, play out at a micro level and adversely impact the necessary integrated, holistic treatment of the environment. It has suggested that two forms of compartmentalization were present at the inquiry: epistemic compartmentalization, evident in the treatment of lay-person and expert testimony and of generalist and scheme-specific expertise, and legal compartmentalization, evident in legal protections and the adversarial nature of the inquiry. It has contended that compartmentalization had a negative impact, as it made it difficult to recognize the interconnected nature of aspects of the environment and did not allow space to provide a range of responses on environmental issues.

However, spurred by the environmental crisis and empowered by Welsh sustainable development legislation, environmental objectors sought to disrupt these processes of compartmentalization. The article has considered the impact of the WFGA on the environmental objectors' strategy, and the diverse ways in which objectors utilized public participation to disrupt these tendencies in legal decision making. By investigating the complex, situated processes at play in this case study, this article has illustrated some of the ways in which macro-level principles and policies

[135] *BBC News Wales*, 'Benefits of M4 Relief Road "Outweighs £1.1bn Costs Two to One"' *BBC News Wales*, 1 March 2017, at <https://www.bbc.co.uk/news/uk-wales-south-east-wales-39127347>; *BBC News Wales*, 'M4 Relief Road Would "Damage Historic Landscape"' *BBC News Wales*, 26 April 2017, at <https://www.bbc.co.uk/news/uk-wales-south-east-wales-39692493>.

[136] MW second interview, 6 August 2019.

[137] BM second interview, 12 August 2019.

[138] Id. Paradoxically, while the inquiry process can be restrictive for individual participants due to tight timeframes (for instance, environmental objectors noted the strict timelines within which they had to gather and submit evidence), the inquiry process as a whole can be slow moving. This is demonstrated by the fact that the inquiry was called in June 2016 but the First Minister did not release his decision until June 2019.

are shaped and obstructed in decision-making processes, and the behaviours and actions through which embedded assumptions – in this case, processes of compartmentalization – are reproduced, maintained, and resisted.

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