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Determining the facts that matter in complex decision-making: A critical realist framework of identifying valid knowledge in planning

Andrew Ivins[1]

Abstract

While the role of valid knowledge in planning decision-making is recognised in literature, the determination of validity and its relationship to controversial planning decisions is under theorised. In this paper, critical realism is utilised to explore hegemonic influences on the determination of validity as an explanation for controversy and contestation. Findings from a UK case identify a hegemonic lag whereby hegemonic rationalities and doctrines actualise decisions that endure through subsequent planning processes despite political and public contestation, and changes in policy, local context, and planning personnel. This lag narrows the scope of valid knowledge, excludes public input, and directly influences controversy. The paper recommends increased agency for planners to respond to contextual change when (re)determining approval for development. Future research directions in contexts where observed inertia of the planning system is considered alongside political struggle and contestation are suggested.

Keywords

Valid knowledge, decision-making, complexity, critical realism, structure, agency, hegemony, hegemonic lag, political rationalities, planning theory, planning practice

[1]School of Social and Spatial Sciences, Cardiff University, Cardiff, UK

Corresponding author:
Andrew Ivins, School of Social and Spatial Sciences, Cardiff University, Glamorgan Building, King Edward VII Avenue, Cardiff CF10 3WA, UK.
Email: IvinsA1@cardiff.ac.uk

Introduction

What might be termed valuable data in planning decision-making has variably been characterised as 'valid knowledge' (Rydin, 2007), 'what is critical' (Owens, 1994), and 'the facts that matter' (Forester, 1994). While such claims may usefully support and justify planning as a professional practice (Vigar, 2012), they offer little clarity as to how validity, criticality, or what matters, are established at the desk of a public planner working within and between the public, elected members (councillors), statutory consultees, expert bodies, and developers. What determines the facts that matter and their value in the complex, institutional, and often political, contexts in which real-world decision-making happens is under theorised.

This gap means that while public controversies and political contestation in contemporary planning decision-making are acknowledged (Roskamm, 2023), there is a lack of theory to explain why they arise. This paper asserts that the explanation lies in exploring what happens to data and knowledge in decision-making (Eriksson et al., 2022) and establishing why it is that planners align with technical consultees whereas councillors often align with the public in complex cases (Murdoch and Abram, 2002). Identifying what determines the facts the matter is critical and it is argued that to understand decision-making in a local context, consideration must be given not only to the agency of planners but also to governance and institutional structures (Mäntysalo, 2023).

This paper seeks to address two interlinked questions; how is valid knowledge determined in planning decision-making and how does this determination explain instances of controversy? Critical realism is utilised to propose a framework capturing the key determinants of validity, within which data and knowledge may be determined as valid (or not) in complex planning decision-making. The framework details concepts that are under exploited in planning theory, such as the critical realist concept of hegemony and ideas of political rationalities (Joseph, 2002; Rose and Miller, 2010) to explain the determination of valid knowledge. While hegemony and rationalities are fully detailed, the author assumes some familiarity with debated concepts such as the public interest which are fully detailed elsewhere (Alexander, 2002; Campbell and Marshall, 2002; Howe, 1992; Lennon, 2021). This research accepts the public interest due to the observation that in planning practice working for the public good is both a doctrine of public policy and an explicit goal of professional codes of conduct, such as those by the Royal Town Planning Institute in the UK and the American Institute of Certified Planners in the USA (AICP, 2021; RTPI, 2023).

The paper and case study refer to complex decision-making. Complexity is firstly observed in the form of decision-making in planning, and the kinds of wicked problems it often responds to. In the case study provided, complexity related to the requirement of consultation and deliberation with technical consultees in the face of significant public and political contestation, uncertainties regarding the technology and sustainability of the project, a long running time frame, and a changing policy context (Laureiro-Martínez and Brusoni, 2018). Complexity also refers to critical realism's non-linear and emergent interpretation of causation in open systems (Castellani and Gerrits, 2024). Such an understanding means that social actors are typically unaware of the causal mechanisms acting upon their decisions, that emergence is not a tangible entity that can be researched,

and that the findings of critical realist research reflect contingent interactions with context and should be understood as tendencies rather than laws (Byrne, 2009; Næss, 2016).

The relationship between critical realism and complexity necessitated the use of retroductive inferential logic in conducting the case study. Retroduction balances deduction and induction, enabling a researcher to establish the mechanisms and connections within a social system that explain the causes and consequences of action (O'Mahoney and Vincent, 2014). Applying retroduction required the development of a framework to account for phenomena of interest prior to undertaking case study research (Gilmore et al., 2019). The framework (see Figure 2) was completed via a review of the literature and refined by engagement with documents during case study selection. The case study tested the framework to arrive at key conclusions.

The case study is focused on the role of development managers working in Local Planning Authorities (LPAs) in the UK context (where LPAs are typically city, county, or borough councils). In simple terms, the UK planning system proceeds by:

> LPAs develop Local development Plans (LDPs) that allocate land uses for development. These plans, once adopted, remain extant for 15 years.
> Applications are received to develop land. Development managers assess applications against national and local policies, and collaborate with statutory consultees (e.g., environmental agencies, transport departments), and consult the public.
> In simple cases, the planner decides whether to consent or refuse the application. In major development, or politically contentious cases, planners make recommendations to a planning committee of elected councillors who undertake votes to decide.
> Where developers disagree with decisions, they can appeal to the planning inspector who can redetermine applications independently.
> Where developers breach or act without permission, the LPA can take enforcement action against the development.

Despite this focus, the framework proposed is considered transferable to other public planning roles, including policy planners in the UK context, and further afield wherever public planning offices are linked to democratically elected local governments.

The paper is structured as follows. First, the paper problematises the term 'valid knowledge' and the planner's agency to identify it. It then provides an overview of critical realism before defining the key concepts of the critical realist framework that is the focus of this research. Next the paper applies the framework to a case study before providing a conclusion and suggested next steps for the use of critical realism in understanding decision-making in planning.

Problematising valid knowledge and the agency to identify it

A typical claim with implications for how planners determine value in decision-making is captured in the aim of identifying 'the facts that matter' (Vigar, 2012; Forester, 1994: 179). This identification process might well be termed deciding 'what is critical' (Owens, 1994), and implies an expert judgment on the validity of data available in decision-

making. Rydin (2007) makes this explicit when suggesting that identifying valid knowledge is the key task of planners. In Rydin (2007) conception, knowledge is considered separate from wider forms of data and information due to its ability to highlight the cause and effect of different actions, which is of particular concern in planning practice. Privileging valid knowledge requires planners to distinguish valid claims from other claims that actors may make, such as beliefs, opinions, loyalties, commitments, biases, prejudices, and personal experience (Forester, 1994). Valid knowledge is warranted, evidenced, and provides certainty to planning decision-making (Moroni and Chiffi, 2022), in which future-oriented understanding is desired (Behrend, 2024). While allowing for lay input, it is ultimately for the planner to navigate and negotiate this range of knowledge and test it within appropriate forums to arrive at the desired valid knowledge (Rydin 2007).

These ideas legitimise planning as a professional practice in which experts are afforded the agency to identify 'facts' and 'knowledge' and to act upon them. However, this view places upon the planner a freedom and agency to identify validity in decision-making (Harsia and Nummi, 2024), while reducing the role of governance and institutional structures acting upon the decision-making process. This is an incomplete view of practice that emphasises the planner's agency to interrogate, test, and decide upon the validity of knowledge claims across various stakeholders. Such a view is fundamental to the architectures of collaborative planning (Healey, 1997) in which planners can perform the roles of analyst, consultant, client, advocate, and mediator, when required (Rydin 2007). But this is to risk excluding the causal influence of the interaction of proposals, plans, policy, and programmes, as well as political and institutional structures that surround decision-making in public planning.

The very concept of seeking valid knowledge has been challenged in planning theory literature. Normative and social justice perspectives might consider that seeking forms of valid knowledge in decision-making privileges actors who are best able to warrant and evidence technical claims, diminishing and excluding the value of lay experience (Fainstein, 2006). Technical knowledge is not neutral and inevitably contains bias and normative assumptions made during interpretation (Healey, 1992). Reflecting on the privileging of technical knowledge over the claims of others, contemporary collaborative planning might argue that this is to exercise an illegitimate 'power-over' those publics who are participating in a planning process (Mäntysalo et al., 2023). To consider that the 'facts that matter' are best measured by 'validity', or to exclude the public from the production of valid technical knowledge, further ignores that lay experience offered in public consultation has the ability, at the very least, to indicate the mood of the public which is of some political value to elected members if not to planners (Handmaker et al., 2021). Furthermore, developments in citizen science have led to increased technical expertise in consultation that can lead to instrumental contributions with the potential to improve policy and plan making, supporting government agencies in achieving their goals (Beck and Mitkiewicz, 2025). Academic researchers might note that in real-world practice the reality of 'valid knowledge' is that well warranted, cause and effect focused scientific evidence is often not privileged in decision-making (Tennøy et al., 2016).

Despite the identified problems with validity, to advance understanding of how and why 'the facts that matter' are determined, this research accepts that planning practice

nominally seeks valid knowledge in decision-making. However, it questions how, why, and by whom (or what) validity is decided. It observes that in seeking out the facts that matter, the planner is typically aligned to expert consultees alongside the technical submissions of developers whereas councillors are often more aligned with members of the public (Murdoch and Abram, 2002). This division suggests two potential explanations. Firstly, that planners consistently identify with their own agency that valid knowledge is best provided by a small group of technical consultees and interested parties at the expense of others. Or secondly, that identifying validity is rarely a free choice for the planner. While normative literature has highlighted the potential injustices presented by the former agential explanation, this realist research instead seeks to establish the case of the latter structure versus agency focused explanation.

Introducing critical realism

Critical realism is a realist philosophy of science that developed in response to the positivism that dominated scientific activity in the first two thirds of the 20th century, and the subjectivism that led to paradigm shifts across the scientific spectrum in the latter period of the century (Archer et al., 2013). Bhaskar (1997) identified that science had reduced ideas of scientific knowledge from 'what is' to 'what we can know' (Archer et al., 2013: xii), a critique to be levelled at both naïve empiricism and its theory neutral experimentation, as well as to the social construction and reproduction of scientific knowledge. In response, Bhaskar (1997) reasserted that natural mechanisms endure independently of humans, and that science has the potential to uncover these mechanisms.

To achieve this, the distinction between closed systems (i.e., laboratory experimentation), and open systems (i.e., the natural or social world), needs to be understood. In a closed system experiment, it may be possible to bring together specific variables to generate a specific outcome but in an open system where confounding variables may be operating unseen and conjunctions between variables are in states of continuous change, the same coming together may not produce the same outcome (Bhaskar, 1997). This is not to diminish the value of closed system experimentation, but rather to consider that for scientific claims to hold in the natural or social world, the outcome must further be observable in open systems, independent to scientific testing. This further allows for the fallibility of science and eventual falsification; notably, in the social sciences, law-like statements are in fact observations of tendency (Banai, 1995) or, in critical realist terms, demi-regularities where strong causal mechanisms generate a semi-predictable regularity of action (Næss, 2016).

To underpin these assertions, critical realism is characterised by three conventions of science (Archer et al., 2013: xii-xiii):

1. Intransitivity – while scientific knowledge may be socially constructed, natural and social mechanisms exist independently of their discovery or articulation.
2. Transfactuality – the natural and social world operate independently from their closure, and laws operate independently of the conditions for their identification. Recognising the ubiquity of open systems means that laws must be analysed as transfactual (or universal).

3. Stratification – the natural and social world are stratified. Intransitive elements (the domain of the Real) are distinct from both the Actual and the Empirical domain (see Figure 1).

A stratified reality is fundamental to the assumptions of critical realism. Without this, causation is limited to the observance of constant conjunctions of variables, circumstances and events (e.g. every level of x equals a level of y) (Næss, 2015) which limits the potential for explanation of complex structures and phenomena. Critical realist researchers seek to overcome this by linking structures to events and to actors' individual experiences of them, thereby linking the empirical world with complex, open natural and social systems (Banai, 1995: 564). Retroductive inferential logic enables realist research to undertake this task. Figure 1 displays a descriptive visualisation of the stratified levels of critical realism.

Critical realism has been widely deployed in the social sciences (Price and Martin, 2018), and the language of intransitivity has been refined. In the social world, it may be said that 'agents are always acting in a world of structural constraints and possibilities that they did not produce' (Archer et al., 2013: xvi). While accepting that socially constructed structures or institutions are reproduced by action (Banai, 1995), it is also observed that once in existence, these structures contain emergent powers and properties separate from and greater than the sum of the agential power that created them (Næss, 2015: 1232). This view enables explanations of how concepts such as neoliberalism emerge as structuring

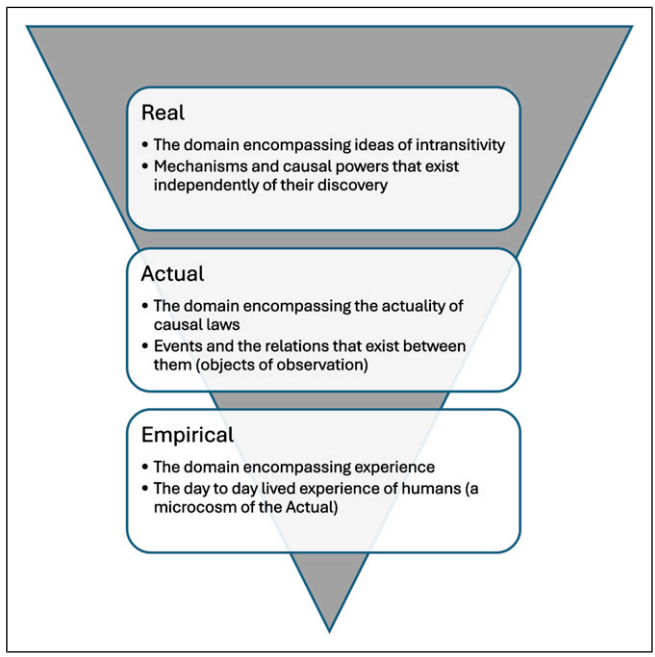

Figure 1. A simplified outline of the stratified critical realist view of the scientific world.

forces of society. Despite this structural focus, critical realism also attributes causal power to agents, allowing for an exploration of personal values, background, and the education of planning actors, all of which contribute to a structure versus agency discussion of decision-making in planning systems (Næss, 2015).

A critical realist framework of the determination of the facts that matter

This section details the critical realist framework (see Figure 2) that captures causal mechanisms, their interaction with process, and thus the determination of the facts that matter in planning decision-making. Key concepts are in the relevant domain i.e., the Real, Actual, and Empirical. The Real level encompasses the intransitive concepts and causal mechanisms that exist independently of their construction or articulation, such as political rationalities. The strength of these causal mechanisms and their interactions with the Actual are seen to produce demi-regularity of action in decision-making and help to address the question of why valid knowledge is often provided by a limited selection of technical consultees. The typical events of expert-decision-making are present in the Actual, and the day-to-day experiences of the individual are present in the Empirical.

Critical realism and hegemony

This paper places planning decision-making within hegemonic power processes and contestation to understand contemporary planning decision-making and controversies (Roskamm, 2023). To do so, a critical realist conception of hegemony is adopted to

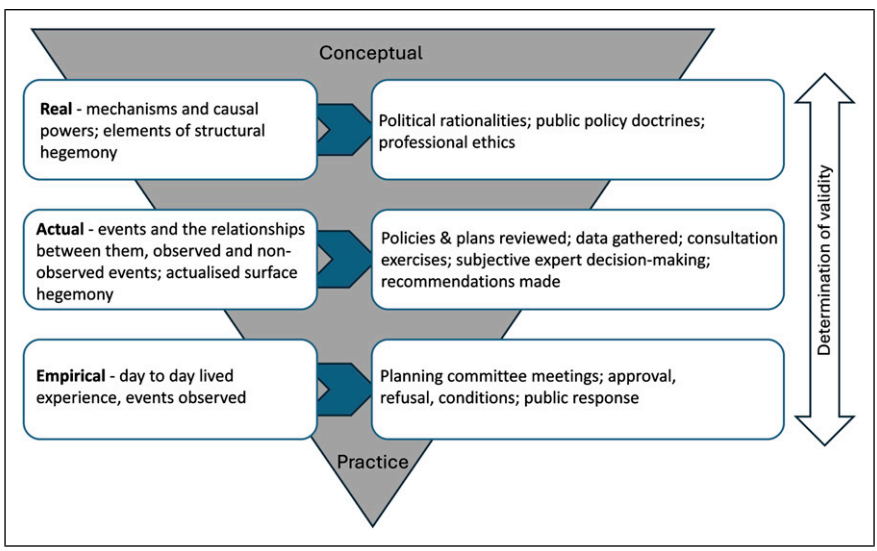

Figure 2. A critical realist conception of the interactions in the determination of validity in planning decision making.

capture the interconnectedness of social structures and human activity essential to structure and agency debates (Joseph, 2002).

Hegemony is typically described in two ways (Joseph, 2002: 38). Firstly, and most commonly, hegemony describes the organisation of political actors around particular projects and the winning of consent to a set of ideas or interests. Secondly, hegemony is referred to in a structural sense that coerces the reproduction and transformation of social structures. For critical realist research, with the explicit aim of exploring structure and agency, this observation leads to two intersecting descriptors of hegemony identified in the critical realist framework (Figure 2); structural hegemony in the Real and surface hegemony in the Actual.

Structural hegemony and the intransitive mechanisms of the real

Structural hegemony is comprised of the causal mechanisms that secure the unity of the social system, allowing for the reproduction of social processes and providing the conditions within which agential action is performed (Joseph, 2002). As society is considered to be an open system (Næss, 2016), the mechanisms comprising structural hegemony provide the means for society's partial closure to generate cohesion and demi-regularity of social action, rendering society governable. Structural hegemony can be understood as objective rather than subjective (and thus applicable to the Real level of the framework) as it is the outcome of, and the ever-present condition for, day to day activity and social reproduction. As much human activity is unconscious of the structures and mechanisms acting upon it, structural hegemony and its causal mechanisms are seen to exist independently of the agents who subsequently reproduce them (Joseph, 2002: 115).

That a structural hegemony and related causal mechanisms work to create a partly closed society (Næss, 2016) is not to claim that hegemonic power is always repressive (Joseph, 2002), but it makes clear the potential contestations that are present in the political environment in which planning exists. In practice, this closure may present as a simple note in a public consultation limiting what may be commented upon (Eriksson et al., 2022), or by way of summarising public consultation responses into broad themes relevant to policy areas (Harsia and Nummi, 2024). Such minor details may have impacts for the data gathered in consultation by reducing the extent of qualitative submissions and limiting the potential value of the data. Links between the elements of structural hegemony in the Real, and the events of the Actual domain thus become clear once real-life examples are applied. It is possible to link further into the Empirical domain by way of the public response, where perceptions of closure may be interpreted as an institution discounting lay knowledge (Gunder, 2003; Harsia and Nummi, 2024). This may lead to formal contestation through courts, but also to informal backlash and the view that an institution or process is no longer legitimate (Landwehr, 2020).

While structural hegemony itself provides a means of problematising and locating hegemony in the Real level of a critical realist framework, to understand the functioning of the descriptor to support analysis of real world cases, further assumptions as to its causal mechanisms are required (Jessop, 2003). In the political, institutional, and professional context of planning, political rationalities (Rose and Miller, 2010), public policy doctrines such as the public interest (Campbell and Marshall, 2002), and professional

ethics (Campbell, 2012), provide causal mechanisms for the exercise of hegemony (Jessop, 2003) in the actual and empirical levels.

As with structural hegemony, it is argued that while accepting that social phenomena such as political rationalities, public policy doctrines, and ethics, are socially constructed, once they have been constructed, they take on an objective status with causal powers quite independent from their articulation (Sayer, 2012). Further abstracted concepts such as 'the state' and 'the economy' may be expected within such a structural hegemony, however, this paper limits itself to political rationalities, public policy doctrines, and professional ethics as they are established in planning literature and provide a relevant ensemble for exploring decision-making in a planning context (Jessop, 2003).

Political rationalities

Political rationalities can be understood as the moral justifications for the exercising of power by different authorities, the claims and ideas as to the appropriate forms, objects and limits of politics, and conceptions of the proper distribution of tasks (Rose and Miller, 2010: 273). More simply put, political rationalities describe the mentalities and machinations of government (Rose and Miller, 2010) with inevitable impacts on the projects, plans and practices of institutions. As such, political rationalities have clear links with knowledge and power relations (Foucault, 2019), and the conduct of expertise (Rose and Miller, 2010) identified as a key element of determining the facts that matter in decision-making.

Political rationalities are derived from Foucault's concept of governmentality, power knowledge, and power relations. They provide a means of exploring the ways in which calculations, strategies, and tactics, are linked together and underpinned by coherent systems of thought (Rose and Miller, 2010). Political rationalities help to make sense of the conflicts between competing doctrines that limit and impact government interventions, for example, debates regarding the interests of the market and the rights of individuals. As such, the presence of a neo-liberal or pro-growth rationalities in planning (Roy, 2015) has direct influence on decision-making and the determination of valid knowledge, even where separate arms of government may have different aims.

To extend the example, it may be assumed that a neoliberal rationality in a planning context, when faced with proposals for polluting industries, will determine knowledge claims to economic growth, efficiency, self-sufficiency, and competitiveness as valid in expert-decision-making (Purcell, 2009). This determination of the facts that matter will privilege the knowledge of those most able to provide it, thus limiting and closing opportunities for experiential knowledge or dissent, allowing for the hegemony to continue (Roy, 2015). In such a scenario, it is likely that claims to job creation and the local economy will also be promoted as a benefit of a development, however, these claims may be contested by the public response (Vargo and Lusch, 2012), with implications for future challenge where a decision is viewed as illegitimate (Alter and Zürn, 2020). This paper details the rationalities observed in a real-world case study and their interaction with the determination of valid knowledge and contestation.

Though derived from Foucauldian relational concepts rather than a critical realist world view, complementary elements of rationalities are observed in the description of

their development. For example, the neoliberal rationality is observed not as the realisation of a single philosophy, but rather a contingent improvisation of thought and action, drawing upon available procedures and instruments of government, often in an ad-hoc way, to solve new problems (Rose, 1999: 27). On the face of it, such improvisations might best be placed in the Actual level of the critical realist framework where expert practice is located; however, it is observed that when these improvisations coalesce into a rationality, in which strategies, tactics, and thought form a coherent logic that can subsequently be adapted and adopted for use outside of their original context (Rose, 1999), they take on the form of an intransitive causal mechanism guiding a wider variety of action than originally intended. In this way, it is argued here that the rationality appears independent of its original articulation and has a relatively enduring causal power of its own (Al-Amoudi, 2007; Joseph, 2002) and is thus located in the Real level of the framework within the structural hegemony.

Public policy doctrines and professional ethics

Public policy doctrines (e.g., the public interest) operating as part of a structural hegemony limit the space for debate and ongoing contestation and work to reproduce the hegemonic status quo (Joseph, 2002). The limitations placed on adopting differing forms of public interest derive from existing doctrines and their interactions with political rationalities in a structural hegemony. This is because different interpretations of the public interest can lead to different, potentially counter-hegemonic, decision-making outcomes. For example, in the 'good reasons' approach to the public interest some values are considered more reasonable than others and the interests of those most impacted by a decision hold a privileged position (Howe, 1992; Sagoff, 2007). Large scale road building through existing neighbourhoods provides an example in which specific local interest may conflict with wider public interest and where the good reasons approach would seek to privilege the interest of those most impacted. As such, in the good reasons conception, the idea of consensus is dismissed, allowing for explicit hegemonic contestation. However, in typical practice, vested interests are weighed against specific local interests (Eriksson et al., 2022) and the public interest itself is often considered in a neo-liberal intersubjective form, which employs deliberation to claim a common good for all, rather than one of specific local concern (Purcell, 2009; Roy, 2015). As such, any privileging of local experiential knowledge is not likely to be valued in decision-making set against wider public interest interpretations and political rationalities, including economic growth or as observed in the case study, mandates for energy and waste self-sufficiency.

It is possible that planners may be tasked with delivering policies, plans, and projects with which they personally disagree (Lauria and Long, 2017; Lauria and Long, 2019). The siting of polluting industries may present an uncomfortable decision for an environmentally conscious planner, but a decision remains required. This is reinforced by the promotion of professional ethics and codes of conduct by bodies such as the Royal Town Planning Institute (RTPI) in the UK, or the American Institute of Certified Planners (AICP) in the USA, which encourage practitioners to maintain professional judgment, reflective practice (Schon, 2008), and to minimise personal bias (AICP, 2021; RTPI, 2023). Such professional demands are supported by explicit claims to working in the

public interest and present one aspect of the control asserted by the structural hegemony that leads to the alignment of planners with other institutional experts (Mäntysalo et al., 2023). As already noted, such power is not necessarily repressive (Gunder, 2003), but its potential to limit agency in determining the facts that matter in decision-making is explored here.

Considering the relationship to decision-making, a planner's ability to value varied data might be restricted by legislated processes, policies and plans, and by adherence to professional codes of conduct. It has long been noted that professional ethics and conduct may constrain planners or create self-serving attitudes (Campbell, 2012; Marcuse, 1976). The presented case study details how the environment in which valid knowledge is determined is constrained by the interactions of doctrines (e.g., the public interest), and the justifications generated by rationalities (Rose and Miller, 2010) in the Real domain.

Surface hegemony, and alternative hegemonic conceptions

While structural hegemony provides a means of understanding the underlying conditions upon which decision-making is conducted, surface hegemony allows for the actualisation of hegemonic projects, formed within the conditions of structural hegemony but enacted at a local level. While actors may enact and reproduce such hegemony unconsciously, this understanding empowers researchers to investigate causation, structure, and agency explicitly.

In a surface hegemony, internal and external relations emerge, a political point of agency (or point of decision), and the possibility of political contestation (or hegemonic struggle), develop (Joseph, 2002). Contestation may appear from within or without an institution where it is expected that competing discourses emerge. As competing discourses claim to have meaning, it must be presupposed that there is an objective structure or mechanism to which both refer. The strength of competing claims and discourses thus depend on their relation to the underlying structural hegemony (Joseph, 2002), enacted and interpreted through the surface hegemony. When applied to a planning context, surface hegemony recognises that planning is a part of a political agenda, and embedded in social and historic contexts (Roskamm, 2023) but allows for research to link emergent discourse to underlying structures and causal mechanisms.

This stands in contrast to alternative forms of hegemony, such as those outlined by Laclau and Mouffe (2014) which, as they are noted for their influence in planning literature (Roskamm, 2023), are briefly discussed here. Unlike critical realism, Laclau and Mouffe (2014) locate hegemony exclusively in the subjective realm, placing particular importance on the role of discourse. In rejecting realist positions and any notions of objective structure, this concept of hegemony seeks to identify how common political positions can be arrived at by social groups while adhering to a contingent and non-objectivist view of reality (Roskamm, 2023). This concept of hegemony has been adopted to highlight the role of antagonistic political contestation in the planning system (Pløger, 2021), the importance of the point of decision that is often overlooked by communicative planning literature (Mouat et al., 2013), and the constitutive outside, which suggests that political actors coalesce around the establishment of difference, rather than what unites

them (Mouffe, 2013; Roskamm, 2023). While these contributions to the planning field are acknowledged here, the post-structural ontological foundations are challenged.

Adopting the critical realist position accepts the importance of the point of decision and makes clear the link between the causal mechanisms of the Real and the expert decision-making, and potential contestation and controversy, in the Actual and Empirical levels. It is at the point of decision-making that claims to consensus are challenged by those who feel that they have lost (Mouat et al., 2013). This forms the basis for backlash and ongoing contestation in the public response, which may lead to self-organisation, informal participation, or protest (Alter and Zürn, 2020). As such, hegemony is not static, it is continually challenged through formal and informal contestation, but hegemony is also continually reinforced (Joseph, 2002). At a point of decision hegemony is reproduced or, where significant institutional or societal change is an outcome, a hegemony may be replaced with a new hegemony that will institute itself.

Hegemonic contest

While surface hegemony contends that much social reproduction and action is performed somewhat unconsciously, in political contestation intentional action is conducted to disrupt or transform structures, both from within and without an institution, as part of a hegemonic contest (Joseph, 2002). External challenges can emerge from community groups forming in response to specific issues such as the siting of polluting industries, or to perceived limitations on freedoms such as low traffic neighbourhoods, and encompass the full political spectrum (Alter and Zürn, 2020). Such groups may have retrograde aims (e.g., things were better before a low traffic neighbourhood was implemented), be suffused with emotion, and adopt strategies to challenge processes and institutions seen to be hegemonic (Alter and Zürn, 2020). These causes and arguments may even be taken up by councillors who identify as external to the planning system. At its most extreme, this contest will attack structures (i.e., institutions and their rationalities, doctrines, and ethics) to propose alternatives, rather than attacking agency (of the planner) directly (Joseph, 2002: 130). Notably, this is an outcome observed in controversial planning decisions when an institution's legitimacy is challenged (Hacking and Flynn, 2017; Landwehr, 2020). However, it is noted that as structures such as hegemony, rationalities, doctrines, and ethics, are made up of durable and interlocking social and material internal relations, generating emergent powers, they are able to survive a change in, or challenge to, the membership of their constituents and are relatively enduring (Sayer, 2012). Therefore, while surface hegemony allows for the potential of hegemonic challenge, transformative change is difficult and any structural change is likely to be slow (Joseph, 2002). To exemplify this, the presented case study details how a long running development retained the support of planners and constrained the determination of valid knowledge at various points of decision, despite changes in personnel, site context, national policy, and growing contestation over time.

The actual

Given the strength of the causal mechanisms identified in the Real domain, it is in the Actual in which the resulting demi-regularities will begin to emerge (Næss, 2016). The Actual domain includes the occurrence of events triggered by the activation of causal mechanisms in the Real (Archer et al., 2013). These events and the interactions between them, including data gathering, sifting, and analysis, form an important aspect of identifying valid knowledge in decision-making (Eriksson et al., 2022; Laureiro-Martínez and Brusoni, 2018). It is expected that the causal mechanisms in the Real impact upon this process as outlined previously, and that they will be reinforced by way of reference to policies and local development plans that are influential in development management decisions in the UK context. The impacts of the causal mechanisms will be notable in their relation to the point of expert decision-making and the making of recommendations to planning committee.

The empirical

In the Empirical domain, day to day observable and measurable action is accounted for (Archer et al., 2013; Lawani, 2021) and demi-regularities will be generated by the causal mechanisms of the Real and their interactions with the events of the Actual (Næss, 2016). Planning committees represent the nominal final point of LPA decision-making, around which relations intensify and from which a public response is observed. While planning committees accept the majority of recommendations from planners, they may act to overturn the recommendation, as seen in the case study. In this way, a hegemonic contest can be observed within a planning institution in which actors make competing claims that are ultimately tested against the structural hegemony (Joseph, 2002). While this research and the case study are focused on the decision-making process of the planner, the contestation from planning committee members, councillors, and campaigners is also detailed.

A case of complex decision-making

To refine and test the explanatory power of the proposed critical realist framework, a case study was conducted of the decision-making process of a waste-to-energy incinerator development in the UK. As identified earlier in this paper, complexity was generated in this case by way of consultation and deliberation with a variety of technical consultees in the face of significant public contestation, uncertainties regarding the sustainability of the project set against a changing policy context, and a long running time frame (Laureiro-Martínez and Brusoni, 2018) (Table 1). A brief overview of methods and a context of the case are provided, followed by the key findings observed in analysis.

Methods

Research was conducted from February-October 2025. Retroduction was adopted to develop the framework prior to data collection and analysis. Fifteen planning and policy

Table 1. The context of the case study development.

Year	Events
2008	• Application for a waste-to-energy gasification plant on a site allocated for general industrial use submitted to the LPA. • Environmental impact assessment (EIA) screening confirms no EIA required. • Planners recommended approval for the development determining that the plant met existing green energy targets and responded to waste hierarchy policies by moving waste out of landfill and into energy generation. • Planning committee members voted to refuse the planning application on concerns regarding local economy (tourism) and amenity.
2010	• At appeal, a planning inspector determined that the development was permitted, reiterated that an EIA was not required, and that the grounds for refusal were inaccurate. • It was determined that the principle of development for the plant was established by the LDP land allocation, local waste policy, and by national policy encouraging this form of development on such a land allocation. • The inspector was persuaded by appellant claims that the market would encourage adherence to local sourcing of waste wood. • Subsequently, no plant was constructed at the site.
2015	• New application received for a larger plant at the same location. • Despite a public campaign against the new plant, the principle of development for this kind of plant at this site was accepted as established and supported by the previous permission. • Councillors accepted these arguments and the permission was approved.
2018	• The environment agency approved an environmental permit for the plant to operate. • Reiterated that the plant was not subject to EIA as established in 2008 and 2010.
2021-2023	• LPA became aware that the plant as built was not in full accordance with that permitted in 2015. • An enforcement notice was issued to request the demolition of the plant. • This notice was appealed. LPA subsequently accepted that the 2015 permission was lawfully enacted, extant, and that the plant as built could be regularised by a Section 73 application from the developer (a Section 73 application allows minor amendments to be made retroactively, thus permitting the development as built.)
2024	• Section 73 application was heard at planning committee and accompanied by an EIA following a new screening. • Councillors were informed that the principle of development and existing permission could not be challenged within the scope of the Section 73 application • Planners recommended the development as built for approval • Key debates focused on the changed context of the site, of national policy, and renewable energy technological advances • Planning committee refused the application due to noise, amenity, and contravened local policies.
2025	• The developer appealed to the planning inspector, but before decisions could be made, investors withdrew support from the project. In 2026, an application was received to demolish the plant.

documents relating to the development and submitted to, or produced at, planning committee, appeal, and environmental permitting by the environment agency underwent thematic analysis to identify the presence of rationalities, justification of decisions, and to indicate the validity of data in the decision-making process. 10 participants were recruited for interview including: a planning officer with direct experience of the case (Participant 1), councillors on planning committee (Participants 2-5), councillors not sitting on planning committee (Participants 9-10), campaigners against the incinerator (Participants 6-7), and an academic who assisted the campaigners in citizen science efforts (Participant 8). Established principles (Braun and Clarke, 2006) guided the process of coding and analysis. The adoption of thematic analysis in realist research relates to its ability to identify themes reflecting the stratified reality of critical realism, and its applicability to retroductive development of evaluative findings (Mukumbang et al., 2021).

Context of the case

Establishing validity. When explaining how validity is arrived at when faced with competing claims, Participant 1 stated that substantiated claims would always take precedence over unsubstantiated opinion. A substantiated claim was 'probably more quantified in terms of why that conclusion' [Participant 1]. Such an understanding of substantiated, valid claims is observed across the planning decisions within the case, where public claims are viewed as lacking technical evidence, leaving no reason to doubt developer claims. Developer claims were privileged throughout, from identifying no requirement for EIA, to the plant's contribution to local and national goals, and the ability to control harmful emissions. Developer claims were accepted even where modelling could not be replicated as submissions appeared logical and were produced by relevant experts. Similarly, statutory consultees are legitimised such that 'no objections' from consultees is accepted as support for development.

The threshold for the public and campaigners appears higher. The citizen science submissions of campaigners, while accepted as very technical, were not accepted as inherently valid and were used to encourage statutory consultees to re-verify their own submissions. Wider public input was viewed as 'personal', 'prejudicial', and included allegations 'about bias and corruption' [Participant 4], which were counterproductive in a system concerned with valid knowledge. This was suggested to occur as 'people wouldn't have known what they can oppose' [Participant 10], leading to sometimes self-defeating approaches to representations.

Such claims point to both the closure of the system to challenge and to the backlash the closure generates. This reflects hegemonic contestation located in the surface hegemony. From this hegemonic contest the causal mechanisms of the structural hegemony can be inferred.

Elements of structural hegemony

Rationalities. Three rationalities were prominent: a collaborative rationality, an economic rationality, and sustainability. Each of these was subject to contested claims but each had an identifiable impact on the determination of valid data.

Collaborative working was evident throughout the development. Due to the nature of the technology used and its 'larger than local' issues, officers were consistent with national policy and professional ethics recommendations and relied on submissions from the developer and technical consultees such as the environment agency, health and safety executive, and other internal expertise relating to ecology and energy. That there were no objections from technical consultees was a key element in the positive determinations in favour of the development. Conversely, while data and knowledge provided by the public campaigners in 2024 was noted as 'very technical' [Participant 1], this did not make it valid. Instead, officers referred technical data to technical consultees to test campaigners' claims on air quality and emissions. In this way, collaborative working supported the planner in identifying what was 'right' and 'most important' [Participant 1].

For campaigners and councillors, collaboration was seen more negatively. On the point of whether the development required an EIA (something of contention for several years), it was felt that 'officers joined forces with the developer to convince the inspector that it wasn't EIA' [Participant 7] and that the subsequent lack of engagement in such an issue by technical consultees e.g., the environment agency, was evidence of a 'cover up' [Participant 6]. For councillors on the planning committee who voted in favour of enforcement action in 2021 or had rejected the original 2008 application, the role of the planning inspector was to reinforce that the system is right and that councillors are wrong. Collaboration was seen to lead to 'group think', where planning officers, agencies, and the inspectorate agreed on high level aims and responded to challenge by stating 'I know I'm right because I've followed all of these things and we all agreed these things' [Participant 2]. Despite these responses assuming agential action to cover up or to narrow validity, it was also suggested that concerns were being listened to 'as much as was possible within the bounds of the law' [Participant 8], reflecting a structural closure rather than individual practice.

An economic rationality was observed in planners' decisions, including claims in 2008 and 2015 to the number of jobs being created for the town at the plant and its supply chain. A notable instance of an economic rationality gaining primacy over other concerns and knowledge claims is in relation to the proximity principle that states waste wood should be sourced locally. A condition seeking to guarantee this was left out of the inspector's decision to approve in 2010. The reasoning was that the costs of importing waste wood would ensure that supply was sourced locally. This was reiterated in the 2015 report for the larger plant, that specified that 'the market should dictate' the source, and that any condition would be too 'onerous' and could impact business 'viability' [2015 FUL].

The council's decision to approve the 2015 application was also suggested to have an economic rationality by way of the council's 'fear' that they would be sued if they rejected the development [Participant 8]. For campaigners, the rationality appeared as self-interest, as claims of 'money talks' and 'brown envelopes' were built upon their sense of a 'cover up' [Participant 6].

A sustainability rationality was expressed in different forms. Firstly, planners adopted a technical and regulatory view of sustainable development. This involved screening for EIA, assessing the development against local and national policy, and the environment agency permitting the plant to operate once it was built. Within their remit planners saw

no substantial harm to cause them to recommend refusal. Throughout, the development was seen as a solution to reducing landfill, responding to the waste policy, and the technology was accepted as renewable energy. That the site was appropriately allocated in the LDP allowed the principle of development to emerge and limited the validity of contrary claims.

For campaigners, the planning system's approach was seen as 'salami slicing' [Participant 7], whereby lay knowledge was limited by a narrow focus at each stage. They felt excluded by requests for technical detail when responding in normative terms to 'reams and reams' of documents, reflecting that to engage meaningfully 'you have to be an engineer or a lawyer' [Participant 6]. While campaigners eventually adapted to calls for technical data and engaged in citizen science activity, 'different perspectives' on sustainability emerge [Participant 3], explained most clearly by the claim that the planning system operates within 'regulatory science' which responds to scientific progress 'years after' it has been established in a scientific body of knowledge [Participant 8].

These rationalities constrained what was accepted within the decision-making as valid knowledge and directly lead to contestation from campaigners. This is further problematised by interactions with the doctrines observed in the case study.

Doctrines. The public interest was established as a public policy doctrine earlier in this paper, but in practice, this was further supplemented by the principle of development which proved to be a significant influence and constraint on decision-making once established. These two doctrines were observed to impact upon the validity of data in different ways.

An accepted interpretation of the public interest was observed in the planner's mandate to establish benefit 'for the whole community' as a protection against the narrower 'agendas' of campaigners [Participant 10] that needed 'to be filtered out' [Participant 4]. This interacted with rationalities to generate an enduring determination of validity of knowledge. Claims to acting in the public interest were contested when councillors felt they were overruled by the planning system. This increased the controversy of the case, as it was noted that where experiential knowledge was 'discounted actively' by the planning system, then the public had 'no hope' in outcomes [Participant 8].

An explanation for planners' determination of the public interest and validity was provided by national and local policy mandating waste and energy self-sufficiency. It was felt that LPAs handling waste-to-energy developments essentially became 'co-developers' as it was in their interest, and thus their interpretation of the public interest, to deliver such projects [Participant 8]. That contrary views were discounted is thus justified by the planners' interpretation of the public interest.

The principle of development was observed as a causal mechanism throughout the decision-making process. The principle of development for the incinerator was established through the interaction of land allocations in the LDP (adopted in 2005) and national policy allowing such development on such a land allocation. Despite councillors rejecting the 2008 application, the 2010 appeal decision reasserted the principle and approved the original application. During the 2024 decision, the principle of development, agreed as extant in the 2023 appeal process, led to the application arriving in the

form of Section 73, meaning a request for permission to amend conditions of the original consent, rather than making a new application. This impacted the scope of valid knowledge in the planners' decision.

Rather than testing whether the development was appropriate in this location, the decision centred on whether what was proposed in 2024 as compared to 2015 led to a 'fundamental difference' to the development [Participant 1]. Even if councillors refused the application, the development would revert to the 2015 permission. This limited the assessment of the changed context of the site which, for example, updated modelling identified as a flood risk area. As a high-risk development, this would be a significant constraint on a new application, but as the principle of development was already established, and the 2015 permission was extant, such modelling could be discounted as it made no fundamental difference to the fact that the plant was already built and permitted. Further claims that were discounted were that such developments were now limited by a national moratorium, that national policy recognised a climate crisis, and that any environmental benefits that the plant may have had in operation from 2008 were not apparent in 2024. The threshold for overriding the existing principle of development was thus higher than the threshold for setting the principle of development at the outset. As the principle of development is 'always a material consideration' [Participant 1] for subsequent proposals and applications, it is observed to take on significant causal power once established.

Discussion

In response to the observed rationalities and doctrines, determining valid data was constrained at the point of decision-making by planners' and the planning system's interpretation of the public interest, and the interaction of rationalities such as collaboration, economic, and sustainability. The public's representations and knowledge were 'discounted' by the planning system as the planning system became 'stuck' on a decision that become 'more and more wrong each day' [Participant 8], and the public experienced a closure of the system to their knowledge claims. They subsequently questioned its legitimacy, and sought to undermine not just individual planners, but the whole system including councillors, the environment agency, the planning inspector and government ministers.

While campaigners claimed agential cover-ups, there was little evidence of this in wider analysis. Instead, the interaction of rationalities and doctrines acted as causal mechanisms upon decisions, as established in the critical realist framework. The principle of development was actualised by the interaction of rationalities and doctrine during the 2008-2010 decision-making process. Once actualised, it displayed the power of a causal mechanism and the threshold to override the principle became greater than the threshold for setting it at the outset. This significantly constrained decision-making for planners in 2015 and 2024, as well as the 2023 appeal and created what is termed here a hegemonic lag. In simple terms, the hegemonic lag, is the expression and actualisation of a hegemony at a point in time, that subsequently attains an enduring causal power that constrains future decision-making. Just as hegemonies can endure changes in membership, external conditions, and contestation, so the actualised causal power, in this case the principle of

development, endured through changes to national policy, local context, and personnel within the LPA.

The critical realist framework and its application to a real-world case thus makes clear that the planning system creates conditions for a hegemonic lag to be realised in practice. The incinerator development represented the actualisation of the rationalities of planning in 2008 (market led interventions, weak sustainability, emphasis on collaboration with technical consultees), and an interpretation of the public interest accounting for national mandates (energy and waste self-sufficiency). These interpretations were not agential at an individual level but were instead unconscious responses to rationalities and doctrines, alongside contemporary national and local policy. The principle of development subsequently established contained causal power greater than the sum of the agency that created it, and the threshold for challenging the principle despite a changed site and policy context was thus higher than the threshold for the original setting of the principle. This restricted the planner's agency in the 2024 decision-making process by way of both the nature of the application (Section 73) and the scope for the validity of knowledge, leading to a recommendation for approval, in the face of significant contestation. The controversy surrounding the development led to distrust that threatened to undermine not only the local planning department, but the wider institution (the local authority) and others in the planning system such as the environment agency, the planning inspectorate, and government ministers.

Conclusion

This paper set out to question how 'the facts that matter' or 'valid knowledge' are determined in practice and to explore how this determination relates to controversy in the planning process. Applying critical realism and retroductive inferential logic, the paper established a conceptual framework capturing key determinants of validity in the decision-making process and in which hegemony was located in the Real (structural hegemony) and the Actual (surface hegemony). Applied to a case study the framework uncovered elements of structural hegemony including rationalities (economic, collaborative, sustainability) and doctrines (conceptions of the public interest, adherence to the principle of development), that interacted to determine not only validity, but the type of applications and scope of knowledge that can be submitted for a development. This narrowing of validity in the surface hegemony impacted the public's engagement with the planning system, and they sought to undermine the whole planning system with accusations of cover-ups and fraud.

An additional finding of applying the framework to a case was that planning creates the conditions for a hegemonic lag, whereby the actualisation of the principle of development in 2008-2010 attained an enduring causal power and the threshold for overriding it was greater than the threshold for establishing the principle at the outset. The enduring power of the principle, and its constraining influence on process (the Section 73 application) and the determination of valid knowledge, was subject to significant contestation. To overcome this, planners should be empowered with further agency to (re)determine the scope of applications and the validity of various knowledge claims when faced with long running cases or retrospective amendments to developments.

Finally, this research advocates for increased use of critical realism to expand planning theory's discussion of the role of the planner in institutional contexts where observed inertia of the planning system is considered alongside political struggle and contestation, such as planning for racial justice in a multicultural society (Gale and Thomas, 2021) and gendered urban spaces (Kern, 2021). Investigating these fields would identify additional rationalities and doctrines impacting upon decision-making and uncover further instances of hegemonic lag.

ORCID iD

Andrew Ivins https://orcid.org/0000-0002-1201-7921

Ethical considerations

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Data Availability Statement

The datasets generated during and/or analysed during the current study are available from the corresponding author on request.

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Author biography

Andrew Ivins is a PhD researcher and Lecturer at the School of Social and Spatial Sciences at Cardiff University. His research interests focus on decision-making in planning, the use of data and knowledge claims, as well as planning for health and wellbeing.