Reforming research cultures in UK HEIs in a neoliberal context: A critical discourse analysis of government and funder research policies

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Abstract

There has been an increasing focus on ‘research cultures’ within higher education institutions (HEIs), driven by greater awareness of negative experiences for staff. The current study explores the impact of government and funder policies on efforts aimed at improving research cultures within HEIs, in order to support effective action that addresses the challenges faced by staff and takes into account the policy context of higher education (HE). To enable a more comprehensive understanding of the relationship between policies and research cultures, the current study adopts Archer’s concepts of structure, culture and agency (1995, 1996). Four government and funder policies are analysed to surface the key discourses employed and the effect of those on the behaviour of staff within HEIs. These discourses are compared to the discourses evident in the literature review to understand where contradictions exist. Finally, the opportunities for cultural change raised by those contradictions are discussed, drawing on Archer’s concept of social morphogenesis (2013).

The analysed policies largely reinforce existing, dominant values within research cultures, and therefore reproduce elements that research communities have highlighted as unsustainable and problematic. Three key contradictions between the discourses in the policies and those associated with more positive research cultures are identified: narrow notions of research quality vs diversified and inclusive research quality; competition vs collaboration; performance management vs staff wellbeing. By applying Archer’s theoretical framework, recommendations for HEIs seeking to effect cultural change are made, including challenging or redefining existing values, addressing both culture and structure in initiatives, and building a critical mass around research culture values. The current study argues that conditions are ripe for genuine cultural change and advocates for discussion of research culture reform promoting the sustainability of the research sector to be integrated within ongoing discussions of reform related to the financial sustainability of the sector.

Contents

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Author’s declaration

I am the sole author of this thesis. To the best of my knowledge this thesis contains no material previously published by any other person except where due acknowledgement has been made in the form of a reference.

This thesis contains no material which has been accepted as part of the requirements of any other academic degree or non-degree program, in English or in any other language.

This is a true copy of the thesis, including final revisions.

1. Introduction

1.1. Study context

There has been an increasing focus specifically on ‘research cultures’ within higher education institutions (HEIs) over the past few years (Callard, 2023), defined as “encompassing the behaviours, values, expectations, attitudes and norms of our research communities” (Royal Society, 2018, p.3). Though consideration of contexts that facilitate high quality research has been around for decades (Hill, 1999), since 2018 there has been an increase in policy and institutional attention paid to research cultures, including an increase in staff employed with ‘research culture’ in the job title and institutional and sector wide initiatives to improve research culture (UKRI, 2024a). In June 2023, the Research Excellence Framework (REF) announced that the 2029 exercise would include direct consideration of research cultures, expanding the previous ‘research environment’ element that focused on the institution’s strategy and resources to support research and enable impact (REF 2029, 2023).

This increase in attention has been driven by greater awareness and discussion of flaws in the current research cultures in higher education (HE) sector. A large-scale survey and interviews with researchers, commissioned by the Wellcome Trust, revealed widespread concerns (Wellcome Trust, 2020). When asked what words they would use to describe their current experience of research culture, 55% of the words used were negative, with “Competitive”, “Pressured” and “Metrics” amongst the most commonly reported (Wellcome Trust, 2020), p.7). These cultural problems were seen to have consequences for researchers (e.g. stress, mental health problems), the research (e.g. reduced research integrity) and society (e.g. loss of talent, reduction in real-world innovation and impact). The report highlights how these negative aspects are attributed, in large part, to a competitive culture of performance management and an over reliance on narrow research metrics. Researchers noted that these flawed incentive structures often resulted from external sources, such as

government and funders. Indeed, a common challenge identified within UK HEIs is the prevalence of neoliberal ideologies in government research and HE policies (Olssen, 2021).

Across the UK, therefore, staff within HEIs are seeking to foster more positive research cultures to address the challenges faced by those in their research communities and to respond to external drivers such as REF, within a neoliberal context that drives (or worsens) culture challenges and is external to their control. Moreover, given the public funding model of the UK HE sector, HEIs are situated within a wider policy and regulatory context which requires them to align to government policies or risk loss of income (Atherton, Lewis & Bolton, 2024). Over the course of this doctoral research, the financial circumstances of the HE sector have become increasingly constrained (Universities UK, 2024) and there has been increasing pushback on the importance of research cultures (e.g. Sullivan, 2025). The current study explores the impact of government and funder policies on efforts aimed at improving research cultures within HEIs, in order to support effective action within this challenging context.

1.2. Research questions

To enable effective analysis of how the identified government and funder policies contribute to experiences of research cultures for those working within HEIs and identify ways in which effective cultural change can be achieved within the current policy landscape, the current study adopts Archer's concepts of structure, culture and agency (1995, 1996). This enables consideration of the values held within the cultural system, the structures that sustain these values, and the agency of individuals to respond to these influences. Key to this is the notion of contradicting values held within cultures, and the potential to capitalise on these contradictions in order to bring about social change. By applying this theoretical framework, the current study aims to answer the following research questions:

RQ1. What discourses exist in the analysed policies in relation to the aspects of research culture identified in the literature review?

RQ2. How do the discourses of the analysed policies enable or constrain the actions of those working within HEIs?

RQ3. To what extent do the discourses in the analysed policies align with sector discourses about research cultures as identified in the literature review?

RQ4. How can meaningful cultural change be achieved within the current policy context?

1.3. Research approach

To understand the effect of government and funder policies, four policies published within this time period of increased attention on research cultures have been selected:

1. The UK Research and Development (R&D) Roadmap (Department for Business, Energy and Industrial Strategy, 2020)
2. The R&D People and Culture Strategy (Department for Business, Energy and Industrial Strategy, 2021)
3. The UK Research and Innovation (UKRI) Strategy (UKRI, 2022a)
4. The UK Science and Technology Framework (Department for Science, Innovation and Technology, 2023).

Each of these policies establish priorities and strategies for enhancing the UK's research and development sector. They all follow the announcement of a substantial increase in public spending on R&D in the Spring 2020 budget, which committed to increasing spending to £22bn by 2024/25. This also represents a period of significant policy turnover as a result of changes to government stakeholders. Though the policies were all created and published under former Conservative Governments, rather than the current Labour Government, the UKRI Strategy covers the period 2022-2027 and remains in effect. Similarly, a continuation of the Science and Technology Framework has been indicated through the appointment of Sir Patrick Vallance, key author of the Framework, as Minister of State for Science, Research and Innovation, and his continued references to the Framework

in oral evidence in parliament (Science and Technology Committee, 2024). Due to the word constraints of this thesis, which is shorter than a typical thesis because of research projects earlier in the course structure, analysis is limited to these four policies.

Policies will be analysed using Hyatt's (2013) Critical HE Policy Discourse Analysis Framework, which draws upon Fairclough's (2013) relational approach to Critical Discourse Analysis. Through this analysis, the key discourses employed within the government and funder policies will be surfaced and the effect of those on the behaviour of staff within HEIs will be explored in relation to Archer's theoretical framework (1995, 1996). These discourses will be compared to the discourses evident in the wider literature to understand where contradictions exist. Finally, the opportunities for social change raised by those contradictions will be discussed, drawing on Archer's concept of social morphogenesis (2013).

1.4. Academic rationale

By applying Archer's theoretical framework, the current study provides a theoretical basis for understanding research cultures that is often lacking from the literature and how effective culture change in UK HEIs can be achieved. Existing efforts for culture change often include concordats, agreements and institutional commitments or position individuals as self-maximising agents (Phipps & McDonnell, 2022; Callard, 2023; Morawski, 2020). Considering the influence of structure and culture on the actions of those within the HE sector provides greater explanation of why certain values may be held, why individuals may act in certain ways, and what needs to change in order for more positive research cultures to exist. While the current study does not attempt to proscribe a specific set of actions for all HEIs, as this would not take into account the individual contexts, histories and missions of institutions (Farquharson, Sinha and Clarke, 2018), it does seek to raise the visibility of opportunities for social change and the contribution of government and funder policies to the cultural system in order to inform HEIs' own deliberations and cultural change processes. In

this way, the current study aims to support a cultural change that goes beyond engagement with initiatives and concordats to improve the experience of those working within HEIs, ensuring the quality and robustness of the research, and maintaining the benefit of the research for society.

1.5. Thesis structure

The following two chapters provide context for the analysis by outlining the key literature that informs the current study. This is split by literature relating to long-term policy trends have influenced the purpose, governance and funding of UK HEIs, with a particular focus on the research conducted within them (**chapter 2**), and literature relating to theoretical conceptualisations and current manifestations of research cultures (**chapter 3**). Chapter 3 includes a more detailed explanation of Archer's theoretical framework that is applied throughout this study. These chapters therefore provide the background information necessary to understanding the policy analysis and its conclusions.

Chapter 4 describes the research design in more detail, including the critical realist stance adopted and how this informs the critical discourse analysis. A brief context of the production and publication of the policies selected for analysis is provided.

Chapters 5, 6, and 7 summarise the key themes of the analysis, providing an in-depth account of the discourses identified. The chapters are split according to the three key themes emerging from the policy analysis: notion of high-quality research (**chapter 5**), competition and collaboration (**chapter 6**) and people and talent (**chapter 7**).

The potential effect of these discourses on research cultures are explored in greater detail in the discussion (**chapter 8**), drawing on wider literature to theorise the implications of these discourses. The core areas of contradiction between the analysed policies and sector discourses related to research cultures are explored, which in turn informs discussion of how meaningful cultural change, drawing on Archer's notion of social morphogenesis (2013) can be achieved within the current policy context. Finally, the key knowledge contributions of the

current study are discussed and implications for HEIs and policy makers are outlined in the concluding chapter (**chapter 9**).

2. Policy Landscape

2.1. Introduction

This chapter provides an overview of global and UK policy trends that are relevant to the policies identified for analysis and that form the necessary context for understanding the goals of these policies, as well as the current state of research cultures. Ball (1993, 2006) notes that policy research often falls down by not defining what is meant by the term ‘policy’, as such the chapter begins with an overview of how policy is understood within the current study. After this, the broad global policy trends towards a knowledge-based economy, globalisation and neoliberalism are identified and discussed. Finally, the effect of these trends on HEIs in terms of their purpose, governance and funding is considered, and a brief overview of recent policy developments affecting HEIs is outlined. In doing so, this chapter provides the background information required to engage with the later policy analysis.

2.2. What is policy?

Ball (1994, 2006) argues that policy is what is written, what is enacted and what is meant. As such, policy can be understood both as texts and as discourses; recognition of both enables more effective analysis. Viewing policy as a text underscores the fact that it was produced by people working to represent their interests and realise their projects and agendas through the policy. Within government, the process of policy development often entails negotiation between stakeholders and compromises at various stages, such that the resulting text is a product of multiple influences and agendas. The personal or positional interests of the authors and other stakeholders therefore can have a significant effect on the content of the policy. Viewing policy as a text also recognises that policies are meant to be read, with the author hoping that it will be interpreted in a certain way but without ultimate control over how different readers will interpret the policy. Indeed, many of those who are affected by policies do not ever read the original text (particularly in the case of HEIs) and often experience the policies through the interpretations and enactments of others. In HEIs,

often it is the institutional leaders and policy functions within professional services directorates that read the policies and then are charged with encouraging others to act in line with the policies by translating them into institutional structures, procedures and further policies. Policy authors are therefore keen to frame contents in order to best secure the 'correct' reading; identification of this framing therefore can further uncover the intended agendas (Giddens, 1987). Considering policy as discourse enables exploration of the ways in which the policy subjects are constructed and the ways in which those affected by the policies are "'invited' (summoned) to speak, listen, act, read, work, think, feel, behave and value" (Gee, Hull, & Lankshear, 1996, p. 10). This is critical to understanding the values communicated in the identified policies, and therefore the impact of these policies on research cultures.

Ball's definition as both text and discourse aligns with critical realist stance that this study will adopt. The text exists in the empirical and actual domains as do actions in response to them; but the policies also include discourses that construct meanings, communicate values and produce 'truths'. These discourses sit in the real domain and act as generative mechanisms for what happens in the actual and how we interpret events in the empirical domain. Ball (2006) states that policies constrain but cannot determine action; indeed, this aligns with Archer's (1996) theory of structure, agency and culture that the current study uses to conceptualise research culture, which is discussed in more detail in the following chapter. To briefly touch on how this intersects with the definition of policy, policies contribute to structural and cultural systems both through their material content and their discourses, which in turn constrain or motivate actions by individuals within the systems but they cannot determine what the individuals do, even where the policies take the form of regulations or mandates, as the individuals hold their own powers and agency to respond. As Ball (2006, p. 46) writes:

> Policies do not normally tell you what to do, they create circumstances in which the range of options available in deciding what to do are narrowed or changes or

particular goals or outcomes are set. A response must still be put together, constructed in context, off-set against other expectations.

This quote effectively summarises how policies are viewed in this current study; they are viewed as key factors in determining the situational circumstances that influence the actions of those working within HEIs and will be analysed as texts and discourses to understand what influences they produce and how this affects activities within HEIs aimed at improving research cultures.

2.3. Global policy trends

2.3.1. Knowledge-based economies

The role and importance of knowledge in developing societies and economies has been growing globally over time. The concept of a 'knowledge society' emerged in the 1960s and 1970s, with Drucker (1969) noting "knowledge has become the central factor of production in an advanced, developed society" (p.248). Core to these theories is that knowledge is a new factor of production, in addition to previously posited factors of production such as land, labour and capital goods (Drucker, 1969; Bell, 1973; Castells, 1996; Robertson, 2008a). Further conceptualisations of knowledge societies have illustrated the potential for an associated radical transformation in the structure of the economy (Bell, 1973; Bohme and Stehr, 1986; Stehr, 2005; Beerkens, 2008); for example, Bell (1973) theorised that developed knowledge societies would be characterised by a 'sociologizing' orientation concerned with the public good, rather than an 'economising' logic oriented to profit-loss calculations. However, as Jessop (2012) argues, this particular prediction did not come to pass, with considerations of the economy being increasing placed above those of the production and application of knowledge for public good. A clear indicator of this is that the term 'knowledge-based economy' has become much more commonly used in policy than 'knowledge society'. Set against the economic crises of the 1970s, with the USA and UK experiencing a declining in the production of manufactured goods (Jessop & Sum, 2006), the

idea of a knowledge-based economy was seen as a way for renewed economic growth (Robertson, 2008a). By 1999, the OECD was identifying, collecting and publishing data on 32 indicators of a knowledge-based economy including measures related to investments in capital and knowledge, education levels, and scientific output (Godin, 2006). This scoreboard has since been expanded to over 1000 indicators on research and development, science, business innovation, patents, education and the economy (OECD, 2025). Politically, the knowledge-based economy has now become an objective towards which nation states, regions (such as the European Union (EU)) and the global community aspire (Valimaa & Hoffman, 2008).

The EU Lisbon Strategy (2000-2010) is a key example of this development. Stemming from concerns about the economic position of Europe in comparison to the USA (Robertson, 2008b), it established the strategic goal of making the EU “the most competitive and dynamic knowledge-based economy” by 2010 (European Council, 2000, para. 5). Following a mid-term review that concluded there had not been satisfactory economic growth performance, the European Commission announced a re-launch with a renewed focus on investment, innovation and jobs (European Commission, 2005). Roberston (2008b) highlights how the discourse in the strategy shifted such that ‘knowledge’, ‘innovation’ and ‘education’ became more central and were redefined such that, for example, ‘knowledge’ was reduced to research and development and ‘innovation’ was attached to particular areas (digital technologies, biotechnology and the environment). In 2010, this was developed into the ‘Europe 2020’ strategy for “smart, sustainable and inclusive growth” with smart growth referring to “developing an economy based on knowledge and innovation” (European Commission, 2010, p.3). This renewed strategy maintained the focus on the knowledge-based economy, though the aim for research and innovation changed from mass production of knowledge to supporting knowledge that has the potential for technological breakthroughs and major economic impacts (Sørenson, Bloch & Young, 2014). While this strategy is just one example of the policy trend aimed at knowledge-based economies, it is reflective a

widespread movement and policy orientation across Europe towards knowledge-based economies, as EU Member States influence the development of and agree on such strategies.

2.3.2. Globalisation

Governance and policy influence from organisations such as the European Union, the OECD and the World Bank are representative of a broader ‘globalisation’ movement (Dale, 2010). Globalisation refers to the process in which:

> the shaping of the playing field of politics is increasingly determined not within insulated units, i.e. relatively autonomous and hierarchically organized structures called states; rather, it derives from a complex congeries of multilevel games played on multi-layered institutional playing fields, above and across, as well as within, state boundaries. (Cerny, 1997, p.253)

In the 90s and 00s, the growth of networked communications and access to global knowledge via the Internet was accompanied by in-principle support for globalisation (Marginson, 2024). As countries could not gatekeep knowledge, the global science network expanded rapidly. Global markets emerged and international organisations were established to influence global trends through ‘governance without government’ (Rosenau & Czempiel, 1992). Over this period, countries that could match national and global practices (e.g. through influencing global trends) experienced particular success with Anglophone nations often seen as leaders of global politics (Marginson, 2024). Within this context, there was a general trend for countries to, individually, take on a “competition state” form (Cerny, 1997, p.263) to gain advantage in these global markets. The key characteristic of a ‘competition state’ is that economic concerns are prioritised above all other dimensions of activity (Dale, 2010). Nonetheless, Marginson (2024) notes that, since 2010, an increase in political power of countries outside of the West, such as China, India, Japan and Russia, has destabilised Euro-American global agendas. Global competition has become accentuated by an increase

in nation-bound thinking and populist nationalism, with a notable political opposition to inwards migration. Nation-state agendas mean that the globalisation of knowledge has ceased to be viewed as a universal good, and national-global scales are instead seen as zero-sum.

2.3.3. Neoliberalism

Neoliberalism has been one of the most influential ideologies in the knowledge-based economy (Delanty, 2001). Although a “chaotic” and “slippery” concept (Jessop, 2013, p.65), which is frequently overused and misapplied (Rowlands & Rawolle, 2013; Tight, 2019), neoliberalism can be broadly understood as the belief that individual freedoms can be guaranteed by the freedom of the market and of trade (Harvey, 2005). This is differentiated from classic liberalism, which views state power as a negative concept from whose interventions the individual should be freed, as neoliberalism represents a positive conception of the state as one which supports markets by providing the conditions, laws and institutions necessary for its operation (Foucault, 2008). In this way, neoliberalism can often be contradictory:

> Neoliberalism is depicted as embodying freedom from the imposition of the state upon the individual at the same time as being dependent upon indirect (and sometimes direct) state support for both big and small business and the financial sector. At times, it is survival of the fittest only insofar as the “fittest” is deemed appropriate or suitable by government. (Rowlands & Rawolle, 2013, p.264)

Ferlie, Musselin and Adresani (2008) note the strengthening of management of the public sector as an example of neoliberalism that has been particularly evident in the UK but has also been notable across all European countries. From the late 1970s, political pressure to reduce the tax burden of the public sector led to efforts to reverse the pattern of public sector expansion seen since the 1940s, with a view to ensuring greater value for money and

increasing productivity (Ferlie et al., 2008). Changes were strongly resisted by well organised interest groups within the public sector (e.g. trade unions, professional associations), leading to a strong top-down management style from the state as well as within organisations. This drive to produce a smaller, more efficient and more results oriented public sector is often termed ‘New Public Management’ (Andresani & Ferlie, 2006). New Public Management is characterised by the use of markets to encourage competition between public sector providers, measures of performance and quality assurance based on audit systems rather than self-regulation, and entrepreneurial management. In this way, New Public Management allows governments and institutions to give the appearance of freedom, whilst setting standards and supporting investments. From the 90s, neoliberalism as an ideology in the West reduced in visibility, becoming instead part of ‘common sense’ and being an ideology that all political parties must appeal to in order to have credibility (Winlow et al., 2015).

The extent to which neoliberalism continues to be the dominant ideology in the UK is under debate, given the apparent failure of neoliberal policies to secure economic advantages (Marginson, 2024; Siddiqui, 2025) and the UK Government’s response to the Covid-19 pandemic, which included significant increases in government borrowing and state intervention (Winlow & Winlow, 2022). Combined with the turn away of globalisation, commentators query whether neoliberal ideologies can be adapted to suit a national form. The election of a Labour government in 2024 further heightened this potential, with Prime Minister Sir Keir Starmer’s *Change* Manifesto promising reduced spending but greater state intervention (The Labour Party, 2024). Indeed, the adoption of strategic nationalisation – such as with the creation of GB Energy – could be seen as going against neoliberalism. However, the self-imposed constraints on borrowing and cautious approaches to redistributive taxes also appear to be appealing to neoliberal values. Manwaring and Foley (2026) identify an emerging ideological era of ‘minimal social democracy’, in which material protections are put in place for working class people but ambitions for larger scale social

democratic reforms are limited. Winlow and Winlow (2022) note that while there appears to be more appetite for progressivism, economic nationalism (e.g. as seen in the more recent policies of the Conservative Party and Reform) still has the potential to displace this.

2.4. Effect on HEIs

The HE landscape in the UK is diverse, encompassing a range of mission focuses and a broad spectrum of research and teaching intensity. The extent to which HEIs undertake teaching and/or research activities will mediate the effects of these global policy trends, the impact that the analysed polices have, and the extent to which staff are concerned about research cultures. 157 HEIs submitted to the most recent national research assessment in 2021 (REF 2021, 2021) and therefore receive a block institutional grant for research (discussed more below). While this figure doesn't include all of the HEIs and HE providers in the UK, it gives an indication of the number of HEIs that perform sufficient research to opt into this assessment. HE in the UK has expanded multiple times over its history and HEIs are often categorised informally based on their age: 'ancient' (e.g. University of Oxford, University of St Andrew's), 'redbrick' which emerged in the 19th century (e.g. King's College London, University College London), 'technological' which emerged after World War Two (e.g. University of Bath, University of Warwick) and 'post-92s' which includes former polytechnic and other vocational institutions that were awarded university status after the Further and Higher Education Act of 1992 (Krcal & Bryan, 2018; Pearson, 2024). These categories often overlap with perceptions of prestige, with older HEIs being seen as delivering higher quality teaching and research (Boliver, 2013). Within pre-92 HEIs, further distinctions of prestige and quality are made based on their research intensity (Boliver, 2013). These perceptions affect student and staff recruitment, which can in turn affect the attraction of funding in the form of tuition fees and competitive research income. As a result, the UK HE landscape is fairly uneven in terms of the resources available to each HEI. There are also a number of mission/lobby groups that exist in the sector, representing different origins and ambitions, adding further heterogeneity of resources within the sector (Krcal &

Bryan, 2018). One of the most high-profile is the Russell Group, which represents a self-selected group of 24 research-intensive, typically older, HEIs that often rank highly in global league tables (Russell Group, 2025). The group advocates for the interests of its members and has a strong sway with the UK Government. There are two officially recognised representative bodies that also influence policy development: GuildHe, which represents specialised institutions such as colleges of arts and music, and Universities UK, which has 141 members and receives funding from the UK funding bodies and GuildHE to represent all UK HEIs (Krcal & Bryan, 2018).

2.4.1. Role of HEIs in a knowledge-based economy

A traditional conception to the organisation of HEIs is the Mertonian sociology of sciences, in which the role of the state is to ensure autonomy of science. Academics are viewed as producers, users and owners of an esoteric knowledge whose quality cannot be assessed or controlled by those outside of academia (Ferlie et al., 2008). To support this, academics are granted academic freedom from the state to direct their own research, on the condition that the research adheres to the norms, values and best practices of the academic community. The HE system in the UK until the late 70s was a clear model of this conception, with the state allocating a public budget to the University Grant Committee (a purely academic body), which then distributed it to highly collegial HEIs (Ferlie et al., 2008; Kogan & Hanney, 2000). However, within the knowledge-based economy, research organisations are required not only to produce new knowledge but also take part in knowledge transmission through education, as well as knowledge application, such as inputs to problem-solving (Sorensen, Bloch & Young, 2015). As a result, the connection between the HE system and policy goals for the economy and society become sharper (Ferlie et al., 2008).

As primary producers within the knowledge industry, HEIs are increasingly expected to contribute to economic development and social wellbeing by providing a trained workforce

for economies that are dependent on knowledge (Jongbloed, 2007). The demand that HEIs face with regards to teaching has expanded and changed significantly in line with the development of a knowledge-based economy. Trow (2010) highlights that the expansion of HE, founded on the premises of economic growth, social justice and social mobility, has been evident in most parts of the developed world since the second half of the 20th century. This 'massification' of HE entailed a widening of participation from the 'elite' to more diverse and previously underrepresented cohorts of students. In many countries, this widening of participation is often accompanied with neoliberal policies on efficiency and regulation through market forces (Delanty, 2001). As a result, students are increasingly positioned as customers and HEIs are expected to compete for students (Naidoo, Rajani & Whitty, 2014). In the UK, this can be seen in quality assurance related policies, such as the creation of the Office for Students and the Teaching Excellence Framework. Participation in HE has even become an international indicator of national economic performance (Beerkens, 2008), further increasing the demand on HEIs to deliver.

In addition to providing a trained workforce, HEIs are expected to produce knowledge that addresses key societal challenges and enables countries to compete with other nation states in terms of science, technology and innovation, engaging with knowledge-intensive industries whilst doing so (Brennan, Locke & Naidoo, 2007). For HEIs, this expectation translates into a significant shift in organisation from 'mode 1' to 'mode 2' (Gibbons, 2003), in which the old paradigm of scientific discovery defined by academics in discrete disciplines is superseded by a new paradigm of knowledge production that is designed to address multidisciplinary societal challenges and is subject to multiple accountabilities. This shift has also been conceptualised as a change to the 'Triple Helix' model, which illustrates the enhanced role of HEIs in innovation within a knowledge society (Etzkowitz and Leydesdorff, 2000). Previously isolated institutional social spheres of 'academia', 'state' and 'industry' become increasingly intertwined, bringing together academic, economic and wider networks of social actors to produce, exchange and apply knowledge. In line with these changes,

traditional notions of academic freedom become redefined to move away from the image of the scientist as external to society and evaluative governance is introduced to focus publicly funded research on delivery of these policy goals (Ferlie et al., 2008).

2.4.2. Governance of HEIs

While HEIs in the UK are generally considered to be autonomous, self-governing organisations with their own institutional governance structures, policies and procedures, that autonomy is situated within a wider policy and regulatory context which strongly influences activity (Atherton, Lewis & Bolton, 2024). Responsibility for the management of HE at a government level in the UK is devolved, with each nation having their own governing body. The approaches taken differ between nations; for example, the Office for Students in England takes a more regulation-based approach to management, setting requirements that HEIs must meet for teaching quality, student outcomes, equality of access and effective governance and financial management in order to access publicly funded tuition fees (OfS, 2022). In contrast, the Scottish Funding Council (SFC) commissions the Quality Assurance Agency to work with HEIs to conduct institutional reviews and make recommendations for improvements as part of SFC's Quality Enhancement Framework (SFC, 2025a). Through these governing bodies, the provision of education is managed and HEIs gain access tuition fees.

Research in HEIs is governed separately from education (although the Scottish Funding Council is also the main research funding council for Scotland). Broadly speaking, this is delivered through a UK-wide approach, in which the Department for Science, Innovation and Technology (DSIT) sitting in the UK Government has overall responsibility for government spending on research and innovation (Atherton, Lewis & Bolton, 2024). DSIT leads on the development and implementation of UK research policies and distributes its budget accordingly to support their delivery. DSIT's research budget is largely distributed through UK Research and Innovation (UKRI), a non-department public body of the

Government that funds research in HEIs, research organisations, private businesses, public bodies, charities and NGOs (UKRI, 2025a). Within this approach, HEIs are part of a much wider group of research performing organisations, rather than having a dedicated government office. Research funding from UKRI is invested in accordance with its overarching strategy, which is agreed with DSIT. In order to attract research funding, therefore, HEIs' research strategies are expected to align with Government and funder policies and ambitions for research.

2.4.3. Funding of HEIs

To encourage delivery against policy goals, governments implement accountability mechanisms for organisations receiving public funding, which, in Europe, have broadly been achieved through New Public Management (Ferlie et al., 2008). In the UK, HEIs have a 'dual support system' for research, which provides both project-based funding and institutional block grants. Institutional block grants for research are un-hypothecated and allocated via a national accountability-based institutional research assessment – currently the Research Excellence Framework (REF) – which informs the allocation of approximately £2 billion to HEIs in England each academic year (UKRI, 2024b). The funding bodies for other nations in the UK have equivalent strategic institutional funds, for example, Scottish Funding Council allocates approximately £250 million per year through its Research Excellence Grant, representing the majority of their funding for research in Scotland (SFC, 2024b). The UK was the first country to introduce such an assessment and, while there are other countries with comparable peer-review exercises, most countries employ it to allocate a small proportion of institutional funding with the exception of Finland (who use it to allocate 31% of institutional funding at a national level), Belgium (36%) and the UK (52%) (Technopolis, 2019).

With regards to project-based funding, there has been a general shift from delegation to the scientific community towards delegation to quasi-independent agencies to allocate funding to support research oriented to social and economic priorities (Lepori et al., 2009).

These agencies are typically bound by conditions from the government, such as programmes explicitly directed to specific research themes (Lepori et al., 2009). In the UK, project-based public research funding typically covers only 80% of the full economic costs of the research activity (UKRI, 2025b), meaning that HEIs are expected to cover 20% of the costs for each project from other income streams. EU and charitable funding can cover directly incurred project costs only, but either pay a flat rate or no contribution towards indirect costs (i.e. overheads associated with organisational administration and research management). The institutional block grant calculated based on REF results can be used to make up this shortfall, though is generally used by institutions to cover infrastructure, staff salaries and internal research funding pots. This has led to an unstable funding model where the amount of funding going into the UK research system has increasingly fallen short of the costs of associated with undertaking the research (UKRI, 2023). Similarly, the cost of delivering publicly funded teaching activities has also exceeded the funding allocated for it, as policies aimed at the massification of HE intersect with tuition fee caps that do not rise with inflation.

As a result, HEIs rely on cross-subsidies from other income streams to cover these costs, including non-public teaching, paid primarily by international students, and from other commercial income streams (e.g. professional development provision, consultancy, and licensing of technology) (UKRI, 2023). However, political and economic developments in recent years have left HEIs open to financial challenges; for example, Brexit, COVID, and immigration policies have reduced the number of international students (Universities UK, 2024). Similarly, alternative commercial revenue streams have been interrupted by the COVID pandemic and rising inflation. Combined, this has led to increasing pressure on HEIs to cut costs. The Office for Students suggests 72% of English universities will be in deficit by academic year 2025/26 if trends continue (Lapworth, 2024). For Scotland, data is reported differently; Scottish universities recorded a surplus of more than £17 million in 2023/24, a 92% reduction on the £211 million surplus recorded in 2022/23, representing a significant

deterioration (Williams, 2025). Nine of Scotland's 19 universities reported operating in a deficit.

2.4.4. Recent political developments affecting HEIs

This section has explored how these long-term policy trends have influenced the purpose, governance and funding of UK HEIs, with a particular focus on the research conducted within them. Concerns about research cultures are rarely acute, as will be discussed in the following chapter, and therefore an overview of long-standing policy positions is critical to understanding these concerns. However, it is worth noting three more recent developments that have had a significant impact on HEIs over the time period covered by the research policies under analysis:

- **Brexit**: Following a referendum in 2016, the UK began the process of leaving the European Union (EU), which included negotiations on access to EU research funding and collaborations. Ultimately, access was agreed in 2020 and formal association to Horizon Europe was finalised in 2024. Nonetheless, by this time, the UK's share of EU funding had already fallen by over one third since 2016, levels of UK-EU collaborations had reduced and there are concerns that the UK's attractiveness to international researchers has dropped (Costigan & Wilsdon, 2021). This process of negotiations also resulted in instability within the UK Government, with three Conversative Prime Ministers covering this period: David Cameron (resigned in 2016), Theresa May (resigned in 2019) and Boris Johnson.
- **COVID-19 pandemic**: The UK suffered the fifth highest mortality rate in the world during the COVID-19 pandemic and experienced a 9.9% drop in GDP over 2020 (Costigan & Wilsdon, 2021). The UK's research sector was very visible during this time, with scientific advisors appearing alongside politicians in televised briefings and expert advice being widely reported. This resulted in higher levels of political support but had mixed impact on public trust in research. The pandemic also intensified

scrutiny of research processes and social movements at the time, such as Me Too and Black Lives Matter, strengthened discussions about systemic inequalities in research including how it is funded, practised and evaluated. Accordingly, the prominence of issues related to research cultures increased. Finally, scrutiny of decision-making processes during the pandemic contributed to further political instability, leading to the resignation of Prime Minister Boris Johnson in 2022.

- **Rising inflation and the cost-of-living crisis**: The pandemic left the UK economy with high inflation and low growth, and this was worsened by the rise in energy prices following Russia's invasion of Ukraine in February 2022 (Sowels, 2024). This economic situation that was inherited by Prime Minister Liz Truss after Mr Johnson's resignation and wide-ranging fiscal measures were proposed to resolve it. However, this plan for increased government borrowing and led to a sudden drop in the value of the pound and further increases to inflation. Though most of the measures were scrapped almost immediately, there was a loss of confidence in the government and a fifth Conservative Prime Minister in less than a decade was selected – Prime Minister Rishi Sunak. Subsequent budgets sought to rectify this situation by raising taxes and cutting government spending, a trend which has continued since the July 2024 election of Labour Prime Minster Sir Kier Starmer. This includes moving to a 'flat cash' settlement of £86bn for research spending starting from April 2026, representing a real terms decline in funding based on inflation forecasts (Bisson, 2025).

In light of the financial difficulties facing the sector, the UK Government is considering significant funding model reforms (Jarvis, 2024) and has, anecdotally, been reported to be holding discussions on the purpose and role of universities in the modern day. Inferences about the nature and the content of these discussions can be seen in the publications coming from core lobby powers within the HE sector, including the Universities UK 'blueprint for change' (Universities UK, 2024), the Russell Group's 'Future Ready' report (Russell

Group, 2024) and various Higher Education Policy Institute articles on the topic (Habib and Hastings, 2025; Robinson, 2024). These reports have a strong emphasis on the role of universities in terms of producing new knowledge, and sharing that knowledge through education, as well as through knowledge exchange and commercial activity.

2.5. Conclusions

Recognising this policy context is critical to understanding the challenges experienced by those working within current research cultures, as well as understanding the goals and motivations of the analysed research policies. It is clear from this review that global policy trends of knowledge-based economy goals, neoliberalism and globalisation have had a significant influence on the role, governance and funding of HEIs. The effect of this on the experience of those working in UK HEIs is discussed more in the next chapter. The financial discussions and proposals for reform discussed above highlight that the UK HE sector is at a pivotal point, where significant change is required to secure its sustainability. Nonetheless, those working within the HE sector have highlighted concerns about current research cultures that also present a threat to the sustainability of the sector. The current study aims to explore how the identified policies contribute to these concerns and how sustainability can be promoted through reforms to research cultures within the current policy landscape.

3. Research Cultures in HEIs

3.1. Introduction

This chapter outlines the way in which 'research cultures in HEIs' will be defined for the purposes of this study, adopting Archer's concepts of structure, culture and agency (Archer, 1996) and wider morphogenetic approach (2013). Other theoretical conceptions of research culture are briefly explored in order to justify the choice. In order to understand current experiences of research cultures and how the cultural system of HEIs manifests, wider literature on topics related to research cultures is summarised, including sector wide surveys. This provides an overview of current challenges facing those working in HEIs and ongoing initiatives to foster more positive research cultures. Finally, the gap in the literature that will be addressed by the current study is highlighted. As such, this chapter outlines the key sector discourses related to research cultures, which the analysis will refer back to in order to understand to what extent the identified government and funder policies align.

3.2. Defining 'research cultures'

3.2.1. Sector definitions

Despite gaining significant momentum since 2018, the term 'research culture' remains loosely defined (UKRI, 2024a). The most commonly used definition is Royal Society's (2018, p.3) definition of research culture as encompassing "the behaviours, values, expectations, attitudes and norms of our research communities". Royal Society notes that these attributes influence researchers' career paths and determine the way that research is conducted and communicated. This definition has become the working definition for the sector and is often cited by funders (e.g. UKRI, 2022b), HEIs (e.g. University of Lancaster, 2023) and professional associations (e.g. Science Europe, 2023). However, whilst helpful for explaining the concept of a research culture to a lay audience, this definition requires

expansion before it can be applied more tangibly, for example for research or institutional monitoring purposes.

One way in which this has been done is to define what an ideal research culture looks like. Using the Royal Society definition as the starting point, UKRI (2024a) developed a framework to identify the values and behaviours that enhance research cultures in terms of how research is managed and undertaken, how research ensures value, how people are supported and how individuals engage with others. Under this framework, healthy research cultures are defined as those with high levels of research integrity, translation of research into real-world impacts, a diverse research workforce, broad recognition and reward for all contributions to the research endeavour, inclusive working environments and effective leadership and management, amongst other traits. Similarly, Science Europe (2021, p.2) set out their vision for the research culture of the European Research Area to be a culture where:

> a) all participants in the research endeavour are appropriately recognised for their diverse contributions, b) the broad skills and competencies of researchers are fostered and supported by suitable training, appropriate infrastructure, and responsible management and governance, c) research integrity and high ethical standards are promoted effectively, and d) careers in research are attractive and sustainable.

Whilst recognising that these conditions do not yet exist, Science Europe (2022) lists the values that are necessary to underpin this envisaged culture as: autonomy/freedom; care and collegiality; collaboration; equality, diversity and inclusion; integrity and ethics; and openness and transparency. In addition, some institutions have translated these international and national level visions of research cultures into their own priorities to suit their context and specific challenges; for example, the University of Glasgow's (2020) action plan for

research culture sets out five priority areas: collegiality, career development, research recognition, open research and research integrity.

Indeed, research cultures exist at national and international levels, in disciplines, in institutions, in organisational departments and in research teams, and these differing research cultures influence each other. This means that conceptualising research culture by defining what an ideal research culture looks like is limited. The definition will necessarily differ based on context and mission; for example, an institution with close ties to industry may consider collaboration to be a more salient aspect of research culture, and an institution with a high proportion of postgraduate researchers and early career researchers may place a higher value on supporting research careers. For this reason, I refer to 'research cultures' in the plural to clarify that there is not a single research culture that is experienced uniformly. Moreover, these sector definitions are further limited as a basis for conceptualising research cultures in this project as they are intrinsically politicised and value laden. Each of the international, national and local organisations mentioned above are defining research culture with the intention of encouraging particular behaviours and values and therefore foreground certain aspects of culture over others. In order to understand how HE policies influence HEIs' ability to enhance their research cultures in line with their own values and missions, this project requires a neutral conceptualisation of what a research culture is and how it is influences. These sector definitions do not provide this but nonetheless can inform the approach to analysis and the definitions produced by government bodies will be directly included within analysis.

3.2.2. Definitions of organisational culture

Research into organisational culture theory contains value-neutral conceptualisations of cultures, which are highly relevant as UKRI (2024a) notes that 'research culture' is a very HE-specific term that is more commonly referred to in other research contexts as simply 'organisational culture'. Similar to the Royal Society definition, theories of organisational

culture frequently focus on the norms, attitudes and values that shape an organisation (Hofstede, 1980; Pettigrew, 1979; Schein, 1981). Schein (1990, p.111) explains that culture is “what a group learns over a period of time as that group solves its problems of survival in an external environment and its problems of internal integration.” Schein notes that the cognitions shared by the group (e.g. perceptions, language and though processes) are the “ultimate causal determinant of feelings, attitudes, espoused values and overt behaviour” (ibid.). In this way, the shared set of assumptions provides automatic patterns of perceiving, thinking, feeling and behaving which in turn provides meaning, stability, and comfort, relieving the anxiety felt by being unable to understand or predict events within the group. Cultures are created and strengthened through a range of mechanisms, including: what leaders monitor; how leaders react to ‘critical incidents’ like insubordination; deliberate role modelling and coaching; reward and recognition criteria and processes; and, recruitment, promotion, retirement and removal criteria and processes (Schein, 1983).

Translating this work into a HE context, Hill (1999, p.2) proposes the following components of research culture:

- Observed behavioural regularities when people engage in research, such as the language and the rituals used.
- The norms that evolve in research groups or research environments.
- The dominant research related values espoused by an organisation such as 'applied focus' or 'leadership in qualitative research.'
- The philosophy that guides an organisation's policy towards research.
- The rules of the game for getting along with research in the organisation, ‘the ropes’ that a newcomer must learn in order to become an accepted researcher.
- The feeling or climate about research that is conveyed in an organisation by the physical and administrative facilities as well as the way in which researchers in the organisation interact with others.

Hill's definition refers not only to what researchers do, but why they do it, covering both tangible aspects of culture such as behavioural patterns as well as overarching values and philosophies of HEIs. Comparing to the Royal Society definition above, Hill's conception does cover the behaviours, norms, values, expectations and attitudes of research communities, but provides helpful elaboration on each point to support analysis of research cultures.

Nonetheless, there are several limitations to organisational definitions of research culture that undermine their utility to the current study. Firstly, from the sector definitions above, we can see that research culture encompasses the whole context in which research happens, whereas Hill appears to ignore the complex and multi-faceted roles that academic staff hold and instead considered only their research responsibilities. Similarly, there are many staff groups involved in enabling research endeavours, including professional services staff and technicians who do not appear to feature in this definition; notably, Hill refers to the way in which 'researchers in the organisation interact with others', obscuring interactions with other colleagues that may similarly impact on research cultures. Moreover, both Schein and Hill's conceptualisations of culture focus heavily on the role of leadership within cultures. There is little consideration to the process by which others in the culture reinforce or change it through their actions. Schein states that the shared assumptions determine individuals' thoughts and behaviours but the process by which those assumptions do that is unclear, nor is there clarity on how individuals might resist the cultural influence to act in unpredicted ways. These conceptualisations also consider organisations as an individual entity, which is poorly suited to HEIs as there are significant levels of external governance which these definitions do not account for. Finally, by defining culture as a shared set of assumptions, values and artefacts, this approach assumes a level of homogeneity in experiences of the culture, which can be challenged without difficulty when considering the experience of a white male professor compared to a black female postdoc researcher.

As a result of these various limitations and given that the focus of the current study is on how those within HEIs can bring about positive research cultures taking into account the external policy landscape, organisational conceptualisations of research cultures would provide limited analytical benefit. Instead, Archer's (1996) concepts of culture, structure and agency will be used as this is designed to support analysis of how culture affects actions, how actions can in turn influence cultures and how structural factors such as power, inequalities and institutional differences affect how individuals experience cultures.

3.2.3. Culture, structure and agency

Archer (2013) argues that every theory about the social order (i.e. the ways in which societal components work together) must incorporate structure, agency and culture in order to understand potential for social change. To do this, Archer (1996) draws an analytical distinction between structure, culture and agency as separate strata that possess different properties and powers but interact to mould each other. Culture refers to 'intelligibilia', in other words anything capable of being understood, known or deciphered by someone. Similar to Schein's notion of culture as a shared set of underlying assumptions, Archer views cultural systems as a set of propositions – statements to which the law of contradiction can be applied, i.e they can be true or false – such as theories, beliefs, values, or arguments. These statements have logical relations between themselves and also provide the conditions for people to carry out actions. Culture is therefore distinct from agency in that it has the power to enable, constrain and motivate activity but is not deterministic as individuals also have the power to reflect on their environment and choose how to respond (Archer, 2003). Individuals can reproduce or transform components of cultural systems through their actions – referred to as 'cultural elaboration' by Archer (1996). This mirrors the analytical dualism that Archer (1995) uses to describe structure and agency, where structure refers to the relations among social positions, such as power, resources, and dependency (Porpora, 2013). As with cultures, structures constrain, enable and motivate actions and agents, and individuals can reproduce and transform structures. As such, both structure and culture act

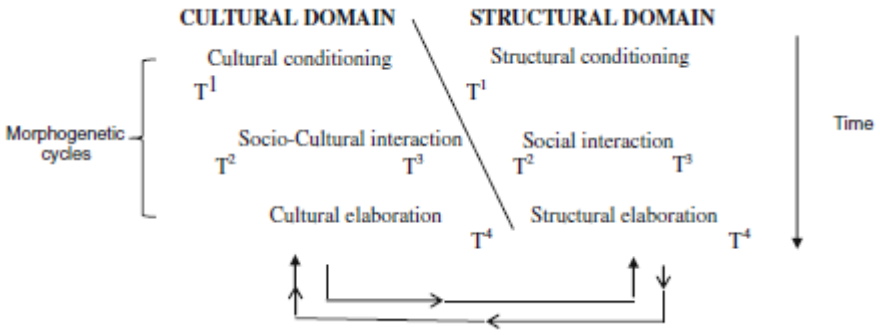
as sources of motivation for behaviour, with structural motivations deriving from the interests built into social positions, and cultural motivations deriving from individuals' value commitments (Porpora, 2013).

Within Archer's approach is the important acknowledgement that culture and structure impacts on individuals whether they recognise it or not, but individuals can be aware of and interact with culture and structure at the socio-cultural level, where they can reflect and respond to structural/cultural factors (Archer, 2011). Through internal conversations and reflexivity, individuals can choose their personal concerns and actions. Individual's concerns are influenced, though not dictated, by cultural and structural factors as well as internal deliberations, and may lead to projects whereby the individual seeks to realise their concerns (Archer, 2003). Behaviours undertaken for projects may become standard practices for the individual if they are sustained and have the desired outcomes. In this way, individuals can *actively* choose to reproduce or transform structure and culture through their actions.

This process therefore relies on the element of time, as the structural or cultural circumstances that influence and motivate behaviour must precede that behaviour and the behaviours subsequently lead to structural or cultural elaboration. This is referred to as the social morphogenesis (Archer, 1995) and is illustrated in Figure 3.1.

Figure 3.1

The morphogenetic approach showing both culture and structure (Archer, 1995, p.323)



While these temporal phases cannot be directly observed in real life, distinguishing between culture, structure and agency in this way allows the interplay to be more effectively analysed. As illustrated in the figure, even where actions are motivated by positional interests, individuals will act in a way that is culturally informed and vice versa. This approach contrasts with other conceptualisations of culture, structure and agency which tend to conflate these aspects (e.g. Giddens, 1987). Indeed, it is clear from the definitions of research culture outlined above that the distinction between relations (structure), actions (agency) and ideas (culture) are frequently overlooked. In social theories, often, culture is ignored entirely or conflated with structure, as either culture encompassing the entire social structure or culture being simply a representation of existing structures with no causal powers itself (Archer, 1996; Porpora, 2015). In Schein's theory of organisational culture, we see agency is largely lost, with culture is seen to determine behaviours. As analysis of the powers and properties held by strata and the interplay between strata is key to critical realism, Archer's morphogenetic approach allows for consideration of generative mechanisms (structure, culture, agency) within the real domain whilst respecting their individual properties and powers, as well as how these mechanisms impact on events in the empirical domain and how they are experienced within the actual domain (Porpora, 2015).

Within the morphogenetic approach, social change involves a dialectical relation between agency and the cultural, structural and physical contexts in which those agents find themselves (Porpora, 2015). The inclusion of time within the morphogenetic approach is central to explaining social change, as it allows individuals to experience a current culture and be motivated based on those factors, whilst at the same time imagining a different possibility for a future culture and being motivated by personal interests to act in a way that would bring about that culture. Archer illustrates the conditions for social change with the concepts of 'socio-cultural integration' and 'cultural system integration' (Archer, 1996; derived from Lockwood's (1964) concepts of social integration and system integration). Socio-cultural integration refers to the relations between cultural agents, such as the level of group

antagonism, and the degree of cultural uniformity produced by the imposition of ideas by one set of people on another through discursive techniques such as manipulations, legitimation, naturalisation and persuasion. This uniformity is also referred to by Archer as ‘causal’ consensus, as it relates to subjective mental experiences and the world of thought-processes. On the other hand, cultural system integration refers to relations between intelligibilia within the cultural system (i.e. different ideas, beliefs, values, etc.) and the degree of consistency between these component parts in terms of their contradictions and complementarities. As these contradictions and complementarities exist whether they are recognised or not, this is called ‘logical consistency’ by Archer. As with Lockwood’s (1964) concepts, neither element alone provides sufficient conditions for change. The way these concepts interact to create the conditions required to maintain structures and cultures (morphostatis) or alter them (morphogenesis) is described by Archer (1996, p. 292):

> What happens in either domain [structural or cultural] is that which agents concerned make happen, conditioned by the structural and cultural contexts which define the situations in which they find themselves. Whether these are problem-free or problem-ridden depends very much on whether they are shaped by integrated (complementary) or malintegrated (contradictory) social or cultural systems. What agency does in such situations turns significantly on whether agents themselves are in a state of collective integration or division.

In other words, if people find themselves faced with a system that is full of contradictions, whether they choose to act in a way that reinforces the system (e.g. by exploiting the contradictions) or seeks to modify it (e.g. by correcting contradictions) depends significantly on whether there is high group antagonism that amplifies and aligns with the contradictions, as well as on the agency of the person (e.g. the influence of their concerns). Similarly, high group antagonism alone does not produce social change unless it is linked to cultural or systematic contradictions that provide a focus for social action. Social action also relies on the visibility of relevant contradictions to the group affected by them; this visibility can be

controlled and concealed by those with dominant structural positions, such that only components of the cultural system that align with their interests are visible. In this way, even where contradictions exist and cultural uniformity is low, the groups that would benefit most from social action may not embark upon it as they would be unaware of the opportunity.

Viewing culture in this way, alongside structure and agency, provides a clear framework for analysing current research cultures and understanding the conditions for cultural change. Translating this to HE for the purposes of this study, research culture will be conceptualised as the beliefs, values, norms, theories and other intelligibilia that are held by a collective body (e.g. UK HE sector, institution, department, group) and this will be viewed alongside the related structures (defined as the relations between groups within the sector) and agents (defined as the individuals who make up the collective). As a result of the significant levels of governance from outside of HEIs in the UK as well as the shared history of UK HEIs with regards to the policy landscape, it is reasonable to conclude that there is a common cultural system of intelligibilia across the UK HE sector. The extent to which components of that system are amplified and reproduced within an HEI's own cultural system at an institutional level is then mediated by the positional interests of that institution (e.g. whether they are a traditional/polytechnic/specialist university/institution, the size and income of the institution compared to others) and the values of those working within the institution (in particular the university leaders and research leads). This culture is then mediated again at the level of research disciplines, departments and research groups – indeed, as Adams and Casci (2020, p.1) state, "it is a fantasy to imagine that a university has, or should have, a single culture." Given this plurality of research cultures and the scope of the current project, analysis will focus on the intelligibilia held within the cultural system at the level of the UK HE sector and the constraining, motivating and enabling influences of these on behaviours and cultures at an institutional level. Due to the large number of institutions in the UK HE sector and the variability within these, policy analysis will not be conducted an institutional level or below.

3.3. Manifestations of current research cultures

In order to understand the cultural system of the UK HE sector, it is important to look at how this manifests and is experienced by those working within the research culture. In 2020, the Wellcome Trust published a review of research cultures in the UK and globally, with over 4,000 researchers sharing their experiences of the research culture they work in (Wellcome Trust, 2020). Though experiences were not uniform, with those underrepresented in academia often experiencing the most challenges, common trends were noted (Wellcome Trust, 2020, p.7):

> Many of the researchers interviewed felt it would be easy to look at the quality of UK research and its outputs – generally seen as good – and to conclude that UK research culture must be healthy. But many agreed there were tensions underlying this quality, related to increasing pressure to produce more and more outputs and still keep quality high. Many, even those that felt supported in their current culture, had concerns about the sustainability of research culture for the future.

As a large-scale survey of researchers, the Wellcome Trust report is referred to frequently in this chapter and in the analysis to understand current experiences of research cultures. However, it is worth noting that survey and interview participants were self-selected, creating a strong risk that negative experiences are overrepresented in the survey findings as those who are most concerned about research cultures are more likely to respond. Quantifications of experiences therefore should be treated with caution. Nonetheless, whether overrepresented or not, the experiences reported are still valid and do still demonstrate the concerns of a significant number of people working within research. Moreover, the survey included researchers working in any research sector, in the UK and internationally; where distinctions have been made in the report to clarify claims that relate solely to UK HE this is

made clear. Further research is drawn on to improve the robustness of conclusions drawn from this report.

Given the fairly recent emergence of ‘research culture’ as a term in 2018 and the broad range of activity that is covers, the academic literature on research cultures is largely split into disparate areas of focus, such as research integrity, research assessment, collaboration, and staff wellbeing. These varying aspects can be seen as manifestations of the cultural and structural components of the HE system and so is explored below to produce a more detailed, comprehensive overview of current research cultures. Literature from beyond the UK is included where it is seen to resonate with UK-based literature. It should be noted that certain staff groups within the research community, such as research managers and administrators and technicians, are less researched demographics. The varying levels of representation of different staff groups in this chapter is not a reflection on their importance within the research culture.

3.3.1. Research integrity

A significant motivator for academic research on research cultures stemmed from concerns around the research integrity of experimental findings (Callard, 2023). While questions about the robustness of research are not new – Ioannidia (2005)’s seminal article on ‘Why most published research findings are false’ was certainly significant – the debate has developed significantly more recently. In 2015, the Open Science Collaboration reported that it had been largely unable to replicate 100 significant studies in psychology from earlier decades, sparking debate about the ‘replicability crisis’ in the field of psychology and beyond (e.g. Maxwell et al., 2015). This occurred alongside reports of questionable research practices like P-Hacking - repeatedly manipulating data and retesting - and HARKING - hypothesizing after results are known – (Bakker, van Dijk & Wicherts, 2012) and led to calls for greater openness and transparency in science (Nosek, 2015; Morawski, 2019; Callard, 2022). Many standard practices, such as word-limits on journal articles and secrecy around

ongoing research to avoid being ‘scooped’, encourage partial accounts of research and rely on trust that authors are reporting their study fully and transparently (Munafo et al., 2017). Moreover, existing incentive structures emphasize innovation and ‘groundbreaking’ findings (Munafo et al., 2020), with null results published far less frequently (Nosek et al., 2015; Franco et al., 2014).

Researchers responding to the Wellcome Trust survey (2020) felt they were judged on their ability to deliver impact, rather than their ability to perform high-quality research. This was seen to reward researchers who had published in so-called ‘higher-impact journals’, penalise researchers who had discovered null results (regardless of the quality of the research) and therefore encourage research misconduct such as deliberate embellishment or distortion of data. Moreover, a survey of over 1,500 staff working in the UK research system found that three of the top five drivers of research misconduct related to incentive structures: the use of journal impact factors, h-index and other metrics; league tables of institutions; and academic career assessments (Vitae, 2020). Despite researchers reporting intrinsic motivations to practise high levels of research integrity, 78% of researchers in the Vitae survey believed that other researchers felt under pressure to compromise on research integrity at least some of the time and 38% reported that they had personally felt tempted to compromise on research integrity at least some of the time. Nonetheless, 73% of respondents also believed that researchers upheld high levels of research integrity all of most of the time. Similarly, Wellcome Trust (2020) respondents also felt that the quality of research outputs had not suffered from these systemic pressures, mostly due to the efforts of individual researchers to counteract this culture, at the expense of their own wellbeing and personal time.

Ongoing initiatives to encourage research integrity include the Concordat to Support Research Integrity (Universities UK, 2019/2025), which commits funders and all HEIs in the UK to ensuring that research is conducted according to appropriate ethical, legal and professional frameworks, obligations and standards as well as supporting a research

environment underpinned by a culture of integrity. HEIs are required to establish transparent, timely, robust and fair processes to deal with allegations of research misconduct and must report annually on any formal investigations and activities undertaken to promote integrity. Many initiatives have developed to facilitate and encourage open research practices, for example preprint servers, data repositories and registered reports (Munafo et al., 2020), as well as sector-wide commitments to open research practices such as the Concordat on Open Research Data (UKRI, 2016) and funder conditions related to open access data and outputs. Institutions have developed their own open research policies and support services, in large part due to the requirement for all outputs submitted to the Research Excellence Framework exercise to be open access. Alongside this, there are initiatives aimed at reforming incentive structures in research, which are outlined in the following section.

3.3.2. Research assessment

As is evident from above, incentive structures and the way in which research is assessed have a significant influence on behaviours and experiences of research cultures. Sorensen et al. (2015, p. 219) highlight how excellence in research has evolved from “a fuzzy intrinsically understood concept rooted in academic virtues and peer review processes to a clear, relational concept which can be quantitatively measured and benchmarked… rooted in measures of research outputs and their commercial application.” As a result, the quality of the research processes has become less important for the purposes of assessment than the performance of the research output according to various quantitative criteria (Butler & Spoelstra, 2014). Valuing outputs, particularly short- and long-form publications, as proxies for research quality obscures the wide range of contributions, skills and practices that go into producing high-quality research. For example, authorship criteria often means that research-enabling staff such as technicians cannot be appropriately recognised (Hidden REF, 2025) and word counts often limit the ability of authors to transparently report their research processes (Munafo et al., 2017). Research assessments

that are based on the belief that output quality speaks to the quality of research processes can produce flawed incentives that risk compromising research integrity as above.

The strong focus on research outcomes includes non-academic impact as well as academic outputs and is often seen to represent the marketisation of research and neoliberal tendencies towards accountability and return on investment (Collini, 2009; Olssen, 2015; Chubb & Watermeyer, 2017). Rhodes, Wright & Pullen (2017) argue that, rather than representing an attempt to create a more engaged research culture, the focus on impact and outcomes seen in many countries including the UK instead represents an attempt from governments to direct research efforts towards activities that reinforce neoliberal ideas of market logic and economic justifications, thereby limiting academic freedom. Many researchers in the Wellcome Trust project felt that the type of research they were producing was changing due to narrow criteria for evaluation and funding (Wellcome Trust, 2020). In particular, ‘blue skies’ and theoretical research often seen by researchers as valuable ways to develop real innovation and impact (Linden, 2008) but being hindered by current incentive systems. While these results may ultimately lead to practical applications, this type of research contrasts with the strategic, goal-driven research often sought by funders. Researchers have reported feeling constrained by the need to articulate project outcomes and timeframes in funding applications and submitting ‘safe’, goal-driven applications rather than pursue more innovative research in order to obtain the funding and publications required to secure their career progression (Linden, 2008; Adler & Harzing, 2009; Willmott, 2011; Butler & Spoelstra, 2014).

Critical reflections on current research measurement and assessment systems, collated by the Research on Research Institute (Curry et al., 2020), highlight a set of connected problems including the misapplication of narrow criteria and indicators of research quality and impact, and a diversion of policy and managerial attention towards things that can be measured at the expense of less tangible or quantifiable qualities. These were seen to contribute to a reduction in diversity of research missions and purposes and systemic

biases against those who do not meet – or choose not to prioritise – the narrow criteria and indicators of quality and impact, or to conform to particular career pathways. A clear example of this is the widespread use of citation metrics as a proxy for research performance, despite a large body of research that highlights the complex citing motives of researchers and queries the validity of citation metrics as an indicator of scholarly impact (Hicks et al., 2015; Burrows, 2012; Lindgren, 2011). Ill-considered, though widespread, use of metrics in this way means research performance and quality are not accurately measured, which leads to the quantitative information morphing from a monitoring instrument into a goal in itself and to unintended consequences for research practices (e.g. embellishment of results) and researchers (e.g. missing out on promotions) (Burrows, 2012; Hicks et al., 2015; Wilsdon et al., 2015; Weinstein, Haddock, Chubb, Wilsdon & Manville, 2023).

The effects of poor research assessment practices are not going unnoticed in the international HE sector. Analysis of discussions at a Global Research Council conference on research assessment concluded that “research assessment shapes research culture” (Global Research Council, 2021, p.12). There is a growing call for ‘responsible research assessment’, which is an umbrella term for “approaches to assessment which incentivise, reflect and reward the plural characteristics of high-quality research” (Curry et al., 2020, p. 4). The aim of responsible research assessment is to encourage those in the R&I sector (funders, institutions, publishers, etc.) to focus on fundamental aspects of research assessment design, such as methodologies, systems and cultures (Curry et al., 2020). This movement builds on years of advocacy, but discussions have intensified in the last decade as a result of several key initiatives, which typically call for more responsible use of research metrics in assessments (DORA, 2013; Hicks et al., 2015; Wilsdon et al., 2015; Curry, Gadd & Wilsdon, 2022). Most recently, this movement has seen the publication of an Agreement on Reforming Research Assessment (CoARA, 2022), which translates the principles of previous initiatives above into ten actionable commitments for signatories (including reporting requirements) and establishes a global Coalition for Advancing Research

Assessment (CoARA) to support the exchange of good practice. This is aimed at supporting assessment of research, researchers and research organisations that recognise the diverse outputs, practices and activities that maximise the quality and impact of research. As of September 2025, the agreement has over 700 global signatory organisations, demonstrating the strength of the movement towards responsible research assessment and its importance in supporting positive research cultures.

3.3.3. Collegiality and collaboration

Funders are increasingly encouraging collaborative or interdisciplinary research proposals to effectively address complex societal challenges (Hall et al., 2018; Read et al., 2016; Stokols et al., 2008). For some, this transition is seen as a natural progression in the scientific production of knowledge and the organisation of research systems (e.g. Davies, Devlin & Tight, 2010; MacKinnon, Hine & Barnard, 2013). The numbers of authors and institutions listed on projects and outputs is increasing, demonstrating that collaboration is becoming a core part of research processes (Jones et al., 2008). However, this increase in demand for collaboration has not yet translated to HE research cultures and systems, which present multiple barriers to collaboration, particularly interdisciplinary collaboration. As academic training typically occurs within a specific discipline, most researchers are therefore imbued with the values of their disciplinary culture, particularly with regards to epistemological and ontological approaches, research standards and research processes (Hoidn, 2018; O'Rouke & Crowley, 2013). As a result, researchers learn to see the world through 'disciplinary lenses' (Boix Mansilla, Miller & Gardner, 2000), which must be overcome to create and sustain successful interdisciplinary collaborations. Upon evaluation (for example, during peer review for a journal or performance review of individual researchers), interdisciplinary collaborations are often judged by discipline-based standards which have yet to catch-up with funder and government priorities, therefore affecting the career progression of researchers who undertake interdisciplinary research (Klein & Falk-Krzesinski, 2017). Moreover, the contributions of researchers can be undervalued if they are

not the first author on a publication or the principal investigator on a grant (Klein & Falk-Krzesinski, 2017). The perception of research teams as led by a single ‘superstar’ researcher is harmful to all kinds of collaboration – formal (i.e. associated with a project) or informal (i.e. collegiality), interdisciplinary or not – as it obscures the many different contributions that are required for high-quality research and motivates researchers to focus on work that they can lead in order to gain the reward and recognition required for career progression. Indeed, high levels of competition in research cultures are seen to have created unkind and aggressive research conditions, discouraging collegiality and collaboration as researchers try to succeed in the changing environment (Wellcome Trust, 2020).

Gill (2018) argues that an individualistic, competitive environment has led to a loss of the “value of the social and convivial features of academic life” (p.106). Similarly, Burton (2021) finds that neoliberal notions of individualism foster unkindness and encourage the idea that ego and selfishness are vital career attitudes. Standard practices, such as anonymity in academic reviewing, reinforces this unkindness (Santos, 2014; Meagher, 2012), leading to a culture which is unforgiving and uncaring (Billig 2013; Gill and Donaghue 2016; Lynch 2010; Rogers 2017). As noted by Back (2016, p.74):

> We are valued not for our generosity but for the sharpness of our intellect, for the unflinching nature of our academic judgments. These qualities can be rewarded... Critical edge becomes a badge of excellence, while generosity shows suspicious signs of intellectual feebleness.

Against this background, there have been calls for greater ‘academic kindness’ (Davis, 2014) to increase the visibility of generosity and compassion within academia (Tursack, 2014; Willis, 2020). Hulme and Locke (2020, para. 6) also highlighted the potential for kindness to serve as a criterion for hiring and promotion, in this way “promoting academics to the professoriate who embody the values of inclusion, collegiality, and caring… to change the culture of academia, and bring kindness, instead of toxicity, into the fore.”

While many UK HEIs do use the criterion of ‘academic citizenship’ in their existing reward and recognition processes, which could align with notions of kindness and collegiality, in practice academic citizenship work is not actively recognised and rewarded, but rather used negatively to point out where academics are perceived to have not done enough (Macfarlane & Burg, 2018; Burton, 2021). There are also inequalities in the levels of academic citizenship expected of individuals, with women, working-class people and people of colour often pressured to take on more pastoral and administrative roles, whereas white men are encouraged to take on more prestigious (and more visible) leadership roles (Deiana, 2010; Hoskins, 2010). These factors all undermine the effectiveness of academic citizenship as a way of promoting collegiality and instead reinforce mechanisms of individualistic performance management.

3.3.4. Employment conditions and impact on staff

The high levels of monitoring and accountability assessments translate to increasingly challenging working environments for those working in HEIs. Burrows (2012) notes that it would be possible to generate a list of over 100 different measures to which individual academics in the UK are potentially subject to (and therefore expected to perform in) and highlights six domains in particular: workload models, transparent costing data, research assessments, teaching quality assessments and university league tables. These measures are all experienced more or less simultaneously by researchers in HE, particularly teaching and research academics, yet are full of tensions and contradictions with regards to time and resource required, value attributed and contribution to individual career aspirations. Only 45% of researchers in the Wellcome Trust survey (2020) reported that they felt able to effectively balance the competing roles required as part of their employment. Although many had expected a career in academia to include long hours, high-pressure and multiple commitments, it was felt that these had previously been offset by benefits such as autonomy, collaboration, creativity, flexibility, job security (once in a permanent position) and the sense of contributing to society (Wellcome Trust, 2020). Kinman and Jones (2008) found that 43%

of academics surveyed indicated that more than one fifth of their overall workload was done during evenings and weekends. Rogler (2019) outlines how academic roles are often seen as vocational, as they require the individual to have a personal commitment to the work, often going beyond formal work obligations and working hours. Gill (2018) notes that referring to academia as a vocation captures the passionate attachment that many researchers have to their work but can easily become a disciplinary mechanism for extracting additional work at intense personal cost. In the Wellcome Trust report (2020), flaws in current systems of reward and recognition were seen to lead to exploitation, with 62% of researchers saying that the system exploited their interest in the work they do. Early-career researchers and those on short or fixed-term contracts often felt particularly vulnerable to exploitation.

Despite this increase in expected productivity from academia, there has been little growth in the availability of permanent teaching and research academic positions (Vitae, 2016). This has intensified competition with more postgraduate students searching for postdoc positions (Herschberg, Benschop & van den Brink, 2018) and then professorial roles (Vitae, 2016; Rogler, 2019). Indeed, 96% of science PhD graduates do not end up holding a permanent academic research position (Royal Society, 2018). Job security was reported to be a key issue for the research community in the Wellcome Trust Survey, with only 29% of those currently working as researchers reporting that they felt secure pursuing a research career (Wellcome Trust, 2020). While researchers agreed competition for funding and jobs had always been a significant part of research cultures, 42% believed the competition was now unhealthy. Many thought academic researchers faced a limited, linear pathway for career progression, forcing those who wanted to progress in this environment to focus on certain metrics and key performance indicators in order to succeed (Wellcome Trust, 2020). Casualisation of academic roles has become normalised as a result of this competition (Mason and Megoran, 2021; Burton and Bowman, 2022); a survey by the University and College Union UCU found that one third of all teaching and research academics were

employed on fixed-term contracts, with this figure rising to 44% for teaching-only academics and 68% for research-only academics (UCU, 2020). This precarity is also linked to existing inequalities, for example, UCU reports 28% of white male academics are on fixed-term contracts, compared to 44% of asian female academics. This growing competition for permanent employment has pushed many researchers into regular migration between and within countries (Herschberg, Benschop & van den Brick, 2018) and produced a divide between elite permanent academics and the bank of teaching and research staff on precarious contracts (Cardozo, 2017).

Simultaneously, the role and duties of research-enabling staff in professional services directorates have become more complex, dynamic and influential (Whitchurch, 2018; Szekeres, 2011). Research-enabling staff are expected to respond to regulatory requirements, such as accountability regimes, funder conditions or institutional processes, and also address the needs of students or researchers, whilst making an active contribution to their institution within their specialist area, such as delivering events, publicising in-house activity or informing colleagues about topical issues (Whitchurch, 2018). In addition, the professionalism and expertise of research-enabling staff has also historically been overlooked or undervalued within academia (McInnis, 1998; Szekeres, 2004). In a survey run by the Association of Research Managers and Administrators, staff reported low satisfaction with access to opportunities and progress, reflecting a feeling of being undervalued by institutions and suggesting a broader issue with reward and recognition for this staff group (Noone, 2020). Indeed, many expressed frustration at the lack of value attributed to their roles in the institutional culture, leading to a lack of parity of esteem between research-enabling roles and academic roles (Noone, 2020). This data from the ARMA survey suggests that, despite recent movements to break down the binary between academic and professional roles (Whitchurch, 2018), this imbalance continues to be felt in research cultures.

There are various initiatives seeking to improve the stability and experience of careers in research, particularly for staff who are not on teaching and research academic contracts. Most prominently, the Concordat to Support the Career Development of Researchers (Vitae, 2019) establishes an agreement between stakeholders – funders, HEIs, researchers and managers of researchers – to improve the employment and support for researchers and research careers in HE in the UK. Obligations are outlined for each stakeholder group under the three principles of 'environment and culture', 'employment' and 'professional and career development', including for example a requirement for HEIs to "regularly review and report on the quality of the research environment and culture, including seeking feedback from researchers, and use the outcomes to improve institutional practices" (Vitae, 2019, p.2). Although these obligations relate primarily to the rights and responsibilities of researchers who are employed solely or largely to conduct research given the high levels of instability for this staff group, the Concordat encourages signatories to apply the principles beyond this group to improve conditions for all staff involved in research. In addition to this core initiative, the Technician Commitment (2017) aims to ensure visibility, recognition, career development and sustainability for technicians working in HE, with HEIs invited to sign the commitment and pledge to take action in these key areas.

The impact of these employment conditions and research cultures on staff has been noted in the literature, particularly the high stress levels they lead to (Kinman & Wray, 2013; Johnson, Willis & Evans, 2019; Winefield, 2000; Johnson et al., 2005; Shin & Jung, 2014). For example, Kinman and Wray (2013) surveyed 11,502 HE staff across job types and found that more than half indicated that their general stress level was high or very high; more than one third said that they often or always experienced levels of stress that they found unacceptable, whereas only 2% of the sample reported that they never experienced unacceptable levels of stress at work. Frequently reported stressors for academics include funding reductions, pay and benefits, working hours and heavy workloads, work-life balance, changes to working environment such as increased student numbers and role ambiguity,

and publications expectations (Johnson, Willis & Evans, 2019; Kinman & Wray, 2013; Rutter, Herzberg & Paise, 2002; Winefield & Jarret, 2001). Work relationships and pay and benefits have also been highlighted as key stressors for professional services staff (Johnson, Willis & Evans, 2019). The high-levels of stress and associated impacts on wellbeing have been linked to the cultural challenges in HEIs, including job precarity (Stoica, Strasser & Loher, 2019; Burton & Bowman, 2022), high workload and other job demands (Kinman & Wray, 2013; Loveday, 2018), poorly designed performance management and research assessment (Ball, 2001; Weinstein et al., 2023), and poor management practices (Kinman & Wray, 2013; Christian et al., 2021). These challenges, in particular the inequalities, high workload and casualisation of academic contracts, have contributed to significant union strike action (Fox-Hodess, Harvie & Ivancheva, 2023), reflecting the strength of feeling for staff working in HE, and the impact of their working environment.

Research cultures that neglect individual's health, wellbeing and work-life balance can have negative consequences for the sustainability of the HE sector, by reducing the quality of research that staff are able to produce and effecting the retention and recruitment of talented staff to the sector. Hesselberth and Bloois (2020) note an increase in media articles since the early 2010s by former academics writing about their decisions to leave academia, reflecting "a precipitous collapse of the academic job market, and the changing landscape of HE in response to neoliberal reforms" (p. 147). In line with the stressors outlined above, the reasons for leaving reported include working conditions (e.g. precarity, pay, career development, working hours, lack of promotion prospects), the changing landscape of HE (e.g. increasing 'bureaucracy', metricisation, focus on grant funding, marketisation of HE), flawed incentive systems and issues of poor mental health and general wellbeing (Hesselberth & Bloois, 2020; Rothengatter & Hill, 2013; Ryan et al., 2013; Heffernan & McKay, 2019). Indeed, the current rate of turnover in HE points to a significant gap of experienced academics needing to be replaced and trained, impacting on institutions' knowledge base and productivity (Heffernan & McKay, 2019).

3.3.5. Power dynamics and discrimination

Many researchers in the Wellcome Trust survey described cultures in which poor behaviour by those attracting high levels of funding was tolerated (Wellcome Trust, 2020). Senior colleagues were seen to have power over the career futures of junior researchers, due to the need for references but also because of the importance of social capital and networking. This view is supported by the literature which finds that academic networks can play a significant role in career success as they can lead to increased status and influence (Mehra et al., 2006; Lai et al., 1998) and employment opportunities (Goel & Grimpe, 2013; Burt, 2005). Wellcome Trust interviewees reported feeling that funding was directed towards established researchers and those who worked with those researchers benefited as a result (Wellcome Trust, 2020). This was seen to lead to researchers fawning over, and even tolerating poor behaviour from, more established researchers and thereby reinforcing existing power dynamics. This power imbalance was seen to contribute to culturally systemic bullying and harassment, 43% of researchers saying they had experienced workplace bullying or harassment and 61% saying they had witnessed it. Similar proportions were reported by research managers and administrators in the ARMA survey (Noone, 2020). In the majority of instances, the behaviours were being perpetrated by a supervisor or manager. However, where research managers and administrators were the target, 39% of examples were attributed to academic staff as the perpetrators compared to 27% to professional services staff, reflecting that power imbalances are present within job families as well as between (Noone, 2021).

Structural inequalities have also been noted as part of the power dynamics in academia; existing research has argued that universities are spaces of whiteness (Arday and Mirza 2018; Bhopal, 2016), patriarchy (Witz & Marshall, 2004), able-bodiedness (Burke and Byrne, 2020; Sheppard, 2021) and middle-classness (Reay, et al. 2009). Of researchers in the Wellcome Trust survey (2020), 60% felt their working environment was biased in favour of certain groups of people; over a third of survey respondents reported experiencing

discrimination and 46% had witnessed it. Those who had experienced discrimination often identified as women, BAME, LGBTQ+ or disabled. For example, BAME respondents (as defined by Wellcome Trust), reported that discrimination was often covert rather than obvious racist behaviour, with examples including being overlooked for promotions or not being properly credited for their work. As a result, many BAME researchers felt that their experience of research culture - and their ability to succeed within it – was worse than that of their white counterparts. Similarly, respondents with disabilities thought it was significantly harder for disabled researchers to progress their careers and succeed, due to a general lack of adaptations to working conditions, early-career expectations to obtain multiple short contracts, a perception that disabilities would make researchers less productive and more difficult to manage, and barriers in current funding processes. Staff in HEIs reported barriers to making a formal complaint about behaviour, including fear of being seen as a trouble-maker, lack of faith in superiors to take action particularly against 'untouchable' high profile academics, challenging and aggressive behaviours being seen as an accepted part of the culture, and perceptions of the procedures as lengthy (Wellcome Trust, 2020; Noone, 2020; Hodgins & McNamara, 2017).

In order to support HEIs to address these issues, Advance HE, a global charity that aims at improving HE for staff, students and society, manages two key initiatives designed to support and recognise commitment to tackling inequalities – the Race Equality Charter (Advance HE, 2023) and the Athena Swan Charter (Advance HE, 2021). The Race Equality Charter is aimed at improving the representation, experiences, progression and success of staff and students from racially minoritised ethnic groups, while the Athena Swan Charter is focused on supporting and transforming gender equality within HE and research. HEIs can voluntarily submit applications to Advance HE with information on their context, priority issues and action plans to receive a national charter mark at gold, silver or bronze level in recognition of their activity.

3.4. Improving research cultures

As has been outlined throughout the sections above, various sector wide initiatives have been developed over the past two decades that seek to enhance research cultures, covering a broad range of topics and varying in scope, approaches to adoption, compliance and governance. The initiatives mentioned form a significant part of the policy landscape related to research and research cultures, but there are many more initiatives that exist in this field. A call for evidence launched by UKRI identified 292 research culture initiatives relating to the academic sector, which included institutional and local initiatives as well as regional or national level (UKRI, 2024a). Most of these were educational or informational (32% resources, 29% training) but research culture is also a highly regulated area, with 20% of the initiatives identified being policy and 12% being commitments or concordats (UKRI, 2024a). Despite this regulation, research commissioned by Universities UK, UKRI and Wellcome Trust found that the collective impact of the various culture-related concordats and initiatives was unknown and focus groups with HEIs who have adopted the initiatives found barriers to their effectiveness, particularly that the associated regulation and reporting was highly burdensome and resulted in a lack of time to make meaningful change (Basis Social, 2023). Indeed, this mirrors the findings from the UKRI mapping report, which asked respondents which aspects of research culture are addressed well in current initiatives and found that even the three top answers (sharing data openly, support for ECRs and EDI in general) were only seen to be addressed well by around 20% of respondents (UKRI, 2024a). Other aspects, such as bullying and harassment and reward and recognition, were thought to be addressed well by only 5-7% of respondents; for work-life balance, this dropped to 2%.

It could be argued that these various concordats, charters and agreements, with their associated reports and action plans, are examples of ‘non-performativity’ (Ahmed, 2012) – discourse that does not produce the effects or changes that it relates to but rather stands in for them. Ahmed notes that “the point of the document can be to have a document you can point to” (2012, p.90), as interviewed practitioners referred to the documents as helpful

starting points, or reminders, that support further action but do not create change by themselves. In much the same way however, the documents can also be used to block action by indicating the HEI is already tackling the issue or by suggesting that the document itself acts as a resolution to the issue. Perhaps more cynically, Phipps and McDonnell (2022) argue that, within a marketized HE system in which HEIs need to attract staff, students and investment, such initiatives and documents become about changing perceptions of the institution as unequal, rather than addressing the issues that make it so. Other related mechanisms include statements of institutional values, which can be transformational when held sincerely and deeply, but can easily be used for institutional preservation rather than institutional change (Phipps & McDonnell, 2022). Such values are often used in performance management processes with staff asked to evidence their adherence to these, making cultural change a personal responsibility of staff and reducing the role of institutions (Phipps & McDonnell, 2022). Indeed, Callard (2023) highlights that literature on research culture has tended to conceptualise the route towards enhancing cultures as one that incentivises individuals to act differently, with behaviour theorised through behavioural-economics and cognitive-psychological frameworks. Researchers are therefore framed as self-maximising agents who prioritise individual career success in a competitive academic marketplace (Morawski, 2020) and therefore initiatives often relate to altering existing incentives to re-route individualistic behaviours. This therefore reinforces individualistic and competitive research cultures, rather than tackling the values of the cultural system.

3.5. Conclusions

To enable effective analysis of how the identified government and funder policies contribute to experiences of research cultures for those working within HEIs and identify ways in which effective cultural change can be achieved within the current policy landscape, the current study adopts Archer's concepts of structure, culture and agency and wider morphogenetic approach (1995, 1996, 2013). This analysis will be informed by the themes emerging from the literature above to ensure a holistic account of research cultures,

considering the many distinct topics that fit under its umbrella. This enables consideration of both the values held within the cultural system and the structures that sustain these values; for example, the literature review above makes clear that neoliberal values are sustained through monitoring and research assessments that inform social structures. By separating culture and structure into distinct analytical units (rather than conflating them as in most literature presented in this review), a more comprehensive understanding can be generated of how the identified policies contribute to both the culture and structure of HE in the UK. While the literature review identified a significant amount of research uncovering and describing staff experiences, there is a lack of theoretical grounding in many studies which undermines the robustness of generalisations (as they do not speak to generative mechanisms) and limits the conclusions that can be drawn in terms of how to address the root causes of negative experiences. By applying Archer's framework, this study addresses this theoretical gap and tests whether the morphogenetic framework is suitable for research in this area. It also aims to provide more robust interpretations about how culture is influenced by the identified policies and how effective culture change can be achieved.

Based on the literature review above, it appears there are currently low levels of cultural system integration (Archer, 1996), with competing values of competition and individualism alongside encouragement for more inclusive, diverse and collegiate cultures. There also appears to be low levels of socio-cultural integration, as seen in the significant criticism of government and institutional policies by staff as well as high rates of bullying, harassment and discrimination within cultures. As a consequence, it could be argued that the sector is ripe for cultural change, with high group antagonism linked to cultural and systematic contradictions providing a focus for social action (Archer, 2013). Using this framework, the current study enables a more informed exploration of the ways in which those working within UK HEIs can foster more positive research cultures. As outlined above, existing efforts often include concordats, agreements and institutional commitments or position individuals as self-maximising agents. However, the power of both structural and

cultural systems cannot be ignored when attempting to understand how HEIs can effect cultural change as they can enable or constrain both the actions of institutional leaders as well as the actions of individual staff members and thereby influence whether they reproduce or transform components of the cultural system. While the current study does not attempt to proscribe a specific set of actions for all HEIs, as this would not take into account the individual contexts, histories and missions of institutions (Farquharson, Sinha and Clarke, 2018), it does seek to raise the visibility of opportunities for social change and the contribution of government and funder policies to the cultural system in order to inform HEIs' own deliberations and cultural change processes. In this way, the current study aims to support a cultural change that goes beyond engagement with initiatives and concordats to improve the experience of those working within HEIs, ensuring the quality and robustness of the research, and maintaining the benefit of the research for society.

4. Research design

4.1. Introduction

This chapter provides more details on the research approach taken in the current study, including the critical realist stance adopted and how this informs the critical discourse analysis. The policies for analysis are outlined and a brief context of their production and publication is provided. Finally, the chapter concludes with a reflection on my positionality and the robustness of my research choices.

4.2. Research questions

Drawing on Archer's conceptualisation of culture and the themes identified in the literature review in relation to experiences of research culture, the current study aims to raise the visibility of the contribution that UK Government research policies make to the cultural system, including any contradictions, in order to inform and support cultural change within HEIs. In doing so, the current study addresses the following research questions:

RQ1. What discourses exist in the analysed policies in relation to the aspects of research culture identified in the literature review?

RQ2. How do the discourses of the analysed policies enable or constrain the actions of those working within HEIs?

RQ3. To what extent do the discourses in the analysed policies align with sector discourses about research cultures as identified in the literature review?

RQ4. How can meaningful cultural change be achieved within the current policy context?

4.3. Ontology and epistemology of the research

When developing the research design for a study, it is important to first establish the ontological and epistemological perspectives from which 'reality' and 'knowledge production'

will be understood. Considerations of the nature of the object under study determine the research methods that are applicable and the claims to knowledge production that the research can make. Given this study relies on Archer's conceptualisation of structure, agency and culture, it adopts a critical realist position, in which there is a reality that exists independently of our knowledge of it and our knowledge about that reality is conceptually mediated (Danermark, Ekstrom & Karlsson, 2019). In this way, critical realism is a metatheory of both ontology and epistemology. Bhaskar (1978) distinguishes between three ontological domains in the critical realist position: the empirical, the actual and the real. The empirical domain contains that which we experience directly or indirectly. However, these experiences are necessarily mediated by pre-existing concepts in order for them to be understandable. The empirical domain is separated from the actual domain, in which events happen whether they are experienced or not. In the real domain are the unobservable structures and mechanisms that produce observable events – the 'generative mechanisms'. Structure, agency and culture are therefore considered to be generative mechanisms – each with their own properties and generative powers - which shape our experiences in the empirical domain and the events in the actual domain (Archer, 2013). Components of the cultural system, such as values and norms, exist and exert constraining or enabling effects whether or not individuals are aware of them. The focus of the current study is on raising the visibility of these generative mechanisms and their impact on the empirical and actual domain, to inform individual's reflexivity, concerns, and projects (Archer, 2011). With regards to epistemology, critical realism states that knowledge production is conceptually mediated. As such, the process of conceptualisation is an important object of the research in addition to the phenomena being studied and the policy analysis methodology has been designed to align with this.

4.4. Policy analysis methodology

To study conceptualisation within the policies and understand how propositional statements, i.e. intelligibilia, are communicated, reinforced or transformed within the cultural

system of UK HE, the policy analysis will focus on the discourses – or 'ways of representing' (Fairclough, 2013) - used in each of the chosen policies. For example, this could include how the concept of 'high-quality research' is represented in the policies, or how 'competition' is represented. By uncovering these discourses, inferences can be made about the intelligibilia that are being communicated and the extent to which these align with sector discourses and initiatives identified in the literature review. The policies are in themselves an action within Archer's morphogenetic approach which can either reproduce or transform culture, meaning that the discourses within them contribute to the differing strengths of components within the cultural system. In this way, the policies can add to contradictions in the cultural system; they can create complementarities by adjusting and aligning previously conflicting components; and they can conceal components of the cultural system that do not align with their desired aims and values. As an action at the socio-cultural level, the policies also play a part in the level of socio-cultural integration – if they adjust previously conflicting components or adopt sector discourses, this may enhance integration and shared beliefs. Alternatively, the modes of legitimation used within the policies may increase integration by persuading individuals of the merits of their values, ideologies and beliefs.

To uncover these effects, the policy analysis will be conducted using Fairclough's (1993, 2013) relational approach to Critical Discourse Analysis (CDA) as this is firmly grounded in critical realism and enables the goals of the policy analysis, as outlined above, to be realised (Fairclough, 1999). Other qualitative methods, such as thematic analysis, would provide a more descriptive analysis of the content of the policies, whereas CDA enables identification of discourses and consideration of their effects. Fairclough's dialectical-relational version of CDA views semiosis, i.e. meaning-making, as an element of the social process which is dialectically related to others. These relations between elements are dialectical in the sense that they are different but not discrete; for example, research cultures, and the values and beliefs within them, are partly semiotic, but they are not purely semiotic and cannot be reduced down to semiotic modalities like the use of language and

visual images. Research cultures are perpetuated in other social elements, like policies, strategies, standard practices and social interactions. By critically analysing how semiosis relates to other social elements, research can reveal the ways in which dominant discourses are sustained or challenged and identify possibilities for overcoming obstacles to address wrongs.

Fairclough (2013) argues that the specific textual analysis methods used for a particular piece of research are chosen based on the theoretical constructions of the object of research. Given that the object of research in the current study is the effect of UK HE policies on research culture (understood as the set of intelligibilia held within the UK HE research sector), Hyatt's (2013) Critical HE Policy Discourse Analysis Framework will be employed. This framework draws upon Fairclough's version of CDA (2013) and applies it specifically to HE policies, splitting analysis into contextualisation of policies and deconstruction of policies. To begin with, policies are contextualised with regards to the temporal context (the socio-political context in which the policy was constructed), policy drivers (the intended aims or goals of the policy) and warrant (the justification for the policy – split into evidentiary, accountability and political warrant). Once this context is appreciated, the policy can be properly understood and deconstructed using various analytical lenses outlined by Hyatt.

Core to this policy analysis will be the modes of legitimation used, i.e. the ways in which the policies are justified, as these often rely on appeals to existing ideologies or expression of intended benefits, through which the underlying values and beliefs can be identified. Due to the structural position held by the UK Government over HEIs (as a result of relations like dependency for funding and accreditation), the values held and communicated within policies can significantly impact on the behaviour of those within HEIs as they seek to align with the UK Government values in order to maintain or enhance their structural position. Indeed, Archer (2013) notes that cultural factors intersect with the structural field regularly and simply, as groups adopt beliefs and values that will advance their material

interests. Once these values and beliefs are adopted, groups are most likely to behave in a way that further protect those values, as to do otherwise would likely have negative structural impacts. Nonetheless, it should be noted that ‘protection’ of values can include correcting or diversifying values so that they sit better alongside competing values; this could mean redefining apparently contrasting values such that individuals can feel they are aligned with both at once.

Legitimation is also a method of advancing certain values over others and seeking to persuade others of the merits of certain beliefs. This can be seen in the ‘rationalisation’ mode of legitimacy in which reference is made to the inherent usefulness or ‘goodness’ of a particular action (Hyatt, 2013). As individuals are motivated to act based on their value commitments, attempts made in the policy to position values as desirable can be seen as influencing behaviours in a certain direction. Surfacing those effects can enable individuals to counter this influence and reduce the effects of the policies on actions, thereby supporting greater agency and informing opportunities for social action. Hyatt’s Framework is a tool to highlight the discourses and influencing techniques contained within the policies; as such, those discourses that are positioned as dominant can be differentiated from those that are positioned as new or alternative and those that are absent can be identified as ignored or presupposed/implied. Other analytical lenses in Hyatt’s Framework, such as intertextuality, presuppositions and lexico-grammatical constructions, are aimed at undercovering a level of detail in the semiosis that was less relevant to the research questions and to Archer’s conceptualisation of research culture, and therefore analysis was limited in these areas due to the scope of the project.

4.5. Overview of the policy analysis

Each of the policies selected for analysis establish priorities and strategies for enhancing the UK’s research and development sector. They all follow the announcement of a substantial increase in public spending on R&D in the Spring 2020 budget, which committed

to increasing spending to £22bn by 2024/25. Though the policies were all created and published under former Conservative Governments, rather than the current Labour Government, the UKRI Strategy covers the period 2022-2027 and remains in effect. Similarly, a continuation of the Science and Technology Framework has been indicated through the appointment of Sir Patrick Vallance, key author of the Framework, as Minister of State for Science, Research and Innovation, and his recent references to the Framework in oral evidence in parliament (Science and Technology Committee, 2024). The list of selected policies with brief contextual information is presented in Table 4.1.

Table 4.1.
List of government and funder policies identified for analysis, including contextual information about their production and publication.

Policy	Published	Owner	Framing	Context
UK Research and Development Roadmap	July 2020	Department for Business, Energy and Industrial Strategy	Framed as a proposal to be developed into a formal policy	Building on the Spring 2020 budget and published shortly after the Wellcome Trust report on researcher perceptions of research cultures, this policy is aimed at strengthening the R&D sector to maximise benefits by boosting productivity and addressing what the government sees as issues within the sector (e.g. cultural issues, bureaucracy, funding constraints). Under Prime Minister Boris Johnson and Secretary of State for Business, Energy and Industrial Strategy, Alok Sharma, this policy was largely led by Dominic Cummings, who left in November 2020.
Research and Development People and Culture Strategy	July 2021	Department for Business, Energy and Industrial Strategy	Framed as a call to action, inviting the sector to work with government to drive lasting change	This policy was developed as a result of commitments made in the R&D Roadmap, addresses concerns raised by the sector about research cultures, and sets out a plan to address them. It calls for collaborative action to improve research cultures and positions the government as listening and willing to act for the benefit of the whole R&D sector. Under Prime Minister Boris Johnson, this strategy was led by Under Secretary of State for Science, Research and Innovation, Amanda Solloway.
UK Research and Innovation Strategy 2022-2027	March 2022	UK Research and Innovation (funded by the Department for Business, Energy and Industrial Strategy)	Framed as a 5-year strategy to support longer term budget allocations to UKRI	This strategy explains how UKRI will address several UK research policies published 2020-2022, including Research and Development (R&D) Roadmap; Innovation Strategy; Plan for Growth; R&D People and Culture Strategy; Integrated Review of Security, Defence, Development and Foreign Policy; Levelling Up Agenda. Given increases in R&D public spending, this strategy is seen to explain how UKRI will use the budget to deliver government ambitions for research and innovation and maximise benefits from research. The strategy was led by Dame Ottoline Leyser, CEO for UKRI, and Sir Andrew MacKenzie, Chair for UKRI, under Prime Minister Boris Johnson and Under Secretary of State for Science, Research and Innovation, George Freeman (replacing Amanda Solloway).
UK Science and Technology Framework	March 2023	Department for Science, Innovation and Technology	Framed as an overarching framework to guide future government policies	This Framework aims to strengthen UK research sector to maximise benefits, including national security and international competitive advantage. It was informed by the Integrated Review of Security, Defence, Development and Foreign Policy. It was published only a month after the Department for Science, Innovation and Technology was created by Prime Minister Rish Sunak, so was actually developed by the Office for Science and Technology Strategy under the leadership of Sir Patrick Vallance, National Technology Advisor. Though it includes a foreword by Michelle Donelan, she just adopted it, having been made Secretary of State for Science, Innovation and Technology in February 2023.

Though the policies do not specify a scope in terms of which research-performing organisations are covered by the policies, they set out priorities for the UK's research sector as a whole, as evidenced by the ownership by departments with responsibility across the sector and their mentions of different stakeholders, including universities, throughout. For this reason, these policies are considered by HEIs to be key government strategies applying to academic research. There is also no specified scope in terms of the research activities covered. Indeed, the policies use the terms 'science', 'science and technology', 'research', 'research and development' and 'research and innovation' interchangeably. There does not appear to be any trends or consistency in the documents with regards to differentiating between the sector as a whole and subsets of the sector by the use of 'science' vs 'research' for example.

There is a clear trajectory of development from the R&D Roadmap to the People and Culture Strategy and significant overlap in terms of the discourses and themes identified in analysis; these policies were developed in similar contexts and had similar stakeholders. The UKRI Strategy contains references to these policies and is formally positioned as translating those policies (which were active at the time) into actions for UKRI; however, the change of key government stakeholders between the publication of the People and Culture Strategy and the publication of the UKRI Strategy had an evident impact. There is a clear change of focus from targeting fundamental aspects of the sector, such as culture, to a more short-term and neoliberal focus on growth and competition. Where the UKRI Strategy does refer to enhancing research cultures, this is often vague and not backed up by specific actions that will address concerns. It is the Science and Technology Framework, however, that marks the clearest diversion from this trajectory, with no reference to any of the other selected policies and the only mentions of 'culture' referring to creating a 'pro-innovation culture' within the public sector. This likely reflects the change from Boris Johnson's Government to Rishi Sunak's Government (and the changes of personnel associated with this) and the alternative route of development for this policy – from the Office of Science and

Technology Strategy, rather than the Department for Business, Energy and Industrial Strategy.

Using Hyatt's (2013) Framework for the policy analysis, the policies were contextualised (as summarised above) and then deconstructed using various analytical lenses as best suits the purpose of the analysis, in particular focusing on the modes of legitimation used (see Appendix 1 for full analysis notes). As texts within the same genre, there were clear similarities in the way this was done. In particular, all the policies relied heavily on rationalisation, explaining the benefits or inherent desirability of action; for example, in the R&D Roadmap the core chapters of the policy (covering different aspects of the policy) are justified as 'where are we now?' and 'what are we going to do?'. The focus is therefore on the problems that the policy will address and the benefits it will enable. The People & Culture Strategy also summarises the aims of the policy in the introductory chapter with a table comparing the current status of different aspects of the research system to the desired outcomes. Similarly, the UKRI Strategy is structured in terms of six strategic objectives, and each of the chapters in the Science and Technology Framework begins with a 'vision' for science and technology. By exploring the stated benefits and intended outcomes, the analysis uncovers what the policy views as desirable and thereby the values and beliefs held within the policy.

Through this process, common discourses relating to the aspects of research cultures identified in the literature review were identified, with analysis focusing on the conceptualisation of desirable behaviours or desirable attributes of the UK research sector. These discourses were groups into themes as summarised below, with a dedicated analytical chapter per overarching theme.

Table 4.2.
Overview of common themes emerging from the discourse analysis.

Chapter	Overarching theme	Sub-themes
5	Notions of high-quality research	Value of research impact
		Value of specific research areas
		Research culture in relation to research quality
6	Competition and collaboration	International competition
		Research collaborations
7	People and talent	Attraction and retention of staff
		Research careers
		Inclusive and diverse research cultures

In each chapter, the discourses are explored and compared to sector discourses to identify which components of the cultural system are reinforced by the policies and where contradictions or complementarities occur. The effect of this on the research culture is discussed, particularly with regards to whether this enables or constrains efforts to embed more positive research cultures (as defined in the literature review chapters) or creates openings for cultural elaboration and/or social action. At the end of each chapter, relevant discourses that were identified in the literature review but not mentioned in the policies are discussed to understand government priorities as well as potential attempts at concealment. By surfacing the effects of the policies in this way, this thesis aims to support social action to address the challenges in current research cultures raised by the sector.

4.6. Reflections on the current study

Regarding my positionality, I am a Research Policy Officer in a UK HEI and have significant experience working with these UK government policies, including being involved in senior level discussions at committee about how these policies interact with institutional strategy and how the HEI is responding to them. I also collaborate with colleagues across

the institution and the wider HE sector to deliver initiatives and activities aimed at improving research cultures, leading on areas related to research integrity and research assessment. Accordingly, I am familiar with the wide range of culture challenges that apply within my university and across the sector, with a particular expertise on the impact of incentive structures and research assessment processes. This personal experience is corroborated by the outcomes of the literature review, but did not direct it, as a wide net was cast in the review.

Aligning with the critical realist approach taken, I acknowledge that my analysis and interpretations of the policies are inescapably impacted by my previous experiences and opinions, as I cannot objectively witness what is happening in the 'real' or 'actual' domains. Nonetheless, it is within my power to maintain an awareness of how those experiences and opinions might come into play and seek to minimise their effects. I have relied strongly on frameworks for analysis – Hyatt's Framework for textual analysis and Archer's morphogenetic approach for conceptualisation of the effects on research cultures and potential for social change to inform my analysis, conclusions and discussion. These methods have been applied to the current research topic to promote robustness in analysis and interpretation and clearly align with the chosen research topic.

As with all research, the project could have been strengthened with the addition of further data collection methods and analysis, such as, a mixed-methods approach utilising interviews with institutional stakeholders to understand how the policies affect their research culture activities. This could have provided an additional level of detail in the analysis and would have significantly enhanced theorisation about the enabling or constraining effects of the policy's contributions to the cultural system. However, the scope of this project in terms of resources meant this was not possible, and the word constraints of the thesis would have limited proper exploration of this additional data.

To promote integrity and transparency in reporting, the full notes from the policy analysis have been included in Appendix 1 and will be deposited with a CC-BY licence following PhD conferral to enable their access and reuse. A data management plan was used to support robust research processes and proper management of research data and is included in Appendix 2.

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5. Notions of high-quality research

5.1. Introduction

This chapter details key discourses used in the policies to conceptualise research quality, including in relation to research impact, research approaches, and research cultures. With reference to Archer's (1995, 1996) morphogenetic approach, consideration is given to the extent to which these policies reinforce or transform the cultural system within UK HEIs, including the extent to which they align with existing values in the cultural system and/or with efforts to address the research culture challenges highlighted in the literature review. Finally, the limited consideration of research processes as an aspect of research quality is discussed. In doing so, this chapter provides an overview of the key themes emerging from the analysis with regards to research quality to enable further deliberation within the discussion chapter on the impacts of these policies on the cultural system and the potential for social change.

5.2. Value of research impact

Each of the policies analysed explicitly states that their goal is to enhance and capitalise on the real-world benefits coming out of research. The R&D Roadmap states that "Our goal is to further strengthen science, research and innovation across the UK, making them central to tackling the major challenges we face, and taking advantage of opportunities" (p.5). Similarly, the People and Culture Strategy claims that the Government's ambitions "put science, research and innovation at the centre of our prosperity, our health and wellbeing, our mission to achieve net zero, and our place in the world" (p.5). Maximising and sustaining these benefits is then used as the core justification for the Strategy to tackle challenges that the sector is facing with regards to people and culture. The UKRI Strategy notes:

> Research and innovation enrich and improve lives and increase prosperity by creating, applying and delivering value from new knowledge and ideas. Capitalising on the UK's extraordinary talent and creativity, UKRI will put the UK at the forefront of solutions to national and global challenges, from climate change and healthy ageing to national security. (p.4)

The UKRI Strategy outlines how UKRI will spend its budget on public funding for research and makes reference throughout to 'maximising value/return for the UK taxpayer' by delivering economic, social, environmental and cultural benefits. The Strategy, as a whole, is framed in terms of research impact, as demonstrated by the sub-title 'Transforming tomorrow together'. Finally, the Science and Technology Framework forecasts that:

> Science and technology will be the major driver of prosperity, power and history-making events this century. The United Kingdom's future success as a rich, strong, influential country, whose citizens enjoy prosperity and security, and fulfilled, healthy and sustainable lives, will correspondingly depend on our ability to build on our existing strengths in science, technology, finance and innovation. (p.6)

The Framework then sets out critical technologies that will be key to delivering this future prosperity and the actions required from the Government to support it.

In this way, the policies naturalise the idea that researchers should be expected to deliver societal and economic benefits as an outcome of their research, in particular when the research has received public funding. This reflects, as outlined in chapter 2, a common trend in the knowledge-based economy, whereby the connection between the HE system and policy goals for the economy and society become sharper (Ferlie et al., 2008) as the HE sector is required not only to produce new knowledge but also to take part in knowledge transmission and application (Sorensen et al., 2015). This is particularly clear in the R&D Roadmap, which has a dedicated section on the role of HEIs and states that "We will refresh

our relationship with universities in England to ensure that their research activities are sustainable and delivering even greater impact, and that their diverse roles in innovation and regional growth are supported and strengthened" (p.56).

It is neither a new nor inherently problematic belief that research should have a relevance to wider society and should be of benefit beyond those involved in conducting the research. Indeed, Bush (1945) writes that:

> As long as [universities] are vigorous and healthy and their scientists are free to pursue the truth wherever it may lead, there will be a flow of new scientific knowledge to those who can apply it to practical problems in Government, in industry, or elsewhere. (quoted in Hill, 2016, p.2)

Etzkowitz & Leydesdorff (2000) maintain that science has always sought to pursue practical as well as theoretical interests and highlight that Merton (1938) reported that around 40-60% of 17th century discoveries were targeted at practical problem solving. Therefore, it is perhaps expected that a government that is responsible for the health of an economy and a society and spends public money to fund research would value the impact of that research and seek to maximise the benefits that can be drawn from it.

Problems occur, however, when the research community feels that too much attention is being paid to research impact at the expense of other dimensions of research quality. In the Wellcome Trust report on current research cultures (2020), researchers reported concerns that creative and innovative research approaches and research with a theoretical focus were being stifled by an excessive focus on impact by government and funders as researchers felt pressured to prioritise research with more certain, more direct applications. This was seen to create narrow notions of research quality and compromise the sustainability of research, innovation and development. It is clear from the analysed policies that there is indeed a strong focus on direct research impact. Firstly, noting that the scope of these four policies covers all research-performing organisations, all research disciplines and

all types of research, yet they give the primary aim of maximising the real-world benefits coming out of research. This, in combination with there being no other government research policy published in this time period that relates to more ‘theoretical’ research, could be seen as devaluing research that does not have an immediately obvious real-world application. The repeated references to economic and societal benefits throughout each policy also suggest that this is seen not just as a natural consequence of good research but as a core purpose. It could be argued therefore that researchers are no longer “free” to do research that naturally leads to benefits as Bush (1945) noted, and the balance between practical and theoretical as reported by Merton (1938) has become skewed.

Though staff working within HEIs at different levels still have the agency and reflexivity (Archer, 2011) to make their own decisions about research, these policies reinforce, and potentially increase, the value of impact within the cultural system; this motivates funders and institutions to create incentives for impact whereby researchers who can deliver impactful research are rewarded with additional funding, promotions and job security, and motivates researchers to adjust their research missions and approaches to address those incentives. This in turn affects the ‘structure’ of social relations in the HE sector such that institutions that are in a structural position where they can align with government priorities, or pivot towards delivery of government priorities, are rewarded with further positional benefits, like enhanced reputation, increased income and greater influence. This constraining effect then continues down to researchers who feel pressure to adopt less risky, more goal-oriented research missions, approaches and methods that are more likely to result in direct economic or social benefits and conform to particular career pathways (Wellcome Trust, 2020; Curry et al., 2020), thus reinforcing the cultural belief that research with direct applications is more valuable than research without and reproducing the current culture. This pressure is heightened for those in a less structurally advantaged position, i.e. those without a permanent contract or those who already face barriers to progression due to inequalities, and therefore their agency is even further constrained (Archer, 2013). These

cultural and structural factors combine to make cultural change towards valuing a more diverse range of research contributions, or morphogenesis (Archer, 1995), extremely challenging.

Nonetheless, the R&D Roadmap does actively attempt to counteract the interpretation of applied research as more valuable in multiple places, stating:

> [having a healthy ecosystem] requires a broad span of approaches, from people developing new theories and insights into natural phenomena and the application of research in technological and industrial settings, through to systems research to improve patient care or tackle the barriers to inclusivity in society. (p.11)

The People and Culture Strategy and the UKRI Strategy talk about boosting creativity throughout, with UKRI stating that they will “champion an agile and responsive research and innovation funding environment that embraces curiosity, creativity, and risk-taking and encourages a diversity of ideas across all disciplines and sectors” (p.19). In doing so, the policies align on this point with sector discourses related to promoting more diverse research approaches and more inclusive notions of research quality (e.g. Hicks et al., 2015; Wilsdon et al., 2025; Munafo et al., 2020; CoARA, 2022) and thereby produce an enabling effect for those working to foster more positive research cultures in HEIs (Archer, 1996). In contrast, the most recent policy – the UK Science and Technology Framework - only mentions ‘foundational science’ once, highlighting its role in “giving us the agility to rapidly advance discoveries and technologies as they emerge” (p.7) and has no other mention of diverse research approaches. This contrast highlights an additional layer of difficulty for HEIs and researchers – the time period under analysis is just three years but represents a period of significant upheaval in terms of government, ministers and policy, with regular changes to government research policy. As a result, when policies create narrow notions of research quality but are wont to change frequently, it creates a challenging environment for HEIs to

implement long-term strategies that provide stability to staff (Jarvis, 2023), and it complicates researchers' attempts to make continual progress on their research ambitions (Grove, 2017). In Archer's (1996) terms, we can see this as part of the challenges of operating within a cultural system with poor logical relations between component parts.

5.3. Value of specific research areas

In addition to the focus on research impact, some of the analysed policies go further to place direct emphasis on specific approaches, fields and research applications. While the R&D Roadmap and the People and Culture Strategy make efforts to be inclusive of research approaches throughout, the UKRI Strategy promotes diversity in places – for example, having 'diversity' as a core principle for change and aiming to "[broaden] incentives to avoid homogenisation and promote a diverse portfolio of research and innovation activity in the UK." (p.6). However, elsewhere the Strategy lists specific areas where it will seek to invest to "secure the UK's competitive advantage" (p.24) and a further five strategic themes that UKRI view as major national and global challenges that research should be addressing. The Science and Technology Framework identifies five 'critical technologies' for the UK to "keep pace and continue to develop global competitive advantage" (p.7), which are different to those listed in the UKRI Strategy. By setting out specific research areas, these policies place additional value within the cultural system not just on research that has immediate real-world benefits but also research that has benefits in particular areas. Combined with structural factors, such as availability of funding, this further constrains the actions of researchers within HEIs and limits the potential for morphogenesis as discussed above.

These priorities outlined in those policies have been informed by the activities of the National Science and Technology Council and the 2021 Integrated Review of Security, Defence, Development and Foreign Policy, and a government is entitled to prioritise investment into certain areas as best suits their policy goals. However, care must be taken in the communication of these priorities when included in research policies that relate to the

whole UK research sector. The R&D Roadmap and People and Culture Strategy use inclusive language to avoid communicating a value of one research approach or area above others; the UKRI Strategy sets out its target technologies and strategic themes well into the document, on page 25, and efforts have clearly been made before this point to appreciate the value of a wider range of research approaches. In contrast, the Science and Technology Framework puts its critical technologies as the first section after the introduction and uses the rest of the strategy to explain how those technologies will be supported*:*

> ‘identifying critical technologies’ is a unique strand of this Science and Technology Framework that is about choosing which critical technologies the UK should focus on to build strategic advantage. The remaining strands describe the tools that the government can use to support these choices and create the environment for success. (p.8)

The focus on these specific applications can also be seen as privileging STEM subjects above social sciences, for example the Academy of Social Sciences (2024) has warned that the value of social sciences has not been fully appreciated within the Science and Technology Framework. The effect of this for HEIs and researchers is a further narrowing of incentives (and potentially available funding), creating structural and cultural constraints on agency and contributing to increased structural inequalities between research missions and disciplines. This inequality also restricts efforts to foster more collaborative, interdisciplinary cultures which value the role of all disciplines in addressing research challenges; instead, social sciences are placed as an ‘add-on’, or weaker partner, in collaborations and the important role that they play in producing high-quality research and innovation is overlooked (Wilsdon, Weber-Boer, Wastl & Bridges, 2024). The difference between the priorities in the UKRI Strategy and the Science and Technology Framework also underlines the difficulty highlighted above of making long-term plans in the face of regularly changing priorities.

5.4. Research culture in relation to research quality

The R&D Roadmap, the People and Culture Strategy, and the UKRI Strategy all include statements on the importance of positive research cultures for underpinning high-quality research and the potential harmful effects of poor research cultures on the quality of research, although they all use the dominant discourse of research impact to justify any related actions or objectives. For example, the R&D Roadmap has a dedicated section on 'Improving the culture of research', in which it states that:

> The vitality of the UK's research culture will be central to this success. The culture of research is an area that the UK has historically led the way internationally, from our reputation for assessment on research quality, to our early recognition of the importance of public engagement and the embrace of open research. However, there is still work to be done to improve research culture and make the most of the wealth of talent in the UK. (p. 20)

In addition to being seen as upholding the dominant discourses of research impact and competition, it can also be argued that this has the effect of integrating a newer discourse – the discourse on the importance of research cultures that has been increasing in significance in UK HE since Royal Society defined it in 2018 – into the dominant discourse of the government (Fairclough, 2013). The People and Culture Strategy in particular appears to draw directly from the Wellcome Trust report on researchers' perceptions of their research cultures (2020), with direct citations throughout the document, amongst other sector-led literature. The People and Culture Strategy gives significant focus to outlining the problems facing current research cultures and positioning these as barriers to government ambitions, for example, stating:

> To realise our science superpower ambitions and to maximise the social and economic benefits of our investment in R&D across all parts of the UK, we need a sector that is able to attract, retain and grow a workforce with the right

> skills and in the right numbers… we must also ensure that people want to stay in R&D by creating a positive working environment. We must address precarity, particularly for women and people from disadvantaged backgrounds, make sure careers are rewarding and offer long-term prospects for people at every stage of their careers and lives. (p. 16)

This is bolstered by the UKRI Strategy's references to culture, though not as strong, which communicate their intention to support more positive research cultures, for example "Priority 1.3: Shift research culture to support, rather than hinder, talented people and teams to pursue their ideas". This increase in attention on research culture reflects an increasing recognition of the effects on culture on behaviours, moving beyond simplistic notions that target initiatives at the level of individuals and their behaviours, in line with Archer's concepts of structure, culture and agency (1996). Instead, the influence of cultural and structural factors is highlighted so that more effective action can be taken to enable positive behaviours that underpin research quality. The policies create an opportunity to move away from the beliefs and values that exist in current cultures and are leading to poor experiences in HE, questionable or poor research practices and negative interactions between individuals, as highlighted in the literature review. As such, institutions can justify their research culture strategies in terms of supporting government ambitions, enabling those working within research cultures to challenge poor behaviours as they are clearly outlined as unacceptable and detrimental to research overall in high-profile policies. This can be seen as allowing for reflection on current research cultures and allowing those within research cultures greater agency to criticise and take action to address challenges (Archer, 2013).

Nonetheless, it is worth noting that the R&D Roadmap and People and Culture Strategy were effectively abandoned in 2023 with the publication of the UK Science and Technology Framework, which only refers to 'culture' in the context of creating a "pro-innovation culture" that supports "appropriate risk-taking" and "minimal bureaucracy" (p.17). While there is benefit that the UKRI Strategy has a specified timeframe of 2022-2027 and is

not officially affected by government changes, the message communicated by the government relinquishing its objectives for research culture cannot be underestimated. It undermines HEIs attempts to improve research cultures, hinders long-term planning and investment in positive action and suggests that it was a mistake to view research culture as core to research quality.

5.5. Omitted discourses

A core way that HEIs and researchers seek to reinforce the quality of their research is through the adoption of ‘good research practice’, also referred to as research integrity. As members of Universities UK and/or as recipients of public research funding, UK HEIs are expected to adhere to the principles of the Research Integrity Concordat (Universities UK, 2019) to strengthen the processes involved in research, promoting trust in researchers and confidence the research outcomes. In this way, integrity is fundamental to high-quality research and the contribution of said research to the worldwide knowledge base and to the UK economy and society (UK Committee on Research Integrity, 2024a). For this reason, reforming research assessment to take account of the research processes, not just the research outcomes and outputs, as part of quality judgements and recognising robust research processes as vital to maximising research quality is a core part of the responsible research assessment movement (CoARA, 2022). With this in mind, it could be expected that government and funder research policies would see promoting robust research practices as an important aspect of encouraging research quality, in particular, when those policies have the stated aim of maximising the benefits from research.

Despite this, it is not a strong focus in any of the four policies analysed and is instead only mentioned briefly, if at all. The UKRI Strategy has the clearest statement on supporting research integrity by committing to the establishment of the UK Committee on Research Integrity, which is now in place and has responsibility for promoting and driving research integrity in the UK (UK Committee on Research Integrity, 2024b). This is the only specific

action in all four analysed policies to support researchers to adopt good practices. While the R&D Roadmap and People and Culture Strategy do commit to tackling behaviours that they see as compromising research integrity, this most commonly focuses on stopping bullying and harassment. This may seem like a clear communication of the value of research integrity, but these comprise of just a few short statements within much larger policies. Research integrity is not promoted in its own right with a dedicated section but is instead included within other sections, for example on research bureaucracy. There is also no specific justification in any of these three policies for why research integrity is important and, as a result, it is not positioned as a priority or as high a value as research impact for example – despite beneficial and sustainable application of research relying on research processes that are rigorous, responsible and ethical.

The Science and Technology Framework goes even further to make no mention of research integrity, ethics, or good research governance at all, though there would be multiple places where it would have relevance, not least as part of their vision that “all stakeholders have confidence to invest their time, money and effort supporting our science and technology vision… and citizens trust that science and technology can improve their lives” (p.9). The lack of emphasis on good research practice, and arguable over-emphasis on research impact, therefore works to reinforce the existing values within the cultural system (Archer, 1996) that researchers report focus on outcomes at the expense of the robustness or integrity of research processes (Wellcome Trust, 2020). Many researchers felt there was a risk that this could lead to research integrity being compromised as people cut corners to get results. This in turn can lead to unsafe research findings, which subvert the research endeavour, waste research funding, and undermine attempts to address economic or societal challenges through research. In this regard, therefore, the discourses in the analysed policies actually represent a barrier to achieving their own stated aims as well as constraining efforts within HEIs to bring about research cultures that enable good research practice.

Of relevance to research integrity, the only specific practice mentioned in the policies is open research (though it is not mentioned at all in the Science and Technology Framework). Open research is mentioned directly in the R&D Roadmap, the R&D People and Culture Strategy and the UKRI Strategy, including open access, open data sharing and open engagement. For example, the R&D Roadmap states “We will mandate open publication and strongly incentivise open data sharing where appropriate, so that reproducibility is enabled, and knowledge is shared and spread collaboratively” (p.51) while the People and Culture Strategy promotes “more open and inclusive practices that value the knowledge and experience of diverse communities” (p.28). The UKRI Strategy makes the value of open research clear with the statement “Open research improves research efficiency, quality and integrity through collaborative, transparent and reproducible research practices” (p.13). These open research practices have been promoted by those within the HE sector as a solution to several challenges in research cultures, by supporting reproducibility and research integrity, increasing diversity and representation of voices in research and stimulating future research collaborations (e.g. Munafo et al., 2020; Concordat on Open Research Data, 2016). By promoting open practices, the policies align with sector discourses and lend further value to them in the cultural system. This motivates those within the HE sector to foster an open research culture, putting in place policies and support structures that encourage researchers to share their research and engage with non-academic audiences, and collaborators, as much as possible.

However, this enabling effect is unlikely to be as strong as the constraining effect of focusing on research impact, as it is not given the same prominence in the policies, and is not intrinsically linked to funding and therefore is not reinforced by structural motivations in the same way as research impact. Moreover, it could be argued that the singling out of open research as the only specific research practice discussed in the policies further reflects the focus on impact, as open research is widely believed to enhance research impact (e.g. Open Research Data Task Force, 2018; UNESCO, 2021; European Commission, 2019). Other

aspects of research integrity that are recognised within the sector, such as sustainability in research or responsible innovation (UKRI, 2024a), are entirely omitted from the policies. In this way, while the inclusion of open research practices in the earlier three policies can be seen as a positive move that aligns with some of the sector discourse on supporting research cultures, it could be argued that this in fact further reinforces the narrow notions of research quality by excluding many other processes from the narrative.

5.6. Conclusions

In line with the stated goal of capitalising on the real-world benefits coming out of research, the policies position research as core to the national's successful economic growth. While this is expected within a knowledge-based economy, the strength of this focus, and the scope of the policies as overarching research policies rather than a dedicated innovation strategy, motivates those working in research cultures to focus on research that can more directly lead to impact. As a result, the diversity of research approaches risks being narrowed as researchers adopt research approaches with the greatest chance of funding success. While there are notable efforts to counteract this effect in the earlier policies, these efforts do not continue into the most recent policy, the Science and Technology Framework. Moreover, the same constraining effects can be seen in the areas of research that are considered valuable within the policies, and the research practices that are highlighted as contributing to research quality. The narrow notions of research quality communicated in these policies therefore contrast with sector efforts to bring about inclusive and responsible research assessments that recognise the many diverse research contributions that are necessary to maximise research quality and impact (e.g. CoARA, 2022).

The earlier policies do recognise the link between research cultures and research quality, in many places drawing directly from sector discourses (e.g. Wellcome Trust, 2020). In doing so, the policies produced an evident enabling effect by communicating the value of

a positive research culture. This lends credibility to efforts to foster more positive research cultures and likely contributed to the rise in staff employed explicitly to enhance research cultures in HEIs and institutional research culture action plans that have been seen over the past few years. The cultural elaboration (Archer, 1995) that has seen research culture become a common topic within HEIs and seen the proposed expansion of REF 2029 to include direct assessment of research cultures was no doubt in part enabled by the prominence provided to the topic in these policies. However, this prominence does not continue into the Science and Technology Framework, which has no direct mention of research cultures. Indeed, it is worth noting that there has also been a rollback in wider commitment to research culture activity since publication of the Framework. Most notably, the pause to the REF 2029 criteria setting phase, which was initiated by Sir Patrick Vallance (one of the key authors of the Science and Technology Framework), has been accompanied by indication of a reduction in the scope of the People, Culture and Environment element (Parr, 2025). This underlines the influence that the values communicated in policies and held by those with authority can have on a culture and on the behaviour of those within the culture.

The notions of research quality communicated in research policies set the priorities for organisations and individuals working within the research sector. When the notion of research quality held by the Government and communicated in policies is narrow, this has a significant impact on the research that is done and on the strategies that are set by HEIs. This is even more important within the current financially constrained context of the sector. Government and Funder stakeholders have advised HEIs to ‘specialise’ in order to reduce costs. As summarised by Universities UK President, Prof Malcolm Press: “What we are hearing from government is that we don’t want to be investing in areas of research where we don’t have quality and we don’t have scale” (Swain, 2025, para. 2). UKRI CEO Prof Ian Chapman has confirmed this approach, stating “For too long we have tried to do more than our budget allows… this government is saying these are the things that we want to

prioritise… Expect UKRI to follow that plan" (Grove, 2025, para. 7). As such, it is clear that the government's definition of research quality will be reinforced structurally through the availability of research funding and that HEIs are being directly encouraged to narrow the diversity of their research portfolio. There is no indication of efforts to coordinate this reduction, therefore raising the risk of loss of expertise and diversity at a UK level and a threat to the sustainability of the UK's pipeline of research and innovation.

6. Competition and collaboration

6.1. Introduction

This chapter outlines key discourses used in the policies to refer to competition and collaboration in research and research cultures. Consideration is given to the extent to which these policies reinforce or transform the cultural system within UK HEIs (Archer, 1995, 1996), including the extent to which they align with existing values in the cultural system and/or with efforts to address the research culture challenges highlighted in the literature review. Finally, the discourses that emerged from the literature review but did not feature in the policies is discussed to further explore the discursive choices adopted in the analysed policies. As such, this chapter informs further exploration in the discussion chapter about the impact of these policies on the UK HE cultural system and opportunities for social change.

6.2. International competition

Each of the policies analysed forms part of consecutive Conservative Governments' mission to make the UK a 'global science superpower'. This was established in policy in the R&D Roadmap in 2020 and then carried through to the People and Culture Strategy, the UKRI Strategy and the UK Science and Technology Framework. Though not specifically defined in any of the policies, the policies refer to this in terms of the strength of the UK's research sector in attracting resources (including income and staff) and delivering economic and societal benefits, as well as the UK being recognised internationally as a leader. For example, the People and Culture Strategy states that "Attracting and retaining these highly sought-after individuals will add to the UK's strength as a collaborative science superpower" (p.32) and the UK Science and Technology Framework explains "Britain as a Science and Technology superpower does not just challenge the rankings, but translates the benefits of that position into material benefits for British people" (p.5). Within this discourse, competition is positioned as an inherently desirable thing, with the UK's strengths being understood by comparison to other nations. This can be understood as aligning with neoliberal beliefs that

competition drives quality (Delanty, 2001; Jessop, 2013; Rowlands & Rawolle, 2013); viewing global research as a market, these policies are aiming to strengthen the UK's research sector by competing for investment and talent in order to enhance productivity and quality.

However, the discourse in the Science and Technology Framework appears to go beyond competition as a means to strengthening the UK's research, to position competitive advantage as the end goal:

> Despite our relative size, Britain outperforms our closest competitors and we are a main challenger nation to the US and China in many areas... If you put together just eight of our university towns, they are home to more billion-dollar unicorn start-ups than the whole of France and Germany combined. However, when others – France and Germany among them – are moving further and faster to invest in science and technology, we have got to do the same. (p.4)

In the quote above, it is not the number of billion-dollar start-ups that is valued, but the fact that these start-ups outnumber other countries. Moreover, the 'critical technologies' outlined as the first strand of the Framework are identified as the areas where the UK can build a strategic advantage globally; and the rest of the Framework is aimed at supporting delivery in those areas. 'Signalling the UK strengths and ambitions' is the second strand of the Framework, with objectives that focus on the UK being seen to have a competitive advantage, including "that the UK is seen as a top three nation in the world, and the leader in Europe, for the strength of its science and technology system" (p.9). This positions competitive advantage as the first priority, with the strength of the research sector and quality of research being a way of securing that advantage. This competitive approach to research is not uncommon globally, particularly in knowledge-based economies where innovation is considered vital for economic growth and development (Arentsen, van Rossum & Steenge, 2010). In these economies, there tend to be fewer material exports for economic

policies to target to drive productivity, so ‘knowledge capital’ becomes a key focus of policies (OECD, 2001). Reich (1993) argues that ‘symbolic analysts’, i.e. workers that produce symbolic resources like knowledge and innovations, become a key occupation for any country wanting to enhance their competitive advantage. Nonetheless, considering that the Framework was established as a *research* policy, not an *economic* strategy, and claims to be aimed at enhancing the UK’s research, this value of competition above all else risks worsening the threat to research integrity and research diversity discussed in the previous chapter.

This focus on international competition can also be seen in the other analysed policies, though to a lesser extent and the discourse is often used in more nuanced ways. The R&D Roadmap, for example, positions R&D is an area of international competition that the UK must compete in for resources in order to maintain or enhance the strength of the R&D sector. Rather than considering competition as an end goal, international comparators are used to benchmark the UK’s performance and identify further areas for improvement to maximise the positive outcomes of research:

> The UK is ranked 5th in the Global Innovation Index 2019 and in the top 10 best countries worldwide to start, locate and scale a business… And yet, we underperform in innovation compared to research… We need to ensure our excellence in discovery research, design, engineering, data science and creative arts translates into commercial applications – increasing productivity for our existing industries and creating new growth opportunities for the UK. (p.24)

Using comparators in this way - to benchmark rather than as a measure of performance - aligns better with sector discourses on responsible research assessment (e.g. Curry et al., 2020; CoARA, 2022) and ensures that the attention is placed on the outcomes, such as economic growth and productivity, rather than on increasing the ranking or achieving more than other countries. International comparisons are instead made to understand potential

and set targets. Similarly, the People and Culture Strategy recognises the competitive global context in which it is operating and sets out ambitions for attracting people and talent to the UK. There is a clear explanation of why this is beneficial for the UK, with the policy stating:

> The international flow of workers in research and innovation is a key dimension of international networking and knowledge exchange… Research teams with a balanced mix of domestic and international researchers also tend to be more productive in terms of publication record. (p.33)

This is a level of reasoning not seen across the other three policies. The discourse on international competition for talent is also used as a justification for the policy's aims to improve the UK's offering to researchers, including in providing more stable careers, developing and progressing existing researchers and in addressing challenges in research cultures. As in the previous chapter, this can be understood as integrating a newer discourse – on improving research cultures and conditions for those working in research – into existing governmental discourses.

The discourse in the UKRI Strategy sits between the two approaches seen in the other analysed policies, as might be expected given it was responding to the R&D Roadmap and People and Culture Strategy but was published after the key individuals involved in those policies had been replaced in their roles. Like the UK Science and Technology Framework, there are statements which position competitive advantage as the end goal, such as "The long-term sustainability of the UK's research and innovation ecosystem is critical to maintaining our global leadership and leveraging our competitive advantage" (p. 16). It could be argued that this is putting the horse before the cart – seeing the financial sustainability of the sector as a way to secure competitive advantage, rather seeing competitive advantage as a necessary way to secure the financial sustainability of research organisations and the strength of the UK's research sector. Nonetheless, within each objective, there is also an aspect of international benchmarking, an explanation of why this is important and an outline

of areas for improvement, as in the R&D Roadmap. As in the People and Culture Strategy, discourses arising from the sector in relation to improving research cultures are also integrated into this discussion of international competitiveness to justify efforts and position research culture considerations are part of dominant discourse; for example, stating: “The research and innovation workforce is globally mobile, so we must strengthen our offer to attract, develop and retain talent, making sure research and innovation careers in the UK are globally attractive to talented individuals and teams” (p.14).

The strength of focus on competition in these policies, and the extent to which it is positioned as either a significant part of securing the strength of the research sector or as a desirable outcome in itself, is important for research cultures and those working within them. All four policies reinforce the value of international competition within the cultural system and thereby motivate action that promotes international competition and advances the UK’s advantage (Archer, 1995). For those working within HEIs, this can mean diverting attention and investment towards activities that contribute to the Government’s ambitions for competitive advantage, i.e. through delivery in the ‘critical technologies’ identified in the Science and Technology Framework or through performance in the areas mentioned in the policies as comparator indicators such as number of spin-out companies. The same motivating effect acts on Government stakeholders and funders to encourage action that further reinforces a competitive and hierarchical structure of social relations (Archer, 1996); people within HEIs that do contribute to Government’s ambitions are rewarded with resources and structural benefits such as increased funding or enhanced profile. Similarly, HEIs that are able to pivot their strategies (or whose strategies already align with Government ambitions) are also rewarded with structural benefits. Typically, it is HEIs with pre-existing structural power, such as those belonging to the lobby group ‘the Russell Group’, that benefit most of this as they have the political influence or have more resources available to change or expand their activity to meet emerging policy developments. As a result, the effect of these policies reinforcing the value of competition and thereby bolstering

social structures is to produce morphostasis (Archer, 2013), in other words to sustain existing cultures, strengthen the high levels of competition and hierarchy that were identified in the Wellcome Trust survey (2020), and hinder social and cultural change.

Indeed, it is not just international competition that is sustained through these policies. The value of competition and the notions of research quality promoted in the policies is strengthened across institution-, project- and individual-level assessments too as each layer of the HE system seeks to boost their own productivity and strategic advantage through corresponding quality control and accountability measures (Camilleri & Camilleri, 2018). Institutions are motivated to be selective with the staff that they recruit and invest in to ensure that they can contribute to funding attraction. Indeed, this trickle-down effect of competition in the sector can be seen in the Wellcome Trust report (2020), where researchers reported understanding that academia is competitive but feeling that the competition had now gone too far and was becoming a goal in its own right. Researchers reported that "this was creating conditions ripe for aggressive, unkind behaviour and crowding out collegiality and collaboration, generating high pressure as researchers tried to succeed and survive in this new environment" (p.15). As in the previous chapter, those that choose to use their agency and reflexivity (Archer, 2003) to act against the conditions created by these policies find themselves without the resources required to achieve their research missions and facing barriers to career progression, as well as potentially suffering in terms of their wellbeing (Curry et al., 2020).

6.3. Collaboration

One concern from the sector around the increasing rates of competition is that it can hinder genuine, inclusive collaboration. Researchers in the Wellcome Trust report (2020) identified collaboration as an important aspect of positive research cultures – something that is mirrored in other relevant literature such as the UKRI Research Culture Framework (UKRI, 2024a) and Science Europe Values Framework (2022). Collaboration – be it academic,

interdisciplinary, cross-sector and/or international – is increasingly seen as crucial for addressing complex, large-scale research problems (Hall et al., 2018; Read et al., 2016; Stokols et al., 2008). Through collaboration, research can benefit from having diverse perspectives and capabilities involved (Chen, Zhang & Fu, 2018) and from embedding peer review throughout the research process rather than just at the publication stage (Rigby & Edler, 2005). Despite this, researchers in the Wellcome Trust report (2020) felt that good collaboration was increasingly threatened by individualistic cultures in research. Researchers from within HE noted that collaboration was easier to achieve in research-intensive institutions with more funding as positions there felt more secure, underscoring the importance of social structures as a distinct layer of influence on individual's actions (Archer, 1995).

Within the analysed policies, there is some recognition of the benefits of collaboration and an effort to encourage it, though this often focuses specifically on formal, international collaborations. Acknowledging that international collaboration strengthens research, the R&D Roadmap states "The UK must collaborate globally if we are to remain at the forefront of cutting-edge research and innovation. We benefit from strong international partnerships with a range of countries, at different stages of economic and scientific development" (p.40). Collaboration is given a strong focus in the Roadmap, with a whole section dedicated to 'being at the forefront of global collaboration' and associated actions to support collaboration. Within the People and Culture Strategy, there is recognition that international collaboration extends the UK's access to knowledge and innovation, even if the international researchers are not employed at UK institutions and even if the international businesses do not have a base in the UK. The UKRI Strategy similarly appreciates the benefit of collaboration for strengthening research and maximising innovation, noting "We must catalyse ideas by promoting new ways of working and supporting unique collaborations, nationally and globally, that spark creativity and inspire breakthroughs and technological advances" (p.24).

This promotion of the value of international collaboration and its integration within dominant discourses related to research performance provides an enabling effect on those working within HEIs to collaborate more widely and counter the individualistic values also held within the cultural system related to high levels of competition and narrow notions of high-quality research. Macfarlane (2017) notes that it is common for research policies to invoke collaboration as an inherent benefit to research, which has led to an increase in initiatives to support collaboration, including funding schemes requiring multiple partners, institutional research themes and research networks. Indeed, through the R&D Roadmap, the People and Culture Strategy and the UKRI Strategy, further initiatives have been put in place to support collaborative working, including participation in Horizon Europe funding and membership of international and multilateral initiatives to build strategic relationships. These structures empower individuals to establish international research collaborations and act in a way that transforms the cultural system (Archer, 2013), challenging the value of competition between individuals working in similar areas and replacing it with the value of working together to combine strengths (Hall et al., 2018; Read et al., 2016; Stokols et al., 2008; Wilsdon et al., 2024).

However, the positioning of international collaboration as beneficial when it serves to increase the UK's competitive advantage is also notable across the analysed policies. The UKRI Strategy makes clear that a core goal of international collaboration is to enhance the UK's attractiveness in global talent and investment markets: "Through our international activities, we will forge new equitable partnerships and deepen existing relationships with trusted partners, making the UK a collaborator and destination of choice for international talent, innovative companies and inward investment" (p.25). This discourse of 'being a partner/collaborator of choice' is present in the R&D Roadmap, the People and Culture Strategy and the UKRI Strategy and suggests that notions of international competition have permeated into international collaboration too. On the one hand, this could be seen as aligning with Chrislip and Larson's (1994, p.5) widely cited definition of collaboration as a

“mutually beneficial relationship between two of more parties who work together towards common goals by sharing knowledge, learning, responsibility, authority and accountability for achieving results”. Indeed, it is natural that all those involved in collaborations would want to see some benefit from them. However, the discourse used in the policies invokes ideas of out-competing other nations to be the one leading the collaboration or participating in collaborations at the expense other parties, rather than a collaborative, inclusive and collegial approach to sharing resources and building knowledge together to solve shared challenges. This competitive approach to securing collaborative partnerships, accompanied with the notion of collaborating only when it advances the UK’s competitive position, further reinforces the value of competition between others, even when the policies are discussing working together as partners. This approach could be considered what Macfarlane (2017) terms ‘collaboration-as-performativity’ in which collaboration is seen as a means to increasing research productivity and meeting performance targets, rather than as an exercise of academic duty or part of the wider pursuit of knowledge as a common benefit for society. Indeed, collaboration within the policies appears to be deployed to meet neoliberal ends; it is encouraged and permitted as long as it meets the criteria desired by the government (Rowlands & Rawolle, 2013).

This neoliberal approach to international collaboration is continued and intensified in the Science and Technology Framework, which entirely positions collaboration as only desirable when it benefits the UK’s competitive advantage. The Framework sets out a desired outcome under ‘international opportunities’ for the UK to have a “prioritised and varied set of science and technology-based international partnerships… [which] will each benefit the UK and strengthen the science and technology system and the UK’s global influence” (p.14). Within the Science and Technology Framework there is no recognition of the inherent value of collaborative research approaches and takes a much narrower view of the benefits of collaboration to only encourage international collaborations with a strategic advantage. Moreover, the Science and Technology Framework’s section on international

collaboration – titled ‘International Opportunities’ – outlines the goal of a “systematic approach to handling national security risks around international R&D collaboration and inward investment, weighing the security risk of open collaboration and investment against the opportunity cost of limiting them” (p. 14). This is referring to the UK Government’s ‘Trusted Research’ framework which is aimed at protecting the UK’s intellectual property and managing cyber risks (National Protective Security Authority, 2024). However, the wider guidance from the National Protective Security Authority goes into detail about assessing risks, types of research that would be covered and provides guidance to academics on key considerations, while the Science and Technology Framework just refers to ‘risks’ and the need to ‘protect national security’, without providing any nuance on the areas of research that are covered by Trusted Research or any justification on why it is necessary. This therefore suggests that all international collaboration has a security risk associated with it and effectively discourages it all unless there is a material benefit to the UK in engaging.

Despite the recognition of the positive benefits of collaboration noted in the R&D Roadmap, the People and Culture Strategy and the UKRI Strategy in places and the potential enabling effect that this can have, the overall conditional approach to collaboration promoted through all four analysed policies is more likely to have a constraining effect on behaviour (Archer, 1996). Moreover, the focus on collaboration only as formal, international partnerships if likely to narrow research approaches, as in the previous chapter. In particular, it is likely to motivate those working within HEIs to engage in collaborations that align with the government’s ambitions and that have the potential to result in personal and positional benefits, which could be outputs and Principal Investigator positions for individuals and/or income and reputational benefits for institutions. Wider collaborations, for example, those that are more unilateral in the transfer of expertise, are less likely to be encouraged and may even be seen negatively as giving away an advantage. From the Wellcome Trust survey (2020), it is clear that this narrowing of genuine and open collaboration is ongoing, and the intensification of discourse between the R&D Roadmap and the UK Science and Technology

Framework supports this. As political attention moves away from widespread collaboration towards more targeted collaborations, we can expect to see a decrease in the amount of funding available for collaborative research, e.g. with the cuts to Official Development Assistance investment and discontinuation of the Global Challenges Research Fund in 2022 which occurred after the primary authors of the R&D Roadmap and People and Culture Strategy had moved on from their roles (Research Professional News, 2022). This therefore reduces the structural benefits of collaborative research and creates tensions within the cultural system. In Archer's (2013) terms, this could be seen as morphogenesis, with developments in cultural and structural systems motivating more competitive behaviours and more selective collaboration. This would therefore be cultural elaboration in the opposite direction to efforts to bring about more positive research cultures.

6.4. Omitted discourses

The policies present a limited definition of collaboration, typically considering only formal research collaborations and partnerships. Collaboration in research is more complex than this and includes practices such as networking, discussion of ideas, and intellectual exchange (Lewis, Letina & Woelert, 2016). These behaviours support the production of high-quality research by effectively embedding peer review throughout the research process, as well as supporting staff wellbeing and positive perceptions of the research culture through collegial interactions (Craig, Harris & Woodfield, 2025). Policies that have the effect of reducing the value of collaboration and removing the availability of collaborative funding, therefore, can have a much wider effect than just reducing the proportion of research undertaken in formal research collaborations. This can lead to individuals not being motivated to engage in academic networks - if there are limited opportunities for this to translate into collaborative funding - and focusing their time on individual pursuits that are more likely to result in benefits such as funding or career advancement - rather than taking the time for intellectual exchange and collegiality (Macfarlane, 2017). This therefore contributes to researchers' negative perceptions of research cultures, which were seen as a

threat to both collaboration and collegiality, often attributing this to high levels of competition (Wellcome Trust, 2020). It also risks compromising research quality as research does not benefit from wider perspectives, diverse expertise and constructive challenge, and reducing development opportunities for early career researchers who can benefit from working with others to expand their skills.

In terms of supporting collaboration more widely, not just international collaboration, there have been various challenges raised by the sector that inhibit collaboration, which were not mentioned in three of the analysed policies and were mentioned only very briefly in the UKRI Strategy. These barriers, as discussed in the literature review, include disciplinary silos, narrow and/or out-dated ideas of 'rigour' that disadvantage interdisciplinary research, and poor standards for measuring, rewarding and recognising the nature and roles in a collaboration (Hoidn, 2018; Klein & Falk-Krzesinski, 2017). Within the UKRI Strategy, it refers to "too many silos separating people and knowledge, acting as a barrier to interdisciplinary work and reinforcing a model in which there is a linear, one-directional relationship between research and innovation" (p.9). Listing the actions to overcome this challenge, the Strategy simply states that UKRI will identify where barriers existing within their funding programmes and support interdisciplinary networks. These are both useful actions that are likely to create an enabling effect on collaborative practices if done effectively; however, the limited detail provided suggest that they may not be well-developed areas of activity. Given the existing literature highlighting that traditional research assessment practices do not recognise the various roles involved in collaboration and are not able to appropriately evaluate quality in interdisciplinary research (Klein & Falk-Krzesinski, 2017), an alternative option for enabling effective, sustainable collaborations – and thereby leveraging the benefits of collaborative practices for research and innovation – would have been to tackle these fundamental challenges. This would have had the additional benefit of challenging the narrow notions of research quality discussed in the

previous chapter, which are often highlighted as particular obstacles to positive research cultures (e.g. Wellcome Trust, 2020).

6.5. Conclusions

As may be expected in a neoliberal, knowledge-based economy, the marketisation of knowledge and innovation is seen as a way to drive up quality within the UK's research sector and boost the UK's economy, by attracting resources. In places, however, the UK's competitive advantage and being seen to out-compete others is presented as the end goal, rather than as a means to enhancing research productivity and quality. To varying extents, all four analysed policies strengthen the value of international competition within the cultural system, thereby motivating action that promotes competition and advances the UK's interests. As discussed in the previous chapter, this can lead to policy and managerial attention within HEIs being diverted towards research that aligns with these ambitions, for example focusing on the 'critical technologies' outlined in the Science and Technology Framework, at the expense of broader research approaches and areas of interest. This is reinforced by funders, such as UKRI, directing funding towards these areas of research as priorities. The high value of competition in research cultures then trickles-down to researcher assessment as HEIs seek to maximise their own competitive performance, with more selective recruitment and promotion. As well as narrowing the UK's research base, this can create cultures that pit colleagues against each other for personal and positional benefits.

Though the policies do include positive rhetoric about collaboration and establish structures that support it, such as association to Horizon Europe, the enabling effect created by these contributions to the cultural and structural systems are limited by the contradiction caused by the high value of competition. For those working in HEIs, who are typically promoted on the basis of individual pursuits and for whom contributions to collaborations are poorly recognised, the enabling effect is certainly unlikely to counteract the self-interested motivation to secure positional benefits within the hierarchical and competitive structure of

HE. Even within the topic of collaboration, the analysed policies – in particular the Science and Technology Framework – advocate for a strategic approach to collaboration that serves personal and national interests above the benefit to others, such as supporting the development of more junior colleagues or advancing knowledge for the benefit of society. This has the effect of narrowing the scope of collaboration and discouraging practices that are necessary to underpin the quality and sustainability of the UK's research sector. Given the role that collaboration is said to have in identifying solutions to societal challenges (as recognised both in the literature review and the earlier analysed policies), this discourse appears to undermine the overarching goals of these policies with regards to maximising the real-world benefits of research.

7. People and Talent

7.1. Introduction

This chapter outlines key discourses related to people and talent, covering the attraction and retention of staff, support for their careers and career development, and efforts to foster more inclusive and diverse research cultures (both in terms of people and in terms of contributions). These are significant aspects of the cultural system that relate directly to interactions at the socio-cultural level, in many ways translating how the narrow notions of quality and success and strong values of competition within the existing cultural system are felt by people within research cultures. Throughout, the areas where the discourses in the policy align with sector discourses and provide an enabling effect on activities to promote more positive research cultures are identified and discussed in terms of how this may lead to cultural elaboration. Similarly, discourses that constrain this activity are highlighted and the consequences of this are examined. Discourses that are common in the sector when discussing research culture but have been omitted from policies are discussed, including consideration of staff wellbeing and recruitment of international staff in the context of immigration controls.

7.2. Attraction and retention

Negative experiences, harmful research cultures and poor working conditions are key reasons given for staff leaving academia (Hesselberth & Bloois, 2020; Gewin, 2022; Hall, 2023), leading to a “precipitous collapse of the academic job market” (Hesselberth & Bloois, 2020, p.147). Addressing these issues therefore – for HEIs and the UK government – could be seen as pivotal for maintaining a substantial and thriving workforce in order to promote the sustainability of the UK’s R&D sector. There is clear motivation within the People and Culture Strategy to increase the R&D workforce: “To match our ambitions for R&D we estimate the R&D sector will need at least an additional 150,000 [researchers and technicians] by 2030 to sustain the UK’s target of 2.4% research and development intensity”

(p.5). The Strategy outlines issues affecting the attraction and retention of staff currently, including instability in research careers, barriers to mobility across sectors and disciplines, and lack of training for leaders and managers. This approach mirrors the R&D Roadmap ambition to attract, train and retain people "from excellent scientists, researchers, engineers and technicians, through to entrepreneurs, business leaders and investors" (p.18). Within this section on attracting people, the R&D Roadmap has a dedicated section on "improving the culture of research" (p.20), which highlights further issues affecting research careers and people working within HEIs, including reward and recognition of diverse research practices, EDI in staff recruitment and progression, and bullying and harassment. Relating to enabling the attraction and retention of staff, the Roadmap states that "The vitality of the UK's research culture will be central to this success" (p.20). The UKRI Strategy continues this discourse by reiterating the need for 150,000 more people in the R&D workforce by 2030 and committing to "incentivise diverse, flexible careers, so that people can pursuit great ideas without barriers" and "improve support for the wider range of people, skills and roles necessary for research and innovation to thrive" (p.15).

This clear acknowledgement of the challenges faced by people currently working within or wanting to move into HEIs and the direct statement that these challenges need to be addressed in order to achieve government ambitions, provides a compelling opportunity for HEIs to justify their efforts to foster more positive research cultures. Within the cultural system, this reinforces the value of having inclusive research cultures that support a diverse range of people to access and develop in employment within the HE research sector, as well as the value of research training for students delivered by HEIs to create a pipeline of talented researchers. In doing so, the policies create an enabling effect on institutional actions to improve the conditions and experiences of people working in HEIs and supports cultural change (or morphogenesis; Archer, 1995). The clear statement about the need to address existing challenges acknowledges the contradiction in the current cultural system that values high levels of competition and individualism and has narrow notions of success

and quality, whilst simultaneously encouraging collegiality and collaboration and supporting initiatives aimed at supporting research careers and reducing inequalities. By recognising this contradiction so directly, the policies support corrections to be made to resolve it and transform the cultural system, which is discussed in the following chapter.

In contrast, the UK Science and Technology Framework includes a vision to expand the number of staff working in research fields but takes a more selective approach. By 2030, the Framework aimed to have “expanded opportunities for participation in STEM and ensured that a more diverse range of people enter the science and technology workforce” (p.11). While this does appear to be similar to the ambitions of the other analysed policies, there is a clear focus on STEM subjects only and the motivation for increasing this participation is based on solely achieving economic growth and delivering on government priorities – as opposed to supporting staff working within HEIs and addressing barriers to participation. Though there is one single mention of supporting a diverse workforce, this is not expanded or justified. As such, the Science and Technology Framework does not provide the same support for HEIs to address challenges related to research careers and recruitment of a pipeline of researchers and therefore does not have the same enabling effect on research culture related work. Instead of recognising the contradiction in the cultural system, this policy conceals it so that the opportunity for social action is hidden. As in the previous chapter, the Framework’s discussion of the research workforce appears to be aimed mostly at strengthening the UK’s competitive advantage. This is demonstrated in another intended outcome under this section to have “established competitive advantage in attracting international talent to the UK. The UK’s offer will be attractive to the world's best talent across all career stages, with easy access through our ‘high-skilled visa system’” (p.11). This underscores that the focus is on making sure only the ‘best’ get in, rather than the other analysed policies which seem to be actively seeking to attract people in numbers to deliver on government ambitions, including reducing barriers to participation.

Nonetheless, the R&D Roadmap, the People and Culture Strategy and the UKRI Strategy do also mention competing internationally for talent in similar ways to the Science and Technology Framework. For example the R&D Roadmap states “To ensure we have the talent we need to underpin our ambitions, we need to go further to attract top talent, at all career stages, to come to the UK” (p.10); the People and Culture Strategy has an aim on “Renewing the UK’s position as a global leader in R&D by attracting, retaining and developing talented people, making sure R&D careers in the UK are appealing to talented individuals and teams both domestically and internationally” (p.8); and the UKRI Strategy includes a priority to “Make the UK the most attractive destination for talented people and teams from the UK and around the world” (p.15). To a certain extent, this can be understood as integrating newer discourses and values on improving research cultures within existing discourses about international competition, adjusting both sets of values to be more compatible. However, as discussed in the previous chapter international competition is a core value of all four analysed policies, not just a discourse that is drawn on to justify improvements to research cultures. There is evident concern within these policies that if the UK’s reputation for R&D is not compelling enough, talented researchers may choose to work elsewhere, and businesses and funders may choose to establish bases and invest in other countries where they have more ready access to innovative research. This then affects economic growth and limits the ability of the UK to invest further in research, develop research strengths and new innovations, and subsequently produce the economic and societal benefits that are the ultimate aims of all four analysed policies.

With this motivation in mind, the focus on demonstrating impact, delivering innovations and new technologies, and being seen to have a stronger research performance than other countries can be understood as part of competing for ‘knowledge capital’ in order to ultimately grow the knowledge-based economy. These discourses draw on concepts of ‘brain drain’ and ‘brain gain’ (Salt, 1997) to suggest that advancement of knowledge capital is a zero-sum game in which only one country can benefit from knowledge and does so at

the expense of other countries. However, while concerns around brain drain and brain gain are still prevalent in policy agendas, research into mobility within knowledge-based economies often criticises the negative values attached to discourses over brain drain and conceptualise mobility as 'brain circulation' (Meyer, 2003; Ackers, 2005; Daugeliene & Marcinkeviciene, 2009). 'Brain circulation' is seen to better capture the continued process of migration and recognise that knowledge transfer can occur in a range of ways – not just through the physical presence of an individual. Attraction and retention of a skilled workforce is still a core part of this process of knowledge transfer, as attracting globally mobile researchers to work within a R&D system can introduce new expertise, develop the skills of the existing workforce and stimulate the creation, dissemination and adaptation of new knowledge (Daugeliene & Marcinkeviciene, 2009), but it is just one strand of the process.

Alternative mechanisms include creating opportunities for UK researchers to work and collaborate abroad in order to enhance their skills and expertise, supporting international collaboration and cooperation between researchers and research organisations, and fostering open exchange of knowledge are also methods of increasing a country's knowledge capital. Invoking 'brain drain' discourse instead further strengthens the value of competition and marketisation within the cultural system. It also makes it harder for HEIs to address the cultural challenges that are mentioned within the earlier policies as affecting the attraction and retention when staff are positioned as commodities to be owned and their value is based on narrow ideas of the quality of their contribution to the research endeavour. That this is communicated most strongly in the Science and Technology Framework, the most recent policy, means the constraining effect on institutional and individual actions is acutely felt.

7.3. Research careers

Key concerns about the sustainability of research careers raised by the HE sector relate to intense competition for academic positions (Vitae, 2016), precarious contracts

(Cardozo, 2017), issues with reward and recognition of work, and barriers to mobility between sectors (Wellcome Trust, 2020). As can be seen in the quotes above, these are all recognised within the R&D Roadmap, the People and Culture Strategy and the UKRI Strategy. The R&D Roadmap directly refers to these issues, stating:

> Only 29% of early career researchers feel secure pursuing a research career, and most doctoral candidates exit the profession once they have completed their training. Opportunities to transition between academia, industry and other roles are unclear or unavailable, and our technical workforce lacks the visibility, recognition and career development it deserves. We must not be afraid to tackle these issues. (p.9)

Similarly, the People and Culture Strategy notes that “people may be driven to consider other careers to increase financial security and enjoy a more stable family life” (p. 19). The UKRI Strategy reiterates concerns about precarious contracts, narrow measures of success and barriers to mobility in research careers and summaries that “these factors work together to create high pressure working cultures that can compromise creativity, excellent research and innovation, and retention of talented people” (p. 14). Taken together (as these three policies were originally intended), they build a compelling argument for addressing concerns related to careers, recognition and assessment within current research cultures. There is a clear justification that these concerns compromise the productivity and quality of research, either through lack of staff or challenges faced by staff, e.g. stress, excess workload or competing priorities, aligning with challenges identified in literature and by the sector (e.g. Weinstein et al., 2023). This reduces the value of highly competitive and selective research careers that previously might be seen from a neoliberal perspective to be key to ensuring that the research sector is populated by the ‘best’ talent available. In doing so, the constraining effect on individuals and organisations to maintain competitive research assessment and accountability processes is diminished and greater agency is provided to actions that reform research careers.

The Science and Technology Framework, however, makes no mention of problems in research careers. Instead, the heavy focus on attracting “the world’s best talent across all career stages” (p. 11) suggests a ‘survival of the fittest’ approach whereby those who are talented and work hard will be able to thrive in existing cultures and those who leave research must not have been good enough. This can be seen as reinforcing the existing dominant neoliberal values in the cultural system discussed in the previous chapter that marketize research and promote competition. Combined with the narrow notions of research quality held within the Framework, the focus on attracting the ‘best’ suggests a highly selective and exclusionary concept of a desirable workforce. In particular, it can be understood in the case of people and talent as part of the discourse on ‘meritocracy’ (Young, 1958). Although the R&D Roadmap acknowledges issues with research careers and is broadly supportive of efforts to address them, it also includes a goal to “ensure that our system is as meritocratic as possible” (p. 20).

Though originally coined to convey the inequalities caused by hegemonic social organisation, the concept of a meritocracy has evolved significantly in the UK and has been adopted by both the Conservatives and Labour (Civil & Himsworth, 2020). Indeed, since the 1980s, the belief that success is determined by hard work has increased to the point that it is nearly universal (Mijs & Savage, 2020).This discourse positions the outcomes of someone’s actions as a factor of their competence and effort, which means that systematic inequalities can be obscured and efforts to address them are seen as unworthy (Mijs & Savage, 2020; Martini & Robsertson, 2022). This constraining effect is worsened by the ‘internalisation of fates’ in which individuals see their life outcomes as a product of their own efforts, rather than structural forces, which can mean that those that have succeeded in current academic systems of employment – e.g. University leaders – fail to recognise problems in the system because they believe that if you work hard enough and are talented enough (as they were) then you will succeed (Mijs & Savage, 2020; Savage, 2000). Drawing on this discourse therefore, as the R&D Roadmap and Science and Technology Framework do, can hinder

HEIs' actions to address systemic issues related to careers, recognition and assessment and conceal systemic cultural and structural influences on behaviour. It can also reinforce the value of selective and competitive recruitment and progression as a means of quality assurance, thereby exacerbating the career precarity issues acknowledged in the earlier policies.

Another key part of supporting research careers is enabling staff progression through development opportunities, which all four analysed policies support. The R&D Roadmap and People and Culture Strategy both advocate for development and training throughout careers; the Science and Technology Framework similarly refers to giving people the opportunity to train, retrain and upskill. The UKRI Strategy includes a dedicated priority on developing staff, in which UKRI commits to:

> Improve support for the wide range of people, skills and roles necessary for research and innovation to thrive, working with the sector to ensure visibility, recognition and career development pathways for everyone involved in delivering and realising research and innovation outcomes. (p. 15)

Effective development ensures a pipeline of staff across all roles and career stages, which is recognised within the policies as key to sustaining high-quality research and delivering on the UK Government's long-term goals for R&D. In addition, sector discussions and initiatives, such as the Concordat to Support the Career Development of Researchers (2019) see development as supporting meaningful research careers and enabling staff to thrive and build on their ambitions. This is therefore an area where the multiple aims can be addressed through the same action, meaning that HEIs can draw on government and sector discourses to justify staff development opportunities. It also means that there is a strong motivating factor coming from the cultural system to support researcher development. Given this area of complementarity within the cultural system, those advocating for effective staff

development within HEIs are facilitated by convenient situational logic that enables their actions to be integrated seamlessly into the cultural system (Archer, 2013).

7.4. Supporting inclusive and diverse research cultures

Increasing the diversity of people involved in research is a key part of promoting more positive research cultures for multiple reasons. Universities have historically been places of are spaces of whiteness (Arday and Mirza 2018; Bhopal 2016), patriarchy (Marshall and Witz 2004), able-bodiedness (Burke and Byrne 2020; Sheppard 2021) and middle-classness (Reay et al 2009), which exclude or present barriers to certain groups from participating. More diverse research teams provide a broader perspective on research issues that can lead to better problem solving (Rock and Grant, 2016), more innovative approaches (Williams, 2019), greater engagement with research (Adams, 2013), and more socially relevant research findings (Powell, 2018). Promoting diversity in research, therefore, is not just a question of equity and fairness, but also a way to strengthen the quality of research. The R&D Roadmap conceptualises diversity as something that a material contribution to the research endeavour – “We must also challenge ourselves to recognise when our R&D system may be failing to attract, grow, retain and champion exceptionally talented people, especially those with protected characteristics or from disadvantaged backgrounds.” Similarly, the R&D People and Culture Strategy notes that “Across the whole sector, there is a strong business case for increasing the diversity of people and ideas and for working in partnership to drive progress based on what works.” However, the focus is not just on performance; the People and Culture Strategy also positions diversity as naturally desirable, listing under ‘outcomes we want to achieve’ the desire that “There is a positive, inclusive and respectful culture that attracts a diversity of people to work and thrive in R&D in the UK and encourages them to stay” (p. 11).

Statements that communicate the value of diversity and the desire to attract and retain a diverse research community are particularly important in the context of current

research cultures where over a third of researchers have experienced discrimination (Wellcome Trust, 2020). However, this high level of discrimination highlights a contradiction within a HE sector that purportedly strives to promote equality and inclusiveness but fails to tackle poor behaviour (Ahmed, 2012). This contradiction is also clear in the later analysed policies; for example, the UKRI Strategy includes ‘Diversity’ as one of its four principles for change, claiming that:

> Diversity is key to future success: diversity in people, who are the beating heart of our research and innovation system, with diverse skills and ambitions; diversity in infrastructure, providing the full range of facilities and equipment needed to set creativity free: diversity in ideas, pushing forward the boundaries of knowledge and understanding, and capturing the benefits to build a better future for all. (p. 8)

While it can be argued that placing diversity as central to change in this way communicated a strong value, the section focuses mostly on diversity of contributions to research (discussed below) and diversity in career paths (discussed above). In relation to diversity in people, there is a strong statement that this is important, but there is no elaboration or justification for why that is the case. This contrasts with the R&D Roadmap and the R&D People and Culture Strategy which have clear justifications related to attracting diverse perspectives and talented people. Without such a justification, promoting diversity in people can be perceived as a tick-box exercise, thus reducing the value of it and making it harder for people working in HEIs to embed efficient EDI initiatives.

This superficial approach to equality also leaves UKRI open to criticisms of adding unnecessary bureaucracy for adding new commitments without rationalisation. Indeed, UKRI was accused of this in 2023 by then Secretary of State for Science, Innovation and Technology, Michelle Donelan, after establishing a Research England Expert Advisory Group on Equality, Diversity and Inclusion to take forward this work. Sparked by concerns over the

membership of the group and allegations that members held extremist beliefs (which was later found to be unsubstantiated), Donelan wrote that “I am concerned however that in recent years UKRI has been going beyond requirements of equality law in ways which add burden and bureaucracy to funding requirements, with little evidence this materially advances equality of opportunity or eliminates discrimination.” In response, UKRI suspended the group pending investigation and UKRI’s then CEO, Prof Dame Ottoline Leyser, apologised on X (formerly Twitter), which received backlash from the academic community who felt principles were being compromised in response to political pressure (Tatalović, 2024). Though this was ultimately resolved with no changes to the Advisory Group’s remit or membership as an independent investigation found no evidence of misconduct, this incident raises concerns that UKRI is not valuing diversity to the same extent as the academic community and highlights the resistance to embracing diverse and inclusive research cultures that existed within the UK government at that time.

The UK Science and Technology Framework which was published during this time and nominally led by Michelle Donelan (though it was written before she took office) includes only a cursory mention of diversity in a single place. The Framework includes an objective for “Expanded opportunities for participation in STEM and ensured that a more diverse range of people enter the science and technology workforce” (p. 11) but provides no justification for why this would be beneficial and has no other mention of diversity in the policy, therefore not positioning it as a priority. As above, this could be seen as concealing a contradiction, as the Framework states matter-of-factly that there will be a ‘more diverse range of people’ without acknowledging directly that the current ‘range of people’ is limited in diversity, without committing to reducing barriers, without specifying what groups the opportunities will be expanded to, and without explaining why this would be important. It therefore does not recognise that, despite the existence of equality-based initiatives such as Athena Swan and the Race Equality Charter as well as HEIs espousing the values of EDI and having EDI committees established at multiple levels of the institution, there are continued barriers to

participation for those who are not white, straight, able-bodied, middle-class men and high levels of discrimination and bullying for those that do manage to access employment within HEIs (Wellcome Trust, 2020). In this context, it is remarkable that fostering a diverse and inclusive culture is something that the government have been able to challenge as a worthwhile aim and roll back on their commitment within their research policies.

This underscores the importance of contradictions within the cultural system needing corresponding divides at a socio-cultural level in order for social change, as well as the impact of structural social relations between those groups (Archer, 1996). There are indeed those within HEIs who advocate strongly for equality and those who are impacted by inequalities who would benefit from changes. While most working within HEIs would claim they are pro equal rights, those that are most directly affected by this harmful element of the research culture are not the dominant group in terms of structural relations or in terms of numbers and therefore have limited influence with which to exploit this contradiction to transform the culture. It is notable that the movement to reform research assessment to address harmful narrow notions of research quality, which affects all staff in HEIs, has made significant progress over the past decade (Curry et al., 2020), whereas race equality appears to have made much less progress despite the existence of race equality legislation since the 1970s (Bhopal & Pitkin, 2020). Even within underrepresented groups in academia, we can see the effect of size and influence on the progress of equalities-based activities: the Athena Swan Charter, which seeks to advance the careers of women in HE and research, was introduced in 2005; whereas the Race Equality Chater, which aims to improve the representation and progression of BAME staff and students within HE, was only introduced in 2016. While the earlier policies therefore do provide an enabling effect on these initiatives, the influence of socio-cultural interaction and structural factors on individuals' ability for cultural elaboration cannot be overlooked.

Another aspect of a diverse and inclusive research culture is appreciation of the wide range of roles and contributions involved in the research endeavour. This is seen in the

UKRI Research Culture Framework (UKRI, 2024a), which includes a section on “broadening what is recognised and valued as contributing to the research endeavour”, and in the Agreement on Reforming Research Assessment, which forms the basis of the Coalition for Advancing Research Assessment (CoARA) and includes the first commitment to “Recognise the diversity of contributions to, and careers in, research in accordance with the needs and nature of the research” (CoARA, 2022, p. 4). There are clear statements about the need to support diversity in research careers in the R&D Roadmap, the People and Culture Strategy and UKRI Strategy. In particular, the UKRI Strategy refers to “seeking a shift away from traditional, siloed academic and non-academic careers, towards careers that are mobile between sectors, and an increased focus on diverse technical and vocational pathways in research and innovation” (p.15), while the R&D Roadmap mentions creating “opportunities for people around the UK to pursue diverse and flexible careers in R&D” (p.18). The UK Science and Technology Framework also refers to vision for the UK to have “a large, varied base of skilled, technical and entrepreneurial talent which is agile and quickly responds to the needs of industry, academia and government” (p. 11), suggesting some recognition of the value of different contributions to research and thereby aligning with sector efforts. For HEIs, this enables them to move beyond the simplistic notion that increasing the research workforce means increasing their postgraduate research numbers, and encourages them to instead consider how they can support a diverse workforce by providing research training that applies to a wider range of sectors, supports graduates to build relationships with other research organisations and communicates the value of research-related roles outside of traditional academic roles. This provides enhanced agency to postgraduate researchers and all those working within HEIs to take greater ownership over their careers and take opportunities that align with their own ambitions, rather than following rigid career paths that others have paved.

7.5. Omitted discourses

Given the links identified in the literature between stress and cultural challenges, including job precarity (Stoica, 2019; Burton & Bowman, 2022), high workload and other job demands (Kinman & Wray, 2013; Loveday, 2017), poorly designed performance management and research assessment (Ball, 2001; Weinstein et al., 2023), and poor management practices (Kinman & Wray, 2013; Christian et al., 2021), it could have been expected that the policies would discuss protecting staff wellbeing as part of retaining staff. This could have easily connected with discourses in the R&D Roadmap, People and Culture Strategy and the UKRI Strategy that encourage addressing of cultural challenges to improve research careers. Nonetheless, the only mention of staff wellbeing is a minor reference in the UKRI Strategy which notes that “We must create a research and innovation culture that supports the wellbeing and creativity of all those working in the sector” (p. 15). Despite this declaration, there are no actual actions in the Strategy aimed at supporting wellbeing. For staff working within HEIs, this is a primary concern and is contributing to people’s decision to leave academia. Failure to discuss this in discourse about attracting and retaining staff therefore suggests a disconnect between the policies and actual experiences of research cultures on the ground, or, as Archer (1996) might argue, a concealment of values and beliefs that are contradictory with those promoted by the government.

While cultural challenges such as excess competition and poor management might by a causal factor, the way that this primarily impacts on staff is through high levels of stress and consequences for their mental and physical wellbeing. This in turn impacts on the research as talented people leave academia - affecting the sustainability of research production and the researcher pipeline – or have the production or quality of their research impacted (Heffernan & McKay, 2018). Within this context, recognition of the impact of research cultures on staff wellbeing could have been a valuable opportunity to encourage HEIs to reflect on where their systems and cultures may be affecting the retention of staff. This may also have improved the perception of socio-cultural integration by suggesting a

greater uniformity of beliefs, and an appreciation for the values held by the research community. Instead, the R&D Roadmap, People and Culture Strategy and UKRI Strategy focus on instances of bullying, harassment and discrimination when considering direct impacts on staff and students. This positions issues with staff and student wellbeing as something interpersonal or specific to the individual involved, rather than being an outcome of cultural or structural factors. This reduces the agency of individuals to call out negative impacts on their wellbeing as it becomes an issue of their stress management techniques or their personal vulnerabilities. Indeed, this can be seen in HEIs where wellbeing interventions are often at an individual level, aimed at teaching self-care and stress management techniques, rather than settings-level interventions addressing wider environmental factors (Luu et al., 2024; Jackman, Sanderson, Allen-Collinson & Jacobs, 2022; Universities UK, 2020). Recognising the impact that cultures can have on staff and students, Universities UK (2020) has published a report on mentally healthy universities, calling for leaders to "influence organisational cultures, policies and practices to address cultural and structural risk factors for poor mental health and to promote open conversations" (p. 21). This is an area where the policies could have aligned more strongly with sector discourses to support efforts to improve research cultures and experiences for those operating within them, whilst still achieving the same messages about attracting and retaining staff.

International competition for researchers and knowledge is a clear priority within these policies in response to concerns that the UK may struggle to achieve its R&D ambitions if researchers decide to work in other countries. Despite this, there is little to no acknowledgement of the barriers to attracting and retaining international staff raised by the HE sector as a result of immigration controls. Within the policies, several visa schemes are mentioned including Skilled Worker Visas, Global Talent Vises and High Potential Individual Visas; the Global Talent Visa in particular was highlighted as a positive step in attracting researchers to the UK when it was introduced in 2020 (Cattermole, 2024). However, the costs associated with these visa schemes were increased in October 2023, meaning that a

single researcher would have to pay up-front costs of close to £6000 to work in the UK on a 5-year Global Talent Visa. The minimum income for Skilled Worker Visas also rose from £26,200 to £38,700 in 2024, meaning that recruitment of early career researchers, technicians, research assistants, and research administrators is significantly more challenging. Costs for dependants also present a barrier for researchers with families or other caring responsibilities to move to the UK. Cancer Research UK highlights this concern, writing that “researchers from outside the UK that want to contribute to our outstanding scientific legacy face some of the highest immigration costs in the world” (Cattermole, 2024, para. 5). The High Potential Individual (HPI) scheme, launched in 2022, is celebrated in the Science and Technology Framework as a new route to ensure that ‘highly skilled’ researchers can move to the UK. However, the HPI scheme only admits individuals with qualifications from universities ranked in top 50 of two or more international ranking lists; given the biases in international rankings, this list therefore predominantly privileges white/global north countries and excludes large sections of the world (Hamadah & Parry-Davies, 2022). This therefore presents not only a barrier to mobility but also a barrier to the diversity in the workforce that has been highlighted as a key part of positive research cultures.

There is limited recognition of these issues in the policies – for example the R&D Roadmap plainly states that “there are barriers and costs for international researchers and entrepreneurs wanting to come and work here” (p.18). However, no action was taken to reduce these costs after the Roadmap was published – in fact they have increased – and the Science and Technology Framework, which is the most recent policy, clearly champions specific immigration schemes as a successful strategy of setting a high threshold for those that come. Rather than doubling down on international competition and notions of meritocracy, the policies could have recognised immigration regulations as a key challenge facing HE finances and a significant barrier to achieving government ambitions which could then have been addressed within the policies. Doing so would have had an enabling effect

on HEIs seeking to foster more diverse and inclusive research cultures, as well supporting higher quality research by gaining access to a wider range of perspectives and skills. Indeed, when faced with the same challenge in 2000, the European Commission's response was to establish the European Research Area to make travel, collaboration and knowledge sharing between countries easier (Giannoccolo, 2005). Given the strong anti-immigration discourse and policies employed by the UK Government during the time period of the analysed policies (Bonansinga & Forrest, 2025), it seems likely that this omission is a direct concealment of the contradiction in the cultural system that exists in relation to valuing international competition for people and talent, yet not valuing diversity in people.

7.6. Conclusions

Within the topic of people and talent, there are multiple instances where the policies align with sector discourse. Particularly the earlier R&D Roadmap and People and Culture Strategy acknowledge many of the concerns relating to attraction and retention of staff, research careers, and the need for diversity and inclusion. This represents a much stronger alignment with sector discourses related to research cultures in this chapter than in the previous two chapters. Even within the Science and Technology Framework, there is alignment on the topic of researcher development. One explanation for this may be that research careers and researcher development pre-date the wider interest in research cultures and have somewhat driven that wider interest – for example, the Concordat to Support the Career Development of Researchers (Vitae, 2019) was the first concordat to mention research culture and research culture activity often formally sits within researcher development teams in UK universities. This alignment is likely therefore the result of previous cultural elaborations, which resulted in supportive research careers and effective researcher development being integrated as values in the cultural system. This complementarity can enable newer ideas about addressing research culture challenges as a way to retain staff and broadening out of development opportunities to include all staff groups, to be included within what is valued through small corrective measures to the

cultural system. As there is a significant degree of concern about these matters from staff within HEIs, it is likely that there are the right conditions in terms of socio-cultural integration and structural position to be able to achieve social action and eventual change (Archer, 2013).

Nonetheless, given the current financial challenges facing the HE sector and the high volume of redundancies that have been announced across the UK with limited government intervention to mitigate job losses (Megoran, 2025), the government's ambition to strengthen the UK's research workforce seems to be out-of-step at best, and obsolete at worst. Indeed, it may in fact be that the government no longer sees growth in the workforce as a priority. Certainly, with the guidance to 'specialise' as discussed in the chapter on research quality, the government may be doubling down on the dominant values of competition and narrow notions of quality to encourage reshaping that focuses staff resources on select areas and creates redundancies in others. This would further reinforce the discourse seen across all four analysed policies with regards to attracting the 'best talent' and promoting selective and competitive recruitment. This discourse worsens the unstable research careers and poor working conditions that are raised as concerns by those working within the HE sector and limits the ability of HEIs to address these concerns, as doing so could have material consequences for them in terms of their income and reputation. Indeed, despite the enabling effect created by the alignment of the earlier analysed policies with the sector discourses on research careers, it is difficult to imagine how any HEI will be able to meet their commitments to providing career stability in the context of mass redundancies.

8. Discussion

8.1. Introduction

The previous analytical chapters have summarised the key discourses contained within the analysed policies, relating to research quality, competition and collaboration, and people and talent. Throughout these chapters, it is clear that there are many contradictions between the discourses in those policies and the discourses adopted by the sector in relation to fostering more positive research cultures. This chapter draws on the preceding analytical chapters to directly answer the research questions of the current study in relation to Archer's morphogenetic approach:

RQ1. What discourses exist in the analysed policies in relation to the aspects of research culture identified in the literature review?

RQ2. How do the discourses of the analysed policies enable or constrain the actions of those working within HEIs?

RQ3. To what extent do the discourses in the analysed policies align with sector discourses about research cultures as identified in the literature review?

RQ4. How can meaningful cultural change be achieved within the current policy context?

Firstly, the discourses contained within the policies are briefly summarised, with additional literature brought in to enhance understanding of how these discourses enable or constrain the actions of those working within HEIs. Next, the core areas of contradiction between the analysed policies and sector discourses related to research cultures will be explored. This in turn informs discussion of how meaningful cultural change, or social morphogenesis (Archer, 2013), can be achieved within the current policy context.

8.2. Contribution of the research policies to research cultures

For the purposes of this study, culture has been defined as a set of intelligibilia, or propositional statements (Archer, 1996). Through exploration of the legitimation techniques used within the selected policies, the analysis identified several discourses relevant to ongoing sector discussions about research cultures (as found in the literature review) that can be expressed as statements contributed to the cultural system of the UK research sector. The analysis also considered the ways in which these discourses were communicated to assess their relative strength within the policies. These statements are summarised below in the order in which they are discussed in the preceding chapters, with those in bold being communicated strongest and most frequently across all four policies and therefore make the strongest contribution to the cultural system.

- **Research that has an immediate real-world application is more valuable than other research approaches**
- STEM disciplines are more valued, and have more potential to realise impact
- **The process of conducting the research is less important than the outcomes**
- Open research is valuable and leads to better research outcomes
- Research culture impacts on research quality
- Research performance and successes are relative concepts that depend on outperforming others
- **Competition and marketisation is an effective way to drive performance**
- Other countries should be viewed as competitors, or threats, rather than collaborative allies
- Collaboration can strengthen research quality and maximise innovation, particularly when involving diverse viewpoints and stakeholders

- **Collaboration expands the UK's access to knowledge and innovation and can extend our competitive advantage**
- **Attraction of staff to the research sector is critical for the UK's research ambitions, in particular attracting researchers away from other countries**
- Cultural change is needed to ensure careers in research are attractive and sustainable
- **Researcher development enables delivery of strong research and innovation outcomes**
- A diverse workforce brings strengths from different knowledge, skills and perspectives, therefore an inclusive culture is desirable

Considering the statements in bold highlights that the discourses contained within the selected research policies and the values motivating them are largely consistent with the dominant values and discourses within current research cultures. For example, in the literature review, there is a clear sense that research that can generate direct non-academic impact and real-world applications is held in higher regard within current research cultures than other research approaches, with the outcomes seen as more important than the robustness of the underlying processes (e.g. Wellcome Trust, 2020; Munafo et al., 2020; Collini, 2009; Martin, 2011; Olssen, 2015; Chubb & Watermeyer, 2017). Rhodes, Wright & Pullen (2017) argue that this focus on impact represents an attempt from Government to direct research efforts towards activities that reinforce neoliberal ideas of market logic and economic justifications. Indeed, neoliberal values of competition, marketisation and economic efficiency are commonly identified as core features of the UK HE sector (e.g. Ferlie et al., 2008; Naidoo, Rajani & Whitty, 2014; Burton, 2021) and can be seen in multiple of the emboldened statements above.

The contribution of the selected policies to the cultural system, therefore, is largely to reinforce and reproduce existing aspects of the cultural system. This is perhaps expected as

the actions of individuals in producing the policies will have been influenced by the pre-existing cultural system in the same way that all actions are. Archer (2007) explains: “The subjective powers of reflexivity mediate the role that objective structural or cultural powers play in influencing social action” (p.5); without active deliberation and reflection on the current research culture therefore, reproduction of dominant values (morphostatis) is a typical outcome within the morphogenetic approach. In the R&D Roadmap and People and Culture Strategy, there is evident deliberation on the current research culture and challenges resulting from it, which has resulted in active efforts to counteract dominant values, such as clear statements about the value of all disciplines, the value of collaboration and the value of diversity in people. In contrast, the Science and Technology Framework shows no such deliberation and there is a much stronger reproduction of dominant values.

The continued existence of these dominant values within the cultural system motivates those working within HEIs to continue to act in line with these values as they have been conditioned to do rather than change their practices, even where existing practices have been identified as potentially harmful; for example, with a strong focus on outcomes rather than processes leading to risk of corner cutting and research misconduct (Nosek et al., 2015; Vitae, 2020; Wellcome Trust, 2020). These values then intersect with structural factors to produce a further constraining effect on individuals. Consequentially, the values transform from being socially constructed and existing only in interpretation of documents and the beliefs of people, to being empirically observable – research with real-world applications is not only held culturally to be more valuable but is more likely to be funded and is more likely to make a strong case for promotion and is therefore more physically valuable in monetary terms. In this way, it could be argued that the belief of impact being highly valuable cannot be reduced down simply to a social phenomenon held by agents within the HE sector, as there are plenty of agents who do not agree with the value placed on it, and yet they continue to feel the motivating and constraining effects of it within research cultures (e.g. Wellcome Trust, 2020). Indeed, it has been noted across the HE sector that there are

structural and cultural biases against those that either do not meet or choose not to prioritise the narrow notions of quality established within government and funder incentive structures (Curry et al., 2020). As such, the agency of those working within HEIs to define their own research missions and approaches and establish activities and initiatives that challenge the existing cultural system, is constricted.

This effect of constraining agency can be understood further using Foucault's notion of governmentality, which he defines as "to structure the possible field of action of others" (1982, p.790). Rather than relying on violence or absolute control, government as a form of power is "exercised only over free subjects" (ibid) who have several possible ways of behaving. Due to the structural position of the government and funders, they have power, which therefore enables them to limit the agency of others within the HE sector by influencing the values held in the cultural system, the relations between structural positions, and appealing to the interests of agents in the sector (e.g. the maintenance of their privileges). Particularly in the case of neoliberal government, appealing to the interests of agents is vital as individuals are positioned as their own enterprise, "being for himself his own capital, being for himself his own producer, being for himself the source of his earnings" (Foucault, 2008/1979), p. 226). As a result, motivating and/or constraining effects from cultural and structural factors can be felt more strongly on the individual, as they directly affect their livelihood.

This concept of providing freedom to individuals to choose, but narrowing the possible choices, is central to neoliberalism; as Rowlands and Rawolle (2013) write: "it is survival of the fittest only insofar as the 'fittest' is deemed appropriate or suitable by government" (p.264). Certainly, this can be seen in HE research and in the analysed policies – HEIs and staff within them are able to define their own strategies and research missions, and the analysed policies (excluding the Science and Technology Framework) generally appear to offer freedom and encourage diversity in approaches and in people. Nonetheless, there are evidently certain behaviours that are more valued than others and narrow notions

of ‘quality’ when it comes to research, which encourage individuals and institutions to behave in certain ways and then reward those that conform and disadvantage those that do not or cannot. Given that individuals are motivated to act in line with their positional interests as well as their personal values – whether conscious of them or not (Archer, 2007), this means that even where individuals hold values that are counter to the dominant values communicated in these policies, their ability to act in a way that would transform the cultural system is reduced due to the risk of negative structural consequences.

The imposition of these dominant neoliberal discourses and organisation of associated structures in the HE sector – including regular assessment and monitoring in the form of accountability measures - can be seen as a method of promoting cultural uniformity similar to Foucault’s Panopticon (2019/1977), in which individuals adhere to the desired behaviour of the authority due to the threat of being monitored and evaluated, leading to self-policing and compliance even when not being monitored. As Bauman (1982, p.41) elaborates:

> The power reached now towards the body and the soul of its subjects. It wished to regulate, to legislate, to tell the right from the wrong, the norm from deviance, the ought from the is. It wanted to impose one ubiquitous pattern of normality and eliminate everything and everybody which the pattern could not fit.

Ahmed (2019) highlights that this monitorial gaze can be applied even further, beyond being self-directed to being other-directed, thereby strengthening the policing effect as well as promoting internalisation of values. In the HE sector, this can be seen in peer review funding panels, in which researchers themselves are evaluating the work of others based on the criteria (values) given to them by the funder; in this way, the values promoted in the UKRI Strategy (which is in itself informed by the government’s policies) are repeatedly reinforced and reproduced. Moreover, recruitment to a peer review panel and attraction of external research funding are often held in academia as indicators of esteem and performance,

further embedding the government and UKRI as arbiters of what is valued and further reproducing existing research cultures.

The intelligibilia related to alternative or less dominant values - such as positioning open research, collaboration and diversity as inherently beneficial to the robustness, originality and significance of research – can be seen as supporting behaviours in line with the values of openness, collaboration and diversity and, pragmatically, provides scope for institutions and individuals to justify their efforts to improve research cultures. The R&D Roadmap and People and Culture Strategy both appear to draw directly from the Wellcome Trust report (2020) to address sector concerns and promote efforts to improve cultures. Similarly, the UKRI Strategy includes actions to address research culture challenges to the benefit of staff working within HEIs. As well as directly discussing the need to change research culture, these policies draw in specific values from this work, including valuing diversity in people, promoting equal collaboration and co-creation, recognising more diverse contributions to research, ensuring fair opportunity to career progression, and condemning inappropriate behaviours such as bullying, harassment and discrimination. This raises the visibility of these values and integrates them within existing government discourse by positioning them as naturally desirable and necessary for delivery of government ambitions. In doing so, the values are lent credibility via the positional powers of the Government and potential avenues for cultural transformation are created within Archer's morphogenetic approach. However, while this provides some level of enabling effect, these values are rarely communicated as strongly as the dominant values and therefore are insufficient to counter their constraining effects.

In positioning these values as 'alternative' or 'new', the negative experiences of those working within HEIs and their efforts to improve matters are similarly positioned as 'new'. The R&D Roadmap begins with a section on "Being honest about where we need to improve" (p.9), in which it outlines the key issues:

> Our UK R&D system is world-leading, but that means we should be taking the lead in addressing problems which are visible in the R&D systems of all the leading nations and also address those which are specifically holding back the UK. These issues are centred around levels of public and private investment, bureaucracy, work culture and careers, development and innovation, regional imbalances, and our international context. Some of these issues are for the UK Government to spearhead and we will address these as we prepare for the Spending Review. Others are the responsibility of universities, research organisations, academies and representative groups and individual researchers and innovators, and we expect to see change here too.

There is nothing within this to suggest that these issues are long-standing, or that work has been ongoing for decades to address them – despite it being evident in the literature that challenges related to research cultures have been known for decades and that initiatives seeking to rectify them (even if not using the term 'research culture') well precede the analysed policies. For example, race equality work in HEIs has been ongoing since at least 2000 (Ahmed, 2012) and efforts to promote research integrity through the Concordat to Support Research Integrity have been ongoing for over a decade. Drawing on Ahmed's notion of a 'stranger' "not as that which we fail to recognise, but as that which we have already recognised as 'a stranger'"(2000, p.3) or one who is recognised as not belonging, the effect of positioning these challenges as new can be understood as marking research culture as a stranger – as a new topic being met for the first time to be discussed afresh. In doing so, this can have the effect of resetting, or even erasing, this prior work – which has often been led by socially minded individuals, commonly those who are personally motivated due to their own negative experiences (ibid). It can also affect the buy-in from senior leadership and the broader staff group in HEIs, who are already experiencing unmanageable workloads (Rogler, 2019) and may feel they do not have the time to engage with 'yet another' initiative.

Whether strangers are included – 'welcomed' – or not is also often dependent on the dominant party – or 'host', which can mean that strangers' inclusion is subject to conditions (Ahmed, 2000). Stein (2020) refers to the "conditional inclusion" (p. 11) in which space is created for people or for a topic as a "benevolent gift that can be revoked at any time, and produces debts and expectations for those who are included" (ibid). As such, the positioning of reforming research cultures as a key part of delivering the government's goal to become a global science superpower within the R&D Roadmap and the People and Culture Strategy could be seen as creating a condition that research culture reforms are tolerated in so far as they are seen to be contributing to government research ambitions. The lack of dedicated focus on certain aspects of research culture, such as promoting research integrity, responsibility and sustainability in research processes or addressing concerns related to staff wellbeing, are further indicators of conditional inclusion, whereby research culture is included in the policies under an altered, reduced scope which includes only that which the government deems valuable. A similar conditional inclusion can be perceived in the dramatic increase in research culture commitments and initiatives in HEIs (UKRI, 2024b) at a time when it appeared structurally beneficial – due to the increased attention from staff on negative experiences of research cultures, the increased attention from funders and government on research cultures and the potential economic benefits through the expansion of REF 2029. Conditional inclusion in this way suggests that the inclusion is not as a result of, or accompanied by, genuine culture change in the form of changing values, but is instead just a response to structural changes.

This conditional inclusion is further reinforced by the retraction of research culture and its related values in the most recent policy - the Science and Technology Framework - where they are either not mentioned at all or given only cursory reference. Whether this is because of an active policy change to roll back on commitments to research culture or because the scope of this policy was focus on addressing the outcomes of the Integrated Review of Security, Defence, Development and Foreign Policy, it positions reforming

research culture as something that is separate from core research enhancement activity, that is ‘nice to have’ where its inclusion may bring additional benefit but not an integral or necessary component. It also further limits cultural change by restricting the ability or the willingness of HEIs to establish long-term courses of action, as they need to be able to respond to changing structural and cultural factors to avoid negative material consequences. Adhering to dominant values rather than alternative ones, therefore, appears to be a safer course of action. Indeed, there is a significant risk that the government’s rollback on research culture values may result in an abandonment of initiatives within HEIs, or at least a reduction in investment in research culture, as HEIs respond to changing structural factors. This would further suggest that the increase in initiatives was not due to genuine cultural change, and potentially was non-performative in nature (Ahmed, 2012). Leslie (2025) argues that the adoption of initiatives in favourable conditions can in fact be a case of progressive signalling – aligning an organisation with the zeitgeist to obtain reputational or material benefits, but in a non-performative manner. It is only when conditions change to be less favourable that one can see where the actions were truly values-led and aimed at actual culture change. The government’s roll back on culture can be seen as such a change, and the response of HEIs will reveal where genuine commitments were held.

In relation to progressive signalling, one potential interpretation of the lesser status of research culture values in the R&D Roadmap, the People and Culture Strategy and the UKRI Strategy could be that the policies are in fact not motivated by recognition of the need to improve research cultures and broaden the values related to research that exist within the UK research sector; rather, the statements referring to the importance of research cultures and the benefits of open research, collaboration, and diversity could instead be ‘tokenistic’ (Kanter, 1977) or ‘tick-box’ (Ahmed, 2012). In this way, the statements function more as ‘symbols’ to encourage a certain perception, rather than actual commitments. In the case of the selected policies, this could be understood as the Government responding to increasing sector attention on research cultures and heightened visibility of the negative experiences of

those working within HEIs by including references the issues as a way of easing sector concerns. The extent to which the research culture aspects of the analysed policies are non-performative is difficult to judge within the scope of the current study. Whilst the discourses are positioned as subordinate to more dominant discourses on performance, competition and outcomes as discussed above, discourses related to research culture are nonetheless integrated throughout the R&D Roadmap and the People and Culture Strategy in a way that does not *feel* tokenistic, nor does its translation through to the UKRI Strategy, accompanied by the recruitment of a UKRI CEO, Prof Ottoline Leyser, who openly advocated for the need to address research culture challenges before her appointment. This directly contrasts with the single, unelaborated on mention of encouraging "a more diverse range of people enter the science and technology workforce" in the Science and Technology Framework (2023, p. 11) which does have more of a token feel to it. However, the change of key personnel associated with the earlier policies, the change in government shortly after the publication of the R&D Roadmap and People and Culture Strategy, and the effect abandonment of these policies by the incoming government mean that assessment of how these commitments were intended and what impact they could have had is challenging. It is also possible that these commitments were genuine and that their position as lesser to the existing dominant values was a strategic move to integrate the values associated with positive research cultures into existing Conservative, neoliberal value systems to avoid alienating those with the structural power to make change happen. Regardless of intentions, the inclusion of research cultures in certain policies but not others undermines its importance in the HE sector and frustrates efforts within HEIs to invest in long-term cultural change initiatives.

8.3. Alignment of policies to research culture discourses

Archer (1995) explains that the intelligibilia contained within the cultural system are held in logical relation to one another – meaning that they can complement or contradict one another. From just the list of intelligibilia communicated in the analysed policies above, it is clear that there are multiple contradictions within the policies themselves, and more come to

light when compared to the literature review in relation to research culture. Highlighting these contradictions within the cultural system in this way is core to understanding opportunities for social change; as Archer explains: “Every contradiction represents a potential for change” (1996, p.14). The contradictions between the analysed policies and sector discourses are particularly evident when looking at what is not included within the policies. As Archer (2007, p.xxiii) outlines, “when some dominant material-interest group supports a set of propositions which are embroiled in contradiction, they will use their power to control the visibility of inconsistent items through a variety of 'containment strategies', the most blatant of which is censorship.” Through this policy analysis and the literature review, there are three core contradictions that have been identified: Narrow notions of research quality vs diversified and inclusive research quality; Competition vs collaboration; Performance management vs staff wellbeing.

8.3.1. Narrow notions of research quality vs. diversified and inclusive research quality

Throughout the policies, it is clear that obtaining impact from research is core value, with other behaviours, like maintaining robust and open research processes, falling secondary to impact. Comparing the aspects of research quality valued in these policies with the aspects generally identified in scholarly literature, these policies have a much narrower focus. Langfeldt, Aagaard, Borlaug and Sivertsen (2016) identified three aspects of high-quality research as valued by those in academia based on existing literature (Polanyi, 1962; Gulbrandsen, 2000; Lamont, 2009; Langfeldt & Scordato, 2016): “1) Plausibility/solidity, methodological soundness (and feasibility), 2) Originality/novelty, 3) a) scientific and b) societal value/significance” (p.1). The analysed policies appear to only consider the third aspect, with the robustness, feasibility, originality and creativity of the research largely disregarded. In doing so, the policies privilege a limited set of practices and research approaches and are directly contradictory to sector discourses on improving research cultures, which call for inclusive notions of research quality in recognition of the diverse

practices that are necessary for an effective and sustainable research sector and therefore value a much wider set of research approaches (Curry et al., 2020; Munafo et al., 2020; Vitae, 2020; Wellcome Trust, 2020; CoARA, 2022).

This can lead to those working within HEIs feeling like they are not able to focus on the things that matter most to them; this influence has been viewed by some in the sector as a threat to academic freedom, particularly with regards to a researcher's ability to determine their own areas of research (Olssen & Peters, 2005). Within this context of conflicting notions of research quality between different social groups (e.g. HEI staff vs funders/government) and negative experiences of performance expectations, it would be reasonable to argue, in Archer's (1995, 2013) terms, that there is low socio-cultural integration. Archer notes that the degree of cultural uniformity, or causal consensus, between social agents reflects the success of the imposition of ideas by one set of people (government and funders) on another (staff working in research cultures). From the Wellcome Trust report (2020) and continued resistance to the impact agenda in the academic literature (e.g. Collini, 2009; Martin, 2011; Chubb & Watermeyer, 2017; Olssen, 2021), it is clear that the value of impact in the cultural system remains contested. This suggests that the government can more successfully change structural factors but has been less successful at imposing its notions of research quality onto individuals.

8.3.2. Competition vs collaboration

Similarly, the strong value of competition evident in the policies and the neoliberal ideology associated with it (e.g. that competition drives up quality, that marketisation of goods and services leads to greater performance and efficiency) are common features in UK research cultures as highlighted in the literature review (Delanty, 2001; Ferlie et al., 2008; Olsen, 2021). These values are reinforced within the cultural system by the policies, but are contradictory to efforts to improve research cultures, which often emphasize the values of collegiality and collaboration and seek to devalue competition, particularly as excess

competition has been highlighted as a contributing factor to people leaving academia (Hesselberth & Bloois, 2020; Rothengatter & Hill, 2013; Ryan et al., 2013; Heffernan & McKay, 2019). Although the policies do also encourage collaboration, this is typically done in the context of using collaboration as a tool to access knowledge and innovation that can advance the UK's research capacity beyond its competitors (which generally appears to be every other country). This conditional approach to collaboration, combined with discourse in the UK Science and Technology Framework which takes this to the extreme of collaboration *only* when it advances UK interests, creates a significant tension between the academic value of collaboration and the neoliberal value of competition.

This tension goes beyond nation-level pursuits to impact on individual researchers; while there is a general positive rhetoric around collaboration within academia, career progression and reputation often relies on individual-based success measures (Van Den Besselaar, Hemlin & Van Der Wiijden, 2012; Macfarlane, 2017; Gill, 2018; Burton, 2021). Promotion within HE generally requires an independent body of work, which presents a barrier to collaboration, particularly for early career researchers (Carr et al., 2009). Even within collaborations, the strong focus on performance management combined with the difficulty of measuring individual contributions to collaboration means that researchers are often only rewarded for collaborations that they lead (Van Den Besselaar, Hemlin & Van Der Wiijden, 2012; Klein & Falk-Krzesinski, 2017). As a result, forms of collaboration that focus on supporting the development of more junior colleagues, contributing collegially to the work of colleagues without expecting credit in return, or advancing knowledge as a common good start to appear naïve or even wasteful in the current neoliberal context (Macfarlane, 2017). This contributes to what Gill calls the loss of "value of the social and convivial features of academic life" (p.106) and has led to calls for greater collegiality and academic kindness (Burton, 2021). The analysed policies are evidently contributing to this contradiction between competition and collaboration, and by reinforcing dominant values they are out of step with sector discourses that are calling for more meaningful collaboration and collegiality. Again,

the level of discontent on this matter evident in the literature suggests that there is low socio-cultural integration accompanying this contradiction.

8.3.3. Performance management vs staff wellbeing

A core area of activity within initiatives aimed at fostering more positive research cultures relates to providing attractive research careers and supporting the development of staff involved in the research endeavour (Vitae, 2019; UKRI, 2024a). While the earlier policies (R&D Roadmap, People and Culture Strategy, UKRI Strategy) do align more with these discourses, the UK Science and Technology Framework appears to have defined these aims differently, instead aiming to attract people into specific fields and roles within research, to reward those that deliver research that aligns with its goals (rather than broader contributions) and seeking to develop staff in particular areas to address gaps and strengthen the UK's competitive advantage. This approach aligns with the discourses on narrow notions of research quality and competition that were identified in the earlier policies. Indeed, the policies themselves represent a barrier to providing attractive and supportive research careers by reinforcing these dominant values that contribute to several of the issues experienced by staff (e.g. Vitae, 2020; Wellcome Trust, 2020; Weinstein et al., 2023).

Ball (2001) outlines how these regulations are integrated into complex institutional, unit, and community relations: "WE sit on peer reviews, WE write the accountability reports, WE assign grades to other departments, WE berate our colleagues for their 'poor' productivity, WE devise, run and feed departmental and institutional procedures for monitoring and improving "output"' (p.215). This leads to feelings of guilt, uncertainty and inauthenticity in many of those working in HE, who may fundamentally disagree with the practices but are nonetheless required to make their contribution to the institutional performance. Giddens (1991) notes that this can ultimately result in academics experiencing personal meaninglessness, as they become separated from 'the moral resources necessary to live a full and satisfying existence' (p.91). Indeed, it is clear from the literature that narrow

notions of research quality are affecting staff experiences of research cultures, with staff feeling pressured to conform and compete, experiencing high stress levels and even leaving the HE sector (Hesselberth & Bloois, 2020; Heffernan & McKay, 2018).

Finally, this contradiction is evidenced in the limited support for addressing systemic inequalities and the high prevalence of negative experiences like bullying and harassment, exploitation and high levels of stress. In the R&D Roadmap and People and Culture Strategy, issues relating to EDI are directly acknowledged and clear statements are made to add weight to the value of a diverse and inclusive culture. However, this support diminishes in the UKRI Strategy and is non-existent in the Science and Technology Framework – potentially reflecting efforts to conceal this contradiction to mitigate social action. In the context of significant discrimination, bullying and harassment occurring within HEIs, this draws attention to the need for a corresponding group at the socio-cultural level with sufficient cultural interest and structural power to transform the culture. Without this, there is a risk that equalities-based initiatives are superficial, rather than transformative.

8.4. Opportunities for social change

Archer (1996) describes the level of contradiction vs complementarity within the cultural system as the level of ‘cultural system integration’, which is one of the conditions for social action. From the discussion above, it is evident that the level of cultural system integration is low, as there is limited logical consistency between the values even just within the policies themselves, which is amplified when comparing the values in the policies to the values held by the wider sector about research culture. At a socio-cultural level, the low cultural system integration relies on there being advocates for both sides – otherwise one set of contradicting values would stop being maintained and the contradiction would be resolved (Archer, 2013). Individuals’ reflexivity means they can simultaneously have their behaviours enabled or constrained by the cultural system, yet also hold opinions and values that may or may not align with those behaviours (Archer, 2011). This is visible in the literature review,

with a plethora of research projects and reports demonstrating individuals reflecting on the research culture in UK HEIs to recognise flaws and seek to transform social and cultural structures.

This demonstrates the second of Archer's conditions for social change – low socio-cultural integration, in which efforts to legitimate existing values and persuade individuals working within HEIs of the importance of values such as competition experience limited successes and do not produce cultural uniformity in ideas. Certainly, we can see within the policies that attempts are made to produce cultural uniformity – from integrating contradicting discourses into existing dominant discourses to obscuring contradictory values. Despite this, research culture challenges continue to be a high-profile topic within HEIs and the values associated with fostering more positive research cultures are still a source of debate, particularly with the assessment of research cultures explicitly included within the Research Excellence Framework (REF 2029, 2025), which has seen a wealth of articles both for (e.g. UK Research Integrity Office, 2025; Theunissen, 2025) and against (e.g. London Universities' Council for Academic Freedom, 2025; Sullivan, 2025). Taken together, it appears that conditions are ripe for change within HEIs.

The policy analysis in the current study has raised the visibility of those contradictions in order to inform cultural change. When faced with personal values and beliefs that are embroiled in contradiction within the cultural system, Archer (1996) outlines that people may respond by:

- Leaving the system/context in which the culture exists
- Abandoning the new value and adopting existing values
- Maintaining the value in the face of contradiction despite likely negative consequences in terms of material interests
- Resolving the contradiction

The first three of these options serve to reinforce the culture, whereas the final option provides the opportunity for cultural elaboration or morphogenesis (Archer, 2013). In terms of resolving contradictions there are three ways this can be achieved – the original value can be changed so that it is consistent with the new one; the new value can be changed so that it is consistent with the original value; or, more commonly, both values can be changed/redefined so that they are mutually consistent. Culture-related initiatives within HEIs, therefore, can be understood as a vehicle for resolving contradictions, as they often seek to address problematic values to bring them more in line with the values of a positive research culture. This can be seen for example in addressing discriminatory values with EDI initiatives or changing what is valued as research quality to be broader through reform of research assessments. Reforming reward and recognition processes to value collaboration within them is perhaps an example of redefining both values so that they are mutually consistent. Given that the contradictions highlighted in the analysis (Narrow notions of research quality vs diversified and inclusive research quality; Competition vs collaboration; Performance management vs staff wellbeing) align with the key themes emerging from the Wellcome Trust report (2020) in terms of cultural issues identified by staff and negative experiences associated with them, it appears there is an alignment of contradictions to corresponding antagonism within the socio-cultural level. As Archer (1996, p..xxiii) states: “Cultural dynamics are governed by how the influences stemming from the Cultural System gel with those emanating from Socio-Cultural relations, at the interface where they intersect.” As such, these contradictions are likely strong targets for activities and initiatives aimed at social and cultural change.

In the process of bringing about social and cultural change, it is important to maintain an awareness of areas of complementarity too. Archer (1996, p.158) outlines how, although they are initially enabling, complementarities can have a constraining effect on action over time as they create a ‘smooth path’ which can be difficult to deviate from and difficult to widen: “Over time the situation logic fosters a negative feed-back loop which discourages

alterations in the felicitous cluster of items making for concomitant consistency." In this way, without active reflection and deliberation by individuals, existing values in this area go unchallenged and their adherence is reinforced. In the case of the analysed policies, the efforts to integrate research culture discourses into dominant government discourses in the R&D Roadmap and People and Culture Strategy could be seen as resolving contradictions in an attempt to create an area of complementarity. This would initially support action to bring about more positive research cultures; however, over time and as research culture initiatives seek to expand, individuals and HEIs may find their activity constrained as what is valued in research cultures has become 'controlled' by the dominant material interest groups (e.g. government, funders) – similar to the issue of conditional inclusion discussed above (Stein, 2020). As such, while it is important to resolve contradictions to facilitate action, the enabling effect created by any complementarities produced cannot be taken for granted. Interactions at the socio-cultural level, to build consensus around changes and expansions and disrupt and challenge status quo where necessary, are critical to producing continuous cultural elaboration.

The role of structure within social action and change cannot be ignored – which is of course the central tenet Archer's analytical dualism in the morphogenetic approach (1995). Relations between individuals at the socio-cultural level, and their positional interests and powers, has a significant effect on the success of social action. As already discussed, dominant material interest groups (i.e. those with the most power, such as the government) can control the visibility of contradictions in the cultural system such that individuals do not even attempt social action because they are unaware of the opportunities (Archer, 2013). Even where social action is attempted, its success relies on the response of others in the system. As Archer (1996, p. xxiii) outlines, no social action "can be made to 'take' in society when the contemporaneous distribution of interests and power do not gel with it", meaning that if the action does not align with the material interests of those in power, immediate success is unlikely. Archer (2013) notes that groups adopt beliefs and values that will

advance their material interests and commonly behave in a way that further protect those values, as to do otherwise would likely have negative structural impacts. This ‘protection’ of values can include correcting or diversifying values so that they sit better alongside competing values; this could mean redefining apparently contrasting values such that individuals can feel they are aligned with both at once. In terms of making social change, this could result in “progressive accommodation” by the dominant group(s) (Archer, 1996, p.xxiii) whereby social change is gradually achieved. Alternatively, the dominant group(s) could actively counter the social action, which Archer refers to as “counter-actualization” (ibid), more commonly known as ‘backlash’ (Lipset and Raab, 1978): “When a group of actors disadvantaged by the status quo work to enact change, that group necessarily challenges an entrenched power structure. The resistance of those in power to attempts to change the status quo is ‘backlash’, a reaction by a group declining in a felt sense of powers” (Mansbridge and Shames, 2008, p.625).

Certainly, within the topic of research culture, we can see both of these responses. In the analysed policies, the integration of research culture discourses into the R&D Roadmap, the People and Culture Strategy and the UKRI Strategy can be seen as accommodation of these values. Within the sector as a whole, as well as the widespread action amongst HEIs to improve research cultures, the provision of Research England funding ringfenced for research culture and the expansion of REF 2029 to include direct assessment of culture can be seen in this same light. However, a significant amount of backlash is also present in the lack of continuation of the Government’s commitments to improving research cultures between the R&D Roadmap and the Science and Technology Framework; in the words and actions of Michelle Donelan, then Secretary of State for Science, Innovation and Technology who vowed to fight against “creeping wokeism” at the 2024 Conservative Party conference (Manancourt, 2023, para. 2); and, in the ongoing debate about the People, Culture and Environment element of REF 2029, which has included arguments – particularly from those HEIs in the most structurally privileged positions - that the inclusion of culture dilutes

research quality (Thrift, 2023) and compromises academic freedom (London Universities' Council for Academic Freedom, 2025).

Indeed, it is worth considering whether significant reforms to research culture are even possible within the existing constitution and policy landscape of the UK HE sector. To use critical realist terms, it is important to explore whether the preconditions necessary for a positive research culture are so vastly different from the preconditions present for current research cultures, that to bring about widespread positive cultures would require a significant overhaul to the whole HE sector and its internal relations. It is possible that the UK HE sector relies on high levels of competition and individualism, marketisation of knowledge and exploitation of staff in order to have sufficient resources (e.g. money and people) needed to continue to exist and have a purpose (e.g. education, production of research in order to contribute to knowledge, understanding and society in general). Without these values, perhaps the concerns of the analysed policies would be realised such that students and researchers would choose to go elsewhere for education and employment, resulting in a knowledge vacuum and an economic crisis. In such a case, it could be that the values of inclusivity, diversity, collegiality, collaboration and support for staff wellbeing are wholly incompatible and that the contradictions identified in the analysis cannot feasibly be resolved. For those working in an HEI and wanting to improve research cultures, therefore, they are presented with the situational logic of having no option but to live with existing system, yet remaining committed to their own values and seeking to extract what they can from the system in order to survive. As Archer (1996, p.155) writes "This situational logic spells mental torment, social subterfuge or technical contortions: it produces at worst a divided self denied refuge in schizophrenia."

Nonetheless, there is evidence to suggest that current research cultures are not necessary for the functioning of the HE sector and that changes can be made to research cultures without requiring a complete reform of the HE sector. For example, within the Wellcome Trust report (2020), focus group participants said that they had expected a certain

level of competition and high workload in academia, but that levels had now become unsustainably high. This suggests that the system was previously functioning with lower levels, and that it is not necessary to completely remove the competition seen as necessary by the government to sustain quality and reputation and still have a positive research culture in which staff's wellbeing is not being compromised. Similarly, the literature review outlined how current research cultures are hampering the research quality and impact that the Government is seeking to achieve, such as through inappropriate incentive structures creating pressure to cut corners in research integrity (Nosek et al., 2015; Munafo et al., 2020; Vitae, 2020; Wellcome Trust, 2020), which therefore undermines the value of the research for the economy and society and presents a reputational risk to the UK's research credibility. Moreover, in terms of attracting and retaining people to work in research in the UK, current research cultures represent a significant barrier, which is recognised in the literature review (Hesselberth & Bloois, 2020; Gewin, 2022; Hall, 2023) as well as in the analysed policies themselves (excluding the Science and Technology Framework). As such, there is a convincing argument to say that the social order does not require this social wrong, and that reform of research cultures is not only possible but opportune. The implications of this opportunity for HEIs and policy makers is discussed in the concluding chapter.

9. Conclusions

9.1. Contribution to knowledge

The current study applies Archer's concepts of structure, culture and agency (1996) and broader morphogenetic approach (2013) to sector discussions of research cultures to better conceptualise research cultures. This contrasts with the most common approach taken in the HE sector currently, which adopts the Royal Society's (2018) definition that "Research culture encompasses the behaviours, values, expectations, attitudes and norms of our research communities. It influences researchers' career paths and determines the way that research is conducted and communicated." Applying Archer's analytically distinct concepts of structure, culture and agency has enabled a more comprehensive consideration of how the analysed policies contribute to the cultural system through the communication of intelligibilia, how structural factors reinforce or hinder motivations coming from the cultural system, and how individuals can reflect on their environment to respond in different ways (2003). The morphogenetic approach also provides a framework for the generative mechanisms behind how culture and structure can influence behaviour. Taken together, this provides a clearer understanding of how the analysed policies impact on experiences of research cultures and the behaviour of those working within HEIs and supports those wishing to improve research cultures to do so in a more effective way, taking into consideration both culture and structure. It also lends credibility to the use of Archer's framework in future research, providing a more robust theoretical grounding for research in this area.

The critical discourse analysis of the current study has raised the visibility of the discourses used in UK Government research policies and their alignment to sector discourses related to research cultures. In this way, the effect of the policies on sustaining research culture challenges or supporting research culture initiatives has been highlighted, allowing for opportunities for social change to be identified. Again, Archer's morphogenetic

approach (2013) provides a framework to understand the generative mechanisms behind social change, and the possible routes for addressing contradictions within the cultural system. Danermark et al. (2019, p.182) note that:

> The most productive contribution to social practice that social science can make… is the examination of social structures, their powers and liabilities, mechanisms and tendences, so that people, groups and organisations may consider them in their interaction and so – if they wish – strive to change or eliminate existing social structures and to establish new ones.

As such, the current study supports those working within HEIs to more effectively produce cultural change within the current external policy context. As a practitioner working in this field myself and through discussions with colleagues about my research, it is evident that a key contribution of this project is to provide a framework for delivering effective cultural change and justify the integration of dominant values (such as appealing to economic benefits and notions of staff as factors of production) with research culture values (such as supporting wellbeing and advancing equity). Particularly in the context of wider debates around EDI and the perceived government rollback on culture values, practitioners risk feeling that they are advancing dominant values that they believe to be harmful, when they would prefer to be advocating more strongly for the moral value of research culture activities. The application of Archer's framework in this study corroborates this approach as 'progressive accommodation' and allows practitioners to feel confident in their future actions. The findings of this project also support policy makers to more comprehensively consider the impact of their discursive choices and the potential contradictions between their stated policy goals and the motivating effect of their discourses. Implications for both groups are presented below to make specific recommendations for each group.

9.2. Implications for HEIs

Work within HEIs to improve research cultures can be seen as a 'project' adopted by individuals (typically involving research-enabling professional services staff, institutional leaders, and motivated research-active staff and/or research leaders) to bring about their concerns for a more positive workplace environment as well as more sustainable research performance. The success of such a project is dependent on the situational logic that these individuals encounter, which includes structural and cultural factors (Archer, 2013). As discussed above, the analysed policies capture the contradictions that exist currently with regards to the culture in the UK HE sector, meaning that those that hold the values and ideas related to improving research cultures are confronted with a situational logic that requires irrational dogmatism, abandonment of their values or correction of contradictions. Those that reach the point of implementing research culture initiatives have generally opted to resolve the contradictions. To do so in a way that leads to successful cultural elaboration, the discussion above tells us that individuals and HEIs need to:

- Challenge existing values and highlight their faults to persuade others away from them and/or redefine both sets of values such that that are mutually consistent and persuade others of the merit of these new redefined values.
- Address both culture and structure in initiatives, including lobbying external organisations for structural and cultural change where it is outside of their control to avoid structural factors continuing to constrain activity and therefore hindering cultural change.
- Build a critical mass around research culture values such that the distribution of interests and power aligns with these values, which could mean building a critical mass of like-minded people/HEIs to pool power and resources.

With regards to the first point, the R&D Roadmap and People and Culture Strategy have demonstrated how this can be done – essentially framing current research cultures as

a barrier to the Government's ambitions for R&D and positioning positive research cultures as key to enabling their achievement. This means communicating that positive research cultures are not just a 'nice to have' or a moral duty but also as a key part of delivering high-quality research which can lead to real-world benefits. Done robustly and without using research culture values as signals, this can help to build buy-in, by demonstrating the value to different stakeholders' material interests, whilst also delivering genuine culture change. While this may cause concern about promoting dominant values within initiatives aimed at reforming them, Archer (1996) is clear that presenting new values without explaining them in terms of previous values can lead to outright rejection at a socio-cultural level. Instead, integrating the two discourses allows for 'progressive accommodation' and a redefining of previous values over time. It is important within this process that HEIs continue to play a lead role in driving the research culture agenda, and that the process of aligning values does not see research culture initiatives taken out of the hands of HEIs and controlled instead by government or funders. This could result in a narrow definition of research culture and a one-size-fits-all approach to reform. A key part of fostering positive research cultures is recognising the plurality of cultures and providing flexibility in initiatives for local implementation (Adams & Casci, 2020); as such, HEIs must continue to define what matters for them in terms of positive research cultures, what their priorities are in terms of addressing challenges, and what initiatives will work best in their contexts.

Positioning research culture in terms of broader research ambitions makes the contradiction less severe and ensures that research culture is not seen as a new and unfamiliar item. As Archer (1996, p.149) writes "A [new value] cannot stand alone; it is compelled to call upon B [existing cultural system], to operate in terms of B, to address B, in order to work at all." This extends beyond existing research ambitions to include existing activities related to research culture but not branded as such. For example, HEIs have been working on gender and race equality for decades (Ahmed, 2012), which also seeks to bring about a more diverse and inclusive culture; similarly, discourse and activity around open

research and research integrity pre-date the rise of the term ‘research culture’, meaning that there are already established values of openness, transparency and honesty that can be drawn on. Clarifying the relation to emerging research culture activity to these existing activities will support greater cultural consensus around these values, as staff will be able to see that they already hold and agree with those values. Effectively integrating these existing activities can also prevent research culture activities from being seen as an additional task that adds burden, which is important given the high workload of those working in HEIs (Wellcome Trust, 2020).

Turning to the second point, a strong theme emerging from the analysis is that current incentive structures exacerbate cultural challenges, if not directly cause them. It would therefore be reasonable for HEIs to implement reforms to their responsible research assessment policies and processes in an attempt to address this, so that individual researchers are encouraged to adopt behaviours that are within the policies (e.g. collegiality, diverse research practices, collaboration, inclusivity). However, this alone may not necessarily achieve cultural change. Focusing solely on reforming research or researcher assessment continues to position researchers as self-maximizing agents, which therefore does not address concerns about the high levels of individualism in current research cultures. To be effective such initiatives need to change *values*, not just change structure through policies and processes. If existing values remain unchanged then, by Archer’s definition, no cultural change has occurred. Indeed, it could be argued that efforts to bring about more positive research cultures in HEIs so far have focused more strongly on structure than on the cultural system; for example, efforts to counter discrimination through mandatory training, HR policies, and disciplinary procedures are often more effective at tackling overt behaviours but do not adequately address covert forms of bullying, harassment and discrimination as they fail to change the values held by those within the organisation (Hodgins & McNamara, 2017). This underscores the importance of changing not just structural factors but also the cultural system (Archer, 1996). Whilst changes to the

structure can transform culture and vice versa by changing behaviours that consequentially results in cultural and/or structural elaboration, it's likely that addressing only one will limit elaboration as the other will continue to constrain behaviours. Effectively addressing both may necessarily include the lobbying external organisations that have a strong influence in setting the structure and/or culture of the HE sector, including government and funding bodies.

Finally, on the point of building a critical mass, while most UK HEIs will already be active in the research culture space (as necessitated by REF 2029 and, for those in England, the Research England research culture funding), there is no formal forum or alliance to bring together research culture concerns of HEIs as organisational bodies. Existing groups, such as the Russell Group and Universities Scotland, have such a lobby position but membership and power of these existing groups cannot be expanded. Otherwise, research culture networks tend to be at an individual level, for example professional services staff charged with research culture related work might be part of the Research Culture Enablers Network or the ARMA Research and Innovation Culture Special Interest Group. These networks are often seen as 'support' networks, and participation is not considered to be representative of the institution as a whole. In order to build a critical mass and demonstrate that the distribution of interests and power (Archer, 1996) is aligned behind research culture initiatives, it is important that HEIs are visibly seen to be collaborating and agreeing on these values such that more dominant material interest groups cannot conceal it. The explicit inclusion of agency within Archer's approach is key to this final point. The content of policies, and their contributions to culture and structure, do not dictate behaviour and individuals have power to reflect, respond to and influence culture, structure and policy content back. A critical mass strengthens this power.

9.3. Implications for policy makers

As work within HEIs to improve research cultures can be seen as a ‘project’, so too can work within the government to bring about their concern to further the knowledge-based economy. The analysed policies, with their overarching core aim to maximise and capitalise on the benefits to the economy and society coming out of research, are clear courses of actions to realise this aim and they produce enabling and constraining effects such that those working within the UK R&D sector are motivated to behave in a way that delivers on these ambitions. Specifically, behaviours that lead to direct impact and generation of technology and contribute to the UK’s competitive advantage in key research areas are encouraged above all else. In practice for research organisations (including HEIs) and research funding organisations (including UKRI), this means either producing/funding more research to meet expectations in this area or - more likely given the challenges of the HE sector and overall economic downturn in the UK - produce a narrower set of research, taking resources away from areas that do not directly contribute to the government’s aims. Indeed, as already discussed, policy makers are already encouraging HEIs to specialise, with the Director of Research for Research England saying that HEIs should focus instead of unique, high-impact contributions (Hogan, 2025).

While this could be seen as an increased focus in quality over quantity and potentially helping with the workload issue in UK HEIs, this focus is likely to be based on the narrow notions of quality discussed in chapter 5, meaning that the diversity of research missions and approaches will be restricted. This would undermine a core benefit of academic research, which is highlighted in the Nurse review of the UK Research, Development and Innovation (RDI) landscape (Nurse, 2023, p.36): “Universities in the UK play a very important part in the country’s overall RDI endeavour... They have a broad and deep multidisciplinary research base with demonstrable excellence in many research areas, contributing very positively to the UK RDI ecosystem.” Moreover, reducing the amount of research undertaken would more likely lead to reductions in the number of staff in research-

active roles in HEIs rather than reductions in workload levels, contributing to further redundancies in the sector. In 2025, the UK HE sector announced 15,000 job cuts (UCU, 2025), presenting a significant reputational risk for the UK research sector, undermining the Government's ambition to be a science and technology superpower (Megoran, 2025). This also significantly reduces the workforce available to deliver on the Government's ambitions. Given the financial challenges of the sector and of the UK as a whole, it would be reasonable to argue that the Government's research ambitions and policies that realise them are due to be updated.

The financial challenges are not the only crisis facing UK HEIs and presenting a barrier to achievement of the government's research missions. The literature review has highlighted that research cultures have worsened to an unsustainable position, compromising the quality of research and prompting individuals to reconsider employment within academia (Wellcome Trust, 2020; Hesselberth & Bloois, 2020; Gewin, 2022; Hall, 2023). Within the R&D Roadmap and People and Culture Strategy, there is clear recognition of this and the risks that it poses for maximising the real-world benefits of research and growing the knowledge-based economy. Despite this, the research culture focus was absent from the Science and Technology Framework (the current overarching government research policy) and the recently published Industrial Strategy (not included in analysis), which states that "Universities will play a critical role in delivering our Industrial Strategy" (Department for Business and Trade, 2025, p.73). This suggests that the need to improve research cultures has slipped off the government's radar and is no longer seen as a priority for enabling effective research and innovation. If the Government wants to capitalise on UK universities' strengths, maximise the quality and impact of the research being funded and boost education and skills in order to drive economic growth, HEIs are pivotal and therefore current discussions about reforms to the HE sector must consider both financial *and cultural* challenges.

When developing necessary revisions to policies, consideration of the language used and values communicated could in itself help to foster a more positive and inclusive research culture. In chapter 5, it was identified that the language used to discuss research could have a constraining effect on the types of research undertaken, with efforts to be inclusive of different research approaches visible in the R&D Roadmap and then excluded from the Science and Technology Framework. This applies both to being inclusive of disciplines and research topics as well as inclusive of the different focuses of research that are necessary for an effective impact pipeline, not just the research that directly leads to impact. It is worth noting that the R&D Roadmap was effective alongside a dedicated 2021 Innovation Strategy, which allowed for an overarching research policy that was more inclusive of all research approaches and then a dedicated policy with a reduced scope for research more directly related to innovation. The Science and Technology Framework, however, has no specified scope but was the only active research policy from 2023-2025 and is used to discuss the UK R&D sector as a whole, despite having a specific focus on technology and innovation. As a result, it is assumed to govern all research and therefore has a more significant effect on the diversity of research missions.

A more responsible way of developing research policies to minimise the unintended consequences of excluding certain disciplines, approaches and practices, would be to have a policy framework instead with an overarching policy stating core ambitions, expressed in a way that was inclusive of all research and all research organisations. This could sit above dedicated policies with specific scope, including possibility for a policy on research culture, as existed with the People and Culture Strategy, to directly target cultural issues with exist within the sector. This policy framework could also reduce the impact of changes to policies by allowing for details to be changed within the specialised policies whilst the overarching research policy and ambitions remains in place. Indeed, the existing Science and Technology Framework (re-envisioned with a specific scope for national security and prosperity) and Industrial Strategy could be subsumed within this Framework. In doing so,

the Government could support comprehensive delivery across its research ambitions and priority areas and enable organisations to contribute to the UK's research endeavour as best fits with their mission and purpose.

In line with the globalisation of research and innovation, similar recent trends towards narrower considerations of research quality and a reduced value in culture-related initiatives has been noted outside of the UK, most clearly in the USA. Executive orders signed by President Trump have led to a ban on federal funding of research that relates to areas contrary to government ideology and policies, including research that covers equality, diversity and inclusion, net zero, and foreign aid (Mervis, 2025). This has led to funding agencies withdrawing and/or rejecting grants to realign with government priorities, demonstrating an immediate narrowing of the research base. This has been combined with threats to institutional funding if HEIs do not comply with bans on culture-related initiatives such as those aimed at increasing the diversity of their staff and students, and more hostile immigration policies and rhetoric have limited international student numbers (Lynch, 2025). These restrictions on research, as well as limitations to the research pipeline and workforce, risk undermining innovation in the USA, its economic growth and its appeal to researchers and investors (Victor, 2025; Lee & Stewart, 2025). Indeed, the UK and the European Union have both launched funding programmes to attract researchers from the USA in response (Mitchell, 2025). In order to maintain any researchers attracted, it is important that the UK does not follow the path of the USA and instead recognises the importance of providing a research environment and culture that enables researchers to conduct high-quality research without undue pressures from narrow success criteria, highly competitive environments or discriminative cultures.

9.4. Limitations of the study and recommendations for future research

The scope of this project was narrower than a typical doctoral research project due to the structure of this course which includes earlier research projects conducted in modules

related to specific aspects of HE. As a result, a limited set of policies were selected for analysis; policies were selected that related to the UK's research sector as a whole and that established the Government's priorities for research. The People and Culture Strategy was added as a policy that looks specifically at research cultures. Other policies from this time period that refer to research cultures or communicate values that affect research cultures, such as the 2021 Innovation Strategy, the 2023 Nurse Review of the RDI Landscape, and the 2023 Tickell Review of Research Bureaucracy, were excluded due to resource constraints but could have further enrichened the analysis; unfortunately, the benefit of analysing these policies in future research has likely now passed, as they are policies from a previous government. Similarly, REF 2029 policy documents were initially identified for potential inclusion within the analysis but the developing nature of this policy did not fit with the timeline of the study. For future research tracking the discourses used to relate to research cultures through the People, Culture and Environment element, potentially also including discourses used outside of the policy documents in announcements and conference presentations, would be a very valuable case study of efforts to foster more positive research cultures and integrate research culture related values into the wider discourses on research quality, especially considering the backlash this policy change has faced.

This project has also sought to identify the ways in which the values communicated in the analysed policies can motivate behaviour within HEIs, but it does not include any examples of behaviour at HEI-level. Analysis of institutional research policies to identify how discourses and values are pulled through and how they inform encouragement or adoption of specific practices would be a valuable extension of the current study. An unanswered question about the level of government commitment to reforming research cultures emerged in the discussion of the current study – whether the R&D Roadmap and People and Culture Strategy were examples of non-performativity or whether the commitments genuinely were intended to lead to systemic change. Due to the change in governments, interviews with

government stakeholders are unlikely to provide insights that help efforts moving forwards; however, analysis of institutional research policies formed at this time could support judgements of the impact made by these commitments.

The current study sought to provide a framework for understanding how staff working within HEIs, including those working in research culture related areas, those undertaking research and those leading institutions, are likely to behave in response to the analysed policies. Interviews with staff would help to better understand both their actions and their internal deliberations. Combined with the above analysis of institutional policies and initiatives, this could provide an insightful exploration of how policies and initiatives translate into everyday experiences of research cultures. This would also help to inform broader understanding of research cultures through staff's experiential knowledge, rather than simply seeking to understand the current research culture in UK HEIs based on literature.

Finally, this project has raised the visibility of opportunities for social action and social change and applied Archer's theoretical framework (2013) to illustrate how this might be achieved, but is limited in its ability to recommend specific actions or initiatives that could improve cultures. This theoretical framework could be expanded further to institutional case studies of research culture initiatives in order to understand its potential for explaining successes and failures, and thereby supporting the design of future action. Within this framework, an implication emerged that effectively (and carefully) integrating the values of a positive research culture with the dominant values in the research culture system (by redefining the dominant values, or both, such that they align better) could be an avenue for bringing about cultural elaboration. This could be a focus of future research, understanding the extent to which institutional stakeholders already do this and potentially interviewing government stakeholders about how they view research culture in relation to the Government's research ambitions. This could produce more concrete suggestions on how the recommendations of the current study could be implemented in practice, moving beyond non-performativity in research culture initiatives to transformative action.

9.5. Conclusions

The current study has identified that government research policies largely reinforce existing, dominant values within the UK HE cultural system and therefore reproduce the research cultures that those working within HEIs have highlighted as unsustainable and problematic. This includes: narrow notions of research quality, a strong focus on research outcomes over research processes, high levels of competition, and a lack of regard for staff wellbeing. As such, the policies encourage behaviours that align with their narrow notions of research quality and have a constraining effect on HEI's efforts to improve research cultures as they do not align with the values associated with that work. Though the earlier policies (R&D Roadmap, People and Culture Strategy, and UKRI Strategy) do include recognition of cultural challenges and implement actions aimed at addressing them, they still reinforce existing values as dominant based on their strength of focus. The absence of research culture considerations from the Science and Technology Framework further positions the research culture values in the previous policies as 'alternative' and 'optional'.

Within Archer's morphogenetic approach (1995, 1996, 2013), improving research cultures can be seen as cultural elaboration, meaning that to improve research cultures the values associated with positive research cultures (such as diversity of people and research, inclusive research assessments, valuing research processes as part of research quality, collegiality, openness and collaboration in research, and support for staff wellbeing) need to be integrated within the cultural system and considered dominant enough to effectively influence behaviours of those working in HEIs. This requires the contradictions between values to be resolved through corrections to either dominant values or to both sets of values such that they can be mutually consistent. Contradictions represent potential for social change, and three core areas of focus are identified: narrow notions of research quality vs diversified and inclusive research quality; competition vs collaboration; performance management vs staff wellbeing. These contradictions map to the negative experiences of current research cultures highlighted in the literature review, suggesting that there is

corresponding antagonism at the socio-cultural level to exploit these contradictions for social action.

By applying Archer's theoretical framework, recommendations for HEIs seeking to effect cultural change are made, including: challenging or redefining existing values and highlighting their faults to persuade others away from them; addressing both culture and structure in initiatives; and, building a critical mass around research culture values such that the distribution of interests and power aligns with these values. For the UK Government, these contradictions in the cultural system alongside the current challenges in research cultures present a significant barrier to achievement of its ambition to become a global science superpower and to maximise the benefits of research for society and the economy. Given significant changes since the publication of these policies – namely a change in government and an economic downturn, reconsideration of these ambitions is necessary; resolution of these contradictions in values and consideration of HEI's efforts to improve research cultures should be a key part of developing the policies to enable delivery of revised ambitions.

The outcomes of this study are particularly timely, as debate around the inclusion of research cultures in the REF 2029 assessment is active and the final decisions will have a significant impact on the importance of research culture related activities across the sector. Moreover, the current financial crisis faced by UK HEIs has sparked discussions on the need for reform of the HE sector. Whilst some may feel that reforming research culture should not be made a top priority in the context the current financial challenges facing UK HEIs, this same context also represents a significant opportunity to embed reform of research culture within these discussion, communicate the central important of research culture for research performance, and highlight that poor finances are not the only threat to the sector's sustainability. To not do so at this time risks losing momentum on efforts to improve research cultures and could see a reduction indicating the end of the 'peak' of research culture. The changing political landscape, which appears to be trending towards devaluing research

culture activity, could present a ‘moment of truth’ in which HEIs can decide whether to withdraw investment – suggesting that previous actions may have been in response to increased political attention and aimed at increasing material benefits, rather than changing values – or whether to reaffirm their commitment to improving research cultures and continue to advocate for these values more widely.

The change in UK Government in July 2024 presents an opportunity for a change in research policies. Though the indication is that the government has opted to maintain the Science and Technology Framework as their core research policy, the previous version (analysed in the current study) has already been withdrawn and replaced with a streamlined, somewhat more inclusive version (DSIT, 2025); for example, the 2025 update includes more positive discourse on collaboration. While there are further areas of change that could be recommended based on the current study and the updated version still contains no reference to research cultures, this demonstrates that there is scope for policy development and changes with the new government. Most recently, the cabinet reshuffle in September 2025 led to a change in the Secretary of State for Science, Innovation and Technology to Liz Kendall, who has already indicated that she is interested in understanding the policy priorities for those working in academia (Jones, 2025). This underscores the importance of effective lobbying by HEIs to advocate for the need to reform research cultures and provides a clear opportunity for those passionate about improving research cultures to communicate that financial constraints are not the only barrier to HEIs maximising the quality and contribution of their research.

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Appendix 1: Policy Analysis Notes

UK Research and Development Roadmap

Link to policy: https://www.gov.uk/government/publications/uk-research-and-development-roadmap

Contextualising the policy

Note: This policy is positioned as a 'roadmap', proposing ambitions and launching a consultation on the ambitions set out. It highlights that 'Over the coming months we will develop the proposals in this Roadmap in a comprehensive R&D plan' – this didn't happen. This policy just remained as a 'soft' policy.

Temporal context

Immediate context

- Published in July 2020, mid-pandemic, just out of lockdown.
- Seen to reinforce government's commitment to increasing UK investment in R&D to 2.4% GDP by 2027, building on Chancellor's announcement in March 2020 of a substantial increase in public funding for R&D to £22bn by 2024/25.
- Roadmap is framed as 'testing' how the government can support R&D, 'starting a conversation' about what needs to be done, and setting out proposals which will be developed into a comprehensive R&D plan.
- Published alongside a consultation survey on how the government can best support R&D.
- Published shortly after Wellcome Trust 'What researchers think about the culture they work in' report. This is referenced in the policy, so we know it was read. Multiple aspects of the policy seem to be directly addressing the concerns raised in the report.

Medium term socio-political context

- 2020 – Public used to hearing from scientific advisors, SAGE, etc. on a regular basis; though some hesitation towards 'experts' from sections of society.
- Active attempts to keep economy strong during a pandemic (e.g. eat out to help out, no stamp duty, etc.)
- R&D seen to have renewed importance for building back the country's health, society and economy after the effects of the pandemic (which was thought might be ending)
- 10 years of conservative government – 1 year into Boris, 2 years before the end of Boris.

Contemporary socio-political individuals, organisations and structures

- Published by BEIS – Business, Energy and Industrial Strategy, which had science, research and innovation in its remit, as well as business, industrial strategy, energy and clean growth, climate change. Core priority at this time was to:
    - fight coronavirus by helping businesses to bounce back from the impacts of COVID-19, supporting a safe return to the workplace and accelerating the development and manufacture of a vaccine
    - tackle climate change: reduce UK greenhouse gas emissions to net zero by 2050
    - **unleash innovation and accelerate science and technology throughout the country to increase productivity and UK global influence**
    - back long-term growth: boost enterprise by making the UK the best place in the world to start and grow a business
- Largely led by Dominic Cummings (https://www.bbc.co.uk/news/science-environment-49885230)
    - Cummings was fired shortly after, which is likely why this policy never went anywhere.
- Rishi Sunak, Chancellor of the Exchequer at this point.
    - Very prominent in the government's financial response to COVID-19, particularly the economic impact.
    - Sees R&D as core to economic health, e.g. announcing doubling of investment in public funding in March 2020: "UK's success in the global economy will be rooted in innovation and

cutting-edge technology... The government will invest that money in the people, ideas and industries that will cement the UK's world-leading position in science and technologies…"

- Boris Johnson, Prime Minister at this point
    - Prior to becoming PM, Johnson had shown very little interest in science, technology and research. There are multiple accounts of him dismissing scientific experts (e.g. on climate change) and only supporting highly visible technological/engineering projects such as the Emirates Air Line cable car or the Thames Estuary Airport (Boris Island).
    - After becoming PM, in his inaugural speech he mentioned changing tax rules to incentivise investment in research and, shortly after becoming PM, committed to increasing investment in R&D.
- Alok Sharma MP, Secretary of State for Business, ***Energy*** and Industrial Strategy (Feb 2020-Jan 2021) – largely pre-occupied with Covid but also brought in National Security and Investment Act. Became President of COP26 afterwards, so probably big into Net Zero/Climate Change Action.

Epoch

- Dominant neoliberal ideology in HE governance

Policy drivers

- "Our goal is to further strengthen science, research and innovation across the UK, making them central to tackling the major challenges we face, and taking advantage of opportunities."
- "By confidently embracing the power of science, research and innovation, we will leap forward and build a brighter future for all."
- "By stretching our ambitions and engaging with and learning from people and communities all over the UK, we will create long-lasting economic and societal benefits for our country."
- "This means revitalising our whole system of science, research and innovation to release its potential – to unlock and embrace talent, diversity, resilience and adaptability, and to tackle our biggest challenges, such as achieving net zero carbon emissions by 2050."
- "Our mission is to inspire and enable people from all backgrounds and experiences to engage and contribute to research and innovation and show that science is for everyone."
- "Our UK R&D system is world-leading, but that means we should be taking the lead in addressing problems which are visible in the R&D systems of all the leading nations and also address those which are specifically holding back the UK."
- **Summary:** maximising benefit of research for society and economy & addressing issues in R&D systems.

Warrant

- The ministerial forwards relies largely on political warrant, evoking national interest in broad terms.
    - "It is our duty to build a future which is greener, safer and healthier than before. This means revitalising our whole system of science, research and innovation to release its potential – to unlock and embrace talent, diversity, resilience and adaptability, and to tackle our biggest challenges, such as achieving net zero carbon emissions by 2050."
    - "We have a once-in-a-generation opportunity to strengthen our global position in research, unleash a new wave of innovation, enhance our national security and revitalise our international ties."
    - "By confidently embracing the power of science, research and innovation, we will leap forward and build a brighter future for all."
- The Executive Summary uses the political warrant to reiterate the national benefits of the policy and highlight the outcomes from actions. It also uses the accountability warrant to justify the policy in terms the importance of addressing challenges faced.
    - Political warrant
        - "Across the UK government and the devolved administrations, working with businesses, academia, charities and wider society across the UK, we will tackle some of our biggest societal challenges, advancing our understanding of the world and translating that delivering benefits to people, communities and places around the UK and globally."
        - "We will unlock improvements in health, wellbeing and prosperity, and maintain the security of our citizens. We will tackle some of the big challenges of today and tomorrow, including achieving net zero carbon emissions, investing in world-class

assistive technology, building resilience in our economy, environment and society, and improving security, productivity and quality of life for all… We will nurture the whole system of innovation that will improve lives, services and businesses right around the UK and beyond – creating a fairer, healthier, more prosperous and more resilient society."
        - "We will make the bold changes needed to ensure our system is fit for purpose now and for the future."
    - Accountability warrant
        - "In light of the COVID-19 crisis, the importance of being able to find ingenious, practical and timely solutions to the most challenging problems is even clearer. Research and development will be critical to economic and social recovery from the impacts of COVID-19, enabling us to build a greener, healthier and more resilient UK."
        - "Our goal is to further strengthen science, research and innovation across the UK, making them central to tackling the major challenges we face, and taking advantage of opportunities."
        - "Our UK R&D system is world-leading, but that means we should be taking the lead in addressing problems which are visible in the R&D systems of all the leading nations and also address those which are specifically holding back the UK."
- The evidentiary warrant is not used in justifying this policy as a whole.
- Overall the policy is justified as a leading to benefits for the economy, environment and society (greener/safer/healthier/more resilient) and tackling challenges existing in the R&D sector (bureaucracy, research cultures (bullying, harassment, reward and recognition, diversity), careers, international context, investment and funding) and wider world (economic and social recovery, climate change, national security).
- R&D positioned as critical to achieving these goals, therefore a strong strategy on R&D is required.

Deconstructing the policy

Legitimation (Process by which policies are justified by attachment to dominant norms and values)

- Authorisation – reference to tradition, authority, custom, law (unchallengable)
    - Not used.
- Rationalisation – value and usefulness of an action, face-validity/naturalness of an action. The core chapters of the policy (covering different aspects of the policy) are justified as 'where are we now?' and 'what are we going to do?'. This allows for the policy to be justified in terms of the problems it will address and the benefits it will enable. Each chapter also has a list of bullet points on 'we are asking how we can:' and then listing the ambitions/policy aims related to the topic. This demonstrates that it is a proposal, aligned with a consultation, but also positions the list of ambitions as natural things that everyone will want to achieve. The question relates to how the government can achieve them not what their ambitions should be. The ambitions are broad for each topic with several bullet points. Often they directly address issues raised in the Wellcome Trust report (e.g. Support action to enhance the UK research culture based on current strengths, so diverse people can work in a research environment that supports them to produce the highest quality research.)
    - "This means revitalising our whole system of science, research and innovation to release its potential - to unlock and embrace talent, diversity, resilience and adaptability, and to tackle our biggest challenges, such as achieving net zero carbon emissions by 2050. We have a once-in-a-generation opportunity to strengthen our global position in research, unleash a new wave of innovation, enhance our national security and revitalise our international ties."
    - "By stretching our ambitions and engaging with and learning from people and communities all over the UK, we will create long-lasting economic and societal benefits for our country."
    - Repeated reference to COVID-19, e.g. "Research and development will be critical to economic and social recovery from the impacts of COVID-19, enabling us to build a greener, healthier and more resilient UK."
    - "Across the UK government and the devolved administrations, working with businesses, academia, charities and wider society across the UK, we will tackle some of our biggest societal challenges, advancing our understanding of the world and translating that delivering benefits to people, communities and places around the UK and globally."

- Executive summary list of things that will be achieved, e.g. “We will tackle some of the big challenges of today and tomorrow, including achieving net zero carbon emissions, investing in world-class assistive technology, building resilience in our economy, environment and society, and improving security, productivity and quality of life for all.”
- Rationalisation in terms of increasing diversity and inclusion, demonstrates that these are valued: “Our mission is to inspire and enable people from all backgrounds and experiences to engage and contribute to research and innovation and show that science is for everyone.” / “World-class research and dynamic innovation are part of an interconnected system; they depend on talented people and teams working in a supportive and diverse culture across multiple sectors, with access to the right funding, infrastructure, data and connections – locally, nationally, internationally – to do their best work.”
- Values that are appealed to in order to rationalise the policy. Note: This text addresses the things valued by a wide range of stakeholders (government, funders, private research organisations, staff in HEIs).
    - Research utility/impact (really just mentioned throughout, it seems to be the core aim of the policy so almost every other line is an example of this) – e.g. “Our goal is to further strengthen science, research and innovation across the UK, making them central to tackling the major challenges we face, and taking advantage of opportunities.” And “Engage in new and imaginative ways to ensure that our science, research and innovation system is responsive to the needs and aspirations of our society – delivering better quality of life, economic growth and environmental improvements.”
    - Diversity in people – e.g. “Our mission is to inspire and enable people from all backgrounds and experiences to engage and contribute to research and innovation and show that science is for everyone.” And “World-class research and dynamic innovation… depend on talented people and teams working in a supportive and diverse culture across multiple sectors” And “Attract, retain and develop the talented, diverse people and teams that are essential to delivering our vision.” And “We will ensure future generations are inspired to pursue careers in R&D in a wide range of sectors and show that science is for everyone.” And “To achieve our ambitions for UK science, research and innovation, we must be world-leading in the way that we inspire and enable talented people. This means being the best place in the world for attracting, training and retaining diverse, talented people and teams across the whole spectrum – from excellent scientists, researchers, engineers and technicians, through to entrepreneurs, business leaders and investors. We need to nurture and support talent from all backgrounds and experiences, embracing all cultures and respecting all viewpoints.”
    - Diversity in research approaches – e.g.” We will set up an Innovation Expert Group to help review and improve how we support the whole innovation system, including strengthening the interactions between discovery research, applied research, innovation, commercialisation and deployment.” And “On public funding, we acknowledge that short-term spending settlements can limit people's ability to develop long-term plans. Working with funding agencies and the devolved administrations, we accept the need to reverse the decline in funding for the long-term, fundamental research on which the entire system depends.” And “This requires having a healthy and vibrant ecosystem of institutions in which researchers are free to follow their curiosity, to test radical new ideas, to tackle complex societal problems, and to form new connections, collaborations and networks. It requires a broad span of approaches, from people developing new theories and insights into natural phenomena and the application of research in technological and industrial settings, through to systems research to improve patient care or tackle the barriers to inclusivity in society.” And “A significant proportion of this will be to restore and increase our support for long-range discovery research.”
    - Talented workforce – e.g. “We will increase the attractiveness and sustainability of careers throughout the R&D workforce – not just for researchers, but also for technicians, innovators, entrepreneurs and practitioners. We will set up an Office for Talent which will take a new and proactive approach to attracting and retaining the most promising global science, research and innovation talent to the UK.” [Note: This is recognising the issues with the system, and talks about retaining staff not just

competing for talent. Competition is secondary to having the workforce to support ambitions] And “Only 29% of early career researchers feel secure pursuing a research career, and most doctoral candidates exit the profession once they have completed their training. Opportunities to transition between academia, industry and other roles are unclear or unavailable, and our technical workforce lacks the visibility, recognition and career development it deserves. We must not be afraid to tackle these issues. To ensure we have the talent we need to underpin our ambitions, we need to go further to attract top talent, at all career stages, to come to the UK.” And “We must create opportunities for people around the UK to pursue diverse and flexible careers in R&D.”

- Collaboration (whole section on ‘being at the forefront of global collaboration’ – demonstrates value of collaboration but also wants to be seen as the leader?) – e.g. “We will work collaboratively across the UK, fostering greater collaboration and networks between funders, researchers, practitioners and civic leaders to embed a system that delivers stronger local economic benefit and improved quality of life outcomes from R&D.” And “Be a partner of choice for other world-leading research and innovation nations, as well as strengthening R&D partnerships with emerging and developing countries. We will develop a new funding offer for collaboration to ensure the UK can further benefit from the opportunities of international scientific partnerships.” And “We will ensure that the UK’s science and innovation community, people, institutions, and infrastructure are outward-facing and attract collaboration and investment from across the globe.” And “We want to ensure powerful incentive structures are in place to encourage universities and businesses to work together effectively across the UK, and that businesses can collaborate as well as compete. This will help tackle productivity gaps and reduce regional imbalances in R&D intensity.” And “The UK must collaborate globally if we are to remain at the forefront of cutting-edge research and innovation. We benefit from strong international partnerships with a range of countries, at different stages of economic and scientific development.”
- Competition (Note: This is not as prominent as in the S&T Framework and mention of competition and competitor nations seems to be used more for benchmarking the current state of R&D than as a goal in itself) – e.g. “The UK is ranked 5th in the Global Innovation Index 2019 and in the top 10 best countries worldwide to start, locate and scale a business.6 We already attract significant venture capital – at a level that exceeds that of Germany, France and Sweden combined.7 We are home to 77 unicorns (start-ups valued over US $1 billion), more than a third of the total across Europe and Israel.” And “The UK has lower levels of R&D activity by businesses compared to our competitor nations, and that investment is focussed on large investors in a few sectors.” And “We want the UK to become the top destination for international talent. In February we launched the Global Talent Visa, providing a new route for talented and promising individuals to come and work in the UK.”
- Strong private sector – e.g. “British business invests less in R&D compared to similar nations, and this investment is concentrated in major players in just a few sectors. We need to do more to ensure our world-leading strengths in research are complemented by strengths in development, to bring in more investment from overseas as well as improve access to finance for early-stage firms.”
- Deregulation– e.g. “Longer-term, we will review how we fund and assess discovery and applied research, to cut unnecessary bureaucracy, pursue ambitious “moonshots”, and ensure that institutional funding and international collaboration can support our ambitions.” And “And we will ensure we have the best regulatory system to support research and development.” And “We will free up researchers to pursue ideas which can go on to have unpredictable benefits without starting with a specific goal in mind.” And “The UK’s regulatory approach and the quality of its regulatory policy rank among the highest internationally (footnote: The UK is ranked 8th among 190 economies for the ease of doing business, with the quality of our regulatory practices given the highest overall country score by the Organisation for Economic Co-operation and Development (OECD))” And “We will eradicate unnecessary bureaucracy – keeping in place only those checks and approvals necessary to effectively manage public money and take informed decisions about the system.”

- Research integrity / public trust – e.g. “Researchers may currently be compelled to play safe to sustain a career. The focus on publishing results in ‘top’ journals may be narrowing the research process. Most publicly funded research is published behind paywalls, with the underlying data unavailable. These practices slow down research and put its validity at risk, reducing trust and impact.”
- National security / trusted research (but in a way that foregrounds collaboration) – e.g. “Emerging science powers and new technologies are changing the landscape of international science collaboration. National security issues are threatening the UK’s research base and its economic impact. Not enough focus is given to how we can build partnerships with other like-minded developed countries outside Europe and with emerging science superpowers – where stronger strategic partnerships could bring major benefits to the UK.” And “Developing and maintaining international collaboration is essential to the strength and success of UK R&D, enabling the UK’s world-leading research and innovation sector to get the most out of international scientific collaboration while protecting intellectual property, sensitive research and personal information. The Government has already produced advice called Trusted Research to support the UK’s research and innovation sector to manage the risks that can occur and will continue to support a sector-led work programme, spearheaded by Universities UK, to raise awareness of these risks through the publication of guidelines in the next academic year.”
- Excellence (not specific definition or narrow notion, just talking about research being excellent and high-quality, but mentioning a wide range of areas. Case studies are included throughout of successes that relate to different disciplines) – e.g. “The UK has a deep and broad research base with demonstrable excellence across many areas including science, engineering, mathematics, physics, medicine, social sciences, humanities, design and cultural research.” And “Research has rapidly improved our understanding of COVID-19. Supported by rapid action by funding bodies, scientists around the world have directed their efforts to this global priority, working collaboratively across countries and disciplines, and sharing findings openly and quickly… The UK has led the world’s largest randomised control trial for COVID-19, with findings helping the sickest patients not only in the UK but all around the world… Social science expertise is already being used to understand how behaviours are changing as a result of the coronavirus pandemic, and how they might potentially be sustained to facilitate a green recovery.” And “From the industrial revolution to the invention of radio, from vaccines to the World Wide Web, the contribution that science, research and innovation make to the world and people’s lives is unquestionable. Through a mix of curiosity and application, we have increased our understanding of ourselves, each other, and the world around us.”
- Responsible research assessment – e.g. “Constrained resources require them to spend excessive time competing for funding, sometimes focussing on ‘safe’ research topics rather than bold new ideas that can have the greatest long-range impacts on knowledge and society.” And “Reward and recognition of these positive changes will be central to the ongoing evolution of UK research culture, ensuring we continue to set the benchmark globally. We must ensure assessment systems and processes are fair, efficient and free of bias, eradicating disparities where found to ensure our system is as meritocratic as possible.” And “This means embracing modern methods of peer review and evaluation. It also means tackling the problematic uses of metrics in research and driving up the integrity and reproducibility of research.”
- Good research practice: “We will work with funders to set clear expectations of research organisations in supporting safe and open research cultures that lead to high integrity of research. This includes prevention strategies to tackle bullying and harassment. It is clear that the current environment can drive these behaviours and we will work with devolved administrations, funders and regulators to coordinate policies that will deliver the change we need to see.” And “Through our membership of all the major international and multilateral initiatives, we will continue to be a leading voice in important areas such as global research governance, Open Science and research ethics.” And “Crucially, we must embrace the potential of open research practices… We will mandate open publication and strongly incentivise open data

sharing where appropriate, so that reproducibility is enabled, and knowledge is shared and spread collaboratively."

- Moral evaluation – appeal to a value system that is good and desirable
    - "we will tackle some of our biggest societal challenges, advancing our understanding of the world and translating that delivering benefits to people, communities and places around the UK and globally."
    - "Following the COVID-19 crisis, we want to build a future which is greener, fairer, healthier, more resilient and more innovative than ever before. Research and innovation will be critically important to achieving this…"
- Mythopoesis – cautionary tales
    - "Beyond the immediate imperative to overcome COVID-19, the greatest challenge facing the UK and the world is that of decarbonising our economies and building resilience to the impacts of climate change. COVID-19 has been a powerful reminder of the world's vulnerability to systemic risks; climate change, habitat and biodiversity loss pose a major threat to our prosperity and security. UK R&D will boost efforts to build resilience to these risks by developing the potential of technologies such as hydrogen, carbon capture use and storage, zero-emission vehicles and zero-carbon industrial processes as well as nature-based solutions including habitat recovery, afforestation and innovations in building sustainable agricultural and food supply chains."

Intertextuality/interdiscursivity

- Uses the word science throughout but clarifies on p10 that it refers to the entire academic landscape and is used synonymously with research. It intentionally specifies that all disciplines contribute to the research endeavour. Note: This is not included in the S&T Framework, though they appear to use the term 'science' in the same way. At the 2024 ARMA conference, Charlotte Deane, EPSRC Executive Chair, clarified that UKRI and Government use 'science' to refer to all research.
- "Attract, retain and develop the talented, diverse people and teams that are essential to delivering our vision. We will do this through a new **R&D People and Culture Strategy**."
- Levelling up agenda – "Despite strong national performance in science, research and innovation, UK R&D intensity and funding is concentrated in some regions. Regions outside of the 'Golden Triangle' of London, the South East and the East of England, lag behind our competitors in Northern Europe and some of our cities underperform. Weak innovation systems lead to low productivity economies. All these are long-recognised issues and it is time to take steps to rebalance and level up." And "Our commitment to R&D effectively supporting the wider levelling up agenda runs through this Roadmap. Ensuring we are making the most of all our strengths across the UK will allow us to capitalise on longer-term economic opportunities and tackle longstanding regional inequalities."
- Makes multiple references to this policy as a proposal and part of a consultation process. Suggests it is up for discussion.
- "Moonshot" mentioned a lot in this policy. This refers to the idea of ambitious, disruptive projects that address societal issues. It is a term that was used regularly by the Johnson government, particularly in reference to setting up the Advanced Research and Invention Agency (ARIA). National Council for S&T defined a moonshot, which is the definition that gets used in this policy and other mentions of moonshot (e.g. in the Pioneer Innovation scheme which then got ditched because we got association with Horizon Europe).
- Culture is mentioned 17 times, often in relation to diversity and inclusion, but also in reference to reward and recognition, research integrity, career stability, and eliminating bullying, harassment and discrimination. There is a whole section on 'improving the culture of research'. Throughout, the policy seems to address the concerns in the Wellcome Trust report, e.g. "Researchers tell us that there is not sufficient funding for truly transformational opportunities, alongside other barriers to interdisciplinary research. Constrained resources require them to spend excessive time competing for funding, sometimes focussing on 'safe' research topics rather than bold new ideas that can have the greatest long-range impacts on knowledge and society."
- Does use similar language about supporting international competition, etc. but competition is much less prominent than on other policies.
- Frequent references to what UKRI will do, e.g. "As the first funder to sign the Technician Commitment, UKRI will build upon existing examples of what works, by expanding delivery of experiential learning and training across its network of institutes, centres and the Catapults." Worth looking at the UKRI Strategy to see how this translates. "As the largest public funder of R&D in the

UK, and with a statutory role to advise government, UKRI has a central role to play in delivering the outcomes of this Roadmap."
- Bureaucracy – multiple references, including highlighting the launch of the review of research bureaucracy.

Evaluation/Appraisal

- Inscribed – overtly displaying attitudinal judgement
    - "The COVID-19 pandemic has shown all of us the vital importance of science and innovation."
- Evoked – superficially neutral terms that represent specific value positions
    - "Longer-term, we will review how we fund and assess discovery and applied research, to cut unnecessary bureaucracy, pursue ambitious "moonshots", and ensure that institutional funding and international collaboration can support our ambitions." – appeals to neoliberalist ideology of deregulation. Same as "And we will ensure we have the best regulatory system to support research and development."

Presupposition/Implication

- Presenting phrases as facts
    - "It is our duty to build a future which is greener, safer and healthier than before."
    - "the contribution that science, research and innovation make to the world and people's lives is unquestionable."
- Presentation as causal links
    - "By confidently embracing the power of science, research and innovation, we will leap forward and build a brighter future for all."

Lexico-Grammatical Construction

- Not a core focus of analysis
- Agency
    - "The UK's R&D system is internationally recognised, but, like many research-intensive nations, **we** face systemic challenges that can make it harder for us to produce, translate and use great research. *[all of us together facing the issues]* **We** know unnecessary bureaucracy is constraining the research process, making it risk-averse and inefficient. *[now is this just government again? Or do we all know we need to fix bureaucracy?]*"

Themes

- Core to this policy is maximising benefit of research for society and economy & addressing issues in R&D systems (**research utility**). As a result, the policy is largely justified by highlighting the issues currently faced and explaining what the policy will do to overcome them and the benefits that will bring. By justifying it in this way, the policy communicates several things that are valued:
    - **A diverse and inclusive workforce is essential** to achieving policy ambitions. This includes attracting people from different backgrounds (not just competing internationally for talent), ensuring training is available to support people to develop and progress, and retaining people and teams (i.e. not having people leave because the culture/workload is unsustainable). There is clear mention that this relates to all careers involved in research, across the sector. Research careers need to be more attractive. This is mentioned in reference to attracting international talent but also with regards to retaining early career and post-doc researchers.
    - **Diverse research approaches must be supported**. There is acknowledgement of the importance of 'blue-skies'/'discovery' research and the benefits that all disciplines bring. Examples, such as case studies but also the words chosen in the main text, are chosen to demonstrate the value of a wide range of approaches. This contrasts with the S&T Framework narrow focus on certain types of research.
    - **Collaboration is more prominent than competition.** There is frequent mention of collaboration (international, national, cross-sector and within organisations) as crucial for high quality R&D. This is discussed in an inclusive way that refers to many stakeholders, including 'working with the public' and international collaboration 'with a range of countries, at different stages of economic and scientific development'. Collaboration is mentioned throughout, and has a dedicated section ('being at the forefront of global collaboration'). Competition is often placed as secondary to this, as are concerns around trusted research, e.g. "Developing and maintaining international collaboration is essential to the strength and success of UK R&D, enabling the UK's world-leading research and innovation sector to get the most out of international scientific collaboration while protecting intellectual property, sensitive research and personal information." Still, there are references to competing for international talent and wanting to improve activity in relation to 'competitor nations'.
    - **Improving research integrity and public trust in research** is framed as part of maximising the benefits of research (rather than framed as communicating successes or having a good reputation). Open research is key to this. There is also recognition of the distorting effects of incentive structures and the impact this can have on good research practice, e.g. "It also means tackling the problematic uses of metrics in research and driving up the integrity and reproducibility of research." (related to below).
    - **Reward and recognition structures need to be updated.** There is recognition of distorting effects on research integrity (above), but also the policy argues for reinforcing positive behaviours (like collaboration, open research and culture support). There is also reference to researchers feeling there is excess competition for funding which hinders creativity and risk-taking in research approaches.
    - **Neoliberal values persist** in the form of deregulation (e.g. focus on reducing bureaucracy and promoting innovation through the regulatory system) and in strengthening the private sector. However, these are much less prominent than in the S&T Framework.

Summary: This policy is aimed at maximising the benefits coming out of the R&D sector, not just by boosting investment/productivity but also by addressing fundamental problems raised by people within the sector. This includes issues raised in the Wellcome Trust report about bullying, harassment and discrimination, the need for more diversity in the workforce, the narrowing of research ambitions and approaches, the effect of short-term, funding often focused on applied research, distorting effects of research assessments, difficulties moving between academia and industry, and supporting collaboration. Other issues such as investment, regulations and international competition/security are covered but do not dominate. Throughout, the utility of research is positioned as the core purpose, but there are clear efforts to be inclusive in terms of language, both in terms of discipline and in terms of research ambition (referring to blue-skies research, discovery research, applied research and 'moonshot' research).

Mapping coverage

To visualise coverage of topics central to the concept of research cultures, discourses have been mapped onto the UKRI/Vitae Research Culture Framework.

Section	Element	Addressed?	Notes
How research is managed and undertaken	Effective research governance and management	Yes	*The standards, structures and policies to ensure good research practice, integrity and equity.* There are multiple references to barriers to good research practice, the need for structures (e.g. reward and recognition) to support good research practice and one express mention of good research governance and ethics.
	Achieving the highest levels of research integrity	Yes	*Undertaking research with integrity, honesty and rigour to ensure confidence in the methods and results*. Specific mention of need for integrity and ethics as part of good research.
	Actively promoting sustainability	Partially	*Minimising the impact of research on environmental, social and economic resources.* Throughout, ensuring a 'greener' future is a key goal. Climate change is positioned as a major challenge faced by society. No specific mention of making research activities more environmentally sustainable.
How research ensures value	Taking an open approach to research	Yes	*Undertaking research that is openly accessible, collaborative and increases research integrity bringing public value and innovation.* Open research is positioned as a key thing to be encouraged as part of strengthening research cultures and maximising benefits from research. This includes sharing data, not just outputs.
	Communicating research	Yes	*Making research and knowledge available and accessible to all.* Specific mention of making outputs funded by government freely available to the public. Also the mission of the policy is "to inspire and enable people from all backgrounds and experiences to engage and contribute to research and innovation and show that science is for everyone."
	Realising impact	Yes	*The translation of research into value for communities, society, culture and economy.*

			Reference throughout to the translation of research into value. This is very much positioned as the ultimate purpose of research and therefore it is heavily encouraged.
How people are supported	Recognition and assessment	Yes	*Broadening what is recognised and valued as contributing to the research endeavour.* Policy takes a broad view of excellence, as shown in the different case studies used throughout the policy and in the inclusive text choices in the main policy. The different staff groups that contribute to the research are recognised.
	Employment and conditions	Yes	*The recruitment, employment and progression of a diverse research workforce.* The need to attract, train and retain staff is mentioned multiple times and has its own section. This includes different staff groups. Supporting moves between sectors is also mentioned.
	Embedding professional and career development	Yes	*Integrating professional and career development into all career stages.* Mentions the need for training at all career stage.
	Ensuring inclusive & healthy working environments	Yes	*Environments where all individuals are free to be themselves, included feel well supported and confident to express their views.* Mentions the need to address bullying, harassment and discrimination that happens in research cultures. And the mission is to make everyone feel included in research.
How individuals engage with others	Providing effective leadership and management	No	*The performance and line management of individuals.* No mention of performance or line management
	Empowering individuals	No	*Individuals having ownership and responsibility for their own careers.* No mention of individual responsibilities in careers
	Building collegiality	Partially	*The creation of healthy, inclusive, supportive communities.* Encourages collaboration throughout and discusses need for inclusive cultures. However, this section is also about sense of belonging, importance of individual behaviours and access to networks, which isn't really mentioned.

Research and Development People and Culture Strategy

Link to policy: https://www.gov.uk/government/publications/research-and-development-rd-people-and-culture-strategy

Contextualising the policy

Temporal context

Immediate context

- Published in 2021, having been promised in 2020 R&D Roadmap. UK Gov says it was "developed as a result of commitments made in the R&D Roadmap".
- Published alongside launch of the Innovation Strategy, which aims to make the UK a global hub for innovation and increase business investment in R&D. The Innovation Strategy also includes announcement of the Global Talent, High Potential Individual and Scale-Up visa routes, all aimed at attracting research talent to the UK.
- Follows consultation with academia, industry and charities with organisations such as Universities UK and GSK. This is positioned as a 'call to action' to invite the sector to work with government to drive lasting cultural change.
- P15 has a diagram for how this vision will be delivered, which includes early announcements, policy interventions and longer-term policy interventions. While there have been some subsequent related policies like the Innovation Strategy, Independent Review of Bureaucracy, Independent Review of R&D Landscape, the culture piece hasn't really filtered through into future long-term policies. To a large extent, other ministers took over and even the continued things like bureaucracy review got framed differently.

Medium term socio-political context

- 2021 – Public used to hearing from scientific advisors, SAGE, etc. on a regular basis; though some hesitation towards 'experts' from sections of society.
- Active attempts to keep economy strong during a pandemic (e.g. eat out to help out, no stamp duty, etc.)
- R&D seen to have renewed importance for building back the country's health, society and economy after the effects of the pandemic
- 11 years of conservative government – 2 year into Johnson government.

Contemporary socio-political individuals, organisations and structures

- Published by BEIS – Business, Energy and Industrial Strategy, which had science, research and innovation in its remit, as well as business, industrial strategy, energy and clean growth, climate change. Core priority at this time was to:
    - fight coronavirus by helping businesses to bounce back from the impacts of COVID-19, supporting a safe return to the workplace and accelerating the development and manufacture of a vaccine
    - tackle climate change: reduce UK greenhouse gas emissions to net zero by 2050
    - **unleash innovation and accelerate science and technology throughout the country to increase productivity and UK global influence**
    - back long-term growth: boost enterprise by making the UK the best place in the world to start and grow a business
- Rishi Sunak, Chancellor of the Exchequer at this point.
    - Very prominent in the government's financial response to COVID-19, particularly the economic impact.
    - Sees R&D as core to economic health, e.g. announcing doubling of investment in public funding in March 2020: "UK's success in the global economy will be rooted in innovation and cutting-edge technology... The government will invest that money in the people, ideas and industries that will cement the UK's world-leading position in science and technologies…"
- Boris Johnson, Prime Minister at this point
    - Prior to becoming PM, Johnson had shown very little interest in science, technology and research. There are multiple accounts of him dismissing scientific experts (e.g. on climate

change) and only supporting highly visible technological/engineering projects such as the Emirates Air Line cable car or the Thames Estuary Airport (Boris Island).
    - After becoming PM, in his inaugural speech he mentioned changing tax rules to incentivise investment in research and, shortly after becoming PM, committed to increasing investment in R&D.
    - His premiership was largely preoccupied with Brexit and COVID.
- Amanda Solloway, Parliamentary Under Secretary of State for Science, Research and Innovation, leads on this policy (note: This is a mid-level position, created in 2020 from the former minister of state for Universities and Science, which was split into this role and Minister of State for Higher and Further Education – given to Michelle Donelan).
    - No University degree – entered politics later in life (2015 – aged 53) having worked her way up through retail and human resources roles at charities and local employers.
    - Previously been heavily focused on constituency matters – no clear link to the science brief.
    - Only in post Feb 2020 – Sept 2021 but involved with publication of the R&D Roadmap and then oversaw the R&D People and Culture Strategy. In this time, she made multiple positive remarks about improving research cultures, research careers and reforming research assessment to address perverse incentive structures (e.g. initiating FRAP).

Epoch

- Dominant neoliberal ideology in HE governance

Policy drivers

- "Through this strategy we will set out actions that will bring the best out of people and enable talent and ideas to flow freely between academia, business and other sectors. We will ensure that everyone's contribution is valued, and the UK has an outstanding research culture that truly supports discovery, diversity and innovation, and offers varied and diverse careers that bring excitement and recognition."
- "People are at the core of R&D, so there is nothing more important than how we attract, develop, and retain enough people within research and innovation to meet this ambition. We need to unleash a new wave of talent: attracting, developing and retaining diverse people with the right skills, working in an environment that nurtures and gets the best out of everyone."
- Basically, this policy is aimed at tackling issues with cultures, careers and talent to ensure that the R&D sector is able to deliver the broader R&D roadmap.

Warrant

- The policy uses a mix of political and accountability warrants to justify the policy in terms of the benefits that it will bring for the R&D sector and for the nation, e.g. for "our prosperity, our health and wellbeing, our mission to achieve net zero, and our place in the world."
- The whole policy is structured around current challenges, desired outcomes and actions to get there, e.g. for culture, the desired outcomes are:
    - A positive, inclusive and respectful culture
    - Recognition and reward of all the people and activities that lead to excellent research and innovation
    - Bullying and harassment is no longer an issue in the sector
    - People feel confident to engage with and contribute to research and innovation
    - Frameworks, assessment and incentives at an institutional level that encourage positive behaviours and support an inclusive culture
- These are not all entirely focused on national interest but are things that people would struggle to argue against. This positions the policy as a natural thing that people would want to support, thereby supporting the 'call to action' and encouraging people to collaborate with the Government to deliver the policy.
- Evidentiary warrant used in multiple places, e.g. demonstrating the gender gap in research roles p23.

Deconstructing the policy

Legitimation (Process by which policies are justified by attachment to dominant norms and values)

- Authorisation – reference to tradition, authority, custom, law or institutional authority (unchallengeable)
- Rationalisation – reference to value/usefulness of a social action. The face-validity of that action then represents a 'naturalised' ideological position.
    - Largely, this is rationalised as addressing the UK government's R&D ambitions as set out in the R&D Roadmap.
    - Introduction has a table which sets out the intended outcomes of the policy, therefore outlining the value of the actions. This naturalises the following as desirable:
        - Skilled workforce across all roles to deliver strong R&D
        - Dynamic, varied and sustainable career paths
        - Good leadership, fostering positive and inclusive cultures
        - Attracting and retaining diversity of people
        - Clear reward and recognition of "all the people and activities" that lead to "excellent" R&D
        - Engagement with society, open science
        - Positive behaviours and inclusive cultures
        - Good, efficient governance
        - Appropriate career development
        - Attraction of/competition for talent internationally
- Values/topics that are appealed to in rationalisation include:
    - Research utility:
        - "This will put science, research and innovation at the centre of our prosperity, our health and wellbeing, our mission to achieve net zero, and our place in the world."
        - Vision includes wanting to make a more 'productive' R&D sector.
        - Policy justification frames as achieving research utility: "To realise our science superpower ambitions and to maximise the social and economic benefits of our investment in R&D across all parts of the UK, we need a sector that is able to attract, retain and grow a workforce with the right skills and in the right numbers."
        - Research utility achieved through improving cultures, research careers, inequalities, research assessment and leadership.
    - Building a stronger R&D sector by building stronger workforce (not just development but also recruitment, retention and promotion across all roles):
        - "We need to unleash a new wave of talent: attracting, developing and retaining diverse people with the right skills, working in an environment that nurtures and gets the best out of everyone."
        - "Attracting enough people with the right skills, across all roles"
        - "We need to work across the sector to identify where there are skills gaps, anticipate future needs, and ensure we have the workforce to match the UK's R&D ambitions."
        - This includes all roles, not just academic/research roles. The goal of the strategy is "*Redefining what it means to work in R&D in the 21st Century – valuing all the roles that make it a success and ensuring the UK has the capability and capacity it needs."*
        - Recognition of the need for additional people to deliver aims: "The need for R&D workers is growing faster than the UK workforce as a whole. There are identified skills shortages in several sectors and places as well as in particular roles, for example technicians and engineers."
        - And that people also need training to be able to deliver ambitions. One of the issues listed with current cultures is "failure to develop and support people with potential". The policy says it will "
        - And that research careers (in the broadest possible sense) need to be improved, in terms of cross-sector movement, precarity, competition for permanent jobs: "People may be driven to consider other careers to increase financial security and enjoy a more stable family life." AND "The constant competition for funding also increases precarity, particularly at early career stages, and increases the difficulty of securing long-term roles." AND "However, there is scope to widen entry routes into and improve the circulation of people and ideas across the R&D system. In particular, it can be difficult to return to academia after spending time in business, or on a career break."

        - “We need to provide the right support to talented people throughout their careers, whether they are already in the UK or thinking about a move.”
    - EDI
        - The whole vision for the strategy is centred on inclusion and diversity: “a more inclusive, dynamic, productive and sustainable UK R&D sector in which a diversity of people and ideas can thrive.”
        - Also in the culture goal, it says “working together to make lasting change happen so that researchers and innovators with diverse backgrounds and ways of thinking can thrive and do their best work here.”
        - “Across the whole sector, there is a strong business case for increasing the diversity of people and ideas and for working in partnership to drive progress based on what works.”
        - “Frameworks, assessment and incentives at an institutional level that encourage positive behaviours and support an inclusive culture”
        - “We will create lasting change by working with the sector to embed a culture that welcomes and values difference, brings people from various backgrounds with various lived experiences into the research and innovation system and increase its accessibility.”
        - “The cultures of research in the UK, particularly in academia, need to be more inclusive and supportive and show that everyone’s contributions are valued.”
        - “We need to tackle these issues to attract and retain a diverse research community, where people can freely pursue their research agenda, where everyone can reach their potential and R&D is a great place to work.” – presenting EDI not as a contesting thing but something that is naturally desirable.
        - Under ‘outcomes we want to achieve’: “There is a positive, inclusive and respectful culture that attracts a diversity of people to work and thrive in R&D in the UK and encourages them to stay.”
    - Bullying and harassment
        - “Bullying and harassment is no longer an issue in the sector” – as a desired outcome
        - “encourage the recently established Forum for Tackling Bullying and Harassment to develop sector-wide definitions for all forms of bullying; and to establish clear guidelines to inform future policy and action.” – as a short-term action
        - “Other major areas of concern include diversity and inclusion across the whole sector and bullying and harassment, which has been noted as a significant problem by many academic researchers. Of the factors explored in a 2019 survey, incidents of bullying and harassment were rated as having the most negative influence on research integrity”
        - “This behaviour has serious impacts on individuals, on organisations, on research integrity, and on productivity. We need to create an R&D system and culture where bullying and harassment, of any type, is unacceptable and successfully stamped out. We need a focus on prevention and creating supportive environments in which these behaviours can be tackled at root.”
    - Responsible research assessment
        - “This will examine the incentives, strengths and weaknesses of the current approach to identify improvements which would positively impact on the culture of, and people working in, R&D.”
        - “Recognition and reward of all the people and activities that lead to excellent research and innovation” – does use the word excellent which we know is a loaded term
        - “drive adoption of the ‘Résumé for Researchers’ narrative CV which broadens the range of experiences and accomplishments that are recognised.”
        - “We need to ensure that assessment and incentives take into account everything that contributes to excellent research and innovation, in industry as well as academia. These incentives must also encourage positive behaviours to build the inclusive culture we are aiming for… This will help to diversify career pathways, particularly in academia where there is too often a focus on the individuals who lead research teams.”
        - “The cultures of research in the UK, particularly in academia, need to be more inclusive and supportive and show that everyone’s contributions are valued.”

        - “Assessment frameworks help shape the culture of research institutions. We need to ensure that they encourage positive research cultures. The frameworks and incentives in the R&D system are seen by many as a key contributing factor to the current concerns about research culture in the UK.”
        - “These incentives must recognise all the contributions required for excellent research and show that who and what is valued is changing.”
        - “the demands of different funders and the need to continually compete for funding has increased pressures and the burden of bureaucracy on researchers. As discussed in previous sections, these pressures (coupled with the narrow focus on grant income and publication record in academic research) can lead organisations and individuals to underplay wider contributions.”
    - Leadership
        - “Great leadership skills at all levels… ensure leadership and management skills are actively developed and supported in talent programmes and in grant holders’ terms.”
        - “People are often promoted to leadership roles because of their expertise and reputation within their field. Less consideration is given to the skills and behaviours needed for leadership of people and teams… there are also too many examples of poor leadership practice throughout the sector, particularly in academia” – mirrors what the Wellcome Trust report said.
    - Collaboration
        - Very big on collaboration. Not just research collaborations (cross-sector and interdisciplinary) but also just collaborative approaches to working and making improvements.
        - Also recognises that collaboration allows UK to benefit from the talent of international researchers, without having to compete to be able to call them UK researchers: “The UK must renew its position as a collaborator of choice with a strong, compelling offer to both international and domestic talent.”
        - “create a Good Practice Exchange to develop, test, evaluate and highlight ideas to improve culture sourced from the community, bringing together people from across the sector to work creatively.”
        - “It builds on all the work already being done by people and institutions across the sector to make the UK a truly great place for research and innovation, and invites the sector to work with us to drive lasting change.”
        - “It will take a concerted and sustained effort from all of us: government, funders, industry, academia and everyone as individuals. I really believe we can and must all buy into a whole sector vision for change, and I am pleased that government is leading the way with clear commitments.” AND one of the goals of the strategy is “Co-creating a vision of the culture we want to see within the sector - working together to make lasting change happen so that researchers and innovators with diverse backgrounds and ways of thinking can thrive and do their best work here.”
        - “The UK must retain and extend its position as a collaborator and destination of choice with a strong and compelling offer to both international and domestic talent – including those at the top of their field. The UK research base is well recognised for its strong collaborative nature as shown by international comparisons where the UK ranked second on the percentage of international co-authored papers.” – collaboration but also competition for talent
        - “work with funders and the research and innovation community to co-design a joined-up talent offer, open to the diversity of people and across all career stages, connecting sectors, disciplines and working cultures.”
    - Competition
        - For the ‘talent’ goal of the policy, it foregrounds competition for talent “Renewing the UK’s position as a global leader in R&D in attracting, retaining and developing talented people, making sure careers in UK R&D are attractive to talented individuals and teams both domestically and internationally.” However, in the section on ‘talent’ it does recognise that international talent can be attracted to the UK in the form of collaborations, without necessarily needing them to be employed in the UK.
        - International competition used to justify addressing issues in cultures, particularly research careers: “As competition for talent intensifies, we recognise that there are areas of research and career stages where support can be improved.”

        - International competition is actually justified, not just as something that is inherently good that we are the best. “The international flow of workers in research and innovation is a key dimension of international networking and knowledge exchange. Over 70% of UK-based researchers have been involved in international collaboration and international mobility is the most important determinant of career progression after academic publications. Research teams with a balanced mix of domestic and international researchers also tend to be more productive in terms of publication record.” P33
        - However, with regards to competition within research culture, e.g. competing for funding, the strategy acknowledges that there is an issue “Incentives, particularly in academia, that value too narrow a range of contributions, drive undue pressures and undermine research in both its culture and its outputs.” And says it will address it with responsible research assessment: “the need to continually compete for funding has increased the burden of bureaucracy on researchers. We need to better understand how the structure of funding for UK research affects its sustainability and resilience to shocks and how it influences the culture and behaviours of the people working in it.”
        - “The constant competition for funding also increases precarity, particularly at early career stages, and increases the difficulty of securing long-term roles. This precarity in the early stages of their career, particularly in academia, is often exacerbated by team structures and the short-term contracts that typify post-doctoral research roles. This working environment can put off many - particularly women and those from less advantaged backgrounds - from pursuing long-term careers in research. This impacts on the retention of key staff and on the wellbeing and diversity of people in the sector. People may be driven to consider other careers to increase financial security and enjoy a more stable family life.”
        - “The UK will be the most exciting place in the world for top research and innovation talent”
        - “review our funding offer to globally mobile talent, to retain, attract and support the very best researchers, innovators and their teams, opening up opportunities for talented people to pursue ambitious, long-term goals in the UK.”
        - “drive reforms to improve high skilled migration routes for innovators and entrepreneurs and top talent looking to build careers in the UK, including expansion of the UKRI short-term mobility scheme” – note: published alongside various additional visa routes
        - “Across the world, as countries rebuild their economies following the pandemic, the competition for international talent is set to increase... The UK needs to address this competition for research and innovation talent, taking account of Covid 19 impacts on the UK’s R&D workforce and the changes arising from EU Exit. Both domestic and international talent are vital for the health of the whole UK system.”
    - Deregulation (reducing bureaucracy)
        - Framed as reducing bureaucratic burden on the sector to enable researchers to focus on research, whilst still maintaining necessary governance to foster positive cultures: “The frameworks and incentives within the research system help to shape the culture, values and behaviours within the sector... Through the Review of Research Bureaucracy, we will look to ensure that these systems encourage the positive culture we want to see while minimising the bureaucratic overhead.”
        - FRAP: “We will work to ensure that alongside delivering excellent research and impact, the programme supports a positive research culture, while simplifying and reducing the administrative burden on the higher education sector.” – neoliberal still because it’s about accountability with minimal regulation.
        - Initiates a new R&D workforce survey (meant to be annual, seems it ran once in 2022 under this policy and then again in August 2024 – new government, but probably already had plans in place that got paused with the election). The intention of this is to gather data to monitor implementation of the strategy and to inform policy development. It could be argued that another survey is bureaucratic.
    - Open research
        - “develop an ambitious new approach to supporting public engagement with research and innovation, through stakeholder engagement and evidence and insight gathering.”

        - "pilot experimental approaches to public dialogue and community-led research and innovation."
        - Desired outcome: "support Open Access policy, incentivising best practice as part of the wider open research ambition."
        - "This is a significant impediment to creating a research culture open to the views of, and collaboration with, the wider public. Seeing R&D as a shared endeavour across society is vital for the health of the sector and can only be really achieved if we act not only for people but with them."
        - "To break down the barriers between research and innovation and wider society, we need a fundamental transformation in which researchers, policymakers and the public view research and innovation as a collective endeavour of the whole of society. We must engage widely to understand the perspectives and priorities of diverse communities, and co-create the opportunities that research and innovation offers to enrich lives locally, nationally and globally."
        - "For research and innovation to become a shared endeavour across society we need to create more open and inclusive practices that value the knowledge and experience of diverse communities… We will also build on the lessons learned from pilot projects on citizen science and local engagement to develop new approaches to empower and support local communities around the UK to explore questions that matter to them."
- Moral evaluation – No notes
- Mythopoesis – No notes

Intertextuality/interdiscursivity (Reference to other texts, genres, and discourses)

- Also includes merging of discourses, borrowing bits to lend credibility or recontextualization (e.g. merging sector talk of 'culture' into government priorities related to productivity, economy growth, etc.
- Adopts 'global science superpower' phrase from other policies, e.g. R&D Roadmap and government speeches. This time to justify the policy in terms of addressing that gov aim.
- Uses 'R&D' or 'research and innovation' throughout. Very clear that it relates across the R&D sector to academia, industry, and public sector. Repeats this broad scope in an inclusive way throughout. 'Science' is usually used as part of 'science superpower' or as part of a list of 'research, science and innovation'.
- Aligning with arguments made by UCU? In early 2020 there was the largest wave of strikes ever seen on UK campuses, focused on secure fair pay, conditions and pensions. Potentially the wording around "everyone working in R&D to be able to enjoy a fulfilling and sustainable career and for our research culture to be as inclusive and supportive as possible" is speaking to this?
- References made to several sector initiatives on research culture, including Wellcome Trust report, Royal Society culture work, Russell Group research culture report and Nuffield Bioethics culture report. Desired outcomes and intended actions of the policy appear to be directly addressing concerns raised by the sector, e.g. "As your minister, I have heard loud and clear that there are long-standing issues surrounding people and culture within our R&D sector…" Repeated citation of research and highlighting existing data, e.g. "While the overall gender gap is slowly narrowing (the proportion of research roles filled by women has increased from 20% to 22% over 5 years), much faster progress is needed, and significant gender and other inequality remains. For example, only 27% of professor contracts are held by women. Only 22% of data and AI professionals in the UK are women, and this drops to a mere 8% of researchers who contribute to the pre-eminent machine learning conferences." P23 Things cited are a range of higher education institute research, funder data, higher education statistics, research performing organisations reports.
- Mentions working closely with bureaucracy review "to ensure changes to systems and processes encourage the positive culture we want to see." And "review of existing concordats and accreditations to ensure that they drive positive change while minimising bureaucracy."
- Refers to "those from less advantaged backgrounds", which directly challenges traditionally conservative ideas of meritocracy. However, most of the rest of the policy refers to 'supporting talented people' and 'developing people with potential', which maybe is more aligned to meritocracy discourses as it's suggesting people have to already have the quality, not that we want to remove barriers for everyone to allow them to become talented. Also refers to action "to review our capacity

to attract and develop the most outstanding research and innovation talent across all career stages."

Evaluation/Appraisal

- No notes on this

Presupposition/Implication

- Presenting phrases as facts
    - "As the UK Science Minister, I am privileged to see first-hand how it takes a brilliant and diverse mix of people from all walks of life to build the world-class research and innovation teams we have in the UK."
    - "People are at the core of R&D, so there is nothing more important than how we attract, develop, and retain enough people within research and innovation to meet this ambition."

Lexico-Grammatical Construction

- No notes on this

Themes

- **Collaboration over competition:** The whole document is framed in a collaborative way – it's called a 'call to action' for the whole sector to work together with the government to improve research cultures. The value of research collaborations (including cross-sector and interdisciplinary) is promoted throughout. While international competition for talent and researchers is prominent, this is justified as supporting government ambitions and backed with evidence of why attracting international researchers is beneficial (for organisational reputation, for productivity, for research careers). This contrasts with other policies where international competition is positioned as inherently desirable in its own right. The desire to attract international researchers is also used as a justification for improving research cultures – potentially bringing onboard people who would rather focus on economics than cultures. There is also recognition that international collaborations allow the UK to benefit from international talent, without the individual needing to be UK based. With regards to internal competition, there is clear acknowledgement of the issues that high levels of competition for jobs and funding are causing in research cultures and has actions targeted at addressing this to promote sustainability.
- **Research utility:** The core purpose of research and innovation is seen as driving prosperity and addressing economic and societal challenges. This is used to justify the strategy of improving research cultures as the benefits of research will be delivered/maximised through improving cultures, research careers, inequalities, research assessment and leadership. As above, this is potentially introducing topics that are less valued in the conservative party (culture) with topics that are more valued (economics, research utility).
- **Neoliberal:** There are elements of deregulation in the strategy – the reducing bureaucracy review and FRAP are highlighted as tools for ensuring that bureaucratic systems are efficient. However, this is justified in terms of having systems that support positive cultures and positive behaviours, e.g. "We will work to ensure that alongside delivering excellent research and impact, the programme supports a positive research culture, while simplifying and reducing the administrative burden on the higher education sector." This still draws on neoliberal discourse because it's talking about accountability with minimal regulation. As above, this maybe aligns with other Conservative discourses and allows for the strategy to be justified in those terms. Similar to this, discussions about staff development often involve loaded terms associated with meritocracy e.g. 'supporting talented people' and 'developing people with potential'. (However, does also refer to "those from less advantaged backgrounds" in one place.)
- **EDI:** Promoting EDI is a core purpose of the strategy throughout, with the overall vision being centred on inclusion and diversity: "a more inclusive, dynamic, productive and sustainable UK R&D sector in which a diversity of people and ideas can thrive." This is positioned as a naturally desirable thing, e.g. "We need to tackle these issues to attract and retain a diverse research community, where people can freely pursue their research agenda, where everyone can reach their potential and R&D is a great place to work."
- **Positive research cultures:** Similar to the EDI piece, other factors of positive research cultures (research integrity, open research, responsible research assessment, good leadership, collaboration, no bullying and harassment, sustainable research careers) are positioned throughout the strategy as naturally desirable and justified in terms of addressing the research utility and international competition goals. In many places, the topics covered reflect the concerns coming out of the sector, e.g. in the Wellcome Trust report. Sector discussions and reports are referenced throughout and data from existing literature is used to support actions to promote positive cultures. Specific concerns with academia are highlighted in several places.

Summary: The strategy covers a wide range of issues relating to research cultures (open research, responsible research assessment, good leadership, collaboration, no bullying and harassment, sustainable research careers) in a table and lists desirable outcomes against these. These are worded in a way that it would be difficult to disagree that the outcome is desirable and means that the values of promoting positive cultures are naturalised. To justify this, traditionally less contested (in conservative government) discourses related to research utility, international competition and neoliberalism (e.g. deregulation) are aligned with discourses on positive research cultures. The strategy as a whole is seen as addressing issues with research cultures so that the UK can be a science superpower and can be more attractive to talented researchers.

Mapping coverage

To visualise coverage of topics central to the concept of research cultures, discourses have been mapped onto the UKRI/Vitae Research Culture Framework.

Section	Element	Addressed?	Notes
How research is managed and undertaken	Effective research governance and management	Yes	*The standards, structures and policies to ensure good research practice, integrity and equity.* Includes "frameworks and incentives within the research system help to shape the culture, values and behaviours within the sector" as a desired outcome of the strategy.
	Achieving the highest levels of research integrity	Partially	*Undertaking research with integrity, honesty and rigour to ensure confidence in the methods and results*. No specific mention of boosting confidence in research but does refer to 'keeping the UK at the forefront of research integrity' with regards to open research as part of a health research culture.
	Actively promoting sustainability	No	*Minimising the impact of research on environmental, social and economic resources.* No mention of environmental impact of research.
How research ensures value	Taking an open approach to research	Yes	*Undertaking research that is openly accessible, collaborative and increases research integrity bringing public value and innovation.* Includes an action on incentivising best practice in open research.
	Communicating research	Yes	*Making research and knowledge available and accessible to all.* Repeatedly mentions opening up research to the public/having everyone engage in research.
	Realising impact	Yes	*The translation of research into value for communities, society, culture and economy.* Reference throughout to the translation of research into value. This is very much positioned as the ultimate purpose of research and therefore it is heavily encouraged.
How people are supported	Recognition and assessment	Yes	*Broadening what is recognised and valued as contributing to the research endeavour.*

			Yes, repeated mention of everyone's contributions being valued and acknowledgement that existing assessment procedures have issues.
	Employment and conditions	Yes	*The recruitment, employment and progression of a diverse research workforce.* Yes, this is a core aim of the strategy.
	Embedding professional and career development	Yes	*Integrating professional and career development into all career stages.* Repeated reference to developing all roles and all career stages.
	Ensuring inclusive & healthy working environments	Yes	*Environments where all individuals are free to be themselves, included feel well supported and confident to express their views.* Desired outcome of 'no bullying and harassment' and repeated reference to 'everyone thriving'
How individuals engage with others	Providing effective leadership and management	Yes	*The performance and line management of individuals.* Acknowledgement that poor management practices exist, particularly in academia and actions to address this, e.g. UKRI leadership programmes
	Empowering individuals	No	*Individuals having ownership and responsibility for their own careers.* This section is about having clear lines of responsibility, space for reflection on ambitions, encouraging innovative and entrepreneurial mindsets. This isn't really covered in this strategy, but may also be a more internal thing.
	Building collegiality	Yes	*The creation of healthy, inclusive, supportive communities.* Encourages collaboration throughout and has an overall aim for inclusive cultures, where everyone feels supported. There is also recognition that interpersonal behaviours shape cultures and affect research. There is a commitment to tackling negative behaviours at the root.

UKRI Strategy

Link to policy: https://www.ukri.org/publications/ukri-strategy-2022-to-2027/ukri-strategy-2022-to-2027/

Contextualising the policy

Temporal context

Immediate context

- Published in March 2022, recovery from COVID-19 pandemic in full swing
- UKRI's response to a whole load of UK research policies published 2020-2020, including Research and Development (R&D) Roadmap, Innovation Strategy, Plan for Growth, R&D People and Culture Strategy, Integrated Review, Levelling Up.
- Follows the publication of the Autumn Budget and Spending Review 2021, in which the government promised £20bn in public R&D investment by 2024-2025 and reform tax reliefs. Seen to outline how that additional funding will be spent but also key to meeting ambitions related to increasing investment in R&D to 2.4% GDP.
- Strategy forms the basis of UKRI getting long-term budget allocations rather than year on year.
- Created a unified strategy for all research councils

Medium term socio-political context

- Only UKRI's second overarching strategy (previously Strategic Prospectus in 2018 as its first one after being created). Clearly UKRI prefers longer term strategies. This is the first strategy since the Brexit deal and expiry of the transition period so it communicates UK's post-Brexit strategy for funding R&D. Published while association to Horizon Europe was still not settled.
- R&D seen to have renewed importance for building back the country's health, society and economy after the effects of the pandemic (which was thought might be ending)
- 12 years of conservative government – 2.5 years into Johnson government.
- Economy relatively strong coming out of the pandemic but starting to see inflation increases from international factors like supply chain disruption and Russian invasion of Ukraine in Feb 2022. Strategy is likely to have been written largely during a period of positive growth after the pandemic.

Contemporary socio-political individuals, organisations and structures

- Published by UKRI, a non-departmental public body of the Government of the United Kingdom that directs research and innovation funding, funded through the science budget of the (then) Department for Business, Energy and Industrial Strategy.
    - UKRI is seen as having a "key role in delivering the government's ambitions for the UK as a global leader in research and innovation".
- Dame Ottoline Leyser, CEO for UKRI
    - Long-term interest in research culture and its effects on the quality and effectiveness of the research system.
    - Prior to becoming CEO for UKRI, was active in initiatives to promote inclusive cultures in research and spoke out about challenges in existing research cultures. As CEO, this has continued, with frequent discussions about culture at sector events and in speeches.
- Sir Andrew Mackenzie, Chair for UKRI
    - Not as visible as Ottoline Leyser in the sector. More of a business guy.
    - Prior to this had a career in oil and gas and is currently Chair of Shell.
- Under-secretary of state for science, research and innovation now George Freeman since Sept 2021 (not Amanda Solloway who lead R&D People and Culture Strategy).
    - Held multiple science roles over nearly a decade (under sec life sciences; MoS for transport)
    - Championed R&D investment, e.g. establishment of ARIA, association to Horizon Europe, calling for funding of specific areas of innovation to address societal issues (e.g. agrifood, dementia care, transport innovation)
    - Does not agree with 'culture wars' but does think there is need to be cautious that EDI compliance doesn't add to bureaucracy. Says "What we really need to do is make sure the innovation economy is creating opportunities all around this country for Black and minority ethnic kids who are not in the white, middle-class Oxbridge stream."

(https://www.researchprofessional.com/0/rr/news/uk/politics/2024/5/Interview--Unfinished-business.html)
    - Lot of the focus of the interview above is on reform of the spending review process to make it more long term, investment in priority research areas (aligned with S&T Framework), competing for talent to avoid brain drain (by changing visa schemes) and UKRI running more like a business with more accountability and output-oriented delivery.
- Secretary of State for BEIS is Kwasi Kwarteng – time in this role largely focussed on energy crisis.

Epoch

- Dominant neoliberal ideology in HE governance

Policy drivers (stated aims and goals of the policy)

- Strategy aims to "deliver the ambitions of the UK government, securing benefits from research and innovation for all citizens". This includes the UK being "a global science superpower and an innovation nation"

Warrant

- Evidentiary warrant – Not used
- Accountability warrant – justifying the policy based on intended results and outcomes
    - Lists all the things that the strategy will do, e.g. "enhancing our global discovery research and technology leadership, attracting businesses and talent from around the world" and "strengthening the deep and enduring international science and technology partnerships needed to make the UK a global science and technology superpower".
    - Structured around objectives
- Political warrant – justifying the policy based on national interest/public good
    - Intro is largely political warrant, based around UK recovery, being a science superpower and having an innovation-led economy, and the presenting these as inherently desirably things that are in the national interest.
    - "We must seize this historic moment of national reinvention to transform our economy and our society, embedding research and innovation across them and creating opportunities and benefits for all."
    - "Working together, we have the opportunity to harness the extraordinary potential of research and innovation to fuel the UK's recovery."
    - "We work to deliver a dynamic aligned portfolio of investments on behalf of the UK taxpayer to support a creative and agile research and innovation system that drives economic, social, environmental and cultural benefits for all citizens."
    - "We will empower researchers, innovators and entrepreneurs to turn challenges into opportunities, driving up prosperity and wellbeing across the UK and globally."

Deconstructing the policy

Legitimation (Process by which policies are justified by attachment to dominant norms and values)

- Authorisation – reference to tradition, authority, custom, law or institutional authority (unchallengeable)
- Rationalisation – policy is justified throughout in terms of what the issues are, what UKRI will do to tackle it and stating that it will benefit the UK (usually in terms of economy, societal benefits, increasing research productivity and quality) but the actions listed are very rarely concrete (e.g. we will support and empower multi and interdisciplinary networks that enable diverse research and innovation communities to exchange knowledge and ideas and build new collaborative partnerships). Rationalisation via appeal to:
    - Research utility
        - "We are at one of the most important and exciting times in the history of research and innovation in the UK. The rate of discovery and technological advance is astonishing, with unprecedented opportunities to create value for society and the economy."
        - "We must seize this historic moment of national reinvention to transform our economy and our society, embedding research and innovation across them and creating opportunities and benefits for all."

        - "Working together, we have the opportunity to harness the extraordinary potential of research and innovation to fuel the UK's recovery."
        - "It [the UK Government] has put science and technology at its heart, creating the new National Science and Technology Council (NSTC) chaired by the Prime Minister, recognising the centrality of research and innovation to the future of every citizen in the UK: our prosperity, security and national identity… [policies] recognise the vital importance of research and innovation to our futures, locally, nationally and globally."
        - "We work to deliver a dynamic aligned portfolio of investments on behalf of the UK taxpayer to support a creative and agile research and innovation system that drives economic, social, environmental and cultural benefits for all citizens." – really positioning this as something that is naturally beneficial, justifying public funds for research, clarifying it is on the condition of non-academic impact.
        - "We will empower researchers, innovators and entrepreneurs to turn challenges into opportunities, driving up prosperity and wellbeing across the UK and globally."
        - "Research and innovation enrich and improve lives and increase prosperity by creating, applying and delivering value from new knowledge and ideas."
        - "delivering new insights and understanding to tackle social, economic, cultural and place-based disparities, and improving outcomes for individuals, families and communities."
        - "The UK's world-class research and innovation is the foundation of our health and wellbeing, our economic prosperity and our nation's global influence."
        - "For research and innovation to thrive, they must serve the society that funds them."
        - Sub-section of research utility on focusing on government priorities:
            - "build greater agility into our funding schemes so that we can adapt quickly to changing circumstances and priorities"
            - "We should be investing wisely to secure competitive advantage in emerging technologies and create opportunities for UK businesses in expanding global markets such as: life sciences, space, green energy, AI, fintech, the creative industries." – not the same as S&T Framework but UKRI strategy predates. Still focuses attention down to limited disciplines.
            - "We will work with our partners and stakeholders in government, business, the public, the wider research and innovation sector and international partners to understand their priorities and opportunities, ***including those identified by the National Science and Technology Council*** (NSTC)."
            - "We have identified five strategic themes where, by working across UKRI and leveraging new and existing investment and activity, we will harness the full power of the UK's research and innovation system to tackle large-scale, complex challenges. These themes speak directly to national and global priorities including the government's NSTC priorities and underpin key sectors of the UK economy." [themes are building a green future; securing better health; tackling infections; building a secure and resilient world; creating opportunities, improving outcomes]
        - Objective 5 is 'world-class impacts' and details all the things that UKRI will do to support research utility, largely focusing attention on particular areas of high innovation.
        - "Innovation not only delivers new products and services, but it also transforms processes, supply chains, and public services. It creates new business models and enables all kinds of organisations to increase productivity and adapt to change."
        - "We will invest broadly in knowledge exchange, enhancing connectivity to enable the productive use of research to meet real-world challenges, and transforming processes and ways of working across the private, public and voluntary sectors."
    - Competition
        - "The UK government has set a clear ambition for the UK as a global science superpower and an innovation nation."
        - "The UK leads the world in discovery-led research, ranking first for research quality in the G7 for more than a decade and we are home to some of the fastest growing and most innovative businesses globally. That leadership is an important component of our domestic prosperity, global identity and international relationships."

- “However, new countries have emerged as significant R&D nations and more will continue to emerge. We will not be able to match them all in the scale of our investment in research and innovation.” – Why is this an issue? Because we’re not at the top anymore, no further information on why it’s a problem if other nations have strong R&D too.
- “Through our strategy, we will power an innovation-led economy, securing the UK’s position as a leader in science, technology and innovation and a global partner of choice.”
- “Capitalising on the UK’s extraordinary talent and creativity, UKRI will put the UK at the forefront of solutions to national and global challenges, from climate change and healthy ageing to national security.” – Doesn’t say we’ll collaborate to address them, though that’s undoubtably what this would require. Just that we’ll be the ones at the forefront.
- “Our reach across sectors and across disciplines is central to delivering on the UK government’s global mission, enhancing the UK’s research and technology leadership, and securing a research and innovation system that is ***the envy of the world*** and a magnet for global talent, businesses and investment.”
- “The government wants to capture the power of this extraordinary talent and creativity to secure the UK’s status as a science superpower and innovation nation.”
- The four ‘shifts’ necessary to drive change are all aligned to elements sector discussions about improving cultures (diversity, connectivity, resilience, engagement) and are justified using existing issues and vague statements about being ‘key to success’ and benefits to society. However, they are all justified together afterwards as national interest, particularly in international competition.
    - “The aligned application of these principles for change (diversity, connectivity, resilience and engagement) will enhance the UK’s reputation as a globally leading research and innovation nation, boosting creativity, increasing agility and building a new relationship between research, innovation and society. UKRI is in a unique position to drive the shifts needed for our world-class research and innovation system to flourish.”
- Similarly, the six strategic objectives have the aim: “These objectives will ensure the UK has the people, institutions, infrastructures and partnerships to be a global science superpower with the world’s most innovative economy, attracting globally mobile business and talent.” This is expanded to elaborate on research utility, competitive advantage, strengthening R&I excellence, and economic growth. Each objective is based around the idea of being ‘world-class’, e.g. ‘’world-class people and careers’, ‘world-class places’.
- Objective number 1 is “world-class people and careers: Making the UK the top destination for talented people and teams” – and immediately quotes rankings.
- Objective number 2 is ‘world-class places: Securing the UK’s position as a globally leading research and innovation nation with outstanding institutions, infrastructures, sectors and clusters across the breadth of the country.” And continues to discuss how other countries are heavily investing in research and challenging the UK’s position so the UK needs to take a more strategic approach to “secure and advance our status as a global science superpower and leader in research and cutting-edge technologies.” The section then continues about growing capacity locally and nationally (e.g. levelling up) and taking a strategic approach to international partnering.
- Objective number 3 is “world-class ideas: Advancing the frontiers of human knowledge and innovation by enabling the UK to seize opportunities from emerging research trends, multidisciplinary approaches and new concepts ***and markets***.” This discusses UK’s competitive advantage for responding quickly to new discoveries, technologies and markets because of broad strength across multiple research disciplines and sectors – and explains how UKRI can develop disciplines and sectors further, bring expertise together to tackle complex problems.
- Objective number 4 is “world-class innovation: Delivering the government’s vision for the UK as an innovation nation, through concerted action of Innovate UK and wider UKRI” – immediately quotes government goal for the UK to be a global hub for innovation.

        - Objective number 5 is “world-class impacts: Focusing the UK’s world-class science and innovation to target global and national challenges, create and exploit
        - tomorrow’s technologies, and build the high-growth business sectors of the future” – states that “The UK is among ***a small group*** of nations that has the breadth and depth of research, innovation and technological capabilities ***to lead the response*** to global challenges.”
    - Collaboration
        - [following on from the competition theme about other nations increasing their R&D] “However, we have exceptional breadth and depth of expertise and can turn our size to our advantage. We can build a fully connected, creative and agile research and innovation system through which people and ideas can move freely, across disciplines and across sectors.” – Collaboration as a way to maintain competitiveness and efficiency of the system.
        - “joining up the academic, business, policy and investor communities to make the UK the best place in the world to innovate and invest in or grow a business” – collaboration for the benefit of competition again.
        - “strengthening the deep and enduring international science and technology partnerships needed to make the UK a global science and technology superpower”
        - One of the ‘shifts’ necessary to drive change is ‘connectivity’, breaking down silos nationally and globally to catalyse the flow of knowledge and skills through movement of people and ideas and UKRI supporting collaborations.
            - “Breaking down barriers, shifting the focus from individuals to diverse teams, and enabling the movement of people between business and academia, across disciplines and sectors, and between the UK and its international partners, is essential to ensure that ideas and knowledge flow freely.”
            - “Within the system, there are still too many silos separating people and knowledge, ***acting as a barrier to interdisciplinary work*** and reinforcing a model in which there is a linear, one-directional relationship between research and innovation.”
            - “This approach is detrimental to both research and innovation. To support creativity and capture its value requires a system which enables diverse, dynamic careers that span research and innovation, across disciplines and sectors.”
        - “There is much more we could do to bring disciplines and sectors together to catalyse new ideas, and to promote the adoption and diffusion of new tools and technologies, unlocking novel areas of research and accelerating innovation and commercialisation.” – Recognises some broader benefits of collaboration beyond international competition (although it is under a section about ‘world-class ideas’).
        - “We must catalyse ideas by promoting new ways of working and supporting unique collaborations, nationally and globally, that spark creativity and inspire breakthroughs and technological advances.” – followed by actions that do talk about strengthening research collaborations, but one still frames in terms of competition:
            - work with research and innovation funders in the devolved nations to forge connections between researchers and innovators in all parts of the UK, ensuring existing research partnerships can thrive, and new cross-UK working can be developed
            - strengthen global partnerships, enabling UK researchers and innovators to collaborate with the best in the world, and secure the UK’s position as a global research and innovation leader.
        - Priority 3.2: incentivise and remove barriers to multi and interdisciplinary working – has dedicated actions about supporting networks and catalysing approaches, but not very strongly justified. Just says it can lead to many exciting breakthroughs.
        - “Through our international activities, we will forge new equitable partnerships and deepen existing relationships with trusted partners, making the UK a collaborator and destination of choice for international talent, innovative companies and inward investment.”
    - Open research
        - ‘Engagement’ one of the ‘shifts’ necessary to drive change, largely focused on engagement with wider society (“breaking down barriers between research and

innovation and wider society / involving a broader range of people and organisations in the design and delivery of research and innovation"). Open research, though not directly referred to here, is positioned as being key to research utility and attracting talent.
        - "Research and innovation can often be perceived as activities separate from the rest of society. This hampers development of an open and collaborative culture in which everyone can participate and from which everyone benefits."
        - "Disconnection between research and innovation and wider society makes it harder to reap the benefits and harder to identify and prioritise the challenges people really care about."
        - "Fully embedding a range of insights, expertise and perspectives makes research and innovation outcomes more relevant, impactful and trustworthy." – Note: trustworthy, but nothing about research integrity.
        - "It also makes visible the many and varied careers available in research and innovation, attracting in a new generation of people to fuel an innovation-led economy."
        - (Priority 1.3) We will: "champion open research and innovation through bold and ambitious policy, practice and technological innovations to achieve transparent, collaborative and diverse research that operates globally"
        - "Collaborating internationally will help us discover new science, develop new technologies, enable UK companies to succeed globally and access overseas markets, improve our security and resilience, and increase our global influence."
    - Neoliberalism
        - Reminder that this is about public research funding – "UK Research and Innovation (UKRI) has a unique and critical role to play in this new landscape. We are the main investor of taxpayer's money in research and innovation, spanning all disciplines and sectors." Chooses to use the wording "taxpayer's money" to evoke ideas of efficiency and accountability
        - Private sector investment – "This must attract more than double that in private sector R&D investment." AND "creating the conditions for increased private sector investment in research and development"
        - R&D as key to growing economy – "supporting thriving research and innovation clusters across the UK, creating diverse high value jobs and local economic growth" AND "catalysing growth in key sectors of our future economy, such as space, life sciences and the creative industries"
        - "reducing bureaucracy and ensuring our operating systems and processes are effective and efficient to deliver the best return for the UK taxpayer." – as part of 'resilience' shift
        - "The removal of barriers across the research and innovation system must be matched by the removal of barriers between research and innovation and wider society." – Suggests that deregulation and open research are aligned.
        - "Underpinning the delivery of these outcomes is our commitment to being an efficient and agile organisation, tackling bureaucracy in the system, maximising value for the taxpayer and working in a more connected way across our councils to increase the impact of our activities and investments."
        - Objective 6 is 'world-class organisation: Making UKRI the most efficient, effective and agile organisation it can be - "We will transform UKRI to be a more confident, efficient and agile organisation, maximising return for the UK taxpayer.
            - Commits to delivering a transformative efficiency plan with streamlined processes to reduce bureaucracy, costs and maximise value to the taxpayer.
    - Workforce – developing/supporting skills, increasing diversity
        - Linked directly to research utility to justify: "To drive our innovation-led economy, we must support the full range of people, talents and skills needed, and the full range of ideas and enabling infrastructures."
        - "The career paths people can take through the system are restricted, resulting in precarity, particularly at early career stages, and creating silos between sectors, roles and disciplines."
        - "There are gaps in the UK's talent offer at different career stages and low awareness and high friction in navigating the wide variety of career opportunities available."

- Diversity is one of the ‘shifts’ identified as necessary for driving change – which therefore suggests it is of high value. However, the content of this section mostly just says diversity is important (with limited elaboration), that they want to support it, and lists some existing issues. E.g. “Diversity is key to future success through the following:
    - diversity in people, who are the beating heart of our research and innovation system, with diverse skills and ambitions
    - diversity in infrastructure, providing the full range of facilities and equipment needed to set creativity free
    - diversity in ideas, pushing forward the boundaries of knowledge and understanding, and capturing the benefits to build a better future for all.”
- “The full benefits of diversity are only captured through connectivity and collaboration, bringing diverse ideas, skills and knowhow together in novel combinations to catalyse discovery and innovation.”
- Has a whole section on people and careers, discussing importances of people in the system and the need to reform research careers (citing precarity for ECRs, high-pressure working cultures). However, this is all under the heading of “Making the UK the top destination for talented people and teams” – suggesting the motivation is international competition.
    - “The UK has a highly talented and skilled R&D workforce, and investment in people and skills underpins R&D activity across the economy.”
    - “The research and innovation workforce is globally mobile, so we must strengthen our offer to attract, develop and retain talent, making sure research and innovation careers in the UK are globally attractive to talented individuals and teams.”
    - “We must redefine outdated views of a ‘traditional’ research career path, making more visible the full range of careers available in research and innovation and creating exciting new opportunities to attract a new generation of talented individuals and teams.”
    - “This restricts career paths across roles, sectors and disciplines, reinforcing silos by reducing connectivity and the flow of people and ideas. Combined with the competitive nature of research and innovation funding, this creates precarity, especially for early career researchers. These factors work together to create high pressure working cultures that can compromise creativity, excellent research and innovation, and retention of talented people. We must take a more holistic approach that values the entire workforce and the breadth of skills needed to deliver high-quality research and innovation, and we must design a more flexible and agile system which is responsive to the needs of talented people and teams.”
- Further sub-priorities under Making the UK the top destination for talented people and teams are about attracting global talent (priority 1.1), developing researchers (priority 1.2) and creating cultures that support high quality research (priority 1.3). However, the heading suggests the main motivation is not actually about support but about growth and international competition. This undermines some of the messaging around, for example, “We must create a research and innovation culture that supports the wellbeing and creativity of all those working in the sector, valuing all roles that make research and innovation a success, recognising the power of collaboration, and reflecting the breadth of skills needed for the wide range of careers options available.” Indeed, this quote appears to point towards responsible research assessment but notably there is no action in this section on reforming assessment procedures.

- Creativity
    - “If we are to seize the opportunities for the UK from ground-breaking discoveries, technologies or new markets, we must unleash one of our most impressive assets: the creativity and ingenuity of our researchers and innovators.”
    - “Flexible and responsive funding is essential in allowing knowledge to be built up over the long-term, as well as providing the agility to pursue new directions, together with a research and innovation culture that recognises the value in ideas and technologies that fail as well as those that flourish.”

        - We will: “champion an agile and responsive research and innovation funding environment that embraces curiosity, creativity, and risk-taking and encourages a diversity of ideas across all disciplines and sectors, recognising the importance of teams”
        - At the same time, has developed new strategic themes to focus activity: “We have identified five strategic themes where, by working across UKRI and leveraging new and existing investment and activity, we will harness the full power of the UK’s research and innovation system to tackle large-scale, complex challenges.” – “develop new funding opportunities for multi-disciplinary programmes aligned to our strategic themes”
    - Sustainability
        - “driving the development, adoption and diffusion of green technologies, building a sustainable circular economy and a greener future for the UK as we move to net zero”
        - No mention of sustainability under ‘resilience’
        - Has a strategic theme on ‘building a green future’ but is referring to delivering net-zero and doesn’t mention reducing impact of R&D
        - “We will also act as a responsible partner, accountable for our societal, ***environmental***, and financial impact.” – No elaboration on what that means or how that will be done.
    - Trusted research
        - “enhancing our national security, virtually and physically, and strengthening the UK’s resilience in a rapidly changing world”
        - No mention of trusted research under ‘resilience’ – though it is maybe hinted at with “Resilience has many dimensions, but recent experience highlights both strengths and weaknesses in the funding landscape.”
    - Responsible research assessment
        - “The criteria by which we judge excellence in research and innovation are often too narrow. This risks homogenous thinking at both the institutional and individual level… At the institutional level, competition against narrow excellence criteria contributes to limiting the balance and range of institutions that make up the research and innovation landscape.”
        - “Incentives in the research and innovation system can value too narrow a range of contributions, drive undue pressures on individuals and undermine research in both its culture and its outputs.”
        - “We must build a balanced portfolio of activity, making the hard choices needed to ensure that people, teams and institutions ***are properly incentivised***, powered and connected to deliver.”
        - “We must escape the constraints of narrow definitions of excellence and excessive focus on the performance of individuals to harness the power of diverse collaborative teams.”
- Moral evaluation – reference to a value system around what is good/desirable, linked to specific discourse e.g. neoliberal see accountability as inherently good.
    - Using national pride/narrative around Covid-19 recovery with “the Oxford vaccine” – “We have seen the power of this approach in the UK’s work to combat COVID-19, from the development of the Oxford-AstraZeneca vaccine to the world-leading RECOVERY trial identifying safe and effective therapeutics.”
- Mythopoesis – No notes.

Intertextuality/interdiscursivity (Reference to other texts, genres, and discourses)

- Cites gov policies throughout, including R&D roadmap, R&D people and culture strategy and independent reviews
- Cites R&D people and culture strategy under ‘making the UK a top destination’ – “However, there are significant, long-term challenges to address if we are to meet future needs, as set out in the government’s R&D people and culture strategy (GOV.UK).”
- Pulls in discourse from literature and sector discourse around, for example, diverse career paths where it aligns with strategy to increase workforce (“We are also seeking a shift away from traditional, siloed academic and non-academic careers, towards careers that are mobile between

sectors, and an increased focus on diverse technical and vocational pathways in research and innovation.)
- Foreword borrows a lot of discourses from government policies

Evaluation/Appraisal

- Evoked – superficially neutral terms that represent specific value positions
    - "taxpayer's money" used to evoke neoliberal ideas of efficiency and accountability. ALSO: "We work to deliver a dynamic aligned portfolio of investments ***on behalf of the UK taxpayer*** to support a creative and agile research and innovation system that drives economic, social, environmental and cultural benefits for all citizens."
    - Objectives each target different aspects, aiming for them to be 'world-class', e.g. 'world-class people and careers' – this evokes values around competition, i.e. they have to be better than everyone else's, they can't just be great in their own right.

Presupposition/Implication

- Didn't focus on in this analysis

Lexico-Grammatical Construction

- "The government wants to capture the power of this extraordinary talent and creativity to secure the UK's status as a science superpower and innovation nation." Specifically referred to the government not as 'we'
- But otherwise uses 'we' throughout, seemingly referring in some places to work UKRI will do, and in other places speaking for the whole of the UK, e.g. "We [UK] need a more connected and agile system. We must capitalise fully on the breadth and depth of talent across the UK and create a nexus for global talent and investment." Vs "It sets out how we [UKRI] will catalyse transformational change in the system and in how we work as an organisation."

Themes

- **Neoliberal justifications** for the strategy: Strategy is positioned as ensuing that public funding/ 'taxpayer money' is well-spent and in line with government priorities (research utility). Commits to maximising efficiency and reducing bureaucracy. Has a whole objective on 'Making UKRI the most efficient, effective and agile organisation it can be'. Very much an extension of the government's R&D policies and strategies (which makes sense as it is still a government body.
- **Competition:** Each objective is to be 'world-leading' in specific aspects of the research system. Most of the strategy is justified in terms of competitive advantage, e.g. "securing a research and innovation system that is ***the envy of the world*** and a magnet for global talent, businesses and investment".
- **Collaboration:** Often collaboration is discussed within the context of maintaining competitiveness and efficiency of the system (attracting talent and business, securing position as a global leader) but there are areas of recognition for the broader benefits in terms of inspiring breakthroughs and innovation, supporting creativity, supporting interdisciplinary work, strengthening global and national partnerships, flexible careers.
- **Creativity:** Often the issue aimed at current funding systems (particularly UKRI's investments to add government priorities and the high level of competition) is that it stifles creativity because people play safe to get short-term funding. The strategy has multiple statements targeting this, e.g. we will "champion an agile and responsive research and innovation funding environment that embraces curiosity, creativity, and risk-taking". There's little elaboration on how they will do this, and they elaborate much more on how they will development capacity in certain areas of research (e.g. strategic themes, NSTC priorities).
- **Workforce:** Lots about developing UK talent and reforming research careers, citing issues raised by the sector. However, the section on people and careers is under the heading 'making the UK the top destination for talented people and teams' so it suggests the main motivation is competitive advantage again. 'Diversity' is also one of the 'shifts' needed to drive change, and this includes diversity in people and recognising that diverse ideas, skills and knowhow are key to innovation. There don't appear to be any specific actions to increase diversity of people though.
- **Open research:** 'Engagement' is highlighted as one of the 'shifts' necessary to drive change, and is focused on breaking down barriers between research and innovation and wider society, getting a wider range of people involved in research (in terms of sharing perspectives and expertise but also attracting people to the R&D workforce).
- **What's missing:** Speaks about public trust in research and brief mentions of research integrity, but no actions specifically on how to improve it. Also, multiple mentions of issues in recognition and assessment but no actions on reforming incentive structures. Nothing on institutional research governance, leadership or management. Overall, very little action that targets fundamental cultural issues.

Summary: This is a strategy for making sure that public funding for research is spent in a way that maximises the benefits coming from research. There is one priority (1.3) on creating cultures that support high-quality research, but this is under a heading of 'making the UK the top destination for talented people'. However, rather than establish actions that would improve cultures and therefore strengthen the R&D sector (building on the R&D People and Culture Strategy/R&D Roadmap which were the most recent policies at the time of this being written), the actions in the strategy focus on things that are directly related to R&D *growth*, such as attracting international talent, developing researchers, making strategic investments in research funding and increasing the efficiency of funding systems. There are multiple mentions of challenges in research cultures and nods towards sector discourse on positive research cultures, but these are often vague and not backed up by specified actions (where there are actions aligned with sector discourses they are not concrete). The strategy mostly focuses on research utility and international competitiveness, which feels a bit like things that can be more easily (and more quickly) evidenced, whereas investing in cultural initiatives probably would take longer to demonstrate the benefit (which could lead to loss of funding or restructuring of UKRI). It's hard to tell whether they are trying to use neoliberal/government discourse to justify inclusion of cultural issues in the strategy, or if they're throwing in concerns from the sector to increase sector buy-in.

Mapping coverage

To visualise coverage of topics central to the concept of research cultures, discourses have been mapped onto the UKRI/Vitae Research Culture Framework.

Section	Element	Addressed?	Notes
How research is managed and undertaken	Effective research governance and management	No	No mention of policies to ensure good research practice
	Achieving the highest levels of research integrity	Partially	Reference to establishing UKCORI and the importance of research integrity but no great detail to suggest research integrity is highly valued
	Actively promoting sustainability	Partially	One brief mention of UKRI being environmentally conscious, otherwise focus on sustainability is efficient use of resources and investment in development. No mention of the impact of research on the environment.
How research ensures value	Taking an open approach to research	Yes	Supportive of open research, particularly open engagement to communicate research to wider society.
	Communicating research	Yes	Has a 'shift' on engagement, and mentions throughout about making research and knowledge gained more accessible, connecting wider society into R&D.
	Realising impact	Yes	Yes, heavy focus on the translation of research into value
How people are supported	Recognition and assessment	Partially	Mentions in multiple places about issues with recognition and assessment (e.g. narrow notions of excellence) but has no action on reforming recognition and assessment
	Employment and conditions	Yes	Multiple mentions about improving research careers, in particular movement between sectors and career progression. Also briefly mentions difficult working conditions and diverse contributions.
	Embedding professional and career development	Yes	Yes, has a section on development of researchers to ensure they can deliver on government ambitions.
	Ensuring inclusive & healthy working environments	No	Brief mention of supporting wellbeing but no elaboration or action on making cultures inclusive
How individuals engage with others	Providing effective leadership and management	No	Nothing on leadership or management
	Empowering individuals	No	Nothing on ownership and responsibility for own careers

	Building collegiality	Partially	Does talk about supporting networks, but more in the context of specific research collaborations rather than support

UK Science and Technology Framework

Link to policy: https://www.gov.uk/government/publications/uk-science-and-technology-framework

Contextualising the policy

Temporal context

Immediate context

- Informed by the Integrated Review of Security, Defence, Development and Foreign Policy (started early 2020)
    - "At the heart of the Integrated Review is an increased commitment to security and resilience, so that the British people are protected against threats. This starts at home, by defending our people, territory, critical national infrastructure (CNI), democratic institutions and way of life – and by reducing our vulnerability to the threat from states, terrorism and serious and organised crime (SOC)."
    - Titled 'Global Britain in a Competitive Age'
- Published one month after the establishment of the Department for Science, Innovation and Technology – "a Government Department that focuses on a single mission: to make the UK a science and technology superpower" (Donelan, 7 March 2023). Changed from Business, Energy and Industrial Strategy.
- Generally part of a wider Gov approach to foregrounding research and innovation and placing emphasis on harnessing science to solve societal and economic challenges/address gov objectives.
- Published alongside the R&D landscape review.
- £500 million associated with delivery of this framework - £370 million new
- Probably the 'further developed strategy' that the R&D roadmap refers to, but represents a big shift in tone and priorities.

Medium term socio-political context

- 2023 – one year before election year, Labour significantly ahead in polls. Potentially setting out how this Government can solve societal and economic issues and address its objectives. (Note: Framework is supposed to be a strategy for until 2030 which would be a whole term more).
- March 2023 – soon after economic crisis of Liz Truss. Midst of cost-of-living crisis.
- 13 years of conservative government – 5 months into Sunak government.
- Recovery from COVID-19 pandemic – public used to hearing about science, hearing from scientists, science hailed throughout pandemic as the solution (developing a vaccine); but some hesitation towards science and 'experts' from sections of society.
- Geo-political context – trusted research, war in Ukraine, Brexit

Contemporary socio-political individuals, organisations and structures

- Michelle Donelan, Secretary of State for Science, Innovation and Technology (Feb 2023-July 2024). Only came in just before this was published, so she wasn't the main person driving it.
    - Only been in place for a month when this was published.
    - "Culture Warrier" – Previously Universities Minister (Feb 2020-Sept 2021) and Minister of State for HE and FE (Sept 2021-July 2022) and championed issues of free speech and academic freedom on campus. Urged universities to reconsider membership of the race equality charter and complained of "professors being harangued and hounded out of their jobs."
    - Neoliberal views – concerned about 'low-quality courses' and argued for increased performance monitoring of universities. Concerned with value for money of degrees for the taxpayer and for students.
- Overseen largely by Patrick Vallance, National Technology Advisor at the time leading the Office for Science and Technology Strategy.
    - Office for Science and Technology informs and delivers the NSTC's vision. It performs its secretariat function, develops strategic options, and tracks the impact of NSTC decisions.
    - "The new cabinet committee, the National Science and Technology Council (NSTC), and its supporting body, the Office for Science and Technology Strategy (OSTS) under the National

Technology Adviser, are intended to direct the Government's strategic approach to science and technology. The objectives for the OSTS include "identifying and signalling UK priority outcomes from science and technology [and] defining and communicating the technologies that are critical to achieving these outcomes."87 It will also "identify how the Government should use and direct their levers to optimise the S&T system."88 The bodies will pull "together the different strands of policy … across government".89 The OSTS has committed to publishing, by the end of 2022, clear targets and metrics to assess progress towards the ambition to make the UK a "science superpower"" (https://publications.parliament.uk/pa/ld5803/ldselect/ldsctech/47/4705.htm)

- Andrew McCosh, Deputy National Technology Advisor, key civil servant developing the policy
- Rishi Sunak, Prime Minister.
    - Very concerned with the economy and with reducing national debt, previously Chancellor of the Exchequer.
    - Has historically viewed research and innovation as core to promoting the economy, e.g. announcing substantial increase in public R&D funding to £22nb by 2024/45 as Chancellor in 2020 (then pushed back target to 2026/27) and reforms to R&D tax credits in 2021.
    - Pledged to make UK a "Science and Technology Superpower" in his leadership bid in 2022.
    - Chairs the National Science and Technology Council (which advises PM on strategy)

Epoch

- Dominant neoliberal ideology in HE governance

Policy drivers

- UK becoming the most innovative economy in the world
- UK as a 'Science and Technology Superpower' that performs well international rankings and delivers societal and economic benefits.
- The UK will grow and maintain the ecosystem we need to attract investment, grow companies, innovate, and deploy our world class science and technology research for good.

Warrant

- The ministerial foreword and introduction are largely political (evoking public/national interest). This theme continues throughout the policy.
    - "keeping our nation secure, our people prosperous, and our planet healthy"
    - "a better future"
    - "tangible improvements that matter to communities across the country, growing the economy and improving public services to help British people live longer, smarter, healthier, and happier lives"
    - "United Kingdom's future success as a rich, strong, influential country, whose citizens enjoy prosperity and security, and fulfilled, healthy and sustainable lives, will correspondingly depend on our ability to build on our existing strengths in science, technology, finance and innovation"
    - "Guided by this framework, the UK will grow and maintain the ecosystem we need to attract investment, grow companies, innovate, and deploy our world class science and technology research for good."
- Also uses accountability warrant, in the foreword/intro often couched negatively as what will happen if we don't deliver the policy. Throughout the policy, the strategy is framed in terms of the outcomes that will be delivered.
    - "In an increasingly competitive world, we find ourselves facing new challenges in keeping our nation secure, our people prosperous, and our planet healthy."
    - "when others – France and Germany among them – are moving further and faster to invest in science and technology, we have got to do the same."
    - "investment in science and technology is more important than ever. It is at the heart of the Prime Minister's priorities: halving inflation to ease the cost of living and provide people with financial security, building a stronger economy with better jobs, and ensuring that NHS waiting lists will fall and people will get the care they need more quickly."
    - "it is absolutely crucial to act quickly and act now"
    - Each section has a vision and outcomes, which are clearly accountability warrant.

- Limited use of evidentiary warrant – lending credibility to the policy by suggesting it is based on evidence:
    - "It has been developed in close collaboration with the UK science and technology sector"
    - In Section 2 "Only 57% of people polled in Public Attitudes to Science felt that science could generate more work opportunities; this should be at least 80%."
- Effect of these warrants is to present the policy as a natural strategy that is necessary for national interests. Suggestion of negative consequences if the policy is not delivered. Makes it difficult to challenge because you can't disagree with the general idea that people should "live longer, smarter, healthier, and happier lives". But very limited evidentiary justifications or rationale provided to support the policy.

Deconstructing the policy

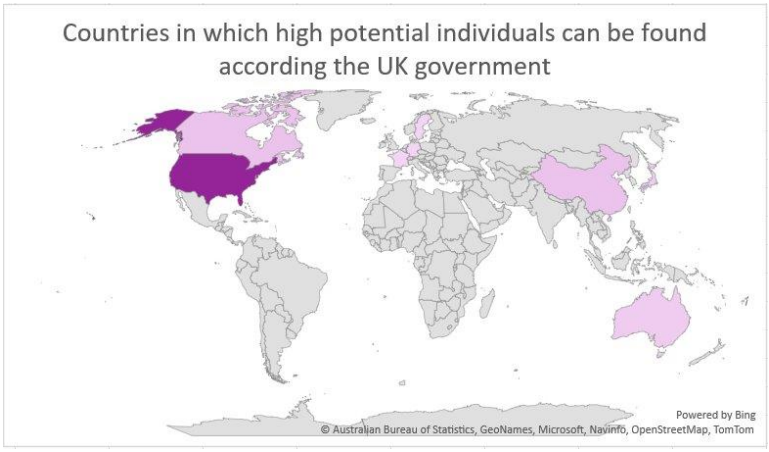
Legitimation (Process by which policies are justified by attachment to dominant norms and values)

- As legitimation is attached to specific norms and values, understanding the modes of legitimation used can help to identify the values communicated in the policy.
- Overall policy (i.e. the ministerial foreword and the introduction) are justified via rationalisation (reference to value/usefulness/face-validity of a specific action) and via moral evaluation (appeal to a certain value system)
    - Rationalisation linked to policy/science and technology delivering inherently good outcomes:
        - "investment in science and technology is more important than ever"
        - "driven by a relentless focus on tangible improvements"
        - "United Kingdom's future success as a rich, strong, influential country, whose citizens enjoy prosperity and security, and fulfilled, healthy and sustainable lives, will correspondingly depend on our ability to build on our existing strengths in science, technology, finance and innovation."
    - Moral evaluation is often linked to valuing competition or valuing application of research:
        - "In an increasingly competitive world, we find ourselves facing new challenges in keeping our nation secure, our people prosperous, and our planet healthy."
        - "Despite our relative size, Britain outperforms our closest competitors and we are a main challenger nation to the US and China in many areas."
        - "ensuring that Britain as a Science and Technology Superpower does not just challenge the rankings, but translates the benefits of that position into material benefits for British people"
- Within the 10 sections, similar modes of legitimation are used. Each of the sections contains a vision and stated outcomes for the 10 areas. This aligns with the accountability warrant (mentioned earlier) and the rationalisation mode of legitimation by framing these visions and outcomes as desirable, e.g.:
    - In Section 1 'Identifying Critical Technologies', the strategy is rationalised as aiming for "defining, pursuing and achieving strategic advantage **[competition]** in prioritised areas **[narrow definition of quality]** of science and technology application to deliver prosperity and security **[impact]** for the UK on our own terms **[neoliberalism]** and deliver benefits to global society **[impact]**." This appeals to the norms and values of competition, narrow notions of quality, impact and national autonomy/liberalism/freedom from governance.
    - In Section 2 'Signalling UK Strengths and Ambitions', legitimation is attached to the values of **competition** ("Polling by the government will demonstrate that the UK is seen as a top three nation in the world, and the leader in Europe, for the strength of its science and technology system"), **impact** ("citizens will understand the positive impact that science and technology can have on their lives"), **narrow notions of quality** ("increasing confidence among UK stakeholders to conduct activity that supports our objectives"), **trust in research** ("ensures that all stakeholders have the confidence to invest their time, money and effort supporting our science and technology vision… citizens trust that science and technology can improve their lives").
    - In Section 3, the value of having **strong private sector** involvement in research ("The UK's R&D investment matches the scale of the Science and Technology Superpower ambition, and the private sector takes a leading role in delivering this.") This is appealing to neoliberal ideological values and therefore justifying the policy through moral evaluation mode. It should be noted that this is alongside "the biggest increase in public R&D investment".

- In Section 4, the promised outcomes are a highly-skilled workforce through initial education, ongoing skills development and recruitment of talented researchers. These appeal to the values of the **knowledge economy**, and ongoing skills development is also a theme that comes up regularly in sector discussions about supporting staff. Note: this is referred to specifically in STEM disciplines rather that across all research.
- Sections 5, 6, 9 and 10 introduce the value of **deregulation** in 'pro-innovation' approaches to regulation, markets and governance. "The UK leverages post-Brexit freedoms and is at the frontier of setting technical standards and shaping international regulations. Regulation is pro-innovation, stimulates demand for science and technology and attracts investment while representing UK values and safeguarding citizens."
- Section 7 'International opportunities' expands upon international relations to clarify that it's not just about competing, **collaboration** is also desirable but only where it supports existing UK gov objectives – "International relationships with governments, industry and academia make a meaningful contribution to the UK's science and technology capabilities. We are influential in shaping the global landscape, embedding our values into technology, and protecting our security interests."
- Section 8 'Access to Physical and Digital Infrastructure' repeats attachments to the theme of 'collaboration when it's beneficial for UK' ("the UK strategically invests in relevant and important international infrastructure which sustains the UK's scientific edge"). Generally this section is very practical about investing in digital infrastructure and equipment to support science and technology.

Intertextuality/interdiscursivity

- 'Science and technology superpower' is a phrase that Rishi Sunak used in his campaign to be Conservative Leader, e.g. "Science and innovation will be at the heart of my government. I will turbocharge clinical innovation to enhance our medicines research regime, deliver better access to funding and lab space, and ensure that we have access to the very best talent available. My plan will secure our status as ***a science and technology superpower***, providing opportunity and spreading prosperity in every part of our United Kingdom." (August 2022)
- No mention of the R&D roadmap
- No mention of the People and Culture Strategy
- Yes mention of the R&D landscape review
- Yes mention of the reducing bureaucracy review
- Words used link to existing discourses on:
  - International competitiveness
  - Impact/applications from research
  - Knowledge economy
  - Narrow definitions of research quality
  - Neoliberal discourses such as strengthening private involvement, deregulation (pro-innovation regulation), protecting state interests
  - Meritocracy discourse ('best people')
- Notable things missing:
  - In Section 2 'Signalling Strengths and Ambitions', the policy talks about giving people confidence in UK science and technology. Notable that there is no mention of discourses around increasing public trust via robustness and quality in research, research integrity or openness in research.
  - In Section 4 'People and Talent', there is a single reference to supporting a more diverse workforce but this is not attached to any values or discourses. There is no legitimation provided for this, i.e. no justification for why that is something beneficial. It is not integrated into the wider narrative of the policy. However, immediately after that point, there is a section on 'established competitive advantage in attracting international talent to the UK'. This is legitimised through link to 'competition'. This section then refers to 'high-skilled visa system' including the High Potential Individual visa scheme which only admits individuals with qualifications from universities ranks in top 50 of 2 or more international ranking lists. Given the biases in international rankings, this list therefore predominantly privileges white/global north countries and excludes large sections of the world (image from Lizzie Gadd's slides).



  - In Section 8 ‘Access to Physical and Digital Infrastructure’, it mentions ‘data as an enabler’ and promotes the use of Office for National Statistics Integrated Data Service, data sharing agreements and access protocols. There is no mention of enabling open and transparent sharing of research data by researchers, which would also support more efficient research?
- Culture is mentioned 4 times, only ever in reference to encouraging innovation.

Evaluation/Appraisal

- Evaluations are split into ‘inscribed’ evaluation that attach specific value judgement words like ‘best’, ‘excellent’ etc., and ‘evoked’ evaluations that use neutral language to construct a positive image.
- Essentially the whole document is an expression of opinion because it’s a strategy. Everything that is mentioned as part of the ‘vision’ or ‘desired outcomes’ are constructed as being desirable.
- Regarding specific values/norms:
  - Competition as a positive is evoked by listing comparative “successes” to construct a positive image of competing, even though these successes are largely meaningless to the average person (in some cases are flawed comparisons – rankings) and the successes of the S&T sector could have been demonstrated with more tangible examples such as contribution to economy, number of jobs created, beneficial technologies, i.e. an example of how this has actually contributed to society or the economy. Competition, in particular the UK having a strategic advantage over others, is also framed as being necessary, though no specific justification is given for why it is needed, and why innovations and developments can’t be shared. The value is placed on the competition, not what the competition results in.
    - Evoked: “Despite our relative size, Britain outperforms our closest competitors and we are a main challenger nation to the US and China in many areas. We have four of the world's top ten universities and a technology sector worth over one trillion dollars. If you put together just eight of our university towns, they are home to more billion-dollar unicorn start-ups than the whole of France and Germany combined.”
    - Evoked: “a commitment to scaling our ambition and delivering the most critical actions needed to secure strategic advantage through science and technology.”
  - Narrow definition of quality, evaluations about what are desirable in research are given throughout. These basically just focus on natural and engineering sciences and STEM in order to address five critical technologies. It also privileges research that informs technological developments. Other research areas and approaches are largely ignored and where foundational research is mentioned, it is valued for its ability to support future applied research only.
    - Evoked: eight criteria on the first page being used to identify critical technologies demonstrates that these are the criteria by which research in the UK S&T sector are valued - sustainable environment, health and life sciences, digital economy, national security and defence, international comparison, foundational, market potential, threats and resilience.
    - Evoked: “The UK has a track record of defining, pursuing and achieving strategic advantage in prioritised areas of science and technology application to deliver prosperity and security for the UK on our own terms and deliver benefits to global society. The UK’s foundational science base is world-leading and broad, giving us the agility to rapidly advance discoveries and technologies as they emerge.”
  - Impact is framed throughout as a core purpose of research.

        - Evoked: “Our Department will be driven by a relentless focus on tangible improvements that matter to communities across the country, growing the economy and improving public services to help British people live longer, smarter, healthier, and happier lives.”
    - Liberalism/autonomy
        - Evoked: “The UK has a track record of defining, pursuing and achieving strategic advantage in prioritised areas of science and technology application to deliver prosperity and security for the UK *on our own terms* and deliver benefits to global society.”
        - Evoked: “The UK leverages *post-Brexit freedoms* and is at the frontier of setting technical standards and shaping international regulations. Regulation is pro-innovation, stimulates demand for science and technology and attracts investment while representing *UK values* and safeguarding citizens.” [italics added for clarity]
    - Deregulation
        - Evoked: “encourage a regulatory environment that supports innovation”
        - Evoked: “A system of regulation and standards that is pro-innovation, easy to navigate and facilitates widespread commercial science and technology applications.”
    - Knowledge economy
        - Evoked: “Given people the opportunity to train, retrain and upskill throughout their lives to respond to changing needs.”
        - Inscribed: “This includes ***revolutionary*** initiatives like the Lifelong Loan Entitlement, especially ***important*** given 80% of the 2030 workforce is already in work.”

Presupposition/Implication

- Not a construction that seems to be used heavily in this policy.
- Presentation of things as causal links:
    - “The United Kingdom’s future success as a rich, strong, influential country, whose citizens enjoy prosperity and security, and fulfilled, healthy and sustainable lives, will correspondingly depend on our ability to build on our existing strengths in science, technology, finance and innovation.”
    - “Because a better future will be driven by Britain’s boldest businesses”
- Each of the outcomes is presented in the past tense (By 2030 we will have… given people the opportunity to train…). This creates the perception that these things, which are framed as desirable, are therefore lacking currently.

Lexico-Grammatical Construction

- Use of the word ‘we’
    - Immediately in the first sentence, we’re all included as facing challenges that this strategy is going to address. “In an increasingly competitive world, ***we*** find ourselves facing new challenges in keeping our nation secure, our people prosperous, and our planet healthy.”
    - “As we look towards the future, investment in science and technology is more important than ever.”
    - However, after the introduction, ‘we’ is used clearly throughout to refer to the Government and to claim ownership over actions and take responsibility.
- Vision statements for each section, written in present tense to make them a convincing reality.

Themes

- Science, Innovation, Technology, Research all very good, highly valued and important things to be doing.
- **Competition inherently good**. Collaborate when it suits. Very much an individualistic approach to international collaboration.
- **Delivering tangible societal and economic benefits** from research presented as the core purpose of research. Impact/applications very highly valued. Minor mentions of 'foundational research' as important for allowing UK to quickly pivot to different 'critical technology' if things change. Narrowing focus of research approaches, narrowing focus of research outcomes.
- **Narrow focus on certain types of research** – i.e. natural and engineering sciences that address the five critical technologies, frequent focus on STEM. No mention of social sciences that will deliver critical developments to address societal issues such as inequalities, poverty, quality of life, education, etc. Privileges certain approaches over others. First section has eight criteria that technologies were assessed against: sustainable environment, health and life sciences, digital economy, national security and defence, international comparison, foundational, market potential, threats and resilience. These criteria informed the technologies/fields that were identified as 'critical' and therefore communicate what is valued about UK S&T. Whilst they don't mention specific assessments of research or researchers, the communication about what is valued will filter down through sector. It could be argued that this policy has a narrow scope, rather than it seeking to narrow the definition of quality, but there's no reference to any other types of research falling outside of the scope of the policy (no scope given in fact). When DSIT has responsibility for the whole R&D sector, if they put out a policy relating to R&D with no provided scope, it implies that it relates to the whole sector.
- **People and related EDI concerns largely excluded**. Some mentions of getting the 'best' people, which evokes meritocracy discourse classic to conservative ideology. No clarification of who the 'best' people are, or any mention about the 'best' people being potentially excluded currently. Largely seems to be talking about attracting 'best' people and 'talent' from abroad, competing for resources. Taking this with visa schemes that are mentioned, they're probably not valuing diversity as part of that. Nothing about retention of talented researchers who might leave academia due to poor cultures. There is mention of researcher development though.
- **Trust in research** – framed as communicating about successes so that people view UK as good at research and trust that we will deliver solutions. Then companies will invest, and citizens will engage with new developments. Trust also plays into the Gov not changing their strategy repeatedly (this is "enduring") so that long-term investments can be made. Nothing about increasing public trust through research integrity principles.

Summary: This is a strategy for how to enhance S&T in the UK and boost the whole sector, but they choose to focus on issues related to investment, regulations, international competition/collaboration to make those improvements. This ignores the literature and sector discussions about the sustainability of the sector being undermined by cultural issues and concerns about the quality and integrity of the research being done. Not only that, but the discourses used in this text are actually perpetuating some of the identified issues. Values of competition, individualism, impact and focus on outcomes not input, narrow considerations of research quality, 'freedom'/liberalism and deregulation are naturalised. Having a diverse and inclusive workforce is mentioned but not coherently integrated, making it appear more secondary or alternative. Other values, such as research integrity and open research, supportive working conditions, etc. are ignored entirely.

Mapping coverage

To visualise coverage of topics central to the concept of research cultures, discourses have been mapped onto the UKRI/Vitae Research Culture Framework.

Section	Element	Addressed?	Notes
How research is managed and undertaken	Effective research governance and management	Partially	*The standards, structures and policies to ensure good research practice, integrity and equity.* The only hint towards good research practice are the statements that are aimed at trusted research and innovation, e.g. “weighing the security risk of open collaboration and investment against the opportunity cost of limiting them” and “protecting our security interests”.
	Achieving the highest levels of research integrity	No	*Undertaking research with integrity, honesty and rigour to ensure confidence in the methods and results*. There is absolutely no mention of this.
	Actively promoting sustainability	Partially	*Minimising the impact of research on environmental, social and economic resources.* One of the criteria for identifying critical technologies was ‘sustainable environment’. The policy also refers to ensuring “the long-term sustainability of the UK’s infrastructure base” and people living ‘sustainable lives’. This isn’t expanded upon to explain how they would minimise the impact of research but it demonstrates that there is some consideration of making research sustainable (mostly in terms of economic and social resources?)
How research ensures value	Taking an open approach to research	No	*Undertaking research that is openly accessible, collaborative and increases research integrity bringing public value and innovation.* Plenty of places where this would have fitted (e.g. reference to engaging citizens with science, reference to international collaboration, reference to sharing government data, reference to communicating about UK research strengths), but no mention of encouraging open research.
	Communicating research	Partially	*Making research and knowledge available and accessible to all.*

			Section 2 is all about communicating research successes and ensuring citizens understand the benefit of science. However, open communication isn't just about communicating successes, there's nothing about making research more accessible, and (as above) there's no mention of open research.
	Realising impact	Yes	*The translation of research into value for communities, society, culture and economy.* Reference throughout to the translation of research into value. This is very much positioned as the core purpose of research and therefore it is heavily encouraged.
How people are supported	Recognition and assessment	No	*Broadening what is recognised and valued as contributing to the research endeavour.* There is no mention of broadening. In fact, this policy narrows what is recognised and valued by selecting just 5 critical technologies, referring throughout to STEM subjects only, suggesting that the core purpose of all research is to develop technologies and other tangible solutions, positioning 'foundational research' (by which I understand research that is not directly applicable) as useful only in the context of being able to quickly develop into a technology if priorities change.
	Employment and conditions	Partially	*The recruitment, employment and progression of a diverse research workforce.* Section 4 is all about talent and skills, though there is little about employment beyond attracting international talent to the UK. Elsewhere in the policy, it refers to getting the 'best people' into the sector, but nothing on who they are or how to do that. There is reference to expanding opportunities for participation in STEM, but nothing else on attracting a diverse research workforce. There is also nothing beyond recruitment, i.e. nothing on employment conditions, retention or progression.
	Embedding professional and career development	Yes	*Integrating professional and career development into all career stages.* Section 4 is all about talent and skills. There is clear mention of creating "an agile and responsive skills system, which delivered the skills needed to support a world-class workforce in STEM

			sectors". To give the benefit of the doubt, this could turn into a professional and career development system, but the narrative surrounding this section seems to be on developing people in the specific areas of government priority, rather than developing staff in HE as a whole. Career development is also more than just research skills and should encompass the wide range of career approaches that maximise the quality and impact of research.
	Ensuring inclusive & healthy working environments	No	*Environments where all individuals are free to be themselves, included feel well supported and confident to express their views.* No reference.
How individuals engage with others	Providing effective leadership and management	No	*The performance and line management of individuals.* No reference.
	Empowering individuals	No	*Individuals having ownership and responsibility for their own careers.* No reference.
	Building collegiality	No	*The creation of healthy, inclusive, supportive communities.* No reference.

Appendix 2: Data Management Plan

Project Name:	Reforming research cultures in UK HEIs in a neoliberal context: A critical discourse analysis of government and funder research policies	Funder:	N/A
Project Description:	CDA policy analysis of selected UK Government HE policies to identify discourses and the alignment of these with efforts to make research cultures more positive		
Student:	Grace Murkett	Principal Investigator/ Supervisor:	Jonathan Vincent
Institution:	University of Lancaster	Dept / School:	CHERE
Date of First Version:	22/06/2024		
Date of Updates:	Final update: 20/10/2025		

This template is based on DCC (Digital Curation Centre, 2013) and used at the University of Strathclyde. Checklist for a Data Management Plan. V.4.0. Edinburgh: Digital Curation Centre. Available online: http://www.dcc.ac.uk/resources/data-management-plans

1. Data Collection

What data (file types) will you collect or create?

List all the research data (file types) that you will collect /generate as part of your project. Examples are included on the first three rows to help you get started, and there are links to relevant info, where indicated (i.e.).

Data type	Original format	Preservation format*	Estimated volume	Intellectual Property Rights (IPR) owner	Active storage location	Completed storage location
Analysis notes	.docx	.pdf	<10MB	Grace Murkett	Strathclyde OneDrive for Business	Pure
Researcher notes and reflections	Paper	Original	N/A	Grace Murkett	Home Office	Home Office

*Preservation formats should be easy to access without the need for specific proprietary software.

How will the data be collected or created?

- How will you collect or generate data?
- How will you structure and name your folders and files?
- How will you handle versioning?
- What quality assurance processes will you adopt?

The University's Information Governance Unit have guidance on **file naming** and **version control** at https://strath.sharepoint.com/sites/igu/SitePages/ManagingRecords.aspx

Data in this project refers to insights generated through policy analysis. This data will be recorded in word documents for each policy. Files are structured with a folder for each policy and a single word document within each folder for analysis notes. As it is stored on OneDrive, version control will be automatic. Physical notes will also be taken in a paper notebook, these will relate more to my developing thoughts as I am undertaking the analysis and wider project. Information that is

useful in the analysis will be written up in the word documents. The paper notebook is just a tool to support me to organise my thoughts.

2. Documentation and Metadata

What documentation and metadata will accompany the data?

What is data documentation?

Documentation may include details on the methodology used, analytical and procedural information, definitions of variables, vocabularies, units of measurement, description of instruments, software and hardware used, use conditions, and any assumptions made. For example, a survey questionnaire, or interview schedule is 'data documentation' because it **provides context to the data** collected from the survey and interviews.

Electronic Lab notebooks and readme files offer a mechanism for documenting data; as would a codebook, which lists and explains the variables and scales used when analysing data.

What is metadata?

Metadata is effectively 'data about data,' often 'intended for reading by machines, metadata helps to explain the purpose, origin, time references, geographic location, creator, access conditions and terms of use of a data collection' (UK Data Service, Metadata).

Why are documentation and metadata important/ required?

Many research funders expect researchers to publish metadata to accompany research data as part of the terms and conditions of the grant award/funding. In addition, the University encourages the creation, capture, and publication of comprehensive documentation and metadata so that the data - associated with Strathclyde's research projects and publications - is made findable, accessible, and assessable to the wider research community and to enable its reuse by others, for societal benefit.

Consider, **how will you capture and create documentation and metadata**; rich, and meaningful documentation and metadata enable dataset/s to meet the **FAIR (Findable, Accessible, Interoperable, and Re-usable) data principles**. Data that are discoverable, and identifiable via a dataset DOI (Digital Object Identifier) are more easily re-usable and citable.

Documentation relating to the methodology and analytical procedure will be provided in the methodology chapter of my PhD and in the appendices. Additionally, the data will be deposited after completion to create a dataset DOI so that the data is more easily accessible.
During the analysis, the paper notebook will be used to record key decisions and assumptions made, so that the justifications for these are not forgotten and can be written into the methodology chapter. A draft of the methodology chapter was written in advice of starting the analysis and updated after analysis was completed.

3. Ethics and Legal Compliance

How will you manage any ethical issues?

Where a project/study involves working with people, or animals, there will be ethical considerations to address. If you are carrying out research involving human participants, you must consider whether consent is required to allow the data you collect to be archived, shared, and reused. Consider the following:

- Have you gained consent for data preservation and sharing from participants?
- How will you protect the identity of participants if required? For example, via anonymisation.
- How will sensitive data be handled to ensure it is stored and transferred securely and appropriately?

If collecting **personal data,** you must ensure it is managed in line with **data protection laws**. Ethical issues affect how you store data, who can see/use it, and how long it is retained.

Managing ethical concerns may include: anonymisation of data; referral to departmental or institutional ethics committees; and formal consent agreements. It is prudent to identify any issues and plan accordingly.

The University has templates for **Consent forms**, **Participant info sheets**, and **Privacy notices**, as well as a Code of Practice on Investigations Involving Human Beings accessible from https://www.strath.ac.uk/ethics/

As there are no participants in this project, there are no requirements for ethical approval, consent or anonymisation. Policies under analysis are public documents.
Nonetheless, the integrity of the research process has been actively considered throughout. Relevant decisions are recorded in the paper notebook and a reflection on the integrity of the project is included in the methodology chapter.

How will you manage copyright and IPR issues?

The default **licence applied to datasets** currently deposited in the University's institutional data repository is CC BY 4.0. Anyone who uses a dataset with this licence must 'must give appropriate credit, provide a link to the license, and indicate if changes were made'. **Researchers can request a different licence be applied to their dataset**, by arrangement, as best fits any contractual or ethical agreements pertaining to the research/study.

Where data have been generated using existing and/or secondary data sources, researchers must factor-in, and adhere to, relevant third-party licence and/or re-use agreements.

Please consider the following points:

- How will the data be licensed for reuse?
- Are there any restrictions on the reuse of third-party data?
- Will data sharing be postponed/restricted e.g., to publish or seek patents?
- Do the IPR owners have any reason to restrict data sharing?

Open data is typically made available under a **CC-BY licence**, meaning that anyone can reuse the data for any purpose, as long as they cite the source of the data.

Commercially sensitive data should be restricted accordingly

The University of Lancaster does not require students to automatically assign IP. As such, I own 100% of the IP generated through this project. It is therefore entirely appropriate for the analysis notes to be shared openly with a CC-BY 4.0 licence to enable re-use. I am not using any existing data sources so there are no re-use agreement considerations.

4. Storage and Backup

How will the data be stored during research, and how will you manage access and security?

The **University offers a number of secure file storage and sharing platforms** which are **automatically backed-up throughout the day**. A comparison of these platforms is available from the **Compare file storage options** web page at https://www.strath.ac.uk/professionalservices/is/help/indepth/comparefilestorage/

Research data which are confidential, sensitive, and/or contain protectable IP (intellectual property) must not be stored on unencrypted storage. Researchers are encouraged to use the University's own systems over less secure storage platforms/methods.

When **working off campus**, or **if working with external project partners**, **arrangements can be made to facilitate joint/collaborative working via shared project folders** on the University's network/storage platforms, as outlined on the Compare file storage options web page.

Please refer to the **Compare file storage options** web page and consider the following:

- Will the data you create/collect/generate be stored on the University's network/storage platforms?
- How will data be transferred to the University's network/storage platforms if it originates from another location?
- How will you ensure that collaborators, supervisors, or participants can access your data securely?
- Will data be stored on H: drive; i: drive; OneDrive for Business; Teams; SharePoint, or elsewhere?

All project files are stored on my Strathclyde OneDrive, which is automatically backed up. Work on the project is conducted on my Strathclyde laptop. Files (chapter drafts, analysis notes) are shared with my supervisor via email – there is no confidential data or potentially exploitable IP contained within these files.

5. Data Curation and Open Access to Data

How will data preservation and open access to data be managed?

At, or near to project completion, or following publication, upload the data associated with your project/s, publications, theses, etc. **to the University's institutional data repository in Pure**, so that it can be catalogued, preserved, and made **openly accessible from the KnowledgeBase Research Information Portal**

If you are **planning to upload the data to an external data repository** (e.g., UK Data Service; GitHub) you must **create a registry record (with metadata and a persistent link, e.g., DOI) in Pure**, so that the University can record compliance with any funder mandate and keep track of the data. Instructions and guidance, on uploading data to Pure is available on the Data deposit web page, and from RDMS (Research Data Management & Sharing) staff.

Researchers should consider the following when selecting data for curation and preservation:

- What data must be retained &/or destroyed for contractual, legal, or regulatory purposes?
- How will you decide what other data to keep (e.g., that which does not underpin a publication)?
- What data will be shared openly?
- When will you make the data available?
- How will data be preserved and shared?
- How will completed datasets be organised?

Outputs (publications, theses, etc.) arising from public funding should contain **data (access /availability) statements,** to direct readers to the data which underpins and supports the research findings. **Data statements should include persistent links (e.g., a DOI/Digital Object Identifier)** to the data source. Placeholder DOIs (Digital Object Identifier) are available in advance of final manuscript submission from RDMS staff. Further info, including example statements, is available from the Data access statements web page.

In addition to uploading data, many research funders expect structured metadata - describing the research data - to be published. Metadata must be sufficient to allow others to understand what research data exists; why, when, and how it was generated; and how to access it. This expectation can be met by creating a dataset record in Pure and including the relevant details.

All data relating to the analysis will be retained until PhD conferral, in case of queries or comments. Analysis notes (word documents) will be checked for clarity and added into the thesis appendices. PDF versions will be deposited in Strathclyde's Pure and made openly accessible. The paper notebook, which will contain my reflections on the analysis, will be stored in my Home Office. Any useful insights from this will have been included in the analysis notes and my PhD thesis.

Are any restrictions on data sharing required?

- What restrictions are required on data sharing?
- How can these restrictions be minimised? (e.g., temporary embargo, partial sharing, one to one sharing, non-disclosure agreements)

Explain any necessary restrictions on sharing (e.g., commercial, privacy, or security reasons). If data cannot be shared, a dataset record should still be created in Pure so that the data can be catalogued and preserved long-term. In such cases, data can be uploaded to Pure but the data (files) restricted**,** whilst a record, containing metadata only, can be made publicly visible. The record should explain why the data is not accessible; the circumstances under which access may be granted; and who to contact for information about the dataset.
NB. If data relates to a patent application it should not be uploaded to Pure, or any other data repository, nor shared, until such times as clearance has been given by the project PI and/or IP & Commercialisation staff.

No restrictions. Any useful data will be shared – this will all be contained within the analysis notes.

6. Responsibilities and Resources

Who is responsible for data management?

- Who is responsible for implementing the plan, and ensuring it is reviewed and revised?
- Who will be responsible for each data management activity?
- How will responsibilities be split across partner sites in collaborative research projects?
- Will data ownership and responsibilities for research data management be part of any consortium agreement or contract agreed between partners?

I am responsible for implementation of the plan and all data management and sharing activities.

What resources will you require to deliver your plan?

- Is additional specialist expertise (or training for existing staff) required?
- Do you require hardware or software which is additional to existing institutional provision?

No additional resources required.

NB. Draft DMPs (Data Management Plans) can be uploaded to the DMP Inbox for review and feedback. Ideally, they should be treated as 'living' documents and reviewed over the course of a project/study.