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Institutional Hierarchies and Research Impact: New Academic Currencies, Capital and
Position-taking in UK Higher Education

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Institutional Hierarchies and Research Impact: New Academic Currencies, Capital and Position-taking in UK Higher Education

Globally, performance-based research funding aims to support the most deserving academic institutions and researchers. However, overcoming entrenched assumptions about quality is a persistent challenge for higher education research policies worldwide; traditionally powerful institutions tend to maintain dominance. Research impact as a performance criterion presents an opportunity for position-taking through success according to non-academic criteria. Could impact-oriented research funding challenge institutional hierarchies? The UK university system presents an instructive case study for exploring this question. However, exposing the effects of such performance-based funding on institutional stratification requires focusing on the interface between institutions and disciplines. A Bourdieusian analysis of fifty-three cases of research-based impact on higher education policy/practice revealed the differential capital that researchers from more and less 'prestigious' universities mobilise when generating research impact. By uncovering how impact reinforces disparities in research power between UK institutions, the study contributes to understanding of sectoral reproduction through discipline-level mediation of research policy.

Keywords: research excellence framework; research policy; impact; universities, Bourdieu

Introduction

Globally, governments and universities are experimenting with policies, strategies and initiatives for realising the potential social, technological and economic benefits, or impact, of research knowledge. Several national systems of higher education aim to encourage universities and their members to focus their activities on impact through research funding systems that financially reward performance and success in achieving non-academic impact (Hicks 2012). Competitive, performance-based funding is a major

'steering' (Marginson 1997, 223) mechanism adopted by governments to shape university management and outputs, including research. Within Europe, countries which have either implemented or proposed such mechanisms include the United Kingdom, Norway, Sweden, Finland, Denmark, Portugal, Spain, Germany, Poland, the Netherlands, Belgium, the Czech Republic, Italy, and Romania; beyond Europe, the likes of Canada, Australia, New Zealand and Hong Kong (Hicks 2012, McKenna 2015, Gauthier 2004).

Although the market-like conditions this creates have been characterised as typical of 'neoliberal ideology and New Public Management' (Watermeyer and Olssen 2016, 201), a progressive belief has also promoted and sustained support for these systems. Incentivising universities to identify and promote the best value-creating talent, ideas, and innovations could militate against rewarding established institutional privilege and reputations of quality. Allowing all actors to compete within (quasi-) market conditions would enable the emergence and reward of genuine excellence, thus acting as a mechanism against entrenched institutional hierarchies and their dominance.

For example, the UK's performance-based research funding system, known as the Research Excellence Framework (hereby REF), is committed to recognising and rewarding 'excellence ... wherever it is found' (Eastwood 2007, para. 4; Stern 2016, 28). But as Marginson (1997, 221, 224-225) observed of the Australian context, despite attempts of reforms 'to create a 'level playing field' for inter-institutional competition ... older universities ... found that they had more corporate scope than others ... and their existing prestige and resources allowed them to dominate the quasi-market'. This reflects the global tendency for any attempt to level the higher education playing field

to be 'illusory ... [H]igher-ranked institutions..., through governmental policy or self-aggrandizement, acquire and institutionalize greater financial resources ... and this perpetuates and enhances their privileged position' (Clark 1983, 63, 66).

The UK context stands out in two ways pertinent to the discussion so far. First, for the strong prevalence of performance-based funding allocations (in the form of the REF), both as a general accountability mechanism and in advancing an impact agenda (Morgan Jones, Manville, and Chataway 2017, Marcella, Lockerbie, and Bloice 2016, Hill 2016, McKenna 2015, Nowotny, Scott, and Gibbons 2003, Hicks 2012) – one of the most 'controversial' (S. Smith, Ward, and House 2011, 1369) aspects of research evaluation since impact became one of the three strands of assessment in REF2014 (alongside the outputs of research and the research environment). The second way in which the UK stands out is for its entrenched and much-discussed hierarchical structure in terms of differential prestige and power associated with different universities (Boliver 2015). Boliver's (2015, 608) cluster analysis, drawing on UK university data related to five 'status dimensions', shows that, with a few exceptions, the common way of describing this stratification according to the divide between 'Old pre-1992) universities' (608) and 'New (post-1992) institutions' (608) (referring to the 1992 re-designation of polytechnic tertiary institutions as universities), 'persists' (623). Moreover, she finds that the ancient English universities of Oxford and Cambridge still constitute their own elite stratum (Boliver 2015).

The UK therefore presents a valuable case system to investigate how policy interventions into academic research play out in a stratified system characterised by variations in 'institutional capital' (i.e. financial, social, intellectual and reputational) (Mars and Rhoades 2012, Ulrichsen 2014, Cronin 2016).

Rather than consider the system as a whole, however, the study focuses on a set of impact cases of research on higher education. Within the Bourdieusian framework adopted, we expect to locate salient mechanisms of sectoral reproduction or disruption within contextualised disciplinary (or interdisciplinary or sub-disciplinary) communities which cut across the sector. We thus reveal how policies are mediated not only at the institutional or sector level, but also at the level of the characteristics, content and practices associated with a specific field of scholarly activity.

Our research contributes to a nascent line of inquiry using disciplinary-level data from the impact element of REF2014 with a focus on (primarily applied) social sciences (Bastow, Dunleavy, and Tinkler 2014, Dunlop 2018, Kellard and Śliwa 2016, O'Connell 2018, Pain, Kesby, and Askins 2011, Slater 2012, K. Smith and Stewart 2017). There have also been studies showing how the REF functions to privilege already prestigious departments and institutions (Laing, Mazzoli Smith, and Todd 2018, Marques et al. 2017). A novel contribution of the present paper is the Bourdieusian analysis of under-researched REF impact data at the disciplinary level to reveal in greater depth some of the workings of pre-existing hierarchical structures and how these activate the autonomy and capital that researchers mobilise when producing research impacts.

Below, we provide further contextual and theoretical details of institutional hierarchies in the UK academic sector using a Bourdieusian conceptual framework which explains the playing-out of research policy interventions such as the impact agenda. We then describe why focusing on research on higher education is an interesting case for illustrating that the applied nature of a disciplinary field is not a license to societal impact. Pre-existing scientific capital and reputation which are in

larger supply within the traditionally powerful higher education institutions become instrumental to success according to broader criteria of excellence.

Hierarchy, competition and authority in the UK university sector: a Bourdieusian analysis in the context of the impact agenda

The UK university sector can be understood through the Bourdieusian concepts of 'field' and 'capital'. These have a rich recent history of application in the study of higher education and academic work (Costa 2016, Deer 2003, Maton 2000, Marginson 2008, Naidoo 2004).

The concept of field refers to a social space in which actors and/or institutions take up structured positions, and struggle to maintain more powerful or prestigious positions, or those that represent a niche. The totality of these multiple sites of struggle around a more-or-less common set of criteria constitutes a system:

When we speak of a *field* of position-takings, we are insisting that what can be constituted as a *system* is ... the product and prize of a permanent conflict; or, to put it another way, that the generative, unifying principle of this 'system' is the struggle (Bourdieu 1993, 34, emphasis in original).

To think in terms of 'fields' is therefore to think in terms of (i) what is worth struggling for, and (ii) what is considered valuable and legitimate capital to be mobilised in that struggle (Costa 2016; Lomer, Papatsiba, and Naidoo 2018; Maton 2000). Therefore, the structure of any given field, that is,

the space of positions, is nothing other than the structure of the distribution of the capital of specific properties which governs success in

the field and the winning of the ... profits ... which are at stake in the field
(Bourdieu 1993, 30).

Within the scientific field, it is individual disciplines which 'serve as sites of struggle for symbolic and social capital. ... Thus, academics struggle to accumulate forms of symbolic capital that will [simultaneously] enhance their individual reputations, their department's images, and the prestige of their universities' (Putnam 2009, 128, 130). And within a given discipline, the '*specific* issue at stake is the monopoly of *scientific authority* ... in the sense of a particular agent's socially recognised capacity to speak and act legitimately in scientific matters' (Bourdieu 1975, 19, emphases in original). This can be condensed in the concept of 'scientific capital' (Bourdieu 1975, 27). Scientific capital captures not only the 'reputational capital' (Cronin 2016, 397) that research activity can bestow upon both individual and institution, but also the relationship between 'prestige and revenue', in particular revenue earned from 'external ... research sponsors', as rewards in the scientific field increasingly come to 'reflect success in generating prestige economy resource revenues' (Rosinger et al. 2016, 28, 30, 45). Such conditions risk 'creating stronger inequality between the 'successful' and the 'unsuccessful' by concentrating scarce funding in the hands of a few', so that past reputation 'becomes a predictor for accruing future achievements' and capital (Papatsiba 2013, 445), in line with Merton's (1968) 'Matthew effect'.

What this theoretical perspective emphasises is that full understanding of the persistence and/or change of institutional hierarchies and status within the university sector requires an understanding of detailed disciplinary patterns that emerge and

point to the mobilisation, distribution and accumulation of scientific capital at the level of particular disciplines and sub-fields.

Shifting scientific capitals and the UK impact agenda?

In the UK, results of the REF determine the 'Quality-Related' research income allocated to the department's institution from public funds. Prior to REF2014, the assessments were mainly concerned with value-for-money and scientific competitiveness but by REF2014 over time, the focus had shifted towards influencing the actual content and conduct of academic research (Ball 2007, S. Smith, Ward, and House 2011, Watermeyer 2016, Hill 2016). REF2014 included, for the first time, impact as an element of assessment. The Higher Education Funding Council for England (HEFCE) defined impact as: 'an effect on, change or benefit to the economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia' (HEFCE 2016).

The impact agenda potentially has important implications for the structure of the academic 'field'. Although the main struggle within a disciplinary field is over '*scientific authority ... in the sense of a particular agent's socially recognised capacity to speak and act legitimately in scientific matters*' (Bourdieu 1975, 19, emphasis in original), the impact agenda creates a situation whereby 'scientific matters' are extended to include *non-academic matters upon which academic knowledge might be brought to bear*. In other words, in the context of the impact agenda, scientific authority does not just relate to, or solely hinge upon, recognition amongst 'competitor-peers' (Bourdieu 1975, 23) but, increasingly, amongst 'external publics' (Putnam 2009, 23), who may have very different criteria for bestowing such

recognition (and symbolic capital which comes with it). Impact therefore alters the breadth and composition of the 'field', reshaping its boundaries and dynamics by increasing the influence of external actors, i.e. research users. Impact emerges as both a new opportunity for achieving individual distinction within the field (Watermeyer and Chubb 2018) and so too as a new stake in the academic research 'game' (Colley 2014; Costa 2016; Lucas 2006).

Musselin (2018, 673) stresses that 'regardless of the forms it takes, competition in higher education creates new classifications. These classifications challenge the existing ones'. In theory then, this new field dynamic may be capitalised on by previously less well-positioned actors/institutions, that is, as a new form of symbolic capital or distinction which can operate as a mechanism for resistance or even transformation of the field rather than reproduction (Deer 2003). However, institutions which have inherited significant symbolic capital will not be easily de-positioned, even when new, external publics come to re-shape the arena. From the perspective of external publics, institutional status in particular can act as an indicator or a proxy for scientific quality and authority, especially within highly stratified higher education systems such as the UK. Institutional status can increase the visibility of researchers and their findings as well as foster networks that can efficiently extend the reach of these findings. We can therefore expect prestigious universities and their researchers to make effective use of impact as a new opportunity for institutional position-taking (Marginson 2008).

This paper will look at how the context of the impact agenda presents a new opportunity for mobilising and generating scientific capital in research that claims tangible impacts on higher education policy and practice. Below we briefly discuss the

state of this research field and we explain how we have selected our sample of impact cases in this area in the methodology section.

The case of higher education research

Analyses and characterisations of research centred on higher education suggests that it is relatively lacking in many of the features associated with the kinds of ‘capital’ discussed above. For example, two decades ago Scott (1999), writing on the research-policy gap in higher education, argued that

research on reasonably long timescales, with open agendas and based on reflective and critical intellectual values and practices has become less important, while customer-driven short-term investigations, more akin to management consultancy, have become more influential (Scott 1999, 318).

Key ‘customers’ driving these short-term investigations include sector organisations and bodies such as the Higher Education Academy, Universities UK and the Funding Councils of the various UK nations (Middlehurst 2014). Such organisations play an important collective role in shaping academic research on higher education by commissioning work on questions relevant to their respective missions related to issues of practice, policy and sector representation.

Although much research on higher education is therefore set up to produce research results of relevance to external publics, Locke (2009, 125) argues that such an arrangement yields relatively ‘little in the way of strategic research or findings that might contribute to the long-term evidence base available to policy-makers’. The focus on research of short-term relevance appears to hinder the field from developing

theoretically, with perhaps only one-fifth or one-quarter of papers relating to higher education policy and practice making the kinds of theoretical advances that might have more substantial influence on the thinking of the sector (Tight 2014, Ashwin 2012). In this context, research on higher education sometimes struggles to differentiate its contributions from those of non-academic organisations, such as consultancies, think tanks, sector governing bodies and charities (Kehm 2015). Accordingly, several analysts describe academic research on higher education as lacking in the power, authority, autonomy and institutional space for long-term research and theory-development (Brennan 2000, Clegg 2012, Harland 2012) which are the traditional symbols of capital and prestige in academia.

Research on higher education as an applied area of inquiry is therefore an interesting case for probing deeper into the transformative or reproductive effects of the changing dynamics that the impact agenda supposedly generates. It might be expected that the context of the impact agenda on the one hand, with its promise of rewarding research of practical and policy relevance, and higher education research on the other, with its focus on relevance and relatively weak academic status (that is, low 'scientific capital'), would combine to create a relatively level playing field in which institutional hierarchies are less important in determining the distribution of desirable forms of capital. Below, we describe the methods with which we sought to explore the way that research on higher education mobilised and accumulated capital through the opportunities presented by the impact agenda policy.

Methods

Approach and sample

Our data set is comprised of all impact case studies submitted to REF2014 that we identified as related to research on higher education. REF2014 comprised 36 Units of Assessment (UoAs), each representing a discipline or research field (or a group of related fields). The impact rating is reached by an assessment of impact case studies submitted by the institution/department. Impact case studies are four-page narrative documents which describe and evidence a body of research and its non-academic impact. These are organised under five prescribed sections: summary of the impact; underpinning research; references to research; details of the impact; and, sources to evidence the impact. Case Studies had to demonstrate impact achieved between 2008 and 2013, although they could reference research outputs dating as far back as 1993, allowing for the possibility of time lag between research and its impact.

To identify relevant impact case studies relating to the higher education research field, we searched “higher education” in the online database (impact.ref.ac.uk). This yielded 599 Case Studies across all UoAs. The screening process involved including only those impact case studies where the research outputs referenced in support of the impact submission had been published in books, reports or journals with an identifiable higher education focus. We therefore excluded instances where the underpinning research related to teaching and learning focused only on specific disciplinary contexts if the publications had not also drawn out broader implications for higher education practice¹. Acknowledging that research on higher education can be conducted from a range of disciplinary perspectives, we

included all Units of Assessment to which the research was submitted. In total, we constructed a corpus of n=53 impact case studies from 32 universities and from the following ten REF2014 Units of Assessment: 'Education' (38 cases), 'Business & Management Studies' (5 cases), 'Social Work & Social Policy' (3 cases), and one case each for 'Sociology', 'Geography', 'Allied Health Professions', 'Mathematical Sciences', 'English Literature', 'History' and 'Philosophy'.

In our analysis of the Case Studies, we adopted the use of Qualitative Data-Mining (QDM), 'the mining of the narrative text contained in documents' (Henry, Carnochan, and Austin 2014, 8), according to the qualitative content analysis method (Titscher, Wodak, and Vetter 2000; Schreier 2014), in which documents are analysed 'as containers for content' (Prior 2008, 479) and for their 'descriptions of social behaviours and surrounding contexts' (Hodson 1999, 9). We extracted data on the production, dissemination and application of knowledge to identify which actors/institutions fund, conduct and benefit from the reported research and its impact. In most cases it was sufficient to read only the impact case study documents, but in some it was necessary to read published outputs of the underpinning research (referenced in the impact case studies) to obtain this information.

It is important to acknowledge that the impact case study documents which constitute our dataset are not designed to objectively reflect the reality of the research process in its entirety, but are strategic documents produced within the context of a high-stakes evaluation. We have not analysed these impact case studies to make normative judgements about what constitutes legitimate and notable impact, nor evaluative judgements about the magnitude or persuasiveness of impact claims made by the case studies in our sample. Nonetheless, we believe the case studies do

enable valuable insights into the effects of research policy evaluations on the structure and dynamics of the institutional landscape.

Categories and coding

This section describes the five categories before presenting the ‘coding frame’ (Schreier 2014) applied to our data. Table 1 presents the coding frame, showing the coding categories and the number of cases identified of each specific code. We stress that Categories 2 (Funder), 4 (Impact Type) and 5 (User Relationship) are *not* mutually exclusive. A given Case Study could therefore be coded to more than one code within these categories. Although dealing with non-mutually exclusive categories can complicate the analysis stage, we felt it important, at the coding stage, to maintain a closeness to the inherent ‘messiness’ of our object of study; that is, the ‘messiness’ of researching complex social contexts, of applied research within an evolving field over a period of time, and of influencing social change through research (Bastow, Dunleavy, and Tinkler 2014, Grant and Wilkinson 2014, Oancea 2013).

Table 1. Coding frame; categories with frequencies of codes

Category	Codes
1. Tier of HE institution	‘Lower-Tier’ institutions (32 cases); ‘Upper-Tier’ institutions (21 cases)
2. Funder	Membership-based Charities (MBCs – sector bodies based on member subscriptions, e.g. Universities UK, Higher Education Academy) (23 cases); HEFCE (20 cases); Research Councils (18 cases); Government (15 cases); Charities (12 cases); International Bodies (11 cases); Other (non-private) (2 cases); None (5 cases)

3. Temporal	Open-ended research (21 cases); Short-term research (11 cases); 'Mixed' research (16 cases). N/A (5 cases due to insufficient information to make a judgement)
4. Impact type	Sector policy (30 cases); Government policy (28 cases); Practice (23 cases), and Societal benefit (19 cases).
5. User relationship	No direct involvement (31 cases); Co-producer (18 cases); Co-designer (7 cases)

Category 1. Tier of Institution. As we are interested in capturing evidence of reproduction or transformation of existing hierarchies, we coded for the 'status' of institutions. Although, as discussed earlier, the pre-/post-1992 divide persists, we chose to use the 'status' categories from Boliver's (2015) more up-to-date and evidence-based analysis as a dividing line: what she calls 'Tier 1' institutions (comprising of the Universities of Oxford and Cambridge only) and 'Tier 2' institutions (comprising most of the remaining 'pre-92' institutions and no 'post-92' institutions) were combined in our study in an *'Upper Tier'*; while what she calls 'Tier 3' institutions (comprising a combination of 'pre-92' and 'post-92' institutions) and 'Tier 4' (comprising 'post-92' institutions only) were combined into a *'Lower Tier'*.

Category 2. Funder. As we are interested in how researchers at different types of institution interact with 'external publics', such as funders and users, we identified every organisation which had financially supported any of the underpinning research referenced in the Case Study, sometimes requiring access to the papers rather than just the Case Study documents. In five cases, no specific funder was identified for the underpinning research.

Category 3. Temporal. Since the ability to command resources and space for long-term and relatively open-ended investigations is considered a marker of prestige and likely pathway to further accumulation of scientific capital, we inductively coded for the ‘temporality’ of the underpinning research of a Case Study. The three categories used are: ‘open-ended’, ‘short-term’ or ‘mixed’, when elements of both kinds of research were identified.

Category 4. Impact type. Again, to capture the ways in which the researchers interacted with external publics, we inductively coded for the impact type. We identified four types which are presented here in decreasing quantitative importance: ‘sector policy’; ‘government policy’; ‘practice’ and finally ‘societal’ impact, which included impact via the media, impact for the wider public, or specific benefits for individual students.

Category 5. User Relationship. There are two ways in which ‘user relationship’ might indicate markers of prestige and scientific capital: first, where there is little or no ‘user involvement’ in designing the research, this may indicate relatively greater autonomy for the researcher; second, if researchers typically interact with users who themselves hold significant social capital and power, such as policymakers, this may indicate greater levels of scientific capital on the part of the researcher than where the users interacted with are typically those relatively lacking in power, such as small groups of students.

Results

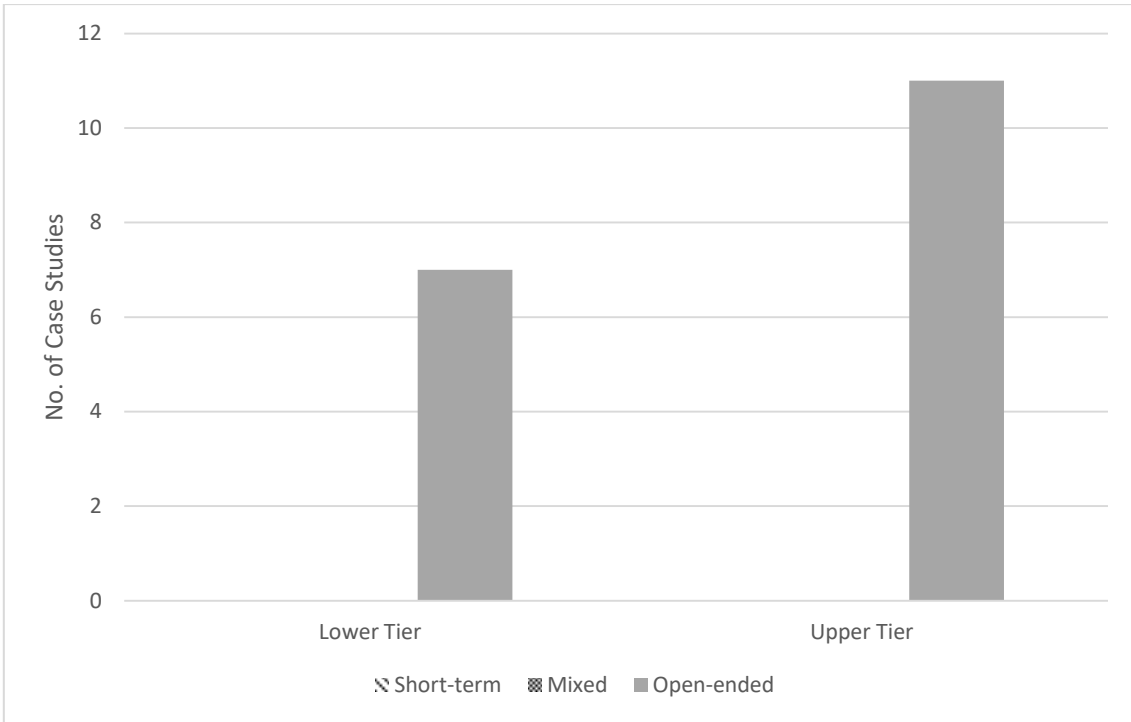
Descriptive analysis of coding

Coding revealed that much research did in fact appear able to overcome some of the

apparent weaknesses typically associated with research on higher education, for example, involving relatively open-ended research programmes rather than very short-term projects with prespecified outcomes, and exhibiting autonomy from the objectives and interests of funders or users. We do not intend to make broader claims about the field of higher education research based on this finding, since research which underpinned impact case studies submitted to REF2014 represents a select and rather narrow range of research on higher education. In addition, our criteria for including an impact case study did not follow predefined criteria for what counts as research on higher education and who the higher education researchers are. However, what is of interest for our purpose is that these impactful studies on higher education appeared disproportionately to be exhibited by Upper Tier institutions.

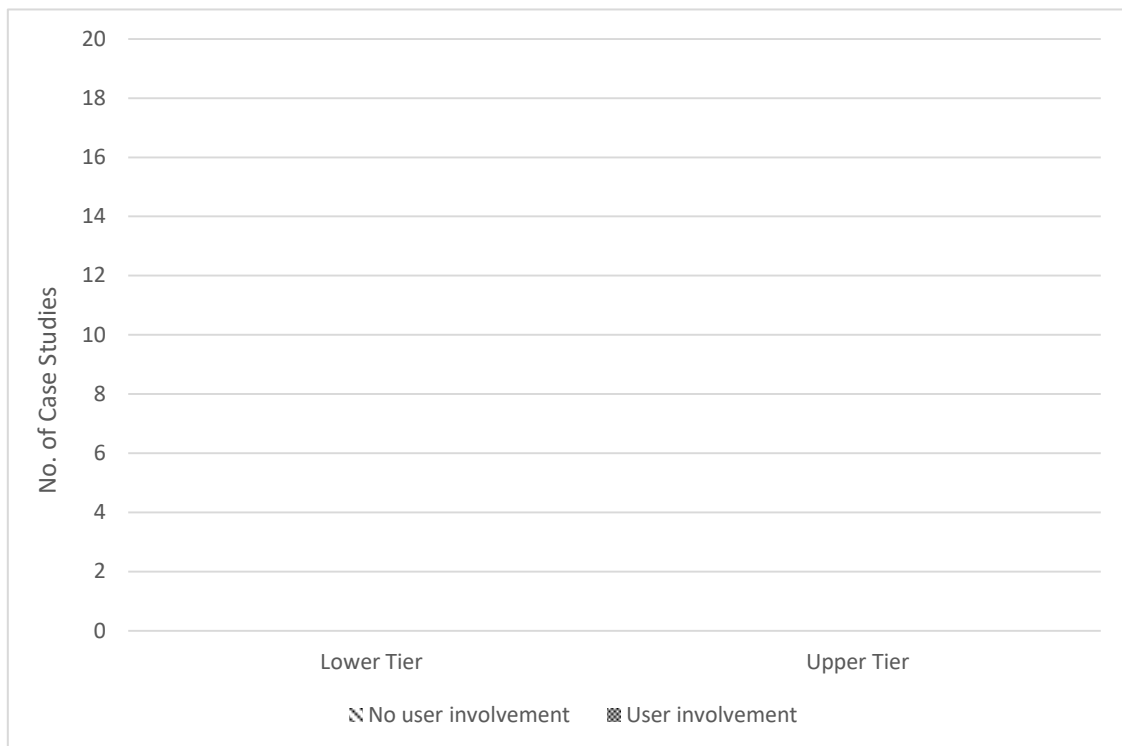
For example, Figure 1 shows that more open-ended research is the norm in Upper Tier institutions but rare amongst the analysed research from Lower Tier institutions.

Figure 1. Frequency of temporal characteristics by tier of institution



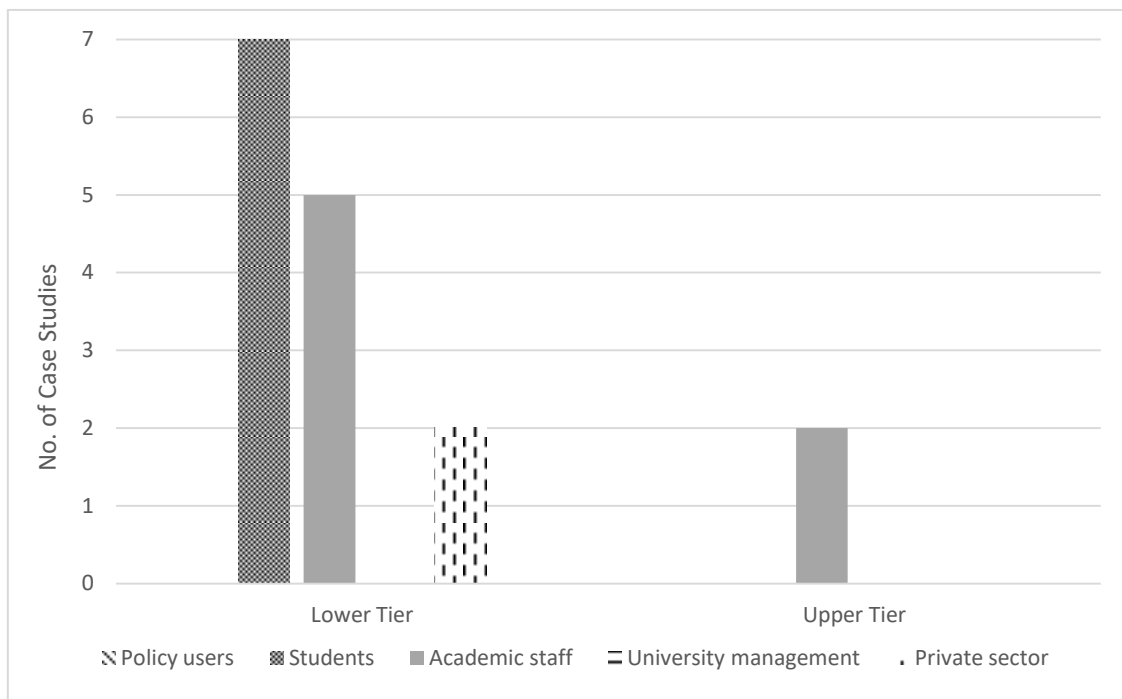
Similarly, Figure 2 shows that Upper Tier institutions appear to have more autonomy over the research, in that the majority of research has no input from users. By contrast, most of the research sampled from Lower Tier institutions involves more direct user involvement, either in terms of setting the agenda and parameters for research or involvement in co-producing the research.

Figure 2. Frequency of user involvement by tier of institution



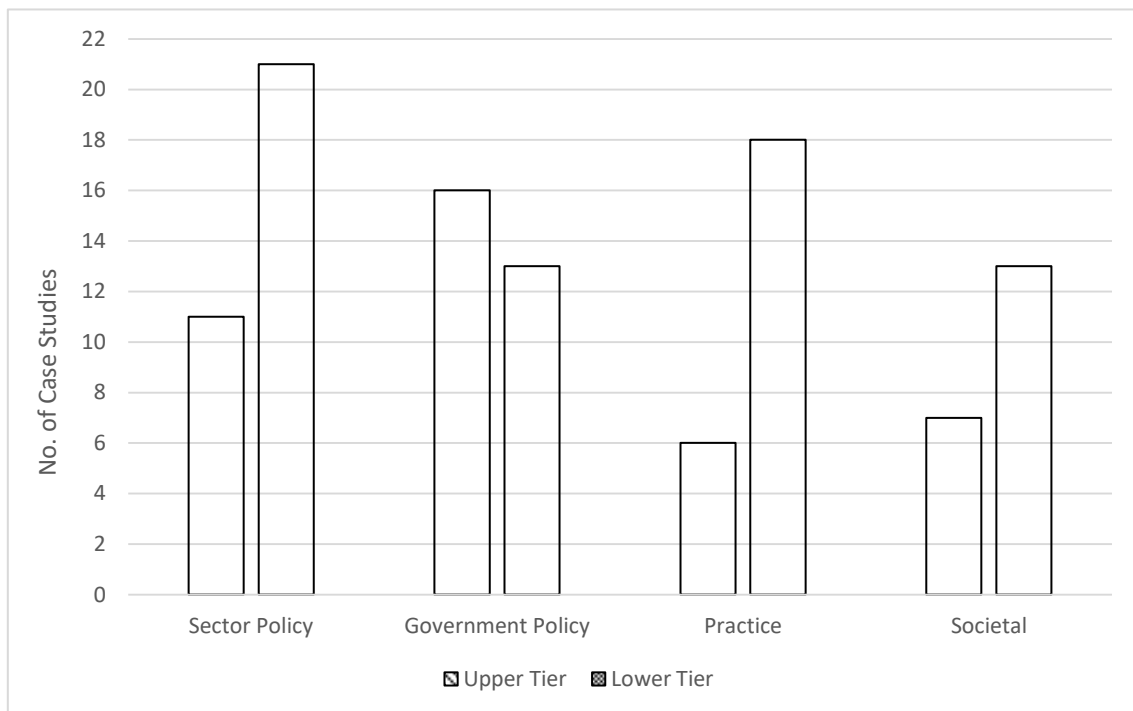
Looking into this further, Figure 3 shows that where users are involved in Upper Tier institutions' research, they are typically users who represent more powerful 'external publics', predominantly policy actors. By contrast, the users most commonly involved in research at Lower Tier institutions are students.

Figure 3. Frequency of type of user by tier of institution (where there is 'user involvement')



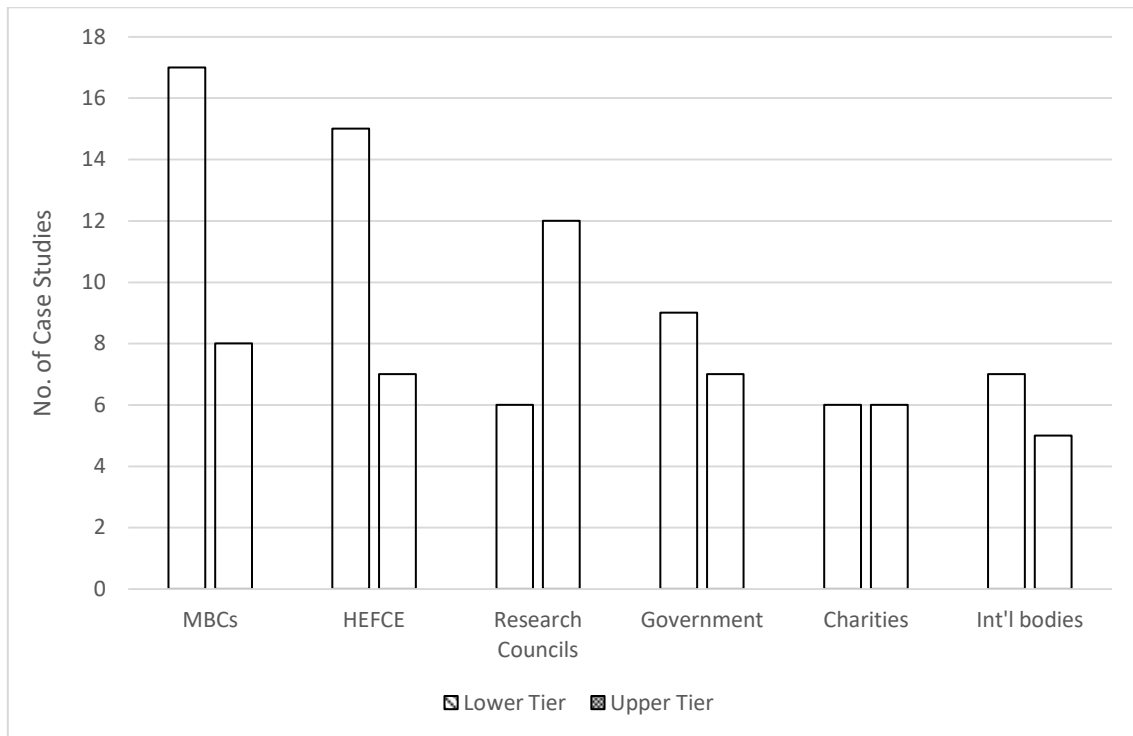
More generally, research at Upper Tier institutions is also disproportionately responsible for impact upon powerful external publics. Figure 4 shows that research from Upper Tier institutions predominantly achieve impact on 'government policy' associated with extensive system change, whereas that from Lower Tier institutions mostly impact more bounded 'sector policy' or local 'practice'.

Figure 4. Frequency of tier of institution by impact type



There is also a marked difference in the sponsorship of research by tier of institution, with Figure 5 showing that research at Upper Tier institutions is predominantly sponsored Research Councils. By contrast, Lower Tier institutions are predominantly sponsored by HEFCE or various membership-based charities (MBCs).

Figure 5. Frequency of tier of institution by funder



To summarise, all the research sampled can be said to have advanced their scientific capital through achieving impact by virtue of having been recognised for this impact and submitted to REF2014. But rather than a level playing field, whereby some ‘invisible hand’ simply and neutrally connects relevant knowledge directly to users, the data indicates the persistence of entrenched hierarchies shaping the mobilisation and accumulation of capital through the policy of the impact agenda.

Upper Tier institutions appear better able to mobilise capital to acquire the resources necessary to conduct research under desirable conditions of autonomy and open-endedness, and to gain access to, and influence over, powerful external publics. Of the 53 impact case studies sampled, a strong pattern emerged of Case Studies from Upper Tier institutions whose underpinning research seems to overcome the weaknesses typically associated with higher education research on multiple dimensions. Far from being short-term, externally directed and having limited (if any) influence on strategic higher education policy, these cases are characterised by sponsorship to conduct research which was open-ended and autonomous and went on to have a significant influence over the thinking of powerful policy actors.

Below, we delve deeper into four Case Studies in order to generate further insights into patterns that clearly challenge the narrative of non-academic criteria of success opening up the space for unsettling sector stratification and disrupting established hierarchies.

Qualitative analysis of distinctive (high ‘scientific capital’) cases

We will start with two Case Studies which share several characteristics. Researchers at the University of Oxford have spent around two decades quantitatively studying the

relationships between supply, demand and usage of skills; similarly, researchers at Cardiff University studied the relationship between skills formation and the global labour market through qualitative interviews with senior figures in multinational companies on their recruitment and human resource strategies and their perceptions of 'talent'. For both impact case studies, the underpinning research was supported by Research Councils. The main relevance of both was that the findings of the research challenged current dominant assumptions in policy about the relation between skills and jobs in the (global) knowledge economy, in particular, the overreliance on 'human capital' development as the key ingredient to national economic competitiveness and personal advancement. The significant quantitative results from Oxford, and the high profiles of Cardiff's interview participants, attracted significant interest from policy actors. For example, in the words of the Head of Skills and Employability at the International Labour Office (ILO), Cardiff's research prompted 'reflection on ILO's own research and policy advice', while an OECD analyst called it a 'fascinating future research agenda' (as quoted in Cardiff University 2014, 3). And, according to senior civil servants, Oxford's research provided 'the leading British critique of approaches to skills policy' and 'an important oversight and challenge role by advocating alternative positions' (as quoted in University of Oxford 2014, 3). Researchers from both Oxford and Cardiff have been invited advisers to governmental departments for both general consultation and specific policy preparation and scrutiny and have had their research discussed and debated at supranational bodies such as the OECD and the World Bank.

Similar trajectories can be observed in research from other Upper Tier institutions. For example, the research on international development education at the University of Bristol (commencing in 1994) has challenged and re-shaped traditional

policy thinking of supranational and international organisations such as UNESCO and the Commonwealth about the educational needs in ‘small states’, which Bristol researchers successfully argued should focus on tertiary/higher education to address localised needs, in stark contrast to traditional policies which focused on a generic, basic level of education. To take another example, research at the University of Edinburgh (conducted 1997-2006) showed that Scottish social mobility policies faced inevitable limitations due to the persistence of other (non-educational) social inequalities, with findings directly influencing OECD’s review of the Scottish education system and subsequent national policies.

In all four of these examples, the researchers were able to secure resources for relatively long-term, open-ended and critical research programmes which allowed the researchers to reveal underpinning social realities which challenged dominant policy thinking. Moreover, the researchers held sufficient social and scientific capital to access powerful political networks who were willing to be challenged by the researchers’ findings. They were able to generate what Hong (2008, 556) has termed ‘theoretical capital’, that is, the capacity to determine what counts as established ‘facts’ in a field. For example, Oxford and Cardiff researchers displaced one widely-believed, but theoretically poorly-justified ‘fact’, that of human capital accumulation through higher education as the key to personal and national economic prosperity, with more theoretically rich ‘facts’ about wider structural realities, and these facts were taken on board by policy actors.

Discussion

Sponsorship, time regimes and hierarchical differentiation

Within academic research on higher education, Upper and Lower Tier institutions have been found to vary in the conditions of research and the influence this research achieves. Researcher from Upper Tier institutions were more frequently able to secure the kinds of resources to conduct research under the much-prized conditions of open-endedness and autonomy (S. Smith, Ward, and House 2011). It was found that this was most commonly achieved via successfully obtaining grants from Research Councils.

By contrast, Lower Tier institutions were more commonly funded by bodies such as HEFCE, the Higher Education Academy and Universities UK which, unlike Research Councils, have particular roles within the higher education sector, and therefore tend to fund research to address their particular questions and issues². As such, research and Lower Tier institutions tended to be less open-ended in its timescale, scope and goals. Commentators have noted that academic research on higher education, despite normally having a relatively clear 'pathway' to impact due to being sponsored by sector bodies to address particular issues of policy or practice, is less likely to achieve significant influence on the sector precisely because the scope of the projects preclude the opportunity to address the bigger picture and propose alternative visions (Felt 2016; Locke 2009; Scott 1999). Our analysis, both through the descriptive statistics and the more qualitative discussion of four example impact case studies, has shown that much research does overcome these apparent weaknesses. But we have also found that this ability is differentially distributed and is more apparent in research based in Upper Tier universities than Lower Tier universities. We

found that a significant minority (approximately one third) of the Case Studies sampled from Upper Tier institutions was underpinned by research which was open-ended and autonomous and went on to have a significant influence over the thinking of powerful policy actors.

The observed differences between Upper and Lower Tier universities could suggest that impact policies are 're-interpreted locally' (O'Connell 2018, 12) and that engagement with impact is anchored in local research practices and interpretations. At the same time however, K. Smith and Stewart (2017, 120) have shown how the preferred impact types for applied social sciences are largely impacts on 'elite' policy institutions and policy makers 'as compared to nongovernmental organisations (NGOs) or local policy or practice'. Similarly, a study of all impact submissions within the field of community-based health sciences (Greenhalgh and Fahy 2015) found that by far the most popular 'target audience' (4) for achieving impact was policymakers. The idea of impact and the impact agenda, then, are not neutral, but rather, as K. Smith and Stewart (2017) point out, prompt greater competition amongst academics to attract the attention of high-profile external 'users' – a competition within which privileged institutions are favoured. Our findings chime with theirs in suggesting that the impact agenda 'is reinforcing the distance between traditional (academic and policy) 'elites' and others' (K. Smith and Stewart 2017, 121), thus connecting differential impacts to hierarchically differentiated institutions. O'Connell (2018, 13) agrees that impact evaluation 'may inadvertently create a hierarchy of influence in the field of [higher education] research'.

We have interpreted these results according to Bourdieu's concepts of 'field' and 'capital' particularly *scientific* capital, and related forms of capital such as

reputational, theoretical and symbolic capital. Our findings agree with others' who have conducted empirical Bourdieusian research into the applied social sciences in the recent UK policy context. For example, applied social scientists perceive UK's performance-rated funding system to lead to an 'intensification ... of individual struggles' for some of the key ingredients of 'scientific capital', namely, 'achieving research council grants' and simply 'finding time' for research (Holligan, Wilson, and Humes 2011, 722, 726, 730). Based on the kinds of research contents and contexts which exhibited characteristics of scientific capital and which influenced powerful 'external publics' in our study, we find, like Garforth and Kerr (2011), 'scientific capital [to be] linked to the *critical* power of the social sciences' (665, emphasis added). For interview respondents in their study, the ideal was that their research would 'be relevant to and in the policy process, but ... that its primary value [would be] academic and disciplinary; ... if the ideas and arguments were rigorous and persuasive, their relevance and application would follow' (Garforth & Kerr 2011, 668). Our analysis suggests that research from several of the Upper Tier institutions in our sample were able to realise this 'ideal'.

Transferability of findings over contexts and time: the uncertainty of reproduction and the possibility of change

From a Bourdieusian perspective, the articulation of given national, institutional and disciplinary contexts, although revealing reproduction, includes within it inherent uncertainty; it is possible that different contexts and times may witness new dynamics, players and opportunities for mobilising capital(s) such that the structure of the institutional (and/or individual) positions within the field undergo transformation

rather than reproduction. Thus, our study, whilst having implications for different disciplines and systems, should not be taken as predictive or deterministic. On current evidence though, the enduring trend of hierarchical reproduction (Clark 1983; Marginson 1997) remains in full operation (Marques et al. 2017). This study demonstrated that even an applied and weakly disciplinary framed field as higher education research which is often hosted in less research-intensive institutions does not succeed in neutralising the structuring forces of established institutional privilege and power when it comes to display its non-academic impact.

Concluding Remarks

Our study has examined the interplay between research impact in social sciences and stratification of the higher education system through the evidence contained in the fifty-three impact case studies of higher education research submitted to REF2014. This revealed the workings of hierarchical structures in accruing professional autonomy, scientific capital and 'symbolic power' (Bourdieu, 1975, 20). The UK higher education sector stands out globally for being relatively highly stratified and having an advanced and entrenched system of performance-based research funding allocations which places particular significance on impact. Our findings contribute to the sociological analysis of hierarchical differentiation in higher education and research evaluation systems by revealing that (i) pre-existing hierarchical structures activate the autonomy and capital that researchers mobilise when producing research impacts in a specific discipline and, in turn, (ii) disciplinary-level processes tend to operate as a mechanism for the reproduction of sector stratification.

Our findings have implications for legitimising performance-based research funding allocations as tools for promoting and rewarding ‘excellence ... wherever it is found’ (Eastwood 2007, para. 4; Stern 2016, 28). Rather than a level-playing field, whereby some ‘invisible hand’ simply and neutrally connects relevant knowledge directly to users, our study reveals a system mediated by entrenched institutional characteristics and relationships between higher education institutions and the funders and users of their research. ‘In consequence, judgements on a... researcher’s scientific capacities are *always contaminated* ... by knowledge of the position he [sic] occupies in the instituted hierarchies... of the universities’ (Bourdieu, 1975, 2, emphasis in original). Already prestigious institutions exhibit greater levels of academic autonomy, command greater authority and are more successfully ‘engaged in those networks where funding and influence are concentrated, they also draw policy-makers into academically driven dialogues’ (Middlehurst, 2014, 1484).

This raises significant questions around whether new criteria for research performance can compete with traditional assumptions about prestigious institutions being preferable producers of knowledge, providers of advice, and possessors of authority. Research policy has seen impact become an element of internal struggle for accruing scientific capital. Its assessment has precipitated the conversion of societal effects of scientific knowledge into a valuable ‘currency’ that is unequally distributed within the academic ‘field’. Our findings point towards the reproductive effect of research policies, which tend to prompt and propel positional hierarchies. However, the broader contribution of our inquiry simultaneously opens up the space for resistance and change.

1. Where a Case Study was based on subject-specific research, it was included only if some element of the research or impact extended beyond that subject. For example, one Case Study based on mathematics pedagogy was included because it related to the teaching of mathematical skills to non-specialists in other university disciplines, while we excluded one Case Study whose focus on Creative Writing did not extend beyond its home discipline of English literature.

Declaration of interest

The authors declare no conflict of interest.

Data statement

The data that support the findings of this study are available at the Research Excellence Framework (REF) 2014 impact case studies repository website at <http://impact.ref.ac.uk>. These data are available in the public domain.

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Table 1. Coding frame; categories with frequencies of codes

Figure 1. Frequency of temporal characteristics by tier of institution

Figure 2. Frequency of user involvement by tier of institution

Figure 3. Frequency of type of user by tier of institution (where there is 'user involvement')

Figure 4. Frequency of tier of institution by impact type

Figure 5. Frequency of tier of institution by funder