What research impact?
Tourism and the changing UK research ecosystem

by

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ABSTRACT

This thesis investigated the research impact discourse surrounding the REF’s 2014 (Research Excellence Framework) evaluation of research in the UK. The addressed knowledge gap dealt with critically evaluating the newly introduced disciplinary regime surrounding research impact and what influence it has on academic praxis and the research ecosystem as a whole. The utilised research methodology represented an evaluation of the research impact guidelines, submitted impact claims and interviews with academics. Specifically, a critical discourse analysis of the research impact case studies (in relation to tourism) and impact templates (of the submitting tourism studies faculties) was conducted. This was complemented with semi-structured interviews of tourism academics on all levels of the academic hierarchy.

The key findings are; firstly the research shows empirically that the newly introduced discourse of research impact shapes academic conduct to affiliate itself within the performance measures in a very pragmatic fashion (small scale and easy to reference). Secondly, the research showed that the research impact discourse disciplines behaviour along the entire chain of the social construction, from setting a word to the page all the way to employment decisions and universities budgets. Lastly, the analysis of the interviews showed the different levels of cognitive learning within the researchers’ resulted in that each individual approached the same discourse differently, this multiplicity and the resulting uncertainty represents a force that is shaping the research ecosystem in its own right.

The work is original in that the here presented post-postmodern approach to studying (scientific) knowledge construction, not only offers an explanation of knowledge accumulation whilst still allowing being critical of it. The originality comes in that the research ecosystem approach allows a potential way to evaluate the vertical dimension of epistemology, allowing the dialectic to present a choice between different value assumptions shaping these disciplinary measures.

Keywords

Research impact discourses, research ecosystem, REF, tourism, post-postmodernism
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A big thank you also goes to all the interviewed academics that volunteered their time in order to make my research possible. I hope the here presented thesis will do justice to the ideas that were exchanged during our interviews. The interview discussions that happened after the semi-structured interview part were vitally important for the research process, as it allowed me to test many of my ideas. These ideas are now formally developed below, with no small part due to your help.

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History never looks like history when you are living through it
1. INTRODUCTION

The previous quote is often attributed to John W. Gardner who was the US Secretary of Health, Education, and Welfare under US president Lyndon Johnson. The history making events have been certainly plentiful during the time of the compiling this PhD (2014-2018); there was Brexit, the election of Donald Trump, #Gamergate, the Syrian civil war, ISIS attacks in Europe, annexation of Crimea, North Korea’s firing a missile over Japan, Europe’s migration crisis, the Greek debt crisis, the Scottish and Catalan referendums for independence and #metoo to only mention a few events that will occupy future historians. However, what was perhaps less noted was the reshaping of the Enlightenment telos of science with the introduction of research impact by the Research Excellence Framework (REF 2014). Exploring the implications of such a shift in telos represents the content of this PhD thesis. As such, this thesis not only represents an investigation of tourism research impact, the REF or a discussion on the advantages and disadvantages of research impact as a performance indicator, but also a historical account of documenting the change of an entire research ecosystem that is starting to prioritize the ends over the means.

The REF’s decision to include research impact as an official performance indicator has far reaching consequences for academia and how research is conducted. The first observable consequence is that such a decision has led to the ‘impact of research’ now becoming the new buzz word within the UK research ecosystem; adorning conferences themes, special issues in journals, new applied research centres, publications, advertisements, university courses and university positions to only mention a few. However, what research impact specifically implies for research praxis is often less well understood. Within the here studied context, the REF utilises research impact as a tool to help assess the quality of research. Such an approach marries the notion of assessment of research to a greater societal contribution, by operationalising impact as a rigidly defined performance indicator that can be used for benchmarking. Such an approach is not without its problems, as will be shown within this thesis, research impact is thereby tied to government funding for universities, revealing why research impact now is in vogue. In general, the UK funding bodies urge the universities to “maximise impact”\(^1\), which in turn is then echoed by universities claiming that they have made “enormous impact on the world over the centuries”\(^2\) fuelling such symbiotic ecosystem wide changes.

In regard to the actual implementation, what is required of a particular institution or individual in regard to fulfilling their role to achieve research impact is much harder to pin down. This thesis explores many different aspects of the kaleidoscopic phenomenon that is research impact. For example, within the REF’s own pilot exercise for the impact assessment, they stated that “[t]he impact guidelines were felt to be rather vague. As such they were left to fight with their own interpretation of what impact means” (REF 2010A:12). Judging from the research here conducted there still is a lot of work that needs to be done in order to address such issues. The reason why research impact has this kaleidoscopic character is because it touches upon; personal values, research praxis, the role of academic institutions, and what principles should steer the accumulation of scientific knowledge (i.e. epistemology) to only mention a few aspects that will be discussed within this thesis. As such, it is instructive to think about research impact as a discourse that is shaped by different forces present within the research ecosystem. The research impact discourse is present within the ecosystem in;

\(^1\) Economic and Social Research Council elaboration on “What is impact?” on their website http://www.esrc.ac.uk/research/evaluation-and-impact/what-is-impact/ accessed: 2015-09-23

the individual academics, within the assessment standards, within the institutions and their organisational practices and so forth. As such, let’s begin this journey by defining the research aim, question and objectives of this study.

1.1. Research Aim
The aim of this study is to outline the effect of the research impact discourses on scientific knowledge production. This translates into the following research question.

1.2. Research Question
What influences has the research impact discourse on the praxis of conducting tourism research?

1.3. Research Objective
The first research objective represented; defining the research ecosystem based on literature that studied science in action, however extending this definition to include evolutionary psychology. Furthermore, this also included critically evaluating the literature that relates to research impact. For the empirical objectives, these represented identifying impact discourses within the REF guidelines, impact case studies and impact template submissions in relation to tourism impacts. As well as within interviews with tourism scholars and other studies that investigated the REF impact assessment. Thereby, resulting in four distinct theoretical and empirical objectives for this study, these are:

- Outline, define and critically assess the sociological, psychological and philosophical literature in relation to scientific knowledge production within the research ecosystem.
- Identify, synthesize and critically evaluate the disciplinary guidelines in relation to research impact, as expressed within the REF 2014 guidelines.
- Identify, compile and critically contrast themes that could be found within the impact cases (and templates) that the universities submitted for assessment of their research impact in relation to tourism, and
- Hold interviews with tourism studies researchers that are active within the wider research ecosystem, focusing on how research impact influences their research and critically reconceptualise their understanding of research impact based on their level of familiarity of how the research ecosystem operates.

By dividing the research impact discourse in such a fashion, it allows for covering the discourse from different points of view within the research ecosystem, enabling the study of such a kaleidoscopic phenomenon. As such, the research defines a research impact discourse as the underlying assumptions of how ‘the impact of research’ is understood and evaluated by people involved within tourism research ecosystem and the REF process.

1.4. Key concepts
One of the key contributions of this PhD is defining the epistemological lens here used, i.e. the research ecosystem. This study understands by research ecosystem the context in which research takes place in order to create scientific knowledge (i.e. the academic system, universities, journals, conferences, research societies etc.). The ecosystem metaphor is used in order to describe the combination of all the forces that act upon research as a human activity (government, universities, interpersonal competition, personal interests etc.).
The research approaches the research ecosystem sociologically, i.e. deconstructing the research discipline that is involved in the making of scientific knowledge (i.e. tourism studies) along human behavioural patterns. Research discipline involves more than just a uniform area of interest, it also represents the proper way of conduct that the members of the ecosystem have to operate by in order to produce the desired outcome, i.e. scientific knowledge. These disciplinary norms have developed and evolved within the research ecosystem since before the Enlightenment and still exert pressure on research conduct, disciplining researchers across many different disciplines.

Different scientific and extra-scientific factors can be identified that discipline the research ecosystem. These are funding guidelines, evaluation standards, political considerations, ethical considerations, material limitations, the wishes of the government, psychological predisposition of researchers and now the REF and research impact. Successfully managing all such different influences and creating a coherent piece of information (i.e. scientific article, impact case study or funding application) is then considered scientific, if all of these different levels of the analysis are incorporated in the proper way.

Within the scientific realm, the proper way is signified by fulfilling proxy indicators of scientific quality, which are language markers for the in-group to establish trust and reliability of the presented knowledge claim. The thesis argues that similar proxy indicators of impact quality have not yet been consolidated among the individuals being assessed. Nevertheless, the disciplinary requirement that the mere participation within the assessment process enforces, still disciplines academic behaviour.

One of these proxy indicators of scientific quality that is disciplining research are the writing norms and reference standards that discursively shape the rhetorical reconstruction of a scientific fact. During the research process, the research first undergoes a critical theoretical deconstruction of the existing literature, followed by an analytical construction of the empirical data material and finally a rhetorical re-construction that presents the research findings, in order to become part of the accepted scientific canon (i.e. the hinterland). This last step is usually shaped by the different traditions of language tribes that inhabit the research ecosystem (i.e. different disciplines).

The seamless web is a notion from the history of technology development that posits that technological innovation occurs without clearly defined areas of expertise. In relation to the research ecosystem, the seamless web simply extends the ecosystem idea to a human ecosystem in general (i.e. society). The REF’s current assessment format conceptualises impact in a very narrow fashion. This PhD thesis argues that it is not the definition of research impact that makes the interpretation narrow, but rather the assessment process that disciplines the rhetorical reconstruction of a research impact fact (i.e. an impact case study).

1.5. Using the REF as a case study
The wider knowledge gap (the problem of extension) that this research situates itself within will be elaborated within the next chapter, however let’s spend a few words outlining the rationale for this study and why the REF represents a good case study. The REF is many things, however in essence; the REF addresses the question of how to choose between different competing scientific knowledge claims, what research gets funded as well as creating benchmarking standards for UK research. This raises questions surrounding research conduct, scientific quality, the role of research in society and political issues, or as will be expressed here; what values should guide research? There have been several attempts to unify modern and postmodern approaches in order to address this question (cf. Lyotard 1984; Latour 1999A; Collins and Evans 2002; Tribe 2002; Latour 2004; Law 2004; Law and Urry 2004; Ateljevic et al. 2007; Collins and Evans 2008; Wadmann 2014). Although, such studies are detailed in their descriptions, they are often mute in implying prescriptive solutions. It is
understandable, as decades of science studies have shown the fallibility of the peer review system, decisions made by 'scientists in white coats' or the internal biases within the ivory tower of academia, that all create their own particular problems (c.f. Martin 1991; Wynne 1992; Langfeldt 2001). So, leaving the decision only to researchers, of what research ought to be researched seems like an imperfect solution as well.

Finding a case study that is dealing with such societal wide issues is not an easy task. I would proposition that resolving this problem, also implies resolving the value problem of what values are beneficial for society and which are not. The reason being, any type of measurement is always dependent upon axiomatic assumptions (Chalmers 2013) and these steer what solutions and problems become feasible. The inference here is that if you talk about impact, in essence you also have to have a discussion about the role that research plays in society. Examples from quality assessment in good patient practices have shown that unpacking values represents a way to consolidate the measurement with the desired aim (cf. Zuiderent-Jerak et al. 2009; Zuiderent-Jerak 2015). Therefore, it is suggested here that studying the REF assessment of tourism research impact represents a good case study to explore how the practice of research is influenced by external values (i.e. desired research impact) and what influence it has on the scientific knowledge that is produced.

One underlying assumption of impact can already be derived by the definition of the word. Impact is defined as an “effect that something […] has on a situation or person.” This presupposes that ‘something’ has to be impacting upon ‘something’ else. As such, an Enlightenment focus of knowledge for the sake of knowledge (e.g. Brabazon 2009) is already denied as a possible role that research plays in society. Furthermore, the REF's definition explicitly states that; “'[I]mpacts on research or the advancement of academic knowledge […] are excluded' (REF 2011A:26, emphasis in the original) from their understanding of what impact is. This creates a very neoliberal view of research, as research is only valued for the outputs it can produce (i.e. research impact), which among others has been called the ‘impact paradigm’ (cf. Holt et al. 2014). Assuming that research should ‘impact’ society (and presumably in a positive and constructive way). Another assumption of the REF is that the results are meant to guide decisions for future research funding (i.e. benchmarking). Inherent in that assumption, is that ‘past success will ensure future successes.’ This may not always be the case, as several errors with this assumption have been pointed out famously by Merton (1936), coining the colloquial phrase; ‘the law of unintended consequences’. A whole range of other underlying assumptions could be mentioned at this point. However, trying to ‘unpack’ these definitions philosophically opens up for an endless chain of regress, as each “appeal to prior knowledge, […] involves an appeal to further prior knowledge and so on in an never-ending chain” (Chalmers 2013:49). Therefore, resolving the issue of the values by unpacking the axioms may result into opening a ‘Pandora’s box’ of assumptions, and not solve anything (cf. Latour, 1999A). What is important to remember here, is that actions and changes in disciplinary regimes can have iatrogenic effects, which despite the best intentions can cause harm to the individual or the system (cf. Dymitrow and Brauer 2016 & 2018).

With the term ‘science studies’ I am primarily referring to Science and Technology Studies here.


This famous paper by Merton is often abbreviated to; ‘the law of unintended consequences’. “A common fallacy is frequently involved in the too-ready assumption that actions which have in the past led to the desired outcome will continue to do so.” (Merton 1936:901)
The concept of *iatrogenesis* is derived from the Greek for ‘brought forth by the healer’ (cf. Taleb 2014). As such, ‘Pandora’s hope’ (cf. Latour 1999A) may therefore not lie in philosophically defining impact, but instead focusing on the ‘practice of impact’, or in other words: ‘how is the assessment done?’, unpacking the practice of the research impact discourse, because, science studies scholars have shown over the last three decades; that yes even while such debates about the underlying assumptions cannot be settled philosophically, they can be settled in practice (cf. Shapin, Schaffer et al. 1985; Hughes 1987; Latour 1987; Bijker et al. 1987; Collins and Pinch 1993; Latour 1993; MacKenzie 1993; Bijker 1995; Livingstone 2003; Latour 2005; Edwards 2010; Collins 2010; Latour 2013). As such, by understanding these assumptions that are made in practice better, this may represent a better way of finding a base for consensus to talk about the ‘proper way’ to measure the quality of research.

1.6. Method summary
The reason for applying critical discourse analysis as the principal methodological point of departure, is so that the ‘attitudes’, ‘rationalisations’, ‘interpretations’, ‘perspectives’, ‘ontologies’, ‘worldviews’, ‘underlying frameworks’, ‘belief structures’, ‘expectancy models’, ‘reality tunnels’, ‘doctrines’ and so forth of how research and impact is presented, understood, utilised and applied can be unified and studied within one coherent methodological approach (cf. Weiss and Wodak 2007). The critical discourse approach is included within the theoretical framework here used on how research and impact is understood. However, the research ecosystem idea expands the notion of discourse to more than merely a social construction, but rather extending to materiality, structural aspects, and infrastructure limitations and psychological learning of cultural norms to create a more compressive picture. For example, the focus on *proxy indicators of quality* as an analytical lens is in essence a textual analysis. However, what these proxy indicators signify are the material, rhetorical and social orchestrations of human behavioural patterns of a particular discourse, that is very deliberately disciplining the language of a specific presentation to fit into certain paradigm, theory, world view, ideology, etc. (cf. Collins and Evans 2008). Lastly, the critical discourse approach also fits with the type of data material that is going to be used and generated by this study (i.e. document analysis and interview analysis).

When approaching socially contingent issues, such as the *discourses of research impact*, quantitative methods do not adequately cover the complexity that is involved within the kaleidoscopic phenomenon such as research impact. As such a qualitative explorative approach is much more suitable (Bryman 2015). The qualitative methods that will be utilised within this study are semi-structured interviews and document analysis. The document analysis also represents a mapping of the research ecosystem, because the REF process produced *impact templates, impact case studies* and other documents that are all addressing the notion of; what *research impact* ought to be facilitated, departing from a particular point of view.

1.7. Structure of the study
The second chapter is simply called *Research ecosystem*, which outlines the epistemological lens of this study, alongside defining the notion of a research ecosystem. A historical account of the development of science studies is provided, as the research gap of this study is located within that development. Furthermore, the conflict of telos that is introduced by the introduction of research impact is discussed and elaborated. This is then put into the context of tourism studies and how knowledge production functions within this particular field of inquiry.
The third chapter is called *Disciplining research*, the chapter outlines the theoretical background on how research functions in *praxis* that is used as a point of departure for the ontology of the here used research ecosystem. In particular, the notion of extra-scientific factors and proxy indicators of scientific quality are defined, explained and put into relation to tourism research. Furthermore, the Piagetian notion of *game* is used to elaborate on how the enculturing process functions in practice. The study uses this post-postmodern synthesis to explain how trust in scientific institutions is maintained within the research ecosystem, commenting upon the current state of tourism studies.

The fourth chapter is called *Research impact* and deals with the phenomenon that is studied here. The understanding of the praxis of impact that is introduced here is that of the seamless web, which developed out of studying large technical systems. Furthermore, within that chapter the rhetorical re-construction is grounded within the research framework, elaborating on how research facts (and impacts) become part of the established research ecosystem. The chapter concludes with a critical synthesis of the literature review, outlining how *discipline* not only separates different knowledge claims but also discursively shapes it.

The fifth chapter represent the *Research methodology and method*, outlining how the study was operationalised to apply a critical discourse analysis to the here studied phenomenon. The research impact discourse was subdivided into a micro, meso and macro discursive level. These levels of the discourse are then operationalised for the document analysis of the REF guidelines, the critical discourse analysis of the submitted material in relation to tourism impacts and the framework and post-hoc thematic analysis of the interviews.

The sixth chapter is called *Research impacts according to the REF 2014* and presents the research impact upon tourism that was reported to the REF. The micro discourses of the individual submissions are compared with aspirational goals of research councils and similar macro discourses (outcome vs. aspiration). The key contribution of this chapter is highlighting how the laissez-faire approach of the REF to impact makes the reported impact cluster around localised small scale research impacts.

The seventh chapter, which is called *Research discipline through proxy indicators*, presents a critical analysis of the rhetorical and technical expertise needed to rhetorically re-construct a research impact claim. The analysis of this meso discourse focuses on how a research impact fact (i.e. an impact case study) is disciplined through the assessment process. As well as summarising the research impact templates, and what they tell us of how the universities self-discipline. The main finding of this chapter is highlighting that despite the REF’s laissez-faire definition of impact, disciplining still occurs that is discursively refocusing the research ecosystem to put more emphasis on research impact.

The eighth chapter is called *Research ecosystem wide change* and presents the analysis of the conducted interviews with tourism studies researchers’. The analysis of the macro discourse shows that the UK research ecosystem is currently in the process of changing itself, in order to align itself according with the research impact agenda. The main argument that is presented is that despite individual confusion of what research impact is, it discursively influences disciplinary behaviour of academics and thereby what knowledge is researched and what is not.
The last chapter is called a defence of the scientific method and represents the conclusion of this thesis alongside suggestions for improvements. The argument is that the telos of research impact conflicts with the traditional Enlightenment telos of science and that now every individual researcher has to make the decision with which to align themselves. The research argues that due to the way that the research impact assessment is done a conflict between an Enlightenment telos and neoliberal view is created. Thereby, the push for more impact will only intensify, under the guise of arguments stemming from a social contract ideal.
2. RESEARCH ECOSYSTEM

When talking about the 'impact' of research, science is automatically referred to as an underlying understanding of what research is and by that token how scientific knowledge production functions. Thereby, in order to fully grasp research impact comprehending the context in which it is produced is necessary. The epistemological view of scientific knowledge production that is used in this study is conceptualised as a research ecosystem. As such, this study takes a post-postmodernist position on scientific knowledge production. The first section of this chapter defines the ecosystem lens that is applied within this study (2.1.). This is followed by a historical description of how science studies scholars have investigated scientific knowledge production, and situating the ecosystem perspective within that historic development (2.2.). The following section outlines the knowledge gap within science studies that is addressed here, as the ecosystem perspective is put forth to address the problem of extension, bridging the modernist/postmodernist divide (2.3). The section after discusses different understandings of science that exist within the same research ecosystem, problematizing how this creates different understandings of impact, academic responsibility and scientific discipline (2.4). The last section of the chapter discusses this multiplicity of values within the tourism research ecosystem and putting these developments into a historic context (2.5). The chapter is concluded by a brief summary (2.6).

2.1. Defining the research ecosystem

The epistemological lens to study scientific knowledge production that is used here is conceptualised as a research ecosystem (cf. Pandey and Patinaik, 2015) and departs from a post-postmodern approach to knowledge production. Over more than a hundred years ago Nietzsche already acknowledged that our human experiences were bounded by our ‘human, all too human’ faculties. He makes that point several times in his writing, for example:

"It has gradually become clear to me what every great philosophy up till now has consisted of – namely, the confession of its originator, and a species of involuntary and unconscious autobiography; and moreover that the moral (or immoral) purpose in every philosophy has constituted the true vital germ out of which the entire plant has always grown." (Nietzsche, [1886] 1989:6)

This metaphor of the plant and the involuntary ‘confession’ in Nietzsche’s conceptualisation links our ideas about morality, metaphysics, politics, literature, philosophy, fiction, reality, epistemology, ontology and indeed science to the biological nature of our human experience (cf. Peterson 2016, 2018). In essence, there isn’t a single bit of datum that is not coloured through our human sensibilities. Nietzsche, wasn’t the first who came to this realisation, nor was he the last. This ecologically bounded rationality and its consequences have always and will always influence societal organisation (Todd and Gigerenzer 2012). For example, Machiavelli famously proclaimed that effective truth (i.e. what people believe to be true) is more important than philosophical truth in matters of government (cf. Machiavelli [1532] 2008). Kant in his critique of pure reasons describes this as the limitation of our cognitive faculties. Today, we may use a different nomenclature, but the same point still stands. Jonathan Haidt (2013) identifies humans as motivated reasoners, where the

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6 [3] While the terms modernism and post-modernism as well as post-postmodernism will be defined within the next section (2.3), the more detailed explanation of why this thesis departs from a post-postmodernist approach will become clear in the next chapter (cf. 3.3), as a modernists (evolutionary psychology) is combined with a postmodern approach (discourse).
biological predispositions overlap with moral, political, scientific and religious beliefs. This recognition links meaning creation to our human predispositions, i.e. our biological impulses come first and then afterwards we rationalise them according to a specific perspective or moral imperative. As such, it is not nature VS. nurture but rather nature AND nurture that decides how the research ecosystem develops over time, both of these ‘forces’ combine and influence the human cultural ecosystem in tangible ways.

In general, this study explores the connection between our biological proclivities and the creation of scientific knowledge in more detail. However, before we can start ‘connecting the dots’ we first have to outline the framework in which these associations are made. The epistemological lens that is used within this thesis on scientific knowledge production represents an evolutionary perspective (cf. Campbell 1974; Dennett 1995; Baumeister 2010) i.e. the development of ideas over time are based on the substructures of competing sets of beliefs systems that operate within a material, social and biological (human) ecosystem. Such ecosystems are inhabited by different human cultures that cooperate with the in-group and compete with out-group of other cultures, and whose cultural norms are then a product of the ‘landscape’ of the ecosystem. The Oxford English Dictionary defines an ecosystem as a “biological community of interacting organisms and their physical environment.” Thereby, such an historic human ecosystem can be envisioned as a community of biological entities navigating and manipulating material components of their environment. The resulting structures that were created by an evolutionary competition, in turn create the interacting human ecosystem, i.e. they create a particular culture that inhabits that ecosystem (combining nature and nurture in understanding how cultures develop). These can be human or non-human interactions; nevertheless, they are linked together by material, social or biological aspects that all shape the ecosystem of human ideas.

The ecosystem is material in the sense that ideas cannot arbitrary reflect reality, there is something ‘out there’ that pushes back (Law 2004). Now we may be unable due to our materially embodied human perspective to represent what is ‘out there’ with hundred percent accuracy (e.g. a map is always a simplification of reality)⁸, but that is not the same claim as stating that there isn’t something out there that most likely influences how our ideas develop (Latour 1999B; Taleb 2014). For example, the power trapped in an atom that the technical expertise of an nuclear reaction exploits rests on the assumption that there is something out there. Yes, the technical expertise that is required to build nuclear weapons is socially constructed, nevertheless, the effects of that technology influence human history regardless what we may personally feel about it, as the cold war clearly showed (Edwards 1997). From such an ecosystem perspective, material things, as the name implies, are made up of matter and both living and dead things can occupy the category of material. This implies that the human animal has no special status and can be regarded as a thing as well, even if humans are indeed strange things. Furthermore, all things occupy space, are visible and touchable and each thing has a monopoly on the space it is occupying. According to Hägerstrand (2009) the physical world is characterised by having no gaps, he calls this concept; “bredvidvarandhet” (p. 57)⁹, meaning that next to each thing there is another thing occupying that space, reality is continuous without gaps. From this ontological perspective, material space becomes the sum of everything that

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⁷ https://en.oxforddictionaries.com/definition/ecosystem, accessed 2017-11-09
⁸ Accuracy in of itself can be conceptualised as a bounded perspective, as it has to correlate to a predefined scale (cf. MacKenzie 1993).
⁹ is a Swedish word made up by Hägerstrand himself, to roughly translate it means something like: “next-to-each-otherness”
is entailed within in it (Hägerstrand 2009:81). To summarize, from the ecosystem perspective, material things are everything that is touchable, visible and will occupy space, while space is just the sum of all things. This may be perceived as deterministic, however, as Hume ([1738] 2003) observed long ago, one cannot go from an ‘is’ to an ‘ought’, meaning that just because reality may be structured in a particular way does not tell you the best way to navigate throughout that space.

Therefore, let’s now turn to how the social interactions influence the human ecosystem, i.e. how culture disciplines human behaviour. The human ecosystem has a social dimension in the sense, that the social constructivist aspect of how ideas develop influences how we humans, as cultural beings, view and understand the world and how we engage with that world. Different sets of beliefs systems have to fit together in a narrative that essentially includes and excludes. An idea, concept or word always divides between what is included or excluded by the sheer necessity of defining it (Derrida 1981). The postmodern position claims that this dualistic way of thinking leads to exclusion and oppression. Now according to the postmodern position this exclusion is just contingent upon power differences. Regardless of all the flaws that the can be pointed out materially with these claims, the here presented ecosystem idea includes that such multiplicity of belief systems also influence how we engage with the world we are describing (cf. Law and Urry, 2004). Within this human ecosystem our interactions are framed, understood and developed. Traditionally there is a standard in social research to treat the physical as trivial (Hägerstrand 2009:10) and in the natural sciences to treat the social as something of lesser quality, due to perceived biases (Bloor 1991), meaning that natural sciences have access to truth and social sciences are mere opinion, two complete separate spheres (Gieryn 1999:343-344). These rather narrow views have been challenged to include group dynamics, community actions or collective delusion, to only mention a few, of the social factors that influence the development of ideas within the human ecosystem. In total all these are referring to some sort of human to human interaction (excluding other animals for the moment) that is influencing behavioural patterns. These coherent narratives then form belief structures and compete over a critical mass of people that 'believe in them' within the human ecosystem of ideas (e.g. Ball 2004; Xie et al. 2014). Such belief structures then performatively enact a certain reality, i.e. culture. Nevertheless, not all compositions of material space are possible due to physical and biological restriction of the human animal. Biologically, “genes hold culture on a leash” (Wilson [1976] 2004:167), therefore let’s now turn to the biological aspect and how it influences the development of a human ecosystem.

Biologically the human ecosystem influences the development of ideas, in the sense that just because belief systems are comprised of coherent narratives (i.e. socially constructed) does not explain how such ideas become intelligible to us. What determines cognitive coherence, is contingent upon our human biological evolved brain (Pinker 2003). We are not ‘blank slates’ (i.e. tabula rasa) to be filled by culture, rather culture remodels, reworks or revises our biological proclivities and flaws. Modern cognitive science has revealed ‘how we think that we think’ or ‘how we know what we know’ (Kahnemann 2011). However, human evolution is characterised by a slow incremental improvement over time, in order to better adapt to a particular environmental problem. This makes our biologically evolved senses prone to errors, if the encountered environment is novel (in evolutionary

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10 For example, the entire idea of patriarchy theory predicates on the assumption that masculine power is embedded within the social organisation of Western values and that this disproportionately benefits men (Hoff-Sommers, 1995). Such, a characterisation of reality ignores how culture exploits both men AND women (Baumeister, 2010) or rationalises it away by claiming that 'the patriarchy is backfiring'.

11 This will be further elaborated within chapter 3, as the here called extra-scientific factors
terms this can be considered as a mal-adaptation). Our biological cognitive faculties have all sorts of biases and flaws built into them (conformation bias, logical fallacies, tribalism etc.) as we now apply them to other contexts they often let us down. Cognitively filtering out noise polishes narratives of incoherent aspects, which make them intelligible to other human beings, however this is not the same as them being a correct description of reality (Kahnemann 2003). Evolution primed us with cognitive tools to coexist, presuming man is a social animal, which is strongly supported by the relevant science literature (Harari 2014). These tools are the physical shape of our hands, our eyes and other physical entities of our body. However, evolution doesn’t stop at the neck, our emotional, social and logical capacities stem from the same evolutionary background. The reason why I quoted Nietzsche was to highlight that even the greatest minds of the human past fell prey to this ‘human, all too human’ tendency. I think this is something inescapably human, in that true objectivity is an illusion; we use the idea of objectivity to justify our own sense of moral superiority knowingly or not (cf. Haidt 2001). Therefore, our moral principles that guide our cognitive ‘hardware’ are founded in our evolutionary past, as they seemed most beneficial for the survival of the in-group.

The way that this study defines the research ecosystem is as a lens that understands the context in which research takes place in order to create scientific knowledge. The ecosystem metaphor is used in order to describe the combination of all the forces (social, material and biological) that act upon research as a human activity within that system. As such, the post-postmodernistic perspective here used understands a research ecosystem as being comprised of individuals such as; line managers, academics, administrators, students, facilitators, research subjects and so forth. Material manifestations such as; universities, departments, research conferences, academic journals and social rules of engagement such as; government assessment standards, research financing rules, behaviour and disciplinary norms, shared values, literary traditions, scientific culture norms, the peer-review process and norms of wider society in general. All these entities and their relations create (extra-) scientific forces that influence the development of ideas that are being produced by the research ecosystem.

2.2. A brief history of studying scientific knowledge production

This section introduces a historical overview of how the post-postmodernistic approach arose from science studies that has investigated scientific knowledge production in the past. However, before I can further develop the similarities and differences between science and other human belief systems and how this relates to modernism, postmodernism and post-postmodernism a few terms need to be defined.

The modernistic approach to studying scientific knowledge production within science studies has been called Mode 1 (cf. Collins and Evans 2002). This mode stipulates that science is able to obtain objective truths about the world. As long as human biases are corrected for and the scientific method is applied correctly, objective truth about the world can be achieved. Different philosophical models were proposed to account for how science creates truth (e.g. induction, falsification or empiricism, van Doren, 1992). This position was significantly weakened with the publication of Kuhn’s (1970) _The Structure of Scientific Revolutions_, from that point forward claiming that science had direct access to objective truths became regarded as “intellectually bankrupt” (Collins and Evans 2002:240). Thereby, the strong position in that science is the only way to demarcate truth has

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12 The conventional assumption, and that of modernity, is that science can rediscover truths about the world (Nietzsche [1882] 1974). The main assumption can be subdivided in a strong and weak position; the strong position is that science is the ultimate truth creation mechanism or the weak position that science is the most
been called into question, leaving the weak position to be the prevailing one. The approach that succeeded it was primarily occupied with socially deconstructing (hard) science knowledge production.

Mode 2 emerged out of a socio-constructivist approach that studied the practice of scientific knowledge production (i.e. postmodernism), or as it is more commonly described; ‘studying science in action’ (e.g.; Foucault 1972; Collins 1981; Latour 1987; Latour and Woolgar 1987; Bloor 1991). In other words, researchers followed scientists into the lab, at conferences, during writing etc. and they came to the initial conclusion that science is just politics by other means (Latour 1993). The claim was that as science involved the creation, transformation and translation of knowledge, it is all interpretation (i.e. it's just socially constructed). Mode 2 is essentially a postmodern critique of scientific knowledge production; in that it found that all scientific truth claims are socially contingent and thereby could be regarded as personal power games of the practitioners, i.e. he or she who has the most power decides what is regarded as ‘true’. However, such an approach leaves out all the above mentioned non arbitrary aspects that shape the ecosystem of human ideas (expertise, material reality, legitimate authority, biological predispositions, past knowledge etc.)

Mode 3 emerged with the arrival of the publication of Leviathan and the Air-pump that accounted for the creation of modern English science and the ensuing debates between Boyle and Hobbes (Shapin and Schaffer 1985). This approach was consolidated within the so called science wars, where sociologists and scientists argued over how a scientific fact becomes true (c.f. Gieryn 1999). Mode 3 attempts to remarry social construction with human social expertise (c.f. Collins 2010) and the ‘real’ (material) world (c.f. Latour 2013) in understanding of how something becomes true. This mode can therefore be seen as a post-postmodernist position, and is the one that is applied here. Such an ecosystem perspective conceptualises ‘scientific truths’ from the weak position of epistemological unity, namely that despite all its flaws science is still the best access to reality we humans have found so far. From a Mode 3 perspective, all that exists are scientifically accepted ‘heuristics’, which are the result of consolidated community norms. Now this is not to say that these aren’t useful, quite the contrary (c.f. Latour 2013), but this does represent a fundamental different approach from the aforementioned conceptualisation of science being a direct access toward ‘truth’ (mode 1) or merely a social construction (mode 2). In fact, the whole idea of ‘truth’ and how it is achieved is redefined. In this view, truth is neither undermined by human intervention (mode 1) nor merely an expression of (political) power disputes between individuals or groups (mode 2), truth from this perspective (especially scientific truth) is the result of highly choreographed negotiations between experts within particular fields of knowledge (cf. Law 2004; Latour et al. 2011; Collins 2014).

The conceptual move made by mode 2 was to put the practitioners of science on the centre stage, rather than truth itself, stating that “there is no abstract and logical scientific method apart from evolving community norms” (Sismondo 2011:10). Now there still may exist such a thing as ‘ultimate’ Truth (capital T), however this is beyond the realm of human attainability, as humans are always bound by their specific outlook on reality. The here introduced ecosystem perspective acknowledges that; all different sub branches of science, despite their apparent differences, are on a fundamental level all powerful truth creation mechanism. Regardless of which position is taken, the assumption is always that science can generates truths and only distortions of the human mind (e.g. ideology, ego or biases) blemish this process. When we keep these in check and apply the scientific method appropriately, objective truths about the world can be discovered. This proposition can be found in the writing of Russell, Popper and Merton and still influences the popular characterisation of science today.
human endeavours. Research on the Large Hadron Collider, is still done by (human) monkeys that have evolved brains and that live within a social dominance hierarchy following the disciplinary norms that this structure preordains (cf. Baumeister 2010). Research in this view; pushes the boundaries of (socially) consolidated knowledge into areas where consensus is not yet established. Each and every sub branch (i.e. discipline) has its own popular way of how truth claims are established. In the natural sciences, the term paradigm has been used to describe this approach to how research ought to be done, according to the prevailing consensus of the time (c.f. Kuhn 1970). Foucault (1980) called this state of affairs episteme, defining it as;

“[…] the strategic apparatus which permits of separating out from among all the statements which are possible those that will be acceptable within, I won’t say a scientific theory, but a field of scientifcocity, and which it is possible to say are true or false. The episteme is the ‘apparatus’ which makes possible the separation, not of the true from the false, but of what may from what may not be characterised as scientific.” (Foucault 1980:197)

Such a Foucauldian view sees science as one avenue to truth generation that is not essentially different from other forms of human knowledge production. Now despite science representing a human endeavour there are differences between it being just another human belief system. One major difference is in the way actors can be treated. In the natural sciences you have a prevailing reductionist approach turning the actor into passive research objects that can be studied and manipulated in all sorts of ways. Meanwhile, in the social sciences, religion and other ideologies, you have more active actors (e.g. research subjects, your congregation or the demos, Latour 2010). The difference lies in the degree of actionability that these actors can manifest within the particular domain of knowledge production. For example, a stone may have a complex molecular structure; however, it pales in complexity compared to that of the human brain. The more complex your object of study is, the harder it becomes to separate out causal relations and not unimportantly a human research subject can voice dissidence, a stone cannot. As such, the difference of why the natural sciences are perceived to be more successful than social sciences, maybe simply because they tend to deal more with non-human actors, while the social sciences deal with human actors (c.f. Law 1999; Latour 2005 on their definition of actor). This difference allows the natural sciences to manipulate the objects in such a way which wouldn’t be possible with research subjects. This difference strengthens the power position of the researcher within the natural sciences in the research process. Therefore, the result is that the theories appear to have an air of certainty which cannot be achieved within the social sciences to the same degree (Camic et al. 2012). This (with other factors) creates a ‘hierarchy of certainty’ which usually places pure mathematics at the far end of the high certainty spectrum, while the social sciences occupy a lower position of ‘truth’ generating. However, any theory always involves some degree of speculation, because “theories don’t describe the [real world … rather they] describe either idealisations or other kinds of fundamental structures” (Sismondo 2011:166) that are supposedly representative of the real world. Such an understanding is very deeply entrenched in Western thought, Aristotle already wrote:

“The greatest thing by far is to be a master of metaphor; it is the one thing that cannot be learned from others; and it is also a sign of genius, since a good metaphor implies an intuitive perception of the similarity of the dissimilar.” (Aristotle, [384 BC - 322 BC] 1987: part xxii)
This brings us to how the ecosystem perspective relates to mode 3. Chapter 3 will deal with the mechanisms of how (scientific) truth is accomplished, however, for now I rather want to draw attention to how these particular frames are maintained and shape the content of the knowledge that is produced within the research ecosystem. According to Mode 2, the structural dimension is not neutral; ideas are influenced by external material forces. Examples of the influences of the aspects that can be mentioned are: the masculinisation of the concept used in science (Martin 1991), global power politics (Edwards 2010), Euro-American domination of research (Law and Urry 2004), geographical factors (Livingstone 2010) or the effects of structural changes (Camic et al. 2012) to only mention a few of these factors that create the ontological politics involved in defining a concept (Law 2004). However, this does not make scientific claims arbitrary or ‘just politics by other means’, quite the contrary. Such institutions and the frameworks which they uphold are instrumental alliances in defending the veracity of a particular scientific claim. The framework (i.e. ecosystem) in which ideologies and other belief structures operate within is different from a scientific one. For example, it is quite trivial to say that publishing in a scientific journal is different from people having a discussion at the pub, parliament, demonstrations, online discussion boards etc. However, it is precisely this framework (i.e. the research ecosystem) that scientific knowledge operates within, which makes it reliable, as the authority of the forum of discussion becomes shorthand for the authority and reliability of the presented claim. However, regardless of the framework the knowledge production finds itself within, it is still done by humans with evolved brains and ‘human, all too human’ weaknesses.

2.3. Truth, science studies and the knowledge gap

Historically, the main concern of science studies scholars included studying the underlying assumptions of science, turning the question of ‘what is science?’ into ‘how is science done?’ in understanding how something becomes true (i.e. the problem of legitimacy). The way that the ‘problem of legitimacy’ was solved, is to understand that for each and every case truth is socially constructed anew. The problem that now arises (with relativist/descriptive models of explanation), is that it will leave you ill prepared to make decisions between different knowledge claims and predictive claims. “How do we know how, when and why, to limit participation in technological decision-making so that the boundary between the knowledge of the expert and that of the lay person does not disappear?” (Collins and Evans 2008:10). This study can be positioned in the resulting knowledge gap that exists within science studies (or science and technology studies, commonly abbreviated to STS), or as stated by Collins and Evans:

“Like it or not, those who study knowledge are experts in the nature of knowledge. If we refuse any role other than criticism – if we are willing only to level down and never to build, explain, or evaluate the structure of the vertical dimension of epistemology – we are evading a responsibility that only we can fulfil” (Collins and Evans 2008:140)

This frustration about the direction of science studies stems from the historical development of the discipline (cf. previous section, 2.2). What Collins and Evans are referring to is that science studies research ought to take responsibility and address this gap within the field. Or to put it in other words, the conflict that arises when you have (scientific) experts that are faced with conflict against democratic principles. For the question of direction they propose turning from the ‘problem of legitimacy’ to studying the ‘problem of extension’, where the latter is a knowledge gap that this thesis is situating itself within. The problem of legitimacy addressed how scientific claims acquire legitimacy and this will be further elaborated in chapter 3. Here we want to focus on the problem of extension and how it relates to this studies position on truth creation.
For example, the problem of extension is touched upon by Annemarie Mol in her ground-breaking work the *body multiple*, with what she calls 'coordination' (Mol 2002:53-86). She states that no concept is ever removed from the practice of its creation, and proceeds to map out the underlying assumptions, showing that reality is 'multiple.' However, when faced with answering the question of how to collapse this multiple reality into a single solution, she merely ascertains “[t]his question will not be answered here” (Mol 2002:7). Similarly, Law in his book *after method* concludes that yes science deserves its legitimacy due to its careful orchestration of materiality and social praxis, however to generalise for predictive power he states simply, “I don’t know” how to do that (Law 2004: 156). So it goes on with STS study after STS study, always mapping the underlying assumptions but remaining mute when it comes to suggestions of potential ways of action (e.g. Wadmann 2014; Calvert 2006; Tuunainen and Knuuttila 2009; Arbesman and Wray 2013; Matusall 2013; Woolgar and Lezaun 2013; Erikson and Erlandson 2014; Jackson and Buyuktur 2014). These studies may be academically very interesting, but are worth little (if not 'valueless') when it comes to suggesting potential ways forward, hence Collins and Evans (2008) frustration with the current state of STS.

The argument is scientific knowledge is a very powerful type of knowledge. However, it has very limited applicability and if the initial pre-conditions change too much so does the predictive power. In fact it is this limited applicability, which makes it so powerful (c.f. Latour and Woolgar 1987; Latour 1987). The way that this study is proposing to address this knowledge gap is by viewing truth from an ecosystem perspective, such a Nietzschean perspective (cf. Hicks 2004), asks;

“What then is truth? A mobile army of metaphors, metonyms, and anthropomorphisms -- in short, a sum of human relations, which have been enhanced, transposed, and embellished poetically and rhetorically, and which after long use seem firm, canonical, and obligatory to a people: truths are illusions about which one has forgotten that is what they are; metaphors which are worn out and without sensuous power; coins which have lost their pictures and now matter only as metal, no longer as coins.” (Nietzsche and Kaufmann 1954:46-7)

The concept of bounded rationality (cf. Kahneman 2003) has been introduced to conceptualise our human perspectivism. However, this idea that there are limitations to our human senses can be traced back to many famous occidental thinkers. For example, Plato used the analogy of the cave to describe the same contingency. Kant describes these limitations of our human faculties in his ‘critique on pure reason’ (Kant [1781] 1988). Nietzsche addresses it with his discussion of *foreground perspective-optics* (Nietzsche [1882] 1974). In classical sociology this is referred to as *discourse*, meanwhile in journalism it has been labelled as the *Overton window* of what is accepted discourse and what is not (Lehman, 2012). Another line of thinking that expresses such Nietzschean ideas is Leary’s concept of *reality tunnel* that was further expanded upon by Robert Anton Wilson (Leary et al. 1977). Now using the metaphor of a reality tunnel, in relation to truth science has found a mechanism of how to make that tunnel wider. So that a particular perspective can be shared (i.e. a collective tunnel is created) and upon what people can agree that it is "logical", "rational" and "true."

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13 Limited in the sense, that the negotiations involved in the construction of a scientific fact are ultimately dependent the commonly agreed assumptions (i.e. axioms), if scientific claims are removed from their setting of construction, they abandon the safe confines of the episteme and lose their authority.

14 "The gene-pool politics which monitor power struggles among terrestrial humanity are transcended in this info-world, i.e. seen as static, artificial charades. One is neither coercively manipulated into another’s territorial reality nor forced to struggle against it with reciprocal game-playing (the usual soap opera dramatics). One simply elects, consciously, whether or not to share the other’s reality tunnel.” p. 93
Within the binds of these assumptions (i.e. within the collective tunnel) these judgements apply and they are correct, i.e. it is regarded as true. The problem now arises when you forget that you are in one particular tunnel (i.e. particular set of assumptions) essentializing your personal assumptions to be THE truth, excluding other potential explanations, as well as disregard the limitations of the mechanism of creation.\footnote{The author suspects that the reason why humans so easily fall to this tendency, is because for action to have an desirable outcome, the accuracy of the model described the outcomes does not have to be ‘true’ (e.g. sacrificing a goat for safe travel.). The more success we have, the greater the potential for hubris. This problem is so deeply grounded in our psyche that even the bible has a proverb (16:18): ‘pride cometh before the fall’.}

According to Kant ([1781] 1998), our human faculties lead us to boundaries of what potentially can be known, beyond which our own faculties are useless. Now the mistakes that some postmodernist make is by stating that ‘it could be otherwise’ (cf. Woolgar & Lezaun 2015) and taking this methodological stance to be representative of reality, i.e. everything is just socially constructed, truth is only a tool of power..... leading to some form of cultural relativism. The implication being, just because the judgment is made from a particular position it is the dominant power position that is merely justifying its own existence, which it certainly does not have to be the case. The assertion is in order to lock down one particular interpretation of reality power has to intervene. This intervention is never specified, more than in that power in some form exerts itself and reality is just interpretation that we can shape to our political inclinations (cf. ontological politics, Mol 2002; Law 2004). However, reality (whatever that now is) is not infinitely malleable, as explained above, and here is where the scientific empiricist comes in and states therefore ‘reality’ should be the ultimate adjudicator of what is true or not, i.e. empiricism (e.g. Harris 2011). The trouble with this position is that without an interpretive framework the notion of ‘evidence’ becomes meaningless. Furthermore, even within a particular framework, it is impossible to tell if the observation or the theory was at fault, as logically it could be both (cf. Collins, 1981). This inescapable human tendency has to be acknowledged within any theory of human social interaction, Nietzsche writes;

“Because we have for millenia made moral, aesthetic, religious demands on the world, looked upon it with blind desire, passion or fear, and abandoned ourselves to the bad habits of illogical thinking, this world has gradually become so marvelously variegated, frightful, meaningful, soulful, it has acquired color - but we have been the colorists: it is the human intellect that has made appearances appear and transported its erroneous basic conceptions into things.” (Nietzsche [1878] 1996:16)

Regardless of the inescapable relativism that this creates, it is still possible to establish patterns from a human (ecosystem) perspective. For example, take the human need to defecate. The final stage of our human digestion process forms a pattern; you have to eat, digest and then excrete. Now this chain of events is contingent upon other local behavioural patterns, i.e. how do you acquire food to eat, is your digestive tract working correctly and where can you find a place to defecate in private? These chains of events in and of themselves compete with other patterns. Other behavioural patterns might be; how much time is at your disposal for these activities compared to other obligations and needs (e.g. work, sleep, sex etc.). Such groupings of behavioural patterns then compete with each other patterns within the physical limits of the ecosystem of what is possible or not. Furthermore, we also have the temporal dimension, for example eating only sugar for one day may not be a problem, but if you do that every day for the next ten years your digestive tract and your overall physical and mental health may not be in the greatest shape.
The way that this study sees ‘truth’ is in the harmonies of ordering all these different levels of the analysis simultaneously into one coherent perspective. The ecosystem perspective, introduces a nomenclature that allows integrating material reality (nature) and human bounded structures (nurture) under one epistemological framework, enabling the account of the here presented case study. For example, you can detect inharmonious patterns (e.g. eating the sugar for 10 years is a bad idea) without knowing the finer causal details (ontology). In essence, the view of truth here used, is the application of Darwinian evolution to our representations of socio-material reality, hence why I have chosen to label my conceptualisation as a research ecosystem for my particular application to studying research impact. Yes others may have used a similar label, but they have not elaborated the implications as was done here. The idea being; that the health, fitness or the survivability of the research ecosystem, is contingent upon the harmonious integration of all these levels of the analysis into each other, the number of which may be impossible to compute. However, if an idea, action or event perturbs the harmony of the resulting ecosystem it can be seen to be untrue, making it in Darwinian terms unfit to perpetuate the ecosystem. Now from this perspective I cannot tell you what is true beyond mere inference, but I can tell you what is not based on the collapse of the (eco)system. Or as put by Marcus Aurelius long ago:

“That which is not good for the bee-hive cannot be good for the bees” Marcus Aurelius (161 – 180)

2.4. Multiplicity of interpretation within the same ecosystem

As science and by extension research are human endeavours, what science is can be conceptualised differently as well. This means that within the research ecosystem there exist different social constructions surrounding science in terms of, how does it work (theory), what makes it different (legitimacy) or what is its purpose (telos). In this chapter we have already discussed the different views on the legitimacy of science (cf. 2.2), in the next chapter we will discuss different understandings of how science functions, but let’s now focus on the different views of the telos of science. The purpose of this section is to highlight the multiplicity of understanding the same phenomena differently. This is done by defining different purposes of science, alongside their historical development. I would argue that there are three major views of the scientific telos that have historically crystallized. These are; the Enlightenment view of science, the social contract view and a neoliberal end goal focused view.

The first view sees the telos of science for its own sake and stems from the Enlightenment, where science was often the domain of the gentry and royalty. These people represented a highly educated, financially independent and prestigious class of the population. This status was automatically transferred to any type of inquiry that these people did. This significantly helped when establishing scientific disciplines (Livingstone, 2010). For example; the establishment of the Royal Society was made considerably easier as some of the people involved, were already royalty. As such, the views of this class of people codified itself into the institutions that they created. Norms which were laid by the Royal Society became the standard for scientific practice and the view of what science is. (Shapin

16 A good practical example of this is Soviet evolutionary biology that proposed that animal species aim for cooperation, as this ideologically laden view of biology was implemented into the 5 year plans of agriculture planning it not only caused environmental degradation but the crops failed and caused food shortages (Birstein 2004).

17 Telos stems from the Greek word for "end", "purpose", or "goal" and in philosophy is understood as an end or purpose of an action. It was formally introduced by Aristotle who used it in a fairly constrained sense, meaning the moral purpose, end or goal of an action.
et al. 1985). One of the first people that put this view and the associated value of science to paper was Alexander von Humboldt, when he settled a dispute involving the founding of the Berlin University. This view sees science as a noble pursuit, something that civilised societies ought to do (c.f. Lyotard 1984:32). The Enlightenment also included a rejection of religious authority (e.g. from the priesthood), which was ultimately replaced with their own version of authority enshrined in these scientific values. Merton later codified these values into the CUDOS norms (Merton 1973). CUDOS stands for: Communalism - science as a collaborative enterprise that values collaboration over secrecy, Universalism - every person can contribute, regardless of race, nationality, culture, or gender, Disinterestedness - the gain is for the advances of science, not personal gain, Originality - the contribution made has to be new, and Organised Scepticism - scientific claims must be exposed to scrutiny before being accepted. However, these norms are problematic and do not correspond to the everyday experience of modern researchers (Mitroff 1974).18

The second view that I want to introduce here, is the social contract view for state funded science. The Second World War showed the immense power of implemented science. Inventions like, the computer, sonar and the atomic bomb which combined technical and scientific expertise were crucial in winning the war for the allies (Edwards 1997). As such, science had shown its enormous political and military power and could no longer hide it (or wanted to hide it). As a result state funding received an enormous boost after WW2. The funds were primarily directed to military applications, but it also created a ‘spill-over’ effect (cf. MacKenzie 1993). For example, the development of modern GIS (Geographical Information System), is a combination of military funded GPS research and developments in computer technology (which in themselves are a result from military funding, Johnston and Claval 2014). So is the internet, vaccines, computers, the jet engine and other famous research impacts. This increase in funding, lead to an expansion of the size and numbers of universities (Lyotard 1984:39). While Humboldt may have been able to exert his authority at the time over the German intelligentsia, this seems unfeasible today with the sheer difference in size. Now with this growth in size and finite resources, resource allocation becomes an important part of the managerial decision making. There are different ways to organise government funds, but most contemporary Western governments depart from some interpretation of Rousseau’s social contract (c.f. Rousseau [1762] (2009), i.e. governments ought to use their funds for the benefit of the population. If science is now funded by government funds, then in extension this applies to the use of these funds as well. Governments usually allocate money in a cost-benefit schema, and the focus on research impact is no different. This cost-benefit notion of social engineering, bureaucracy and management was borrowed by governments from the army and engineers (Porter 1995). Initially science was protected from the rationalisations of cost-benefit cutbacks, and the budgets of researchers were so generous that it didn’t really matter. However, Let’s take the norm of disinterestedness as an example. This norm may be unproblematic for a Victorian Gentleman; however, it becomes problematic when applied to modern day context of researchers disciplined by the REF. Nevertheless, in this view science is treated as ‘pure’ independent enterprise from political, religious or social influences. In fact, this view demands it, as intrusions from these spheres are perceived as threats to science (Latour 1993). However, science has ‘never been pure’ (Shapin 2010), and this is usually manifested in practice. Humboldt’s account is no different, because, despite acknowledging all the aforementioned notions, he also acknowledges that the advances of science should also service as ‘spiritual and moral training of the nation’ (Humboldt in Lyotard 1984:32). Despite this acknowledgement, the rhetoric of ‘pure science’ is still salient today. This view of science is particularly common within the popular presentations of the natural science. A few examples of public scientific figure with a background in the natural science who are expressing this view are; Jim Al Khalili, David Attenborough, Brian Cox, Richard Dawkins, Carl Sagan, Steven Weinberg or Neil de Grasse Tyson to only mention a few.

18 Let’s take the norm of disinterestedness as an example. This norm may be unproblematic for a Victorian Gentleman; however, it becomes problematic when applied to modern day context of researchers disciplined by the REF. Nevertheless, in this view science is treated as ‘pure’ independent enterprise from political, religious or social influences. In fact, this view demands it, as intrusions from these spheres are perceived as threats to science (Latour 1993). However, science has ‘never been pure’ (Shapin 2010), and this is usually manifested in practice. Humboldt’s account is no different, because, despite acknowledging all the aforementioned notions, he also acknowledges that the advances of science should also service as ‘spiritual and moral training of the nation’ (Humboldt in Lyotard 1984:32). Despite this acknowledgement, the rhetoric of ‘pure science’ is still salient today. This view of science is particularly common within the popular presentations of the natural science. A few examples of public scientific figure with a background in the natural science who are expressing this view are; Jim Al Khalili, David Attenborough, Brian Cox, Richard Dawkins, Carl Sagan, Steven Weinberg or Neil de Grasse Tyson to only mention a few.
this has changed today, and science is included into this cost-benefit discussion due to the increase of scale (cf. Calvert 2006). Research impact could be seen as the latest step in that public accountability aspect of scientific knowledge creation and the purpose of science for society. 19

The last view I want to introduce here is the commodified neoliberal view of science that is taking this benefit for society to the maximum at the expense of scientific authority and freedom. The reasons for why this is happening are complex. One is the aforementioned increase in size, another that can be discussed is the rise of postmodernism and the attack on scientific authority (Ashman and Barringer 2005). One aspect that I want to highlight here is the influence of capitalism as our prime economic model and its influence on science. For example Polanyi (2000) viewed science as a ‘marketplace of ideas’, that is internally organising and structuring. The economic metaphor is completed by invoking of the ‘invisible hand’ and its self-correcting property. However, the economic metaphor is not neutral. In general, metaphors set boundary conditions for how things ought to be interpreted (Edwards 1997:147-174). In this particular case, Polanyi’s strong anti-communist sentiment, made this presentation not only a descriptive account of science, but also served as a justification of the capitalist system (cf. Polanyi 1966). The economic metaphor is particularly appealing, as it neatly fits with the aforementioned cost-benefit system that government’s use. This ‘metaphor’ has become a fully-fledged view of science in its own right. Prophesised by the ‘end of history’ (cf. Fukuyama 2006), capitalism is portrayed as the one and only form of economic organisation and by extension the free market has become all an all-powerful metaphor, that doesn’t even warrant justification. However, even if capitalism is indeed a very powerful economic system, it is by no means self-evident that it is the ‘best’ system. For example, hyper-consumerism that is created by capitalism, creates a materialistic, short term focused, ephemeral and superficial culture (Kirby 2006) that is slowly undermining its own raison d’être under the guise of tolerance and acceptance (Murray 2017), whilst dissent is punished by social ostracisation. In regard to this view of science, this means that science is only valued for the benefits it can produce (Loytard 1984). The consequence is that, if only the (short-term) outcome counts, the contradiction that the social contract view creates disappear, because, the only thing that counts is a capitalist (cost benefit) narrative. If the outcome has no measurable ‘impact’, it can be deemed ‘worthless’.20. This leaves more ephemeral impacts of the research ecosystem on society, like teaching the public, preserving culture and driving knowledge forward outside of the countable research impacts. In regard to

19 This resulting view of science is a combination of the independence that scientific authority grants from the Enlightenment view in combination with the social contract/cost benefit requirement. On the one hand a scientist should represent an independent critic of society, while on the other he or she should aid society with their expertise (Kramer and Tyler, 1996). Another, way of expressing this dual purpose can be seen in the distinction between ‘basic’ and ‘applied’ research, these two purposes value the impact of research differently (Calvert 2006). From a ‘basic science’ point of view, the impact of research ought to advance the field, meanwhile from an applied point of view the impact of research ought to benefit society. This can create internal contradictions for the social contract view. For example in Denmark, the government advertised both for more transparent scientific practices and more industry collaboration with regard to the development of new pharmaceuticals. The call for better transparency comes from the perceived threat to the scientific integrity that can be blemished by “greedy” corporate involvement. While the call for industry collaboration is acknowledging science potential to create economic benefit for society and industry (Wadmann 2014). Now the contradiction arises because industry collaboration is taken as an indicator for ‘research impact’. Hence, from a cost-benefit point of view, a research institute with many industry collaborations is ‘better’ than one that is lacking these. Meanwhile, from an Enlightenment view industry collaboration can be potentially harmful, as it can bias the scientific process and is not necessarily better.

20 “It would be nice if all of the data which sociologists require could be enumerated because then we could run them through IBM machines and draw charts as the economists do. However, not everything that can be counted counts, and not everything that counts can be counted.” (Cameron 1963:13).
research impact this means that commodification of research results is the new maxim to abide by. If your research results do not increase your status, cannot be commodified into patents, earn money, or make a measurable change, according to the neoliberal view such research might not be worth doing at all.

Now where does this leave us? First of all I want to reiterate that the aforementioned views of science are not exhaustive. They also could be better developed as there is a wealth of information available on the development of science, modernity and capitalism (c.f. Latour 1993). But, nevertheless I think for the purpose here intended, to be used as an analytical framework for a genealogy of the impact research telos; they capture the differences in the perception of science adequately. Secondly, the way in which these were presented was in chronological order. This may give the impression that these concepts succeeded one another. This is not the case, in fact all scientific concepts (including these three views of science) are constantly, rebuilt, reimagined and reengineered within the same ecosystem (Latour 1999A: 169-172).

2.5. Multiplicity, conformity and the tourism research ecosystem

Now as research impact has been officially introduced within the UK research ecosystem, these different interpretations and the actions they embolden create ‘pressures’ on the ecosystem in their own right. Within in any situation of ecosystem wide change, it is important to assess the old value structures and what their role was for the human cultures that relied upon these (a good analogy here is the deterioration of the nuclear family and what this implies for Western culture, cf. Baumeister, 2010). The reason is that actions may not appear to be problematic on an individual level but the agglomeration may have devastating effects for the human culture that inhabits that ecosystem as whole. The knowledge gap of this research represented ‘the problem of extension’ is essentially asking the question where and when should scientific expertise supersede democratic principles? The post-postmodern approach allows for predictive capabilities, as different potential ways of how the research ecosystem could collapse can be laid at the hand of research impact, based on the disciplinary structure that are necessary to retain the respect and trust of scientific institutions. In order to avoid such a calamity, this research proposes to take inspiration from Enlightenment values of scientific quality that were established within research ecosystem over centuries, in order to appreciate the significance of the claimed research impact and not purely based on the practical challenges of the assessment and expedience for managerial decisions.

In regard to research impact the collective process within the research ecosystem has not yet had sufficient time to consolidate one particular approach. With such a contingency, it doesn’t matter very much if you conceptualise the research ecosystem as, a thought collective (Fleck, [1936] 1986), a paradigm (Kuhn 1970), a research programme (Lakatos, 1971), a rhizome (Deleuze and Guattari, 1980), a episteme (Focault, 1980), a habitus (Bourdieu 1988), a republic (Polanyi 2000), an actor-network (Latour 2005) or a tribe (Tribe 2010), at the end of the day we are all describing human behaviour patterns in relation to research conduct. Whatever metaphor you want to use to describe the research community that is being disciplined, the mechanisms seem fairly similar. This is not to say that such a consolidation around research impact will or won’t ever happen, but human beings tend to respond to discipline either by conformity or resistance, more often than not choosing conformity (cf. Milgrim 1974). In times of radical change, the very act of being conservative with certain value structures can be perceived as being revolutionary. The political unrests that are currently plaguing the Western world are of this very nature, where the conflict lies between institutionally enforced changes opposed to individual attempts of retaining their collective cultures (Murray 2017). One of the main points that this thesis makes is that the traditional Enlightenment
focus of science on truth disciplines researchers to conform to certain types of behaviour (in relation to data collection, use of literature, use of references etc.), these should be incorporated into considerations of an impact claim in order to verify that the most reliable impact claims are put forth. Such considerations discipline research conduct and dis-incentivises the individual to engage in improper behaviour (personal attacks, appeals to authority, fabricating data etc.). The problem that now arises is that impact requires certain types of behaviour that cannot be easily incorporated into an Enlightenment value structure, if an accurate description of reality is the goal. However, why?

Tribe and Liburd (2016) in their description of the tourism knowledge system lay out a ‘force field’ in which the tribes (Tribe 2010) that operate within the field of tourism study live. Figure 2.1 is the illustration they use in order to visualise the different forces that act upon the tourism research.

![Figure 2.1 the tourism knowledge system (source: Tribe and Liburd, 2016)](image)

This ‘road map’ to the tourism ecosystem is a visual representation that a multitude of entities “form a meaningful and coherent whole in relation to the epistemology and ontology of tourism and maps the relationships between these elements.” (Tribe and Liburd 2016:46). The tourism research ecosystem is comprised by inputs and its research impacts (circle 1 and 4), the processes that create this knowledge (circle 2 and 3) may have their particular disciplinary way of conducting research, however they are still operating within an ecosystem that is determined by “boundaries (inner oval B), environmental factors (outer oval a) and feedback loops (e.g. line e)” (Tribe and Liburd 2016:46). This road map to the tourism research ecosystem highlights the multitude of pressures that act upon this particular ecosystem. This specific research ecosystem nests within the general UK ecosystem, which in itself nests within a global human ecosystem. What this particular research would add, is not an addition to the ontology of the outlined description but rather an epistemological caveat on how particular individuals within the research ecosystem choose to navigate this environment.
Within the previous section, three different potential purposes for sciences (telos) were identified. From each different perspective, how the individual chooses to interact with the ecosystem differs. Hypothetically speaking, an individual departing from an Enlightenment perspective potentially views the intrusion of government steering research with a greater emphasis on research impact as a something that needs to be resisted. Meanwhile an individual that is departing from a societal contract view potentially perceives the same push for research impact as an obligation to scientific accountability. Yet, another individual that is departing from a neoliberal perspective perceives this same push for research impact as something that should be embraced, as it increases the possibility to create societal relevance for their research. Now narrating these differences into a simplistic dichotomy of ‘right/wrong’ or ‘true/false’ misses the finer details of how these different values that underlie the research process structure and discipline knowledge production. Tribe and Liburd (2016) further developed this complex interaction of values, discipline and bounded material possibility that was first introduced in Tribe’s (2006) ‘truth about tourism’ into figure 2.2.

In their view, the tourism researcher becomes a mediator between tourism knowledge and the world of tourism. However, that mediation process is influenced by; positionality and the biological limitations of the individual, the prevailing ideology, rules and telos (ends) that the particular individual has chosen to enact. Loytard (1984) made the case that if the individuals that perform research change their values and behaviour (shift from Enlightenment to a neoliberal focus) the nature of the scientific knowledge that is produced will change accordingly. The same is bound to happen with research impact as the introduction of research impact changes the disciplinary structure of how academic conduct is evaluated; however how these changes introduced by the REF will shape the research ecosystem largely depends on the collective obedience of the scholars within that particular field. From a performative dimension, it matters little if the individual in question is willingly or unwillingly cooperating with the imposed disciplinary guidelines, as long as the individual is behaving according to the disciplinary measures. As such, regardless of the individual rationales (Enlightenment values, social contract or neoliberal view) as long as the collective behaves according to the wishes of ‘the prince’, the goal has been achieved according to Machiavelli ([1532] 2008).
2.6. Summary of the chapter
To summarise, this study understands research impact as being the product of researchers’ effort that exists and operates within a research ecosystem. The research ecosystem concept is understood to be a combination of material, social and biological factors that all need to be disciplined in a coherent fashion to create a research community and ultimately (research) impact. Material in the sense, that any claims need material reinforcements in order to integrate them into the research ecosystem (i.e. infrastructure, equipment, specimens etc.). Social in the sense, that any research community needs rules and norms of conduct in order to constructively produce scientific knowledge (e.g. peer review, writing conventions, paradigms etc.). Biological in the sense, that the human biological proclivities influence the type of stories and narration that become intelligible to us (e.g. recognition, cognition, understanding etc.). Such a post-postmodernist perspective historically developed out of different modes of science studies that conceptualised science differently. Mode 1 represented a modernistic approach glorifying scientific knowledge production. Meanwhile, mode 2 primarily sought to deconstruct scientific knowledge claims, showing their inherent social construction. Mode 3, which this study positions itself within acknowledges the criticism of mode 2, however, it aims to explore an understanding of how actionable scientific truths are generated. Understanding the transferability of such scientific knowledge claims, represents the knowledge gap of this study (problem of extension). This problem of extension is addressed by introducing the ecosystem perspective, making it possible to identify patterns regardless of the uncertainties that exist. Finally, in order to exemplify different understandings that exist side by side within the same research ecosystem, three different telos for science were discussed; science for its own sake, social contract view and neoliberal end focus view. The research argues only by viewing the phenomena of research impact within this context, can you appreciate the consequences of the introduction of research impact as a performance indicator. In this chapter, it was argued that it is the framework (i.e. the research ecosystem) that scientific knowledge operates within, which exerts a pressure upon knowledge production in its own right. If now research impact shifts the telos of science (into a more neoliberal view for example), the authority of science can be potentially undermined as its institutions become business minded, neglecting the maintenance of what made these intuitions reliable in the first place. The next chapter will now explain why research impact has such power over the research ecosystem.
“You see what actually conquered the Christian God; Christian morality itself, the concept of truthfulness which was taken more and more seriously, the confessional punctiliousness of Christian conscience, translated and sublimated into scientific conscience, into intellectual rigour at any price.”

(Nietzsche ([1887] 1989:203)
3. DISCIPLINING RESEARCH

In order to understand how different research (impact) claims are judged, it is important to understand how scientific knowledge claims are constructed, i.e. how research discipline works in praxis. As such, this chapter addresses the post-postmodernist understanding that is used here to describe the process of research (impact). Research within this study is understood to mean both the informal and formal norms of conduct that researchers have to abide by in order to create scientific knowledge. The chapter starts out by giving a rationale of why this particular understanding of research was used within this study (3.1). The following section then goes on to outline how the research process functions in praxis. Specifically, the research process is deconstructed from a sociological point of view, outlining the different (epistemological, ontological and methodological) transformations that occur during the entire research process (3.2). Afterwards, the chapter continues by discussing the implications that arise for scientific knowledge production, focusing in particular on the implications of so called extra-scientific factors and the role of proxy indicators of scientific quality (3.3). The argument is that extra-scientific factors like the REF are disciplining research conduct, examples from tourism studies are given; in particular focusing on the material dimension of the knowledge infrastructure. As well as how it relates to the research process and tourism studies disputed status of a discipline in its own right. (3.4). Similarly, the idea of proxy indicators of scientific quality is operationalised for what the implications are for tourism studies, in particular focusing on the performative Enlightenment telos that is enshrined within such disciplinary rules (3.5). The chapter concludes with a summary of what was learnt within the chapter (3.6).

3.1. Understanding science as a human belief system

Within this section, the aim is to outline a rationale of why the particular understanding of how the research process functions in praxis is applied here, as well as elaborating on why science can be conceptualised as a particular human belief system. The reason for discussing these issues from such a broad perspective is necessary because impact relates to the research process in all these different levels of its construction; i.e. how knowledge can arise, be structured, disseminated, transformed, refined, narrated, presented and developed in a scientific culture that produces such knowledge. In the previous chapter (cf. 2.2) different modes of science studies were summarised and this chapter contains an elaboration on how the research process functions in praxis that was distilled from such inquires. The author, already for his master thesis combined modernists (time geography) and postmodernists (classical ANT) inquiries into scientific knowledge production into a post-postmodern framework (Brauer 2012). What is important to understand is that from such a post-postmodern perspective the separation between epistemology and ontology becomes blurred (cf. notions of ontological politics Law 2004; periodic table of expertise Collin and Evans 2008; modes of existence Latour 2013). This chapter will deal with how research discipline enforces the separation into the rhetorical re-construction presentation, however in praxis these spheres interlink and are contingent upon each other. Nevertheless, before we can turn to such an explanation we first have to understand where this focus on praxis came from. As well as what are the implications compared to other postulations on how scientific knowledge is different from other forms of knowledge. We will continue to use the nomenclature previously introduced (cf. 2.2) to differentiate between modernist (Mode 1), postmodernist (Mode 2) and post-postmodernist (Mode 3), furthermore this will help to define just how this study relates to Mode 3.
The reason why this study departs from a Mode 3 perspective is that Mode 1 and Mode 2 have serious shortcomings when attempting to account for the creation of the human belief system we call science. Mode 1 viewed science as a structured, coherent and logical enterprise (cf. Chalmers 2013), that is revealing and “discovering specific truths about” the world (Law 2004:9) if the scientific method is applied correctly. Mode 2 complicated such ideas, revealing the socially constructed nature of scientific inquiry. However, the main assertion was that anything is accepted as long it is not undermining the prevailing power structure, as it could have been done otherwise. Mode 2 propositioned that adherence to specific disciplinary rules and norms create different types of knowledge and versions of science and its progress, which are not necessarily commensurable with each other (cf. Kuhn 1970; Mol 2002; Chalmers 2013). Law (2004) notes; “[t]he implications is that there are various possible reasons, including politics, for enacting one kind of reality rather than another” (Law 2004: 162). Such a postmodern position (also labelled as ‘ontological politics’) even stresses that including such other factors can be part of progress of science, however to what degree this is possible remains questionable (cf. Collins 2009).

With the rise of postmodernism, it has been shown that such criticism can be levelled against any human belief system i.e. all knowledge claims can be conceptualised to be merely a social construct. However, the focus on the social-constructed aspect misses the function that such social-constructs fulfil. Knowledge (scientific or otherwise) represents a set of tools that we use to engage with reality, navigate it, make sense of it and understand it (cf. Johnson [Latour] 1988). For example, it is quite useful in our daily lives to know how doors work, regardless of the epistemological or ontological aspect of identifying the ‘truth’ or ‘nature’ of doors. Bruno Latour (2010) discusses this point in his book ‘On the Modern Cult of the Factish Gods,’ from an ecosystem point of view (Mode 3) he deconstructs both science and religion into a human belief system based upon artefacts, rituals and trust. From such an understanding, regardless of the different content of such belief systems, sociologically; shamanic, religious or scientific traditions all function broadly speaking alongside similar sociological lines. Namely, that a small select group of the epistemic elite (the shamans, the priests or the scientist) have the authority to interpret reality (i.e. defining ontology), meanwhile the tribe, congregation or public at large is excluded from such judgments. Depending upon the current power structure, such a select group has to maintain their epistemic privilege, which can become increasingly autocratic (for example, the rejection of priestly authority by the Enlightenment was born from the frustration with such ossified power structures, cf. 2.4). Historically, such similarities are not surprising as there is an evolutionary trajectory in human understanding and the ability to articulate the associated ideas (cf. Peterson 1999). Furthermore, such structural social organisation is required of any complex belief system for it not to deteriorate and fragment down to the level of the individual, i.e. everyone’s opinion is equally valid regardless of factuality. However, what represents a fact is inseparably tied into the axiomatic assumptions of the authority structure of that particular belief system, blurring the lines between epistemology and ontology.

If now the proposition is put forth that one belief system is superior to another (as is done when they are directly compared) the function and form of these belief systems are directly contradicted. The contradiction arises, when the rituals, materialities or other social conventions within the belief system are denied as factors that influence the social-construction of the associated belief structure, i.e. they are treated as if they represent a black box, making the error of simplification (cf. 2.3. on the dangers of essentializing your own assumptions). Firstly, it assumes that there is a commonly agreed upon definition for the particular belief system in question and secondly, that there exist clear definitions of what separates such forms of knowledge from other forms of knowledge. To be fair, there are demarcation criteria for such belief systems, but these are intimately bound up with
the practice of how such belief systems are maintained (see epistemic privilege above). The shaman, priest or scientists all undergo training where the village elder, minister or PhD supervisor teaches the apprentice, priest in training or PhD student what the right way to interpret the ontology of reality is, as well as passing down these exact same ontological categories. Sociological studies into scientific knowledge production (Mode 2) found that there are no unified scientific definitions that can be agreed upon, however they found that the structured dynamic of science is strongly shaped by its practitioners, i.e. there is no science only the praxis of science (Latour 1988). Such inquiries uniformly showed that science is a belief system with its own values, customs, rituals and artefacts, however such claims were initially only perceived as an attack upon the authority of science (cf. Collins 2009).

The conflict between Mode 1 and Mode 2 is best exemplified when the validity of other (non-scientific) knowledge claims are being discussed, as for example in the science vs. religion debate (e.g. Harris 2005; Dennett 2006; Dawkins 2016). Arguments undermining, ridiculing and attacking religious authority often simplify science to a form of scientism. The Mode 3 argument that is put forth in this thesis is that scientific trust can be undermined by a limited understanding of the process of knowledge creation. Scientism, according to The New Fontana Dictionary of Modern Thought (cf. Bullock and Stallybrass, 1999) sees science as; 'characteristic inductive methods of the natural sciences [that] are the only source of genuine factual knowledge', meaning that science alone can yield true knowledge about reality and society. The first part of such scientism simplifies the research process, removing the multiplicity of interpretation, conflicts and contradictions involved in the construction, i.e. creating a black box. According to this line of reasoning, the personal interests of its practitioners, conflicting data in its measurements or the politics of society, often are presented as 'impurities' (i.e. not a central part of science). Such forms of scientism argue usually for a more 'logical', 'rational' or less 'biased' science that would be able to transcend such aspects. Within the binds of their axiomatic assumptions, such demands are correct, however from an ecosystem understanding of how the scientific process of knowledge creation functions, such demands are actually antithetical. The reason being is that such aspects are not only inherent to the praxis of science (i.e. research); they represent a central part of it (e.g. Mitroff 1976). Without such human passions, there is no driving force compelling scientific inquires forward in the face of contradicting data, conflicting theories, rejection of peers or conceptual disagreement. Now when genuine controversies arise within science, e.g. the finer details of anthropomorphic global climate change (Edwards 2010) these are perceived as failures of science instead of being a natural part of it. The example of growing public concerns about the efficacy of vaccines show how quickly such disagreement, understood incorrectly, can reach conspiratorial levels of disagreement (cf. Collins 2014). The oversimplified presentation creates the illusion that science can achieve objective truths, transcending such human influences, something that is simply not the case (cf. Shapin 2012). Furthermore, such scientism of Mode 1 does not help to defend scientific authority; on the contrary it undermines it (cf. Feyerabend 1975). The reason being, because it elevates science to a standard it cannot possibly meet and thereby setting it up for certain failure. Research impact, now officially introduces a new assessment standard into the research ecosystem that is departing from such scientism, but more about that in chapter 4.

21 Similarly, religion is simplified to be a 'delusion', a 'spell' or a 'mental disorder', contradicting the (moral) guiding function religious beliefs play in peoples personal lives.
Similarly, any Mode 2 claims that science merely represents a belief system just like any other is a simplification on the same lines. The conflict between Mode 1 and Mode 2 culminated into the so-called 'Science Wars' spanning the 1990s (Ross 1996). This initial conflict of sociologist of science and scientists (for example the Sokal affair, cf. Sokal 1998) has now largely been resolved; the accepted consensus sees science as a human construction dependent upon its practitioners (Collins 2010). However, an important point to make here is that claiming science as a human construction is not the same as the claim stating that science is useless, arbitrary or lacks authority. On the contrary, scientific research praxis seems to be the best approximation of nature that is currently available to us humans. However, it is just that, an approximation, depending on the humans creating this approximation. The conflation that many postmodern claims that attack the authority of science make is merely because science is not dictated purely by logical and rational principles does not necessitate that power (from the state, from interests groups, from companies or from the individual) are the only arbiters of what is considered to be true. Science has an inherent structure and this structure has evolved over time in order to best fulfil its stated Enlightenment telos (cf. 2.4), i.e. the discovery of truth about the world. In this sense, science is not a competitor to religion but an offspring, Nietzsche ([1887] 1989) writes:

“You see what actually conquered the Christian God; Christian morality itself, the concept of truthfulness which was taken more and more seriously, the confessional punctiliousness of Christian conscience, translated and sublimated into scientific conscience, into intellectual rigour at any price.” (Nietzsche ([1887] 1989:203, author’s emphasis)

This type evolution does not imply that science is better or worse than religion, rather it serves a different telos. Nietzsche argues that the Enlightenment focus on the process of science (confession of truth) has been enshrined within research practice, becoming its guiding telos. As such, one of the (traditional) unifying principles of science has been the pursuit of truth and the structures that evolved represent mechanisms that the practitioners found to best achieve this telos (Van Doren, 1992).

So what does all of this mean for the ecosystem understanding and research impact? First of all yes, there have been plenty of cases where political interference complicated the implementation of science, for better or worse (e.g. smoking tobacco, climate change or on issues of human sexuality). But, secondly and more important, there also have been cases where science implementations have simply been wrong with horrendous social consequences (e.g. racial inferiority, persecution of homosexuality or sterilisation of people with mental disorder etc.). Yes, there has been change and progress in the scientific view concerning these subjects, but that’s just the point; it changes alongside the ever evolving norms of how to best pursue the truth. At the time of the implementation of such practices, such claims were supported by scientific evidence of the time. Lastly, this means that the practice of science (i.e. research) is inseparable from the implementations of science, as these secure funding and lead to more science (Latour, 1987). This is one reason why scientists try to be socially relevant in their advocacy for science, which in the long historical development of scientific norms is today reinterpreted as the REF’s push for research impact. As such, this study utilises an ecosystem understanding (Mode 3), which synthesizes the recognition of the authority of science with its socially constructed nature.
This study relates to post-postmodernism/Mode 3 in that it synthesises aspects of Mode 1 and Mode 2 in its conceptualisation of science; understanding science as a complex negotiation between experts that involves material and a social orchestration between them. From this ecosystem prescriptive, the research process is inseparable from the end product, i.e. scientific knowledge. In terms of impact, this means that considerations of gearing knowledge production towards an impact focus would influence the research process on all levels of its social construction, stretching over issues such as epistemology, ontology, research practice, literature tradition and institutional structure.

3.2. The research process in praxis

The unifying theme of the ecosystem lens is that it acknowledges and incorporates our ‘human, all too human’ fallacies and proclivities into the (scientific) knowledge production process. The reason for doing this is that only from this level of abstraction does it become clear that research impact (end) is conflicting with the traditional focus on truth (means). Within this section the research process is outlined on a theoretical level, however why is such an understanding necessary in relation to research impact? When talking about the impact of research, automatically an underlying understanding of what research is and how it functions are being inferred. The reason being; because how research impacts depends on the underlying perception of how research functions in terms of what type of product scientific knowledge can and can’t produce (cf. Bijker, 1987). The specific post-postmodern understanding of science (Mode 3) that is used in this study is what I call the research ecosystem (cf. 2.1). The ecosystem concept is grounded in the sociological study of science (also known as Science and Technology Studies or Science, Technology and Society, both abbreviated as STS, here referred to as Mode 2) and human evolutionary psychology (e.g. Pinker 2003), which can be considered to be Mode 1. The evolutionary psychological aspect accounts for why certain social constructions are better or worse in organising and structuring human social interaction based on our underlying evolved biology (cf. Baumeister 2010; Ingold and Palsson 2013). However, before proceeding we need to define how this study uses the word ‘science’. In English the word science carries the connotation of only referring to the natural sciences, this is a difference that doesn’t exist within the German or Swedish language for example, where science translates to ‘knowledge craft’ (German: Wissenschaft, Swedish: vetenskap). The ecosystem metaphor implies ‘sciences’ in this ‘craftsmanship’ understanding of how scientific knowledge is produced. In order to avoid confusion, instead of using the word science to denote all structured human knowledge acquisition, the word research will be used to refer to the wider understanding of what also can be referred to as science. However, if not explicitly stated otherwise this is what is meant by referring to the concept of science. So let’s now define how research works in praxis.

So if ‘science’ (or research as I have now chosen to call it) is not the objective22 discovery of truths about the world, what is it then? The implication from Mode 2 is that for all the different sub branches of research, despite their apparent differences, all represent highly structured and choreographed human endeavours (cf. Law 2004; Collins and Evans 2008; Latour 2013). Research in this view, pushes the boundaries of (socially) consolidated knowledge into areas where consensus is not yet established. Each and every sub branch has its own disciplinary way to deal with this. In the natural sciences, the term paradigm has been used to describe this approach to how research ought

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22 Scientific ‘objectivity’ does exist, however in actual practice this is something that is akin to connoisseurship of technical knowledge of a particular field of human knowledge accumulation (cf. Shapin 2012, uses the concept of ‘intersubjectivity’ to explain scientific objectivity).
to be done (c.f. Kuhn 1970). Lakatos (1980) talked about different research programmes, while Bourdieu (1988) described researchers as being encultured into a particular habitus. Meanwhile, Latour and co. used the metaphor of an actor-network (Latour 1987; Law and Callon, 1992). Regardless of which metaphor is used; what these ideas describe is humans (as biological entities) being encultured into a cultural community with specific disciplinary norms that structure human behaviour. Regardless of the context, all these understandings address (cultural) interaction between (biological) humans; as such it is not surprising that there is substantial overlap between such descriptions. One of these community norms that are shared from anthropology to physics, despite their differences, is the core assumption that any type of research ought to apply methodological rigour in empirical studies, i.e. research discipline. Differences then come in, in how these norms are interpreted with regards to the truths about reality or what ‘reality’ is, how it is defined or consolidated (Law and Urry 2004:13). However, the importance of disciplinary hierarchies, on which such interpretations rest, is so biologically important to primates (such as humans) that it can be directly tied to their physical health and behaviour (cf. Sapolsky, 2005 on his endocrinology of social dominance hierarchies and their effects of stress in Baboons and Zebras). As stated in the previous chapter ‘evolution doesn’t stop at the neck’.

From an ecosystem perspective, it may be instructive to think of research using an economic metaphor of the classical science canon (Mode 1) ‘nanos gigantum humerus insidentes’, that is often attributed to Sir Isaac Newton (translation: we are dwarfs standing on the shoulders of giants). However, the giants do not merely serve as vantage points; they represent powerful allies which are mobilised by the individual researcher within their theory crafting, writing and when defending against criticism. Meaning that such alliances are deliberately weaved into a narrative by the researcher, putting their argument forward (cf. Shapin and Saffer 1985; Latour 1987; Latour 1988). The cost involved in the unmaking of a newly-created theory (proposition + alliances) conditions if a proposition is accepted as true or false, criticized or praised (Fleck, [1936] 1979; Latour and Woolgar, 1986; Law, 2004). The more alliances that can be mobilised, the harder it becomes to defeat the newly-created scientific fact. Once enough allies are mobilised, a proposition becomes accepted as functionally true (Latour et al. 2011). In addition, repetition of such disciplinary procedures that require; outlining a knowledge gap, applying accepted methods and publishing the research results. The result is that the knowledge base of particular research discipline grows accumulatively, at least in principle.
**Figure 3.1**, a sociological model of research. Source: Author’s re-interpretation of Law (2004), published in Brauer and Dymitrow 2017.

**Figure 3.2**, illustration of the consequences of a multiple-reality assumption for scientific representation. The same situation is being transformed into different representations of reality, depending upon a particular approach chosen. The different colours represent different ontological, methodological or epistemological approaches (see Figure 1 for how this process unfolds). Source: Author’s re-interpretation of Mol (2002), published in Brauer and Dymitrow 2017.
Figure 1 is a visualization of the process of transformation that every research project goes through, i.e. the making of science. Initially, a research focus is established (see box 1 in Figure 1). This is achieved by drawing inspiration from other previously established knowledge claims (i.e. published research), the so-called hinterland\(^{23}\) (box 2 in Figure 1). This allows for the identification of ontological categories, i.e. a system of ‘truth accumulation’, agreed upon by way of data sampling protocols in line with the scientific standards of a particular research discipline. Such ontological transformation reduces an overwhelmingly complex reality into an understandable and manageable size by removing and filtering out redundant (‘unwanted’) data, i.e. noise\(^{24}\). The epistemological transformation is achieved by agreeing upon a process of how knowledge is structured, i.e. how ‘true’ claims can be distinguished from ‘false’ ones according to the established standards. In this regard, the methodological transformation then generates data and offers hints to potential correlations, isolating relevant information in line with procedures established within the methodological norms of the given discipline. The outcome of these three types of transformations (Box 3 in Figure 1) renders a theoretical idealization of the observed reality, which subsequently becomes a simplified representation of that reality in correspondence to the established hinterland.

As these simplified representations of reality ultimately influence new studies, the whole process is infinitely repeated. Such an understanding put forth by Mode 2, runs into problems of representation, because previous knowledge (upon which its construction was based) inherently influences how reality is to be interpreted for every study anew. As a consequence, Mode 2 researchers have called this dilemma the multiple reality assumption (cf. Mol, 2002). This interpretation is at odds with the conventional assumption (of Mode 1) – for example within multi-method research – where the more different approaches that will be implemented to solve a problem, the better our understanding of it. Instead, the multiple reality assumption implies that depending on what research is chosen to serve as an alliance, a new interpretation of the same reality is created (see Figure 2), which is not necessarily commensurable with different approaches.

On a philosophical level, this gives rise to an inescapable relativism of ideas which have laid the foundation for much criticism towards classical definitions of science. Such philosophical definitions cannot circumvent this impasse with reference to axiomatic assumptions about science alone (Kuhn, 1970; Feyerabend, 1975; Sismondo, 2012). The practical consequence of such a contingency is that scholars can be referring to the same object, entity, phenomena (etc.) which nonetheless is conceptualized differently depending upon what parts of the hinterland the chosen approach departs from (cf. Mol, 2002; Law, 2004). Mode 3 scholars emphasise the process of science, i.e. the praxis of doing science in closing down such multiplicity. The implication is that although, philosophically, consolidation of contradicting knowledge claims cannot be achieved in actual praxis it is possible (cf. Collins and Evans, 2002).

\(^{23}\) Cf. Law 2004, for a detailed description of what he considers to be part of the so called ‘scientific hinterland’. In the here used nomenclature this could be regarded as part of the research ecosystem that deals with the scientific canon of a particular discipline.

\(^{24}\) This means the distinction between what is ‘noise’ and what is ‘data’ is contingent upon a axiomatic assumptions of what is relevant and what is not, for example Law (2004) writes: “Neo-Marxists discover world systems, or uneven developments […]. Foucauldians discover systems of governmentality. Communitarians discover communities […]. Feminists discover glass ceilings, cultural sexism, or gendering assumptions built into scientific and social science method.” (p. 5–6). Hence, why the here articulated Mode 3 research ecosystem lens maintains that epistemology and ontology are intricately linked.
Disciplining of scientific knowledge production occurs on a micro level throughout the entirety of the research process. Accurate descriptions of the world don’t just arbitrarily happen; any description of reality usually starts out by one individual writing down their thoughts. This process allows the individual to externalise these thoughts onto the page, turning them from a ‘hunch’ into a logical formulated argument. Such a process is creative in its own right, as writing forces humans to order and structure their thoughts into a logical linear flow, making sure that all the necessary information is introduced and elaborated (cf. Kahneman 2011). The same applies for presentations of research and the creation of scientific facts. This process of externalisation avoids the rash (often erroneous) judgments of our human automatized emotional responses (e.g. Haidt 2016). Afterwards, and maybe more importantly, this externalising process allows others to participate within the knowledge creation process, allowing for criticism and polishing of the presented argument, opening up to ideas which the individual that wrote the initial argument didn’t even think of (Peterson 1999). In practical terms this process creates an evolutionary epistemology (cf. Campbell et al. 1987) where a piece of information is then not only understood by one individual, but by several (i.e. this is the process that is referred to from Mode 2 when talking about the social construction of scientific facts). Philosophically, such an approach does not generate (absolute) truth. However, sociologically it does seem to work and be in concordance with democratic principles (cf. Collins 2015). The more refined this process is, the more uncertainty (unknown unknowns) that exist within every human being are reduced and we believe the fact to be ‘true’ and the ‘clarity of vision’ of a particular research community on reality is assured. Because, practically this does indeed reduce uncertainty as more and more points of view are incorporated into a coherent manor, filtering out human errors by the comments/criticisms of other people (i.e. cognitive filters of other people’s brains) making this process of knowledge production antifragile (Taleb 2014, Dymitrow, Brauer, 2018).

These Enlightenment scientific values (cf. 2.4), rhetorical tools and norms cannot be arbitrary, as human communication functions according to certain cognitive principles (Pinker, 2003) that are grounded in the evolved structure of our human brain (Haidt, 2012). Evolution does not simply stop at the neck, and our biological proclivities influence our culture and vice versa (cf. Baumeister, 2010). Thereby, any rhetorical re-construction has to have a certain structure and format in order to convince and resonate with so many people. However, not all of these scientific values, rhetorical tools or norms are explicitly formalised as they represent a part of an ever evolving scientific culture. Neither can they be fully articulated by one particular individual (i.e. they mostly represent tacit knowledge, cf. Polanyi, 2009), as they grew through the collective evolution of the research ecosystem and the everyday struggles faced by such individuals (cf. Shapin, 2010) in which the researcher is slowly encultured (Latour and Woolgar, 1986). Within such research communities, the enculturing process starts off with imitation (undergraduate program), which alongside learning a lot of ‘facts’ leads you to internalize these values, rhetorical tools and norms of how these facts were created. This then allows the individual to contribute to the field (PhD and onwards), the final step of that (cognitive) development is that the individual can articulate some of these rules and teach them to the next generation (PhD supervisor). This process creates an evolutionary pressure for ‘best practice’. 26

25 Antifragility, is the defined as the propensity to gain from chaos and adversity. Similar to how a muscle grow when exposed to resistance training, an idea becomes more ‘true’ if exposed to criticism and the idea prevails.
26 Bad rules also get passed down as well, but bad supervisors tend to create bad students leaving the impact limited on the ecosystem as a whole as these tend not to be successful. ‘Bad’ in this particular context, refers to not constructively adding the established rules and knowledge base of the research ecosystem.
The individuals that teach the next generation were all taught the majority of these rules by their supervisors, who were taught by their supervisors and so forth, disciplining the behaviour of how truth should be pursued. Each generation adds on and refines these rules, resulting that they ‘naturally’ evolve within the research ecosystem over time into a best practice of how to argue and socially construct the ‘truth’ (if this is the overarching telos of the scientific culture). As good supervisors then tend to have successful students’ good rules of behaviour get passed down to the next generation. However, once the ecosystem changes, what ‘good practice’ is changes according to this new telos (like research impact), hence the rules will change. The difficulty lies in that not all of these rules can be articulated, the majority are simply carried over as ‘good practice’ that academics ‘have always done’. In this sense the research culture of science is not just another culture, but rather a specific culture that has evolutionary grown with the explicit purpose (telos) of finding truth. As this has been the overarching telos for centuries, what people have discovered is all the ways our human all too human biases have influenced our knowledge production and blind us from the ‘truth’ (i.e. obstruct pursuing the telos of truth, cf. 2.3). Obviously, there will never be a point in time when human beings will have omniscient knowledge about everything (i.e. know THE truth); however, in the meantime the scientific culture that has developed represents our best approximation of how humans can collectively and accurately describe reality in a constructive manor, rather than just ending in disagreement and animosity. More practically, competency of such rules becomes a proxy indicator for scientific quality, i.e. allowing for the establishment of trust within the community (cf. Shapin 1994).

3.3. Extra-scientific factors and proxy indicators of scientific quality

The reason why such proxy judgments work is because observing these scientific rules, does force the individual to ‘jump through all the hoops’ that have been historically enshrined in the culture in order to sublimate biases, logical fallacies or other human shortcomings. This section will now explore how the the multiple reality assumption is addressed within the research conduct. Within Mode 3, such concerns relate to the problem of legitimacy (cf. Collins and Evans 2002 as well as section 2.3 in the previous chapter; for an outline of the knowledge gap that this study situates itself within), i.e. how do scientific claims become legitimate? As aforementioned, what studies have found again and again is the importance of these disciplinary norms is still outweighed within the consolidation of scientific knowledge, rather than merely being a political process (cf. Collins 2014). Mode 3 scholars usually identify other factors that are important to escape the relativism - implied by the multiple reality assumption - by materially reinforcing and fixing one particular interpretation within a rhetorical re-construction (Law and Urry, 2004; Latour, 2005; Mol 2010; Brauer and Dymitrow 2017). Therefore, the problem of legitimacy factors over into the problem of extension, Law (2004) summarises this contingency when he states:

“Since social (and natural) science investigations interfere with the world […]. Things change as a result. The issue, then, is not to seek disengagement but rather with how to engage. It is about how to make good differences in circumstances where reality is both unknowable and generative” (Law 2004:7)

Pragmatically, within the praxis of research, consensus is achieved by adherence or breach of disciplinary norms and what these imply for setting standards for what is logically consist and what are accepted empirical inquiries (cf. Latour 2011). Researchers in this sense can be conceived as experts with a professional code of conduct inscribed in the community norms of a specific discipline (Collins and Evans 2008:49-79). Following these ‘rules of the engagement’ does not only dictate conceptual usage, it is essential for scientific knowledge production (Latour and Woolgar 1986).
Uniformity, i.e. collapsing the multiplicity of assumptions into one coherent narrative, is achieved by disciplining individuals into a particular mode of understanding the world. Foucault (1978) in his account of the history of sexuality writes: “biologically established existence of sexual functions […] did not exist” (p. 151) prior to when they were invented. He makes this claim in relation to homosexuality, and I would contest that the underlying comprehension he tries to impart is one of his most misunderstood claims. The reason being, in one aspect his assertion is correct and in the other he isn’t. In order to understand this dichotomy, we have to go all the way back to Plato’s theory of forms and Kant’s critique of pure reason and discussions of the ‘Ding an sich’ (the thing-in-itself) to only mention two of the giants of Western philosophy who commented upon similar contingencies (cf. 2.3 & 3.1). In regard to homosexuality let’s distinguish between the behavioural pattern that presumably always ‘existed’ (the thing-in-itself) and the associated causal explanation of the phenomena that did not exist before its invention (i.e. the form). What Foucault’s (1964) great insight was in his work on Madness and Civilisation is that these two aspects are not distinct; they are interconnected in all sorts of complicated ways. As such, he is correct when he proclaims that ‘homosexuality’ did not exist, however what he is referencing by ‘exist’ is very specific to the interpretation of the phenomena (i.e. form), not the underlying behaviour it describes (i.e. thing-in-itself). What makes this difficult to understand is that without a causal explanation (i.e. discourse), you cannot conceptualise the phenomena in the first place. He further added to this understanding in his work on Discipline and Punish (Foucault 1977), when he showed that disciplinary measures are anchored within the edifice of culture that justify or discredit cruelty/discipline. Thereby, the difference between ‘education’ and ‘indoctrination’ that lets us interpret and understand a specific phenomenon, is actually only a difference in labelling of our positionality to the mechanism, not in how the behaviour functions that is being described.

From a post-postmodern position (Mode 3), the enculturing that influences a moral development of a child (cf. Piaget 1932) can be compared to that of the disciplining that researchers undergo in their training. Such disciplining/enculturing starts off with imitation (e.g. bachelor program or master program) the next step represents a more formal trial and error period where the individual is guided under parental supervision (PhD program27). Such guidance prepares the researcher to operate within the wider research ecosystem. Nevertheless, in these early stages of their career there still exists’ a lot of uncertainty within the individual of how the research ecosystem functions. Once a level of familiarity is developed, the flaws and problems of the social construction behind the disciplinary norms are unveiled to the individual. Such a stage is then superseded when an individual realises the limitations in human communication, soundly securing the individual membership within the academic hierarchy. This level of psychological cognitive development allows humans to translate different belief systems into each other, without mixing their conceptual frameworks. This level of cognitive development represents the ‘final’ stage of moral development, as it allows the individual in question now (often professor level) to influence the disciplinary rules of how the next generation will be trained (supervisor position), completing the evolutionary cycle of how these disciplinary norms are maintained and propagated within the research ecosystem. The important point to make here is that in this way research **has** impact, even, if that impact cannot be articulated in propositional terms.

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27 Parental supervision does not necessary have to come from a biological parent figure, what is important is that there is a difference between the student (low level of familiarity with cultural norms) and the teacher (high level of familiarity with cultural norms) that the teacher can impart onto the student.
An example of this difficulty in articulating the effect of this sort of disciplining is inherent in the difference between moderation (i.e. an appeal to civility) and censorship (i.e. an appeal to power). From the perspective of a person within a position of power, the intention may be to moderate a discussion and this means allowing certain individuals to speak, whilst preventing others. However, from the position of the person (of lesser power) all he/she is noticing is that they are being prevented from being allowed to speak, i.e. they are being censored. As such, the difference between moderation and censorship isn’t so much that these are two distinct behavioural patterns, but rather where in the mechanism of preventing someone to speak the individual is located. An important note here, although power is important (as stressed by Mode 2 scholars), justifying one’s own power position is not the only reason of why moderation/censorship is important. The same type of problem arises in relation to philosophically defining the 'scientific method', making it into a futile task as actual practices do not always conform to such ideals (Collins and Evans 2002). Furthermore, I do not rule out that other concerns shouldn’t influence science, for example, ethical concern and personal interest are all valid reasons to conduct a specific inquiry or not. However, such conduct can at times lead to loosening disciplinary requirements, retaining something which shouldn’t be retained within a particular discipline or otherwise adversely influencing scientific credibility (Dymitrow and Brauer, 2018). This thesis postulates that the disciplinary regime introduced by research impact has this same potential. This is such a subtle point, that in a debate between Noam Chomsky and Foucault the Dutch television that broadcasted this debate decided that they needed to add a 3 minute ‘explanation’ to prime the audience that they actually were talking about the ‘same’ thing. In the here used nomenclature Chomsky argues a modernist (Mode 1) position, whilst Foucault argues a postmodern (Mode 2) position, without a post-postmodern (Mode 3) understanding all they do is talk past each other. Nevertheless, the consequences of the disciplinary conduct is that it is difficult to ascertain if consensus was achieved through a dialectical means or via appeal to disciplinary guidelines that silenced dissident voices.

Scientific disciplines are called “disciplines” as these specific rules and norms discipline the interaction between different individuals, so as their thoughts and ideas become comparable enabling any form of scientific progress (cf. Golinski 2003). The aforementioned difficulty arises, because for the disciplined individual their thought processes have become internalised and naturalised. Scientific factors that cause this disciplining are norms of writing, conduct in data collection and other informal rules (cf. Gieryn 1983; Star and Griesemer 1989; Latour 1999; Law 2004; Livingstone 2010). Now based on the particular disciplinary norms we can distinguish between ‘scientific factors’ (accepted community norms) and ‘extra-scientific factors’ (not accepted community norms) (cf. Brauer and Dymitrow 2017). Now to be clear, this is an idealized proposition of how scientific conduct ought to achieve scientific progress. However, based on insights from Mode 1 and Mode 2 we can identify two common ‘rules of engagement’ within the majority of these approaches; these are empiricism and logical consistency (Lazorko 2013). Empiricism, in the sense that: “to be scientific, propositions should be capable of being disproved” (p.25) and consistency in the sense that: “[w]here there is an instance of relevant data to which the theory cannot apply, it must be modified” (p.26). As such, regardless of the definition of science; empiricism and logical consistency could be conceived as “scientific factors” that are internally consistent within any given research discipline. These disciplinary norms are then enshrined in scientific value structure (cf. 2.4) that is used to discipline the next generation.

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28 The video of the ‘Debate Noam Chomsky & Michel Foucault - On human nature [Subtitled]’ can be viewed here: [https://www.youtube.com/watch?v=3wfn2LGLG88&t=1720s](https://www.youtube.com/watch?v=3wfn2LGLG88&t=1720s), meanwhile a transcript of the debate can be found here: [https://chomsky.info/1971xxxx/](https://chomsky.info/1971xxxx/), both last accessed: 2018-02-10.
While there is usually less contention about how to distinguish scientific from non-scientific factors (Chalmers 2013), what counts as extra-scientific remains a matter of contestation. One of the first mentions of ‘extra-scientific factors’ was by Weber ([1904] 1941), who contended that defining science according to purely rational and empirical laws would not work in the social sciences as these are “decided according to value-ideas” (p. 80). Fleck ([1936] 1986), building on Weber’s work, introduced the concept of ‘thought collective’ as an important step towards understanding research culture changes over time. Kuhn (1970) developed this idea and incorporated it into his concept of scientific paradigm, in which external factors, such as “idiosyncrasies of autobiography and personality [...] the nationality or the prior reputation of the innovator [...] sometimes play a significant role” (p. 153).

Foucault, in his account of the humanities, applied the notion of épistème to elaborate the impact of power on scientific progress (cf. 2.2). In Foucault’s (1980) sense, ‘extra-scientific factors’ influence how the social construction of a given concept develops according to the changing discourses that are conducive for the powers that be. Furthermore, “extra-scientific factors [have been identified to] play a strong role in determining who collaborates with whom in the international scientific community” (Frame and Carpenter 1979: 481). Among other extra-scientific factors, scholars mention: gender (Haraway 1991), geography (Livingstone 2010), politics (Latour 1993) and language (Schaffer 1994). Still later developments have also sought to extend scientific knowledge production to include cognitive and other psychological contingents (Klahr 2002; Proctor and Capaldi 2012; Feist and Gorman 2013) to better understand how our own minds can ‘extra-scientifically’ influence scientific knowledge production (cf. Dymitrow, Brauer, 2018). Piaget (1971:132) almost over 50 years ago already noticed how the Foucauldian concept of épistème was similar to the Kuhnian notion of paradigm, the hope here is that by explicitly outlining the connections between human psychology and societal organisation the two ‘camps’ (i.e. modernist vs. postmodernist) can learn from each other instead of being viewed as antagonistic.

A structural norm that now explicitly emphasized with the REF is the assumption of excellence. As the whole framework is funded by taxpayer money, and therefore achieving excellence represents a form of accountability, value for money, impactful, or usefulness of research conduct (cf. 2.4 for the social contract understanding). Research excellence, is thereby meant to guide decisions for future research funding (REF, 2010). Now if this is an extra-scientific or scientific factor depends if you are departing from an Enlightenment focus of the telos of science (extra-scientific) or from a social contract view (scientific). In either case one of the implied assumptions is that ‘past success will ensure future successes,’ as the focus is on impact (end). This may not always be the case, as several errors with such an assumption have been pointed out famously by Merton (1936), coining the colloquial phrase; ‘the law of unintended consequences’. Based on the ecosystem understanding used within this study, we can identify what will be referred to here as proxy-indicators of scientific quality.

Within a research context, such indicators are for example; knowing whom to cite, knowing how to structure an argument, knowing how to write an academic article, knowing what the best journals in a discipline are, knowing what type of claims are allowed and which are not, knowing which are the ‘hot’ or ‘not so hot’ topics, knowing where to apply for funding, knowing whom to collaborate with, knowing whom not to collaborate with, knowing what universities are the top ones within a particular discipline, knowing what conferences are the important ones, knowing how research performance is evaluated etc. etc. (within a specific scientific knowledge community). Collectively such indicators create pragmatic identifiers for other members of the same research community to judge if the individual that is presenting these claims is trustworthy or not, i.e. creating excellency. However, competency of such proxy-indicators of scientific quality does not ensure veracity of the claims that are presented (hence why they are called ‘proxy’).
For the moment it is important to note that such proxy indicators discipline research conduct, just like other (extra-)scientific factors. Such proxy-indicators discipline the rhetorical re-construction aspect of scientific knowledge production (cf. Shapin and Schaffer 1985; Hughes 1986; Latour 1987; Collins and Pinch 1993; Latour 1993; MacKenzie 1993; Bijker 1995; Livingstone 2003; Latour 2005; Edwards 2010). The relevant aspects for impact will be further elaborated within the next chapter. However, the particular rationale for this study, is that by better understanding such proxy indicators of scientific quality, this may represent a better way of finding a base for consensus to talk about the ‘proper way’ to measure the quality of research (impact) (cf. Latour 2005; Zuiderent-Jerak 2015). The reason being, cultural norms of conduct cannot always be articulated by the individual that are obeying them. However, this does not mean that these do not fulfil a (beneficial/detrimental) function for the individual that is applying them. The basic premise underlying the idea of proxy indicators of scientific quality is that language is the primary medium of human social interaction. Therefore, by studying how consensus is built within the assessment of the research ecosystem, such an understanding can be extrapolated to finding ways of how to choose between different knowledge claims in general, despite the uncertainty of the content of the knowledge claim in question (e.g. Collins 2014). The idea of proxy indicators of scientific quality builds upon what Collins and Evans (2008) call interactional expertise, and they define it as:

“Interactional expertise is mastery of the language of a domain, and mastery of any language, naturally occurring or specialist, requires enculturation within a linguistic community. Interactional expertise cannot be expressed in propositional terms“. (Collins and Evans 2008:30)

Or to put it in other words, learning what counts as proxy indicators represents a skill that has to be acquired and the acquisition of such a skill set separates experts from non-experts. So, the answer to solving the problem of extensions (cf. 2.3) boils down to knowing when to trust, and when not to trust experts in matters of judgments. By exploring this concept further and finding identifiable proxy indicators of impact quality it may be possible to make that type of decision, and provide an underlying theoretical principle that has seemed to elude Mode 3 scholars for so long.

The judgments involved in the research impact assessment undoubtedly utilised interactional expertise. In this sense the REF is a case where this type of expertise had to be applied heavily within such a nationwide assessment; in principle it is pragmatically impossible to have an assessment of the entire UK research ecosystem on the scale of the REF without using proxy indicators. The reason being, that such tacit expertise has to be involved in the construction, assessment and evaluation of the REF, as many different forms of expertise had to come together that are not necessarily commensurable (cf. 3.2 on the practical problems created by the multiple reality assumption). Similarly, academics, end-users or regulators that occupy high status positions, i.e. professors, CEOs or research councils, etc. have to have high degrees of competency within different (language) domains and the associated knowledge of proxy indicators, as it would be doubtful that they would occupy such position without such a skill set. As such, exploring the implications of proxy indicators within a REF setting seems a fruitful task in addressing the problem of extension, in relation to research impact (cf. 2.3).

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29 In analogy, a person might give up smoking because they do not like the yellow stains on their teeth, bad breath or how it makes their cloth smell. Regardless of this rationale, the mere act of quitting smoking is beneficial for the individual in terms of health benefits and saving money. This still occurs, regardless if the individual in question is consciously aware of the causality involved.
3.4. Research impact and a shift in telos for tourism studies

The aim of this section is to operationalise the idea of extra-scientific factors and what it implies for this thesis and tourism knowledge production in relation to research impact. Within the previous chapter (cf. 2.5) it was inferred that the underlying values performativey shape how individuals interact with the research ecosystem. The role of auditing bodies is usually to ensure that the norms and disciplinary measures of a particular institution (scientific or otherwise) are being maintained (cf. Strathern 2000). Now Lyotard’s (1984) contestation was that the postmodern condition enforces a neoliberal disciplinary regime upon scientific knowledge production, shifting its telos from Enlightenment values to a neoliberal end goal focus, under the guise of public accountability (i.e. social contract). Research impact in this sense has always been part of the disciplinary structure of post WW2 science within the West. What is new today is the amount of attention it is receiving and that it is used as an official performance indicator by the research infrastructure to evaluate research quality. As such, research impact through the discursive effect of disciplinary measures imposed by auditing bodies’ influences and shapes what knowledge is being researched, funded and ultimately is allowed to be criticised.\(^{30}\)

For tourism studies in particular, we can already theoretically identify one of these extra-scientific factors, namely the material dimension of the research ecosystem, i.e. the knowledge infrastructures necessary to conduct research. The particular knowledge infrastructure that is the topic of this thesis is the REF 2014. Below, follows now a short elaboration on how such infrastructures extra-scientifically shape the character of research, and tourism studies in specific. Regardless of what type of research, all research is bound to happen within a framework of knowledge production infrastructure (e.g. access to scientific journals, storage of such journals, the process of formatting, editing or publishing such journals, to only mention a few\(^{31}\)). This is probably the aspect in which the natural sciences, social sciences and humanities are most similar to each other. However, before focusing upon the specific assessment of tourism studies within the REF context, let’s first address the disputed status of tourism studies as a discipline in its own right, deconstructing tourism studies from the research ecosystem perspective.

Tourism studies represents a late comer in the multitude of different social sciences disciplines (cf. Tribe 1997) and as such the (extra-scientific) function of time may therefore represent a factor that influences the debates about the status of it as a discipline. The argument being that as mass tourism is arguably a relatively new phenomena there simply hasn’t been enough time to consolidate a set of common disciplinary norms for how to study the phenomena in question. This fact combined with prevalent scientism (cf. 3.1), results in reoccurring debates about the status of tourism studies as a social science discipline. Furthermore, tourism studies are sometimes perceived just as an “importer of social science ideas or a convenient provider of an empirical field for others to harvest” (Gren and Huijbens, 2012:158). This sentiment is echoed by constant calls for tourism scholars to actively “contribute to debates in the other social sciences” (Shaw and Williams 2004:276) and society at large. Such sentiments rather than being characteristic to tourism studies, are a direct consequence of the relational character of the knowledge production of any form of research. Time represents an extra-

\(^{30}\) Chapter 4 will deal with these issues in more detail, however, the overarching point here is, that just because something is deemed ‘good’ by a disciplinary regime does not absolve the individual of moral responsibility. For example, the ‘research impact’ that Nazi scientists (e.g. Dr. Mengele) had on the German academia could be construed as positive research impacts within the binds of (Nazi) disciplinary culture.

\(^{31}\) For a colourful historical account of the rise of scientific journals and the underling structure (cf. Buranyi 2017).
scientific factor because, in order to establish (disciplinary) norms and protocols (cf. 3.3) it is necessary to engage in a significant amount of what is called ‘boundary work’, in order to legitimize the (scientific) knowledge claims that are put forth (cf. Gieryn 1999).

Boundary work can be seen as a process that orders and structures the knowledge that is included within a particular discipline. Boundary work is the activity that defines the boundary between scientific and non-scientific factors; furthermore this is an ongoing process and is vital in the creation of scientific credibility. As the boundary creates an; ‘in group’ vs an ‘out group’, demarcating competence and factual knowledge based on group affiliation, i.e. expertise (cf. 3.2 on how such an epistemic privilege is established in praxis). The ‘in group’ has the authority to make factual claims, while the rest are excluded (cf. 3.1). Tourism studies with its multidisciplinary character can be argued to not yet have achieved this consolidated status of other more ‘traditional’ disciplines (e.g. geology, physics and mathematics cf. Porter 1978; Shapin and Schaffer 1985; Bloor 1991). Now with the introduction of research impact, tourism scholars really have a unique chance to show just how much difference their research makes to society. It will be interesting to see how this develops the boundary work for tourism studies in the future. Regardless, of future developments, specific groups or ‘tribes’ have collectively formed a tourism studies research ecosystem, although it may be heavily fragmented (cf. Tribe 2010; Tribe and Liburd, 2016 and 2.5).

From an ecosystem perspective, tourism studies clearly seems to be incorporated within the wider research ecosystem common to the sciences, social sciences and the humanities; having university schools and faculties dedicated to its study, having its own journals, conferences, or research communities all common to other forms of research that is done within the wider research ecosystem. As aforementioned, rather than representing a fundamental difference, this could simply be a function of time. With this recent introduction of the field, it has not yet accumulated the status that more established (social) sciences discipliners are attributed with. Establishing routines, building alliances and consolidating theories takes an considerable amount of time (Sismondo 2011:136), an amount of time that simply may not yet been available for tourism studies. However, some tourism scholars do not view this situation as a function of time as it was for other disciplines. Rather the argument is usually framed as; ‘is tourism a discipline in its own right?’ or ‘where do you draw the line around such a diverse academic research project’ (c.f. Darbellay and Stock 2012; Gren and Huijbens 2012; Hall 2013; Lai et al. 2015). Viewed, from a perspective of the ever evolving research ecosystem such questions are actually a part of the ongoing process to defend scientific credibility (i.e. boundary work), rather than being able to produce a ‘final answer’.

The Enlightenment ethos (cf. 2.4) that rose from the structured interplay between researchers wasn’t so much protocols of how to do research (although it was this as well) it was modes of communication (cf. Shapin 1994). Within the tourism literature, such communication issues, credibility, boundary work and how they relate to in-group/out-group trust creation have been explored (e.g. Cooper 2006; Xiao and Smith 2007; Xiao et al. 2013). However, how the discourse of research impact and its newly introduced disciplinary regime will influence such conduct remains to be seen. Similar to the status of a discipline in its own right, there simply hasn’t been enough time to consolidate credible proxy indicators of impact quality (may that be in tourism research or in general academic conduct). Nevertheless, by the sheer notion of research impact there is an implied shift in telos of (tourism) research. Meanwhile, traditionally such research may have been driven by intrinsic motivations – due to the sheer introduction of research impact as a disciplinary requirement – this represents a shift to a more extrinsic motivation focus. In practical terms, this means that (tourism) research will align itself more with an ‘applied research’ aim to be even more ‘socially relevant’ or
indeed aim to maximize ‘research impact’. What all of these in vogue concepts have in common, is the aforementioned shift away from an Enlightenment ethos that emphasises the importance of the process of knowledge creation (means focus) to the end product of said knowledge production (end focus). Associated with such emphasis on research impact is a shift to a social contract and neoliberal view of what values should guide research.

The performative difficulty in creating a boundary around tourism, is complicated by the common practice within tourism studies of importing ideas from other social science disciplines such as; sociology, economics, psychology or human geography to just name a few. Now further add to this, the diversity of the study subject; spanning such different approaches as studying visiting friends and relatives (e.g. Young et al. 2007), adventure (e.g. Williams and Soutar 2009) or pro-poor tourism (e.g. Scheyvens 2009) to only mention a few. Is it then any wonder that tourism studies has been described as a discipline with “a pluralist epistemology” (Liburd 2012:902). Add to this the consequences of technological change in influencing the process of (scientific) knowledge production (cf. Waldrop, 2008) and we can clearly see that the research ecosystem and its potential disciplinary status for tourism studies is still in the process of establishing its initial boundaries. Research impact now introduces a further factor into this discussion, as well as the actual research impact that is produced and can be evidenced. In such a situation, were all such extra-science factors combined with the diversity of the studied phenomena and the pluralist epistemology; it shouldn’t be surprising if such debates remain salient within the ‘discipline’ for the foreseeable future.

3.5. Tourism studies being disciplined by impact

With regard to research impact of such a diverse field of tourism study, it surely is not impossible to point to cases where tourism research had impact. This was done for example by the submitting tourism studies faculties that submitted to the REF. However, judgements about the general impact of a specific faculty, let alone the entire field of study seem somewhat problematic to say the least. The argument presented here, is that similar to the disputed status of tourism as a discipline (cf. 3.4) there hasn’t been sufficient enough time for proxy indicators of impact quality to be consolidated by which to judge such research impact claims. The aforementioned underlying diversity surely complicates any type of generalisations regarding the impact of research. Tourism studies as a field seems more united by a common study subject rather than a unified (epistemological, ontological or methodological) approach (cf. Tribe and Liburd, 2016). This is not to say that tourism studies has no impact, rather it is very challenging making any form of generalisations that carefully account for such impacts, because, as of now there exists no unified standard on how to judge such impact claims. The REF addresses this contingency, by defining their own understanding of research impact, which will be discussed in the next chapter. Furthermore, this is also disregarding ‘soft’ impacts through the continuation of disciplinary traditions that uphold Enlightenment values in society as whole (cf. 2.5).

Proxy indicator of scientific quality represents a set of markers that evoke trust in the presented account and the claims that are made. Nevertheless, in respect to research impact claims, the current style in which academic papers are written for tourism journals seems to be counterproductive to discovering the ‘impact of tourism studies’. One of the CUDOS norms represented originality; translated into the language of proxy indicators of scientific quality this means identifying and addressing a research gap (cf. 2.4). However, in relation to impact, this is a different type of discovery that is not addressed when purely scientific knowledge is advanced. Scientific articles usually set out to establish a research gap, anchoring this gap within the existing literature. Let us explore this contingency in detail, by utilising an academic journal article, for example Hoarau and Kline (2014) write:
“According to Cooper (2006) capturing the tacit knowledge that resides in the tourism industry is one of the major challenges and to date has not been formally addressed by researchers.” (Hoarau and Kline 2014:45)

This then gets operationalised within the research project, framing the research aim that is presented within the article as addressing the identified knowledge gap, Hoarau and Kline (2014) do this as well by writing:

“This paper addresses this gap in the literature by focusing on the role of scientists as external source of knowledge in co-creation processes in tourism.” (Hoarau and Kline 2014:45)

The identified gap is then addressed through the research findings, and such an identification then simultaneous functions as the rationale for the study, Hoarau and Kline (2014) state as much when they write:

“The purpose of this paper is to contribute to a better understanding of the absorption of knowledge from scientists in innovation processes.” (Hoarau and Kline 2014:45)

Following this particular procedure, is adhering to disciplinary norms laid down by the Enlightenment telos for how science should operate. Other proxy indicators of scientific quality that follow the same telos that could be mentioned are: is the nomenclature consistent, are the claims cited correctly, is the methodology elaborated, are key terms and concepts defined, are there spelling or grammatical errors, are the references in a consistent format, is the contribution to knowledge outlined, is there a section on the axiology, how many self-citations are there, is the analytical approach outlined, are the aims and objectives outlined, is there a recognition of the limitations, are ethical issues addressed, are (key) recent papers cited etc. etc. collectively ticking these ‘boxes’ signals to the reader that the research in question is scientifically trustworthy as the traditional scientific values are enacted (cf. Shapin 2012).

In regard to research impact, the expectation is then that the created knowledge somehow contributes to addressing the social, economic issues within wider society. However, from a research ecosystem point of view, it is not obvious how such an understanding translates into creating research impact as practical applications are more than just ‘applied science’, (cf. Pinch and Bijker 1984). Implementation is a non-trivial process that necessitates the creation of linkages and innovation along its entire process, or in other words, it just does not happen by itself. The example of the study used above by Hoarau and Kline (2014) represents an empirical study from tourism that has re-discovered this important principle of co-creation of knowledge between academics and industry. However, the notion of impact implies more than a filled research gap and if now the next article proceeds to address a new research gap the focus gets shifted again, making it impossible to evaluate if the created knowledge actually had a research impact, as this is not the main goal of the values that structure the (rhetorical) presentation of scientific knowledge, at least traditionally. Such traditional Enlightenment proxy indicators of scientific quality can be antagonistic to potential proxy indicators of impact quality. For example Caton (2012) writes:

“[…] most of us who work in the tourism academy or in the industry—and who tend to be avid tourists ourselves—have spent at least some time daydreaming about the kind of tourism world we’d like to be involved with” (Caton 2012: 1906, author’s emphasis).
Such forms of vested interests potentially complicate claims of research impact, as these introduce a clear bias in the appraisal of (one’s own) research impact. The reason being, because:

“[on] some level, our experiences translate into values, which guide our scholarship, leading us toward the particular types of questions we find important, which we then commit our energy to pursuing.” (Caton 2012:1906).

Within a disinterested Enlightenment telos dominated research ecosystem, such personal interests may be acceptable and of minor concern. However, within a research impact context, such a contingency has profound influence on how a tourism scholar’s trustworthiness is perceived when arguing for the positive or negative impact of a particular tourism activity. As long as the highest telos is truth (cf. 3.1) this is of low consequence. However, if the highest telos of the research ecosystem shifts from truth to political, financial, societal, cultural or some other end goal focus encapsulated by the notion of research impact, such issues matter greatly for the reliability of the stated impact claim.32

In order to exemplify why these types of positionality matters greatly in relation to research impact lets imagine a stereotypical beachside (mass) tourist resort. Consisting of very dense built-up environment in terms of hotels and travel providers. There is also a closely associated international airport for ease of access of mass tourism. Real world examples of this are the Bahamas, Canary Islands or Phuket to only mention a few regions where mass tourism represents the major economic activity. Now we have three teams of researchers all independent from each other and from different universities, alongside different areas of expertise. Team A (from a social science background) focuses on improving hotel design, working patterns of the employees and responsiveness of tourists to marketing, all with the stated goal of increasing the economic success of the hotel complex. Team B (from a natural science background) uses this same research site to study the negative environmental effect of mass tourism, exploring ways to introduce alternative forms of tourism in order to minimize the damages caused from (mass) tourism that puts stress on the local flora and fauna, both in the sea and on land. Meanwhile, research team C (from a humanities background) focuses on the local populations human rights to maintain their cultural customs not just as a tourist attraction but in general. What this hypothetical scenario is intending to exemplify is that the research impacts from Team A, B and C could all claim to be ‘beneficial’ from their framework of reference, they could commodify these claims into a REF research impact claim and find ample evidence for their account. However, based on the positionality of the individual research team, the ‘beneficial research impact’ from one team is the ‘negative’ consequences that the other team is trying to prevent. This hypothetical scenario is meant to exemplify the real world consequences of the application of different methods and areas of expertise in relation to impact of the same phenomena. These differ greatly based on your underlying value structure, theoretical framework and chosen research methodology, Law (2004) writes:

“Foucauldians discover systems of governmentality. Communitarians discover communities and the need for informal association and responsibility. Feminists discover glass ceilings, cultural sexisms, or gendering assumptions built into scientific and social science method.” (Law 2004:5-6)

32 The disinterestedness clause of the Enlightenment focus is indifferent if the researcher for example is addicted to caffeine. However, if now the same individual is arguing for the benefits caffeine consumption, on which they should receive government funding the personal bias matters greatly.
This problem of ‘you find what you are looking for’ becomes a real practical challenge in relation to identifying research impact. As identifying our impact only becomes sensible, when we are talking about the same aspect of the phenomena. Without a unified underlying value structure, the ability to express positionality or a peer review mechanisms that uncovers blind spots; ‘good’ research impact claims merely remain a matter of framing. Furthermore, within tourism studies there is a tendency to label the *study of tourism* and the *phenomena of study* with the same label. Such tendencies may be an accepted proxy indicator of scientific quality within a research context, however within a research impact context such a conflation leads to that the rationale for the activity is then also automatically applied towards the study of the activity, or vice versa. For example, if a tourism scholar argues that tourism (the activity) promotes cultural understanding (cf. Johnson 2014), tourism needs to be more environmentally friendly (cf. Buckley 2012) or that it can become a mediator of combating oppression (cf. Pritchard et al. 2011). This then means that the associated research concepts of responsible tourism, sustainable tourism or hopeful tourism, then fall under the same rationale as for justifying the activity of study. Rather than indicators for research impact, such practices within a research impact context can be understood as post hoc rationalisation for the research in question. Such post hoc rationalisations form a fundamental problem for ascertaining the quality of the presented research impact claim. The concepts that are used to understand reality are not separate from human values, political considerations or personal interests, according to Law and Urry (2004) such a contingency applies to all human (social) science endeavours:

“[T]he social sciences, including sociology, are relational or interactive. They participate in, reflect upon, and enact the social in a wide range of locations including the state.”

(Law and Urry 2004:392)

As such, the mere study of the *impact* of tourism, also factors back to the conceptual frameworks used to analyse it. Hypothetically speaking, in regards to what are accepted proxy indicators of impact quality, if now a tourism study research results are taken up by UNWTO (United Nations World Tourism Organisation) they in fact become part of creating the desired political intervention, does this now represent political activism (contradicting the Enlightenment value of disinterestedness) or is this now an acceptable part of the research process? (cf. 2.5.) This is not to say, that political considerations do not influence research, as they certainly do, however the question is should they be the primary telos of research and science by that token (cf. 2.4 on the discussion of different competing values within the same research ecosystem)? Oates and McDonald (2014) with regard to sustainable tourism and the so called attitude behaviour gap have identified a similar contingency. They postulate that:

“[…] the ways in which we research green consumers might be partially responsible for the attitude-behaviour gap […] researchers need to examine whether their research designs are part of the problem. This caution applies not only to tourism researchers, but across the social sciences.” (Oates and McDonald 2014:170).

Therefore, disentangling the impact of tourism research becomes problematic, because it is intimately tied up with how the question of impact is phrased, i.e. what gets emphasized or deemphasised, and what proxy indicators of impact quality are deemed acceptable to judge such an impact by. The main point raised in this subsection is that the research methods used to conduct the initial research are not the same research methods that can be used to claim the impact. By nature of the research impact assessment, whilst the underlying research that is causing the impact can be anything from the entire academic spectrum. The account of the research impact is akin to traditional social science research. As such, creating a research impact claim requires proxy indicators of impact quality
that are akin to proxy indicators of scientific quality in sociological research. This problem of accounting for the causality of research impact and further complications in assessing research impact will be discussed within the next chapter, however before proceeding let’s summarise what was learned within this chapter.

3.6. Summary of the chapter

The aim of the chapter was to outline how the research process functions in praxis. From the research ecosystem lens, the research process is an integral part in the construction of a human belief system, namely science. The research process disciplines the practitioners of science, i.e. researchers, to interpret the world according to pre-existing conventions that are already an accepted part of the established research ecosystem (i.e. accepted proxy indicators of scientific quality). Within this process there occur a number of (epistemological, ontological and methodological) transformations that render an overwhelmingly complex reality into a manageable and comparable fashion. However, depending on what disciplinary norms are applied, different understandings of reality are created (multiple reality assumption). Nevertheless, with the help of the nomenclature of extra-scientific factors and proxy indicators of scientific quality we could understand how such multiplicity is rhetorically disciplined into one particular understanding of reality. Competency of what are acceptable scientific factors, extra-scientific factors and proxy indicators of scientific quality vary from discipline to discipline, but familiarity with what these are become the demarcation criteria between who is deemed credible within a particular field (i.e. expert vs. non-expert). Tourism studies functions according to the same principles, however due to the relatively novelty of the studied phenomena there simply may not have been enough time to consolidate what these are within the field in general, compared to other more established disciplines. Nevertheless, there are some established proxy indicators of scientific quality when it comes to specific sub-sections of the tourism research ecosystem that do structure the research process. However, when it comes to research impact not only does it appear that no such analogue indicators exist, the sheer notion of research impact may even potentially conflict with accepted research praxis according to an Enlightenment telos of science.
“How do we know how, when and why, to limit participation in technological decision-making so that the boundary between the knowledge of the expert and that of the lay person does not disappear?” (Collins and Evans 2008:10)
4. RESEARCH IMPACT

This chapter intends to outline the theoretical background that is used within this study to conceptualise research impact. The chapter starts out by introducing the notion of the seamless web in order to conceptualise how research impact functions, discussing how such an understanding relates to the research ecosystem notion, while contrasting it to the REF’s own understanding of research impact (4.1). The following section deals with the historical background of the REF and how the research impact assessment process is structured (4.2). The section is broken down into exploring the way research impact was incorporated as an proxy indicator for impact quality (4.2.1), how the REF assessment process is structured (4.2.2), how the key proxy indicators that are used within this assessment framework are defined (impact, reach, significance etc. 4.2.3) and how the submission material was to be prepared (4.2.4). The following section is concerned with discussing potential issues surrounding the assessment of research impact, based on historical examples of research impact and from tourism studies (4.3). This section is broken down into discussing the different types of research impact, mainly how academic research impacts academia (4.3.1) how academia impacts industry (4.3.2) and how academic research impacts the wider seamless web that is society (4.3.3). Furthermore, the issues surrounding conceptualisations of ‘positive’ vs. ‘negative’ impact are being discussed (4.3.4) as well as issues of causality when attributing research impact (4.3.5). The last section on discipline summarises key concepts from the (here presented) literature review, outlining how the social construction around research impact potentially conflicts with the Enlightenment telos of science (4.4). The last section in this chapter outlines how to navigate the entire thesis (4.5.). The chapter concludes with a brief summary of what was learned here (4.6).

4.1. Research impact and the ecosystem

According to the Oxford English Dictionary impact is defined as; “the action of one object coming forcibly into contact with another” or “a marked effect or influence” of something upon something else. For the this thesis only the later definition is relevant, as research impact is discussed by the REF in terms of a manifested change that was caused by research, i.e. research impact. Within the REF framework impact is defined as; “any social, economic or cultural impact or benefit beyond academia” (REF 2011B:4). What becomes clear is that impact is conceptualised as research causing impact upon ‘something’. This conceptualization sees the role of research as discovering some form of knowledge (theories, applications, patents, discoveries etc.) that are implemented by wider society. This notion is very similar to the dated notion of technological innovation where “basic sciences generate all the knowledge which technologists then apply […] however,] science and technology have become intermixed. Modern Technology involves scientists who ‘do’ technology and technologists who function as scientists” (Layton 1977:210). The identified knowledge gap of this thesis asked the question “How do we know how, when and why, to limit participation in technological decision-making so that the boundary between the knowledge of the expert and that of the lay person does not disappear?” (Collins and Evans 2008:10) This chapter deals now with the issues that can arise with the problem of extension in relation to factual claims of research impact (chapter 2.3).

The linear model of knowledge innovation views such a boundary as fixed and non-problematic (cf. Pinch and Bijker 1984 for a summary of such critique). However, the boundary between knowledge of the expert is always transgressed in praxis in many different complicated ways. Such cases have been the subject of study of much of Mode 2 science studies (cf. 2.2). One understanding that grew from such criticism was the seamless web understanding of technological innovation. It grew from empirical studies that investigated the sociological aspects of technological innovation. Such studies conceptualised research impact as a complex back and forth interaction between scientific advances
and technological advances. The historian of technology Thomas P. Hughes called this state of affairs the *seamless web* of culture, technology, economy and science that creates an interlocking systems that grows and develops in conjunction (Hughes 1986). Taken from the research ecosystem perspective, the seamless web can be seen as an extension of the research ecosystem to society as a whole, conceptualising the entirety of human culture as one big ecosystem (i.e. the seamless web). Modern experimental physics for example is so intimately dependent on technology, that the term ‘technoscience’ has been suggested to more accurately describe this practice. The separation between these two spheres is more a matter of definition rather than actual qualitative differences between the two spheres (cf. Johnson [Latour] 1988; MacLeod and Radick 2013). The notion of technoscience grew from the understanding offered by the seamless web that tried to conceptualise large technical systems (where Hughes initially developed the notion of the seamless web). The conceptualisation of research impact, as being intermixed and representing a complex back and forth process is not trivial in how research impact is to be understood.

The ecosystem perspective opens up for the possibility that *impact* can be conceptualised differently based on the specific actors that are involved, based on how they are influencing and how these actors are being influenced within the ecosystem. When looking at the REF’s definition of relevant groups (REF 2011C); they distinguish in their conceptualisation the following spheres; ‘academic’ and ‘non-academic’. Such a separation ignores the seamless web dimension, where there is a considerable overlap between these categories. As such, in order to be more nuanced in the definition of ’non-academic’, it could be further broken down to ‘industry’ vs. ’society’ where the ‘end-users’ are the actors that are now applying the research in question, i.e. they are impacted by the research. Other, ‘non-academic’ spheres that can be identified are public and private life, as well as the government that is structuring all of these different spheres. Obviously, these are very broad (and flawed) categories, but for the sake of the argument let’s take these and see what the REF conceptualisation of research impact looks like when compared to that of ecosystem (seamless web).

The arrows in figure 4.1 represent the directionality of research impact according to the REFs own definition of the impact of research to the other spheres. Meanwhile, departing from an ecosystem perspective (cf. figure 4.2) each of these spheres represent ‘sub’ ecosystem’s (i.e. the research ecosystem is represented by academia and so forth). If we compare both conceptualisations of research impact, it becomes clear that by its very definition the REF’s impact *focus* is omitting large parts of how impact functions. The reason why such differences in conceptualisation are important will be elaborated below in how to assess and accredit research impact. Research impact from an ecosystem perspective represents a feedback loop (back and forth in the seamless web), where the aims, goals and needs of these different spheres have an effect back on what type of knowledge is being produced (cf. Bijker 1995). The understanding that is inherent within the definition of research impact by the REF (i.e. that they represent separate spheres) in the first place is called into question.
Figure 4.1, illustration of the directionality of research impact by area according to the REF’s own assessment, where academia to academia impact is mentioned, but excluded from the impact assessment. Source: author

Figure 4.2, illustration of the directionality of research impact according to the ecosystem perspective that is used within this thesis (black and red arrows). The black arrows are the impact that is explicitly recognised as ‘research impact’ by the REF 2014 assessment framework. Source: author
This conceptualisation of research impact is very abstract and the potential problems that occur from such misguided categorisation can be difficult to grasp if not contextualised to a specific example (cf. Dymitrow and Brauer, 2016; Dymitrow, 2017). As such, in order to contextualise such issues, a relevant example would be the period of Lysenkoism that happened within the Soviet Union which began in the 1920s and ended in the 1964. In this period:

“Academician Schmalhausen, Professors Formozov and Sabinin, and 3,000 other biologists, victims of the August 1948 Session, lost their professional jobs because of their integrity and moral principles.” (Birstein, 2009:289)

Now post-hoc the era of Lysenkoism is considered as ‘pseudo-science’, however followers of Lysenkoism did depart from Darwinian principles, whilst rejecting Mendelian inheritance and the ‘capitalist’ notion of genes. Furthermore, its proponents rejected natural selection in favour of more ‘communist’ understanding that rye could transmute to wheat, wheat into barley and that weeds could spontaneously morph into food grains. Stalin was very fond of these political expedient ‘research impacts’ that corroborated Marxist economic principles and actively helped to suppress criticism of the ‘scientific theory’, severely hindering Soviet advances in fields of cell biology, neurophysiology and agriculture. Furthermore, the decline in Soviet agriculture productivity during the period and the Ukraine famine of 1932-33 can be partially attributed to this theory that promised ‘great’ research impacts (cf. Soyfer, 1994). The research impacts were certainly ‘great’ but not in the way that was anticipated by the political and scientific elite of the time. 33 However, before we can move on and discuss the potential problems and consequences that the introduction of research impact has for the tourism research ecosystem, we first need to understand how the REF assessment process functions and the background from which it developed.

4.2. Research impact according to the REF

Since the end of the Second World War, Western universities have been growing in size, and competing for a common pot of research funding. As such, there grew a necessity to evaluate where to allocate these recourses most appropriately (Strathem, 2000). So in one sense, the rise of audit cultures is connected to imposing a social contract ideal of the government onto science funding. The aim being that positive societal contribution should be generated and increased (cf. 2.4 & 3.4). The inspiration of how such an auditing is to be conducted came from standards of cost benefit analysis that armies and engineers had been applying previously to their own areas of innate interest (Porter 1995). It is in this environment of growing public accountability that the first Research Assessment Exercise (RAE) was proposed in 1986. With subsequent exercises taking place in 1989, 1992, 1996, 2001 and 2008. The intention was, to ensure the best quality research gets funded and ensure the high quality of UK research; this rationale hasn’t changed for the REF 2014, which came to replace the RAE. However, these assessments do not exist in a vacuum, despite statements to the contrary from the UK research councils, of it being a neutral assessment (REF, 2011B). For example, the UK University and College Union (UCU) are not shy in their criticism of approach to the assessment of higher education and research, on their website they state:

“The [2008] RAE has had a disastrous impact on the UK higher education system, leading to the closure of departments with strong research profiles and healthy student recruitment. It has been responsible for job losses, discriminatory practices, widespread

33 The 1932-33 Ukraine famine became known as the “Holodomor” which is derived from the Ukrainian морити голодом, which that translates "to kill by starvation". The estimates of the death tolls range from 2.4 to 12 million people.
demoralisation of staff, the narrowing of research opportunities through the over-concentration of funding and the undermining of the relationship between teaching and research.” (UCU34)

Other scholars have made similar assessment of the RAE practices. For example, Tribe (2003) points out that the structural design of the 2001 RAE, effectively marginalised tourism research leading to a lowering of the perception of tourism research’s relevance. As tourism research is characterised by a transdisciplinary nature, it did not fit well with the units of assessments that focused on ‘traditional’ disciplinary boundaries. As such, he argued, by the structural aspects alone tourism research was forced down certain avenues, making it appear much more peripheral than it needed to be. Another impact of the RAE that can be mentioned, was pointed out by Lee (2007), he showed that the 2001 RAE changed the character of the UK economics departments. As research quality was assessed primarily based upon which journal an article was published in, universities tried to recruit people that managed to publish in those journals. The unintended effect of this ‘gaming of the system’ was that it led to a sharp decline in heterodox thought, because in order to appeal to those journals that were ranked favourably by the RAE, a certain type of theoretical, ideological and technical expertise was warranted. Thereby, recruiting individuals with this type of expertise inadvertently disciplined homogeneity of thought. In the previous chapter (cf. 3.5) it was argued that tourism studies may now experience a change within the ecosystem as the shift to research impact potentially conflicts with the traditional Enlightenment focus of science. Nevertheless, it also represents an opportunity for the tourism research faculties to showcase their impact and positive contribution to society.

The list of criticisms of the RAE process is not exhaustive; however the criticism seems to always revolve around two central issues; the structure/process of the assessment and the efficacy of the assessment (i.e. its usefulness in judging the quality of research). There is no shortage of critical voices of the REF assessment process (e.g. Sayer 2015, Barkawi 2013, Shepherd 2009). However, only very few criticism mention the here addressed conflict of values that such a disciplining can potentially cause (e.g. Oswald, 2009). Therefore, how does the assessment process of research impact actually function and what are its problems (cf. 4.3) and how does this conflict in values arise (cf. 4.4)? These issues will be addressed later on, but before going into this dimension we have to explore briefly the context out of which the current research impact assessment grew.

4.2.1. How research impact was turned into an assessment standard.

The impact agenda was started with a pilot exercise on research impact (REF, 2010). The most likely reason being in order to address some of the criticism levelled against earlier iterations (Sayer, 2015). Especially, the problem of judging scientific quality based upon the ranking of the journal in which the output was published has been a favourite target for criticism (e.g. Redden, 2008). A focus on research impact nicely circumvents this. It is not a stretch of the imagination to see the new introduction of the assessment of a focus on research impact as an attempt to mitigate some of these criticisms. If the REF is an attempt to enforce a ‘social contract’ upon the accountability of research, the reverse is also true for the REF itself. Apparently this rendition of the 2014 REF cost several million pounds (Else 2015). Spending this amount of money only makes sense if the results that are generated by the REF are indeed a viable indicator of research quality. As such, the inclusion of impact as a performance indicator and the intention of future REFs to increase the focus on research impact can be understood as an attempt to mitigate the criticism of the research outputs and presenting a justification for the assessment in itself.

Discussions to include impact as a performance indicator started shortly after finishing the last RAE in 2008 (Sayer, 2015). However, as it was a new proxy indicator it had to be worked out how to assess research with it. As such, it was decided to run a pilot exercise. The findings of this exercise were published in a 2010 report with the title ‘REF Research Impact Pilot Exercise, Lessons-Learned Project: Feedback on Pilot Submissions’ (from here on REF 2010A). This was accompanied by another report titled: ‘Research Excellence Framework impact pilot exercise: Findings of the expert panels’ (from here on REF 2010B). For this pilot exercise it was decided to focus on 5 different disciplines, or as they call it; ‘units of assessment’ (UoA). These were; Clinical Medicine, Physics, Earth Systems and Environmental Sciences, Social Work and Social Policy & English Language and Literature. 29 universities and colleges were invited to participate and submit (at least) two case studies to each of the different UoAs. The design of the submissions and the procedures were in constant feedback with the universities that submitted, and many of the suggestions made by the universities in this process were implemented into the assessment of the REF. A few examples of the suggestions that were raised were:

- Have the impact assessment aspect of the REF lowered for the first round, as it is a new exercise, which led to the score of impact being reduced to 20% of the overall assessment.
- Stressing that the impact scores cannot be compared across UoAs, as each UoA applied their own understandings of the definitions in order to evaluate research impact.
- The primary focus of the assessment should lie on the case study\(^{35}\) assessment, and the impact template\(^{36}\) should only count for a smaller fraction. (REF 2010A:38) This led to the case studies counting for 80% while impact templates counted for 20% of the final research impact scores (REF 2011C).

These and other suggestions were implemented in the final REF. However, there were some issues that were raised during the pilot exercise that seem to be far more difficult to implement, a few examples are:

- The impact guidelines were felt to be rather vague. As such the universities were left to fight with their own interpretation of what impact meant (REF 2010A:12)
- There was also confusion about what the terms ‘reach’ and ‘significance’ mean, which were the criteria by which research impact was judged (REF 2010A:14), and
- “how does one go about counting the benefit of not doing something?” (REF 2010A:15)

To be fair, this ‘negative impact’, of not doing something was mentioned as a possible outcome for the examples in the REF guidelines (REF 2011B). However, this still does not solve the practical problem of reiterating this type of impact compared to more quantifiable impact in an impact template or case study with a set page limit. This is exactly what they found was happening in the submissions in the pilot exercise (REF 2010B:44). Positive aspects that were noted during the pilot exercise were:

- That it raised awareness amongst researchers about the actual impact that their research had, making them “feel good about what they do” (REF 2010B:35)
- Also that the exercise provided “strategic intelligence” (REF 2010B:47) for universities in showing their impact, in more plain English this means marketing.

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\(^{35}\) A case study is the account of research impact claims that were submitted by the universities

\(^{36}\) An impact template is supposed to outline the universities ‘approach to impact’.
And that the people who are involved in applied research most likely will have their relative status increased within the universities, as their research is more suited to be showcased in this fashion of accounting for impact (REF 2010B:46)

Overall, the conclusion of the pilot exercise was that the effect of this change in assessment should be fairly marginal. As universities had been working on industry and society collaborations anyway, and this added focus only helped them to make it more explicit. Additional costs for developing new data storages to showcase impact, would simply be added on to the cost of doing research. In overall they concluded that it was a “well-run exercise” (REF 2010B:52) and proceeding to the full assessment of impact in the REF should be possible. If that is however possible remains to be seen, because the benefits that were mentioned seemed rather vague and minor in contrast to how fundamentally problematically the criticism was. Now let’s move on to the actual assessment of the REF and how it is structured, highlighting some of these fundamental problems.

4.2.2. The REF research impact assessment process

The REF aims to provide guidance for the UK funding bodies and was jointly conducted by them. These bodies are the Higher Education Funding Council for England (HEFCE), the Scottish Funding Council (SFC), the Higher Education Funding Council for Wales (HEFCW) and the Department for Employment and Learning, Northern Ireland (DEL) and represented their main assessment tool as “[t]he REF replaces the Research Assessment Exercise (RAE), last conducted in 2008.” (REF 2011A:49). As previously mentioned, it builds on the experiences learnt through the pilot exercise, but also upon previous exercises that had been “developed through an evolutionary process” (REF 2011A:4). Thereby, the context of the REF ecosystem can be seen as a historical progression that developed out of these previous exercises in combination with the criticism they received. From a seamless web perspective this just represents another institutional change that influences society. The assessment intended to provide a foundation for decisions where to allocate funds and to provide “accountability for public investment in research and produces evidence of the benefits of this investment” as well as providing “benchmarking information and establish reputational yardsticks” (REF 2011C:4). As such, it is quite clear that the REF is an attempt by the UK government to provide accountability for research and information for decisions where to allocate future funds, but also to discipline the research ecosystem in order to enact the desired change within the seamless web of society.

The REF 2014 contained three main strands of assessment, these are; research outputs, research impact and research environment. The weighting of these individual parts was divided as follows; Outputs: 65% Impact: 20% and Environment: 15%. It was initially suggested that the impact of research was to be weighted with 25%, but this was later on reduced to 20%. However, it is stated that there is an “intention of increasing this in subsequent exercises” (REF 2011B:1). The assessment was conducted by 4 main panels that oversaw the whole process. The specific assessment was delegated to 36 UoAs, which were comprised of both academic experts and experts from non-academic sectors (i.e. end-users). Tourism was officially located within the composite UoA 26 of Sport and Exercise Sciences, Leisure and Tourism. However, tourism impact could be submitted anywhere and then the panel would decide if the impact ought to be forwarded to the tourism UoA.

The REF 2014 made several changes to the assessment structure of the previous RAE of 2008, among others was the reduction to the current four main panels compared to the previous 15. The of UoA’s was reduced from 67 to 36, with the intention was to streamline the process and make the panels inclusive, in regard to transdisciplinary, multidisciplinary and interdisciplinary research (REF 2011B). There were other changes from the previous RAE to the REF, these included among others:
o Esteem\textsuperscript{37} has been dropped as a separate criteria for the assessment
o A new revised approach to assessing the research environment, and
o The measures to promote equality and diversity have been strengthened.

Nevertheless, the biggest change (and the focus of this research) is the inclusion of an explicit focus on “non-academic impact of research” (REF 2011C:10) as a separate performance indicator. The REF is very aware of the novel status of this type of assessment and states within their official guidelines:

“[…] the impact assessment in the first REF is likely to be developmental, and the 2014 REF will be the first experience of assessing impact for those UOAs and [universities] that were not involved in the pilot exercise.” (REF 2011B: 4).

4.2.3. Definitions of research impact
The definition of research impact that the REF settled on for in their final assessment as a proxy indicator of impact quality, was defined as follows:

“[A]ny social, economic or cultural impact or benefit beyond academia that has taken place during the assessment period, and was underpinned by excellent research produced by the submitting institution within a given timeframe.” (REF 2011B:4)

This is further developed as impact included (but not being limited to) changes or benefits to:

“the activity, attitude, awareness, behaviour, capacity, opportunity, performance, policy, practice, process or understanding of an audience, beneficiary, community, constituency, organisation or individuals in any geographic location whether locally, regionally, nationally or internationally. Impact includes the reduction or prevention of harm, risk, cost or other negative effects. (REF, 2011B:48, bold font in original)

For the purposes of the impact element of the REF:

Impacts on research or the advancement of academic knowledge within the higher education sector (whether in the UK or internationally) are excluded. (The submitted unit’s contribution to academic research and knowledge is assessed within the ‘outputs’ and ‘environment’ elements of REF.) Impacts on students, teaching or other activities within the submitting HEI are excluded. Other impacts within the higher education sector [are included]” (REF, 2011B:48, bold font in original)

The underpinning research can have these impacts indirectly or directly, meaning that the researchers can, but not necessarily have to be involved in the implementation of the research. The research can be undertaken by individuals or collaboratively within an institution or between different institutions (REF, 2011B:29). The underlying research has to be carried out at the institution in question in the time period of 15 years prior to the assessment period, effectively giving it a time period from the 1st January 1993 to 31st July 2013 (REF 2011B:29). Vital research

\textsuperscript{37} Esteem was conceptualised as a list of indicators of showing the esteem of an institution, such indicators were; “awards, fellowships of learned societies, prizes, honours and named lectures, personal research awards and fellowships, keynote and plenary addresses at conferences, significant professional service, positions in national and international strategic advisory bodies, industrial advisory roles, editor roles, research coordination, conference organisation (e.g. programme chairs and programme committee memberships, including continued membership of a programme committee over several years)” (HEFCE 2009)
that underpins impact before this period can be submitted, but a strong case has to be made why it is important, and each UoA will judge these cases on an individual basis. The attitude towards impact that was to be developed in the impact templates is restricted to the time period during the assessment (REF 2011B:27).

So in short; the research impact according to the REF has to be underpinned by excellent research and is produced by the submitting institution during the given time frame. Furthermore, research impact should be independently verifiable by evidence and is assessed based on its significance and reach, as the main assessment criteria. These terms are defined as follows within the REF guidelines;

**Underpinned**: means that the research has to be produced by the university in the given time period. This is regardless if the researcher in question has moved on to a different institution or still remains at the university. In contrast, this means that research outputs ‘travel’ with the researchers to their new institution (if such a change has occurred) (REF 2011B:21-23). However, conversely to the output research impact ‘stays’ with the institution where it was produced (REF 2011B:29). Also there has to be a “distinct and material contribution to the impact taking place, such that the impact would not have occurred or would have been significantly reduced without the contribution of that research” (REF, 2011B:29)

**Excellent research**: means that the underlying research that is invoked has to be published in reputable scientific journals whose “quality that is recognised internationally in terms of originality, significance and rigour” (REF, 2011B:29) and could potentially be deemed by the output assessment as a two star publication. Note, that this is a judgement call of the individual assessor, as the research that is underpinning the impact has not necessarily been assessed within any prior output assessment.

**Verifiable evidence** has to be independently verifiable by the assessor. Where evidence for particular impact may be hard to define, as such “greater weight may be placed on evidence of fact over evidence of opinion in determining the significance and reach associated with a claimed impact” (REF, 2012:71, authors emphasis). Which makes the statement that no “type of evidence is inherently preferred” (REF, 2012:71), seem somewhat hollow. Furthermore, just in terms of information density quantifiable evidence is easier to present as ‘evidence of fact’ compared to qualitative evidence, within a case study with a set page limit.

**Reach** and **significance** are defined by each main panel separately. As the tourism UoA was located within main panel C, reach is defined as follows: “the extent and diversity of the communities, environments, individuals, organisations or any other beneficiaries that have benefited or been affected” (REF 2012:74). **Significance** is defined as: “degree to which the impact has enriched, influenced, informed or changed policies, opportunities, perspectives or practices of communities, individuals or organisations” (REF 2012:74, emphasis in the original). Both reach and significance are not geographically defined or dependent.

The expert panels for the assessment were appointed by the UK funding bodies and comprised of experts from the particular field (usually leading academics in the field) and what is called ‘end users’, which primarily were individuals that are involved in industry or other non-academic sectors related to the research activity. The end-users were primarily intended to aid in the assessment of the research impact, as it was deemed that this is where their expertise is most appropriate. The assessment was divided between different members of the UoA, so that at least each “impact case
study will be allocated to at least one academic member and one user member or assessor, wherever practicable. [Meanwhile, end-user assessors will be allocated impact case studies and impact templates only” (REF 2012:16). During the assessment process, panel members could request additional aid from a REF support staff to verify the provided evidence. UoA’s could also refer assessments to other panels/UoA if it was deemed necessary, however the final assessment stayed with the original UoA that the submission was made to. If conflict of interest arose, these were then judged on an individual basis, and most commonly the person with the conflict of interest refrained from making an assessment on the particular case in question (REF 2012:14, 102-103)

Consistency in the assessment was treated as a high priority; as such each UoA and panel undertook ‘calibration exercises’ in the early stages of the assessment. This was done in order to ensure the level of general standards and quality. “International and user members of the main panel [participated] in these exercises to assist in benchmarking judgements. The main panel chair and members of the main panel will attend a selection of the sub-panel meetings that [dealt] with calibration exercises and main panels [received and discussed] reports from sub-panel chairs on these exercises”. (REF 2011C:15). These represent the disciplining standards from the assessment side of things; let’s now explore how the submissions were to be prepared according to the guidelines.

4.2.4. Preparation of the research impact assessment material

As previously mentioned the impact assessment was based upon impact templates and research impact case studies. Both of which had specific guidelines on how these were to be prepared. An impact template was meant to outline the submitting institution’s ‘approach to impact’. A template was given on which aspects should be covered, in the guidelines it states that an approach to impact ought to include (REF 2012:100):

- **Context**, referring to a general background of the submitting institution’s
- **Approach to impact**, what is the institution’s stance on improving the impact of research
- **Strategy and plans**, what are the institution’s future plans to facilitate more impact
- **Relationship to case studies**, how do the case studies fit into this wider picture

How extensive this outline had to be depended upon the size of the institutions, table 4.1 below shows the guidelines of the REF in relation to the page limits of the impact templates. In practical terms this meant that the page limits for the impact template were dependent upon the size of the institution.

<table>
<thead>
<tr>
<th>Number of Category A staff submitted</th>
<th>Page limit for impact template</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 34.99</td>
<td>3</td>
</tr>
<tr>
<td>35 – 74.99</td>
<td>4</td>
</tr>
<tr>
<td>75 or more</td>
<td>5, plus 1 further case study per additional 60 FTE</td>
</tr>
</tbody>
</table>

Source: REF 2011B:51

The case study submissions also followed a similar formulaic approach, having to include the following aspects (REF 2011B:50-52):

- **Summary of the impact** (indicative maximum 100 word limit)
- **Underpinning research of the impact in question** (indicative maximum 500 words)
• **References to the research** (indicative maximum of six references)
• **Details of the impact** (indicative maximum 750 words)
• **Sources to corroborate the impact** (indicative maximum of 10 references)

Similarly, to the impact template the size of the submitting institution related to the number of case studies that needed to be submitted (cf. table 4.2):

<table>
<thead>
<tr>
<th>No. of Category A staff submitted</th>
<th>Required number of case studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 14.99</td>
<td>2</td>
</tr>
<tr>
<td>15 – 24.99</td>
<td>3</td>
</tr>
<tr>
<td>25 – 34.99</td>
<td>4</td>
</tr>
<tr>
<td>35 – 44.99</td>
<td>5</td>
</tr>
<tr>
<td>45 or more</td>
<td>6, plus 1 further case study per additional 10 staff members</td>
</tr>
</tbody>
</table>

Source: REF 2011B:28

In general terms this led to the case studies having a page limit of around four pages (REF 2011: 51). Both the impact template and case study were to be written in a coherent and concise style according to the REF guidelines. Especially for the case studies this was stressed, the guidelines state:

> “Within their narrative account in the case study, institutions should provide the indicators and evidence most appropriate to the impact(s) claimed, and to support that chain. The subpanels will use their expert judgement regarding the integrity, coherence and clarity of the narrative of each case study, but will expect that the key claims made in the narrative to be supported by evidence and indicators.” (REF 2012:71, author’s emphasis)

As such, how the proxy indicators of impact quality were to be weaved into a narrative was left for the universities to figure out by themselves. Furthermore, this focus on the narrative transforms the impact case studies from ‘impact facts’ to ‘stories of research impact’ as the impact case study template lacks a method section. Such an approach of assessing research impact based on narrative accounts creates its own challenges and now these will be discussed below.

### 4.3. Potential issues for assessing impact

So the question now becomes; what are some of the issues that can be pointed out with the REF’s understanding of research impact and the outlined assessment process, based on the research ecosystem perspective and the understanding of research impact functions according to the seamless web? The following issues that are discussed are not an exhaustive list of all the problems that could be pointed out when conceptualising research impact from an ecosystem perspective. Nevertheless, these should serve as a starting point for highlighting how complex the notion of research impact is and what challenges are involved in creating an assessment standard based upon it. First let’s discuss the different definitions the REF uses of who is impacting whom in relation to finding proxy indicators of impact quality that are suitable for assessing impact according to an seamless web understanding.
4.3.1. Academia impacting academia

Academic to academic impact, is usually touched upon when talking about impact factors, journal rankings or other markers used to rank scientific contributions (e.g. Murphy and Law 2008; Wardle and Buckley 2014). The reason why such rankings represent reliable proxy indicators for scientific quality is that these underlying research performance indicators relate to aspects that tie into the allocation of funds and authority. Such scores represent markers that allow easy heuristic to pick winners and losers. 

The academic to academic impact is covered by the REF under their ‘output’ assessment (cf. REF 2011). However, such a proxy indicator of scientific quality is not to be underestimated, as for example, academic credibility accumulated within the academic realm travels with the academic when they are creating impact. Such academic impacts become alliances that are of instrumental importance not just for a scientific inquiry to succeed, but also their ability to influence society in general, in that the (Enlightenment) ethos38 of an academic represents a resource in its own right (cf. Latour 1987). Thereby, the impact of the output ranking creates and impact on the academic potentiality to create research impact. As an example of how intricate and problematic this assessment of ‘quality’ is the ongoing discussion about the use of ranking of journal qualities within tourism studies. In 2008 there was an attempt to address the “troublesome” ranking of tourism journals by defining the quantitative assessment parameters better (Murphy and Law 2008:1078). This quickly sparked a debate within tourism studies, questioning the underlying assumptions about what research is considered valuable. This controversy led the tourism scholar Rob Law (2012) to recant his original position in a later article, that this quantitative ranking may not have been the best approach to assessing the “quality” of journals within tourism studies (Law 2012:1722).

Similar arguments about not representing the proper way to assess research have been levelled against the REF. Such problems, in disentangling research impact of what factors caused the impact, is most likely why the REF choose to omit this impact from their assessment, however this does not mean that such factors are not integral for creating the actual impact. However, from the REF guidelines it is less clear how to commodify such a pathway to creating an impact within a case study. The reason why this is challenging is because it is difficult to account and accredit an important pathway to impact in such a way that the current case study assessment is structured.

4.3.2. Academia impacting industry

Research impact upon industry refers to the generation of knowledge or products that can be commercialised or are useful for the industry, as understood by the REF. The idea being that science generates application in its pursuit of knowledge, for tourism in particular such knowledge interaction has been described as one of many factors that leads to innovation within the tourism sector (cf. Hall and Williams 2008). However, industry innovation can and does occur regardless of research interference. Usually, research impact is the result of a co-creation of knowledge by industry and researchers. A specific example how complex this knowledge creation process is was already commented upon previously (cf. 3.5) in their inquiry on the whale watching industry. They found that co-creation and communication between researchers and the (whale watching) industry is of integral importance for any research impact to manifest. They empirically showed the importance of the principle of co-creation of knowledge between academics and the tourism industry. This refers to the aforementioned feedback loops that exist within the wider ecosystem (i.e. seamless web) and their importance for the creation of research impact. From the seamless web perspective,

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38 Ethos is a Greek word meaning “character” which usually refers to guiding beliefs or ideals that characterize a community, nation, or ideology. However, in rhetorical terms it represents the credibility of the individual making a claim question, such credibility lends authority to researchers when they are involved in creating impact.
this is to be expected as alliances that built knowledge have to be reinforced and maintained along the entire process of their creation (and even afterwards). Only once they are implemented, do they appear as ‘natural’ developments of the larger ecosystem (i.e. the seamless web, cf. Latour 1987).

Another impact that can be mentioned, is that of people working within the tourism sector are influenced by the knowledge that they received within formal tourism education, which in itself is influenced by tourism research (cf. Dredge et al. 2012). However, this type of impact is not counted by the REF assessment (REF 2011B:48), disregarding the knowledge learned during time at university as a form of research impact. However, this does not mean that such knowledge (created through research) has no impact. For example marketing departments use research methods (first developed in academia) as a basis for their studies or implementing knowledge produced within academia into their practices (e.g. Coghlan 2008). However, such techniques are usually not taught in isolation, as they are accompanied by discussions about ethics, values and other issues of contention. Tribe (2002) talks about the importance of the ‘philosophic practitioner’ where actions ought to be guided by (Enlightenment) values and principles rather than mere cost-benefit profiles. These aspects make this ‘soft’ impact difficult to quantify if this is influencing ‘industry’ or ‘society’ as whole, which is presumably why the REF does not recognise research impact through teaching. However, once again this does not mean that no research impact occurs through such informal avenues. 39

4.3.3. Academia impacting society
From an ecosystem perspective the separation between academia and society is somewhat arbitrary, as both academia, industry and other such ‘spheres’ can all be said to be part of larger society. Academia and industry are not separate enterprises that occur in isolated spheres that are removed from society, they are part of society (cf. Latour 2005). When conceptualising impact through education, this shows how difficult it is to demarcate between what ‘spheres’ were influenced by what other ‘spheres’. Such a potential difficulty represents a plausible reason why such types of research impact were not counted as potential impact by the REF. However, influencing the general public debate was counted as an impact. Once again, the artificial separation creates difficulties in arguing for one or the other, as education/influencing the public debate are connected enterprises (cf. Dredge et al. 2012). Nevertheless, impacting the public debate is something tourism scholars definitely do (with their research or through their teaching). For example, on a general level, tourism scholars influence how issues regarding tourism are addressed and understood within the wider societal debate about tourism. Tourism knowledge that is produced within tourism research, influences regulations on issues relating to tourism in a myriad of different ways (e.g. Bertella 2011). Another example, that could be mentioned, are reports issued by the United Nations World Tourism Organisation, which aims to “advance tourism development according to their respective needs.” (UNWTO website40)

These needs and the desired direction are all informed by research about tourism. However, not one of them is easily captured within the REF impact case study approach. Such advisory impact or influences on the public debate is very hard to account for. The reason being, reliable accounts of the impact depend on the type of knowledge transfer in question. Meaning that the type of knowledge, that is never fully formalized nor written down, that has been so essential for scientific

39 Bill Gates maybe one of the most successful ‘college drop outs’, however, his time at Harvard did allow him access to computers, teachers and other research that undoubtedly aided him in his personal success. However, how to quantify such influences is a different matter entirely.

40 http://icr.unwto.org/content/unwto-un-system accessed 2017-10-25
progress (e.g. practical skills, tacit knowledge, a connoisseurship etc. cf. Collins 2010) is very hard to account for as simply no documentation is kept. Or in other words, when ideas spread by informal knowledge transfer from individual to individual, only a few people can even recall where the knowledge initially came from. An example of the difficulties with accounting for such informal knowledge transfer was given in the anecdotal account of Jonathan Wolff’s (2010) recollection of the Ladbroke Grove (1999) and Hatfield (2000) train accidents in the UK. He describes that the knowledge he contributed that influenced the actions of the government were never formalised nor officially written down or published, but (according to him) had an enormous impact on the action taken by the government and the railroad industry. Within tourism studies, an example of the difficulties of formalising the causality of impact would be the recent debate regarding sustainability. The issue centred on the stance tourism scholars should take towards climate change. On one hand, concerns were raised regarding the issue of connections between climate change and tourism (cf. Shani and Arad 2014: Shani and Arad 2015), which was overwhelmingly contested by a huge number of researchers within tourism studies, among others on the grounds that tourism studies “envisage[s] tourism's sustainable future” (Hall et al. 2015:355). However, regardless of the issues raised by either side of the argument, they opened a debate. Now both sides, in principle can claim research impact, regardless of the type of position that they argued for in starting this debate.

4.3.4. Positive and negative impact

The previously raised point, related to the issue of what impact is desirable depends on the particular position an individual is occupying within the ecosystem and their own value system. Nietzsche called this issue perspectivism and when talking about the impact of research it is almost taken for granted that it is the positive connotation that is desired by the REF. Even in their definition of ‘negative impact’ they emphasize a prevention of doing something harmful, i.e. having a positive connotation of harm prevention. However, what is ‘positive’ is a function of many different factors, and research can cause harm, a few examples that could be mentioned of such negative impacts are; the discovery of chlorofluorocarbons, leaded fuel or dichlorodiphenyltrichloroethane (DDT) which were all thought to have positive benefits at the time of their discovery. However, after widespread implementation it turned out that the environmental costs of these compounds vastly outweigh their benefits (cf. Carson 1962; Hoffmann-Riem and Wynne 2002; Tsai and Hatfield 2011). However, what is positive and what is negative is not clear cut, in such situations. Take the example of Thalidomide which influenced the development of the embryo, leading to disfigurements of children. This surely is a harmful research impact, however the standard that was introduced on how to test medicine (testing for adverse effects on pregnant women) is now a standard that has been in place ever since and maybe even saved us from even greater harm. Another example is the use of Nazi experiments on Jews conducted in concentration camps. The methods were surely ethically questionable, but the knowledge has been (and still is used) in modern science, raising many ethical issues (e.g. Cohen 1995). The point being, that judgments of positive or negative impact have moral implications and they are depend on the context and time passed (cf. Wadmann 2014).

For tourism studies, finding examples of negative impact of research is an interesting exercise in linguistics. As words can have several meanings and several connotations, where the specific connotation that is intended is only established in context to other words (i.e. in the syntax of the sentence, cf. Russell [1984] 1992; Wittgenstein [1953] 2009). If this complex sentence structure is removed, when for example by searching for keywords this it becomes difficult to identify what is influencing what. In the case of a search for ‘impact of tourism studies’, this will result primarily in a search results of the impact of tourism, (which can be understood as a type of impact in it of itself). The next problem that arises due to similar reasons is the use of the word tourism by tourism
scholars. In regard to the shift of telos that research impact imposes, such connotations can influence how tourism ought to be done (cf. 3.5), as the telos and the associated discipline is changed. The term tourism within tourism studies does not only denote the activity of tourism, but is often treated as synonymously with tourism research (e.g. Gren and Huijbens 2012). This conflation creates a form of impact in itself, because “categories are performative” (Law and Urry 2004:392), as such, how tourism is viewed (as a phenomena, activity, research subject etc.) influences how it will be perceived and in extension how and what type of impact is valued. An example from tourism studies regarding negative impact would be the discussion that took place regarding a conference concerning the ‘sustainability of cruise ships’. In the relevant TRINET discussion⁴¹, it was discussed that the conference would be held on a cruise ship, which for some individuals represented the embodiment of unsustainable. One perspective argued that discussion of the issue of sustainability is a positive aspect, while criticism focused on the fact that the conference, due to its location, is directly contributing to unsustainable behaviour. It is easy to dismiss this point, as just political disagreement. However, such perspectivism is the major cause of the disagreement as the underlying values colour how an impact is judged, assessed and understood within the (tourism) research ecosystem (cf. 2.6).

4.3.5. Issues of causality of attribution and generalisability
There are many practical issues involved in conceptualising research impact, due to the multiplicity of all the different factors involved in the creation of impact, which have complex back and forth interaction within the respective human ecosystem (i.e. seamless web). So it might not be impossible in principle to discern the impact of research, but in practical terms significant challenges are to be expected in identifying appropriate proxy indicators for impact quality. The reason being, that in order to appreciate the impact of research, you need to have a holistic understanding of the case in question, something that seems unfeasible when making judgments about such broad categories such as society or research as a whole. Furthermore, this is complicated as it is difficult to untangle such judgments from the underlying value dimension and the REF guidelines do purposefully not lock in a specific value set, but rather focusing on a best case evaluation system (cf. 4.2.2). Similarly, researchers may even be unaware of what impact their research has on other people.⁴² The emphasis here is on the ‘best cases’ evaluation model, if the REF is supposed to represent a guiding framework for making decisions on future research funding. The problem that now arises is that the REF is not requiring a comprehensive overview of the entirety of the impact of all research. By only focusing on the best cases, this potentially can create a skewed perception of research impact in general. Creating something, which is known as the so called ‘streetlight effect’ (Freedman 2010). Such a street light effect can significantly skew the results of the analysis. What happens is that only the most pertinent cases are highlighted, and they will be taken to be a representative of the whole, this is also known as an apex fallacy. The feminist concept of ‘male privilege’ has been criticised according to the same logical fallacy. Meaning that the most representative cases of a group (of men) are taken to be representative of the group as whole, allowing feminists for example to view a male homeless person as ‘privileged’ while mainstream female journalists can describe themselves as ‘oppressed’, leading to a misrepresentation of the gender dynamics in society (Hoff Summers 2015).

⁴¹ TRINET is the biggest mailing list within the field of tourism studies
⁴² For example, a random member of the public reads some research on the most painless death and decides to take a vacation to take their life, however the vacation leads the individual to reconsider and quite literally saves the life of the individual. The researcher responsible is unaware of the research impact (Toole 2014).
Now, there are many anecdotal tales of how accidental scientific discoveries have led to major advances for society, e.g. Penicillin, Viagra or Teflon to only name a few (Roberts 1989; Dovers 2014). However, by only focusing on the best case example this might create a warped perception of how relevant research creates technological progress. Furthermore, it completely ignores the performative dimension of preserving Enlightenment values (cf. Lyotard 1984). The literature that investigates how (technological) research impacts occurs, shows that only a fraction of these scientific advances actually translated into beneficial aspects for society. The reason being is that scientific knowledge is not the same as technical knowledge. Implementing scientific discoveries into commercial application is in itself a process of discovery. For example, a US military study evaluating military expenditure on basic research linked to military projects found that only a minority of advances (8.7%) came from basic research, the bulk came from technological advances (91%, cf. Sismondo 2011:93-96). As such, these technological advances do depend upon scientific knowledge, but only indirectly. Now the REF does recognise such research impacts, yet proving such an indirect research impact might be exceedingly difficult, due the absence of empirical evidence which can be used as proxy indicators of impact quality.

Similarly, ‘failed’ research also has an impact, if only in showing other researchers of what not do to. By analogy, if there is a labyrinth with 5 doors in and only 1 door out. In front of each door is a researcher and each one will enter, one will come out at the other side (presuming that one path did lead to the end). Now what was the causality of one of the researcher choosing the ‘correct’ path, was merely a contingent of all possible alternatives being covered. Now the problem with actual real life research impact is that we do not know how many ‘doors’ the labyrinth has or even if there is an exit at the other end. Hypothetically, a country could spend its entire GDP on funding research, covering as many ‘doors’ as possible, maximising the ‘research impact’. However, practically this is infeasible as the social contract that government is fulfilling has other obligations (welfare of the citizens, protection of the nation, rule of law etc.) which all demand resources in order to be funded. As such, research impact now explicitly ties research to the political process. The argument is not, that this hasn’t been the case in the past, but rather now researchers are actively encouraged to participate into societal debates. Compared to being experts that are consulted in times of crisis, let’s just hope that the road to hell is not always paved with good intentions (Dymitrow and Brauer 2016).

4.4. The role of discipline

So where does all this leave us? To recap, research impact is created when (research) knowledge is disseminated, adjusted and applied for a novel purpose that creates a change within the larger society. The notion of the seamless web was used to reflect upon the understanding of the REF; of how research impact is created. According to the seamless web notion there are no clearly distinct borders between research and the public domain and creating impact is a continuous process of innovation. The main argument of the entire literature review of this PhD thesis is that the disciplinary rules discursively enable and restrict research conduct. The mechanism that underlies such discursive shaping (i.e. the disciplinary rules) will change, if the highest purpose (telos) of the research ecosystem is changed (e.g. a shift from truth to impact). In chapter 2 we learned that treating the knowledge production that occurs within science as a research ecosystem enables us to

43 For example Karl Pearson founder of modern statistics, argued passionately that Jewish immigration into Britain "will develop into a parasitic race. [...] this alien Jewish population is somewhat inferior physically and mentally to the native population" (Pearson and Moul 1925), as such research has always been a political issue. Now with the REF focus on research impact, such interference of scientists in the public debate is encouraged.
make sense of the growth of scientific knowledge. In chapter 3 we learned that disciplinary norms enable and restrict research within the research ecosystem, and subsequently influence knowledge production. Within this chapter we learned that the research ecosystem is just part of a larger human ecosystem that is society (i.e. seamless web). Furthermore, we also learned how the REF defines and understands research impact along a linear understanding (compared to that of the seamless web). Despite this difference in conceptualisation, the mechanism behind the social construction of what constitutes a research impact (fact) is not unlike how scientific facts are created. As such, let’s now compare the social construction of a scientific fact to that of an impact fact.

Within chapter 3 it was stated that disciplinary norms work by simultaneously orchestrating social norms of behaviour in combination with material objects that reinforce such rules. In order to better explain this enabling and restrictive property of the combination of human and material object, let’s use the analogy of riding a motorbike. The material object that represents the technology of a motorbike is enabling in the sense that the rider gains additional attributes with the union with the motorbike (i.e. being able to drive long distances, being able to drive fast, being able to impress others etc.). However, this comes at a cost that disciplines the driver’s behaviour (i.e. learning how to drive, having money to put fuel in the fuel tank, being able to repair and maintain the motorbike etc.) restricting the rider in other areas of their life. As such, if the rider wants to reap the benefits of the union with the motorbike, he or she has to submit to the disciplinary regime required by the maintenance. In this sense, the enabling and restricting dimension are not separate but rather entangled in all sorts of complicated ways that necessitate each other. Now the driver may loath, be indifferent or love the task of maintaining the bike; however the sentiments of the individual are secondary to the disciplinary requirement of the maintenance (cf. Pirsig 1974). The larger point here, is that changes in disciplinary norms (if adhered to) influence the fabric of reality, as enacting certain behaviour patterns enable and prohibit certain actions, influencing what reality can and cannot manifest. This is why Mode 2 scholars maintained that scientific facts interfere and shape the reality (cf. 3.3), now as long as this is done according to Enlightenment values it is ‘business as usual’, however, once this starts to change it is not clear how such changes in the maintenance regime influence the ability to ‘ride the bike’.
Figure 4.3, illustration of the social construction of a scientific fact, divided into three distinct parts of the construction. Source: author.

In regard to the materiality of research we find the same enabling and restricting mechanisms (cf. Bennett and Joyce, 2013). Figure 4.3 is a modification of the figure used within chapter 3 to describe the scientific process, reimagined into how a scientific fact is created. Within the social construction of a scientific representation, there can be identified 3 separate parts, namely the critical deconstruction of the existing literature, the analytical construction used during the associated research to arrive at the underlying argument and the rhetorical re-construction of the final text presenting the argument as a scientific fact (cf. Johannesson 2013; Turabian 2013; Coopmans et al. 2014). Each of these processes is disciplined by research norms that enable and restrict the research. Furthermore, as with the motorbike + rider union and the ability to go from A to B, such disciplinary rules have to be followed IF science is envisioned as a collective enterprise. The reason being, instead of gas, air in the tires, oil in the motor etc. such discursive rules maintain that the product (i.e. scientific facts) are understandable to OTHER members within the ecosystem. Such a disciplinary process allows other researchers to utilise previous information for their own research, with the main goal of enabling other individuals to do the same with their own particular piece of research. The maintenance of this communication dimension is similarly indifferent to the sentiments of the individual, as communication functions on certain principles that have been encapsulated by the 'scientific method' (i.e. disciplinary rules that underlie the creation of scientific facts). Human communication is not arbitrary; it has to follow certain principles of narrative, style, use of evidence or consistency of nomenclature and so forth for it to become intelligible to other human beings (cf. Pinker and Prince 1996; Dymitrow and Brauer 2018). As such, from a research ecosystem perspective I would performatively subdivide the so called 'scientific method' into a critical deconstruction, analytical construction and rhetorical re-construction.
In regard to the critical deconstruction of the literature, this is important for communication as it maps out the territory of how, why and what is the phenomena that is studied and what has been done previously. This process is obviously constrained by the literature that exists within the wider scientific hinterland (i.e. the canon). It is enabling in the sense that the individual researcher does not have to start from zero, being able to utilize the knowledge that other scholars contributed in the past (i.e. standing on the shoulder of giants). However, an enabling function is only maintained (for other scholars) if the individual researcher also communicates in a fashion that is intelligible to other researchers. It is restricting, as the research norms posit that such pre-existing knowledge ought to be taken into account.

In regard to the analytical construction, this is important for communication as it allows the individual that is accessing the information to deem if the presented information is reliable or not. Thereby, fulfilling proxy indicators of scientific quality (i.e. accepted disciplinary manifestations) becomes the mechanism of how the reader verifies such reliability. Now in terms of accepted methodological approaches (e.g. quantitative vs. qualitative) and the associated method that have been accepted by the community (e.g. surveys, interviews, secondary data usage, etc.) there exists a multitude of different proxy indicators of scientific quality associated with each of these approaches. Correctly identifying which rules have to be abided by (and which not) creates a coherent fulfillment of proxy indicators of quality, which by that token then signify scientific quality. These indicators are enabling in the sense that the researcher does not have to invent analytical methods from scratch and hope that they are acceptable by the wider community. However, at the same time this means that 'old' methods get recycled again and again, leaving a relatively small pool of acceptable methods that have to be used (cf. Law and Urry 2004).

In regard to the rhetorical re-construction, the reason why this is important for communication is that no matter what approach is used, each has their own constraints and challenges associated with it that influence the knowledge that is produced (cf. 3.3 on the multiple reality assumption). This means that a multitude of potential theoretical contradictions in combination with a multitude of different methodological problems potentially multiplies so much that communication breaks down entirely. In order to mitigate this problem and facilitate proper communication, the rhetorical re-construction adds further constraints on how the information can be structured and presented, in order to be considered as a scientific fact. As such, we can see that along the entire social construction of a scientific fact (from epistemology to putting a word on the page) research rules and norms constrain and enable research conduct, i.e. they discipline. However, whilst such social constructions are accepted scientific conduct, they do restrain how a phenomenon can be envisioned and understood. The reason why it is labelled re-construction is that not all information gained from the two previous steps needs (or should) be included in the final presentation.

44 Try writing about discourse analysis without evoking the works of Foucault or other sources that build upon Foucault's work, other academics would immediately get suspicious. Thereby, familiarity with the work of Foucault becomes a proxy indicator of scientific quality, allowing other academics to relax and address the content, instead of dismissing it outright.

45 Post hoc such instances are then described as 'hoaxes' in order to retain scientific integrity, e.g. Bogdanov affair (cf. Woit 2006)

46 For example, using a hermeneutic approach in combination with surveys will cause suspicion as the approach AND the methodology departs from different epistemologies.
The REF’s notion of impact is conceptualised in very confined terms (e.g. only impact outside of academia). As such, the REF understanding of impact informs how it gets implemented into that of the research impact assessment criteria, assessment standards and definitions of research impact. The REF attempts to circumnavigate the difficulties that were pointed out by the pilot exercise, but it is questionable if they succeeded, based on how fundamental the issues were. Although the definition of how impact is defined very broad, the guidelines on how such impact is to be presented are rather specific, due to the practical necessity of the assessment process. Such strict presentation guidelines, may inadvertently lead to preferences of certain impacts over others, as they are better suited for the rhetorical re-construction of a research impact fact. The same combination of material and human relations occurs with the costs and benefits that are involved for the academics that are being assessed by REF. The union of researcher (human) and the assessment system (i.e. the REF 2014) together create a union that is both enabling and restrictive, for both the REF and the researcher. The REF is able to claim that there have been ‘impressive research impacts’ which are of mutual vested interest to the universities, as they are able to claim these research impacts now in their marketing campaigns. This symbiotic relationship will be further explored within the following chapters, as seen here the REF has defined certain aspect of how to account for research impact. Unfortunately, these definitions say nothing about how it ought to be implemented, how it relates to existing commitments of researchers, how universities should allocate their resources or what research impact should be pursued.

In regard to creating a scientific fact, such disciplinary norms have evolutionary grown and identified associated proxy indicators of scientific quality that now discipline the research ecosystem (cf. 3.4). Now the REF’s intention was to “assess all types of research without distorting the activity that it measures or encouraging or discouraging any particular type of research activity” (REF 2011:4). However, as shown above a potential problem is the conceptualisation of research impact as put forward by the REF in how it related to accountability, recognition and technological progress. Examples of historic research impacts are discussed above to highlight the conflicts that can arise with the process of implementing research impact, alongside examples from tourism studies. The REFs understanding of research impact that is applied has the intention to serve as a tool of accountability and transparency for research funding. While rhetorically appealing, the actual process of both research and impact creation, due to its collaborative nature, makes attribution of recognition and accountability very difficult. The takeaway message of the literature review is only by understanding research impact and the REF from an ecosystem perspective that includes how and why the assessment was created historically, does it start to make sense of what research impact is and how it operates. From a research ecosystem perspective such an outcome orientated telos of maximising research impact (ends) is in conflict with a traditional Enlightenment telos of truth (means). Therefore, the introduction of research impact will further change the culture of science as the underlying research ecosystem is disciplined by the REF’s standards. This will result in changed research practices and will be materially reinforced by institutions like the REF. The argument that this thesis put forth, is that in regard to research impact no analogue set of proxy indicators of quality exist. As such, there is a potential for the introduction of research impact to undermine existing disciplinary structures that are vital for maintaining the trust in scientific institutions.

The reason for why this potential exists is that there is always uncertainty involved in any account of reality and if you "change the rules of the game" in such a highly complex system such as a nationwide research ecosystem (cf. 3.3) it is very difficult to anticipate the consequences. Yet, we can predict human behaviour when faced with disciplinary change in a highly competitive environment. For example, for a researcher to publish on the highest academic level they need to
have similar discipline as word leading athletes, as research by design is a highly competitive emprise. Now by changing the 'training regime' of the athletes (PhD students are expected to publish articles, expected to engage in public forums, think about their research impact etc.), the expected results of the performance and how the rewards are distributed within the game are changed (assessment criteria for research impact, impact awards, publication pressure etc.). To continue with the analogy of high performance sport, in regards to such elite athletes, the commercialization of sport changes the rules that the individuals operate within, i.e. it changes the sport ecosystem. For example, the Tour de France and cycling are plagued from doping scandals (e.g. Lance Armstrong, cf. Thompson 2008), there are scandals in American football relating to concussions (Belson 2014) and doping, (Gay 2006) and FIFA is plagued by corruption scandals (Gibson and Gayle 2015). Now the causes that create these consequences for the athletes are different from the causes that change the research ecosystem. However, my inference here is ultimately, we still observe human behaviour where the intention is to compete on the highest level. Both academics and athletes have the human ambitions to compete and have to obey (personal) disciplinary rules in combination with the disciplinary rules of the specific ecosystem they operate within. If you now introduce a new performance indicator and incentives for research impact, new ways to “game” the system will be developed as history tells us that this is what human beings do.

One further function of the proxy indicators of scientific quality is that these restrain ‘bad’ academic behaviour, similar to how referees keep the game ‘fair. With the absence of such commonly accepted proxy indicators there are no punishments (i.e. disciplinary measures) for conduct that is exploiting the system. The two pictures in figure 4.4 show the GDR’s commitment to an output orientated focus within the domain of sport. The picture to the left shows the medals won by East German Athletes (due to doping) and the picture to the right is the comparison in medals won by East vs. West Germany. The reason why the East German sports program was “superior” to the West German one was precisely due to their outcome orientated focus, regardless of the cost to human life (ends above means). If the performance indicators explicitly focus on the outcomes (ends) than the temptation is pursue these ends by any means. The analogy to research impact here is as follows. Yes, it is “good” that more medals and research impact will be generated, however, the question is not about the outcomes, but rather what costs are we willing as a society to pay for this outcome?
Nietzsche asks: "[w]hat does your conscience say?" (cf. Nietzsche [1882] 1974:219) as obeying (bad) disciplinary rules does not absolve us from our own moral responsibility to ourselves or others. It is very easy to take the moral high ground and deem the East German system as ethically deplorable from the outside. However, this is not the argument I want to make here, when viewed from an ecosystem perspective (e.g. Wadmann 2014), the personal incentives, disciplinary obligations of the system and public interests all intertwine and blur the line between what is acceptable and what is not. Furthermore, psychological research has shown in the case of such difficult ethical choices human beings easily defer responsibility to an authority figure (Milgrim 1974; Blass 1999; Zimbardo 2008). If now the performance requirements are further pushed up (i.e. expectations of research impact getting more emphasis), this will improve the overall performance in terms of research impact outputs of the ecosystem. However, is the counterproductive cost for the individuals and potentially loss of the quality of the products that this system produces really worth pursing?

In terms of personal costs for the individual such an emphasis on end-results can have negative costs for the individual, for example, if now an athlete is pushed for better and better results, the temptation to resort to doping is ever increased, with physical costs to the health of the individual, just so they can up their game. The same applies for academics and the push for more and more outcomes (i.e. publish or perish). Now add to this the burden of performance to create impact and what is created is an research ecosystem that is incentivising individuals to ‘game the system’ due to the comprises that have to be made on an individual level. Publishing world leading research is a full time occupation in and of itself, if now academics still have to perform the burden of teaching and now focus on research impact, any additional workload will lead to compromises in the workload of the other two commitments (i.e. lowering their quality) as there are only so many hours in a day. Furthermore, in such a situation additional performance indicators alongside incentives to achieve and vested interests to claim “impressive research impact” will make the temptation to commit academic fraud more pronounced. In terms of cost for the system, academics and athletes in the...
here implied ecosystem sense are “parasitic” upon society as a whole. In the sense that they do not produce resources directly, they can only ever create impact indirectly as their primary product is knowledge (progress) or sport results (entertainment). Most of that knowledge will never be implemented, or only ever first implemented in years to come by other people. Most athletes that compete do not win any medals; nevertheless they fulfil a vital function in maintaining the sport ecosystem. Some academics and athletes will produce marvellous feats that have a “great impact” upon our society, but the majority won’t. Still they have to be financed by society or other investors for the health of the research/sport ecosystem as a whole. As such the question of research impact becomes a question of how much resources can be expended towards (currently) “useless” knowledge or sport activities?

4.5. Navigating this thesis and enacting scientific values

Now the argument can be made that the majority of the scientific activity is ‘useless’ from an economical point of view. However, what this ‘useless’ scientific endeavour does, it is performatively enacting scientific (Enlightenment) values by the structure of how the argument is presented, this research is no different.

Figure 4.5 ‘road map’ to navigate this thesis, source: author

Figure 4.5 above highlights how the ‘scientific method’ applies for this particular thesis (cf. 3.2). Within this thesis the scientific method has been subdivided into a theoretical critical deconstruction of the existing literature (Ch. 2 to Ch. 4, grey boxes). This is followed by a the analytical construction that involves outlining the used methodology and method (Ch. 5, green box) that is applied to the empirical data material (Ch. 6 to Ch 8, blue boxes). The rhetorical construction of the thesis makes that the narrative flows smoothly from the introduction of this thesis (Ch. 1) to the conclusion (Ch. 9) covering all the expected proxy indicators of scientific quality (cf. 3.3). What constraints such a narrative is that all the presented information has to be linked constantly back to previously
introduced information (the red arrows). What makes a piece of information ‘scientific’ is that the literature review is in constant dialogue with the empirical data analysis, framing how the data is collected, discussed and ultimately presented, constantly anchoring all inferences in the previously introduced literature (orange arrows). In practical terms this transforms the presented argument into a unified claim, reinforced within the previously established literature (cf. 4.4).

Such a performative structure forces the author to engage in a rough facsimile of a Hegelian dialectic. Within the here presented literature review it has been argued that these evolved structures are not arbitrary, far from it, they have evolved to best fit how we human beings engage and make sense of this world. It has been argued that ‘science’ is more akin to a craft like that of farming than a disembodied mechanism of generating truth. So if we take this analogy and apply it to this thesis chapter 2 can be envisioned as outlining the occupation of the individual that is engaging with the field (epistemology), depending upon if he or she is engaged in wheat farming, cattle heading or forestry, that all can be considered ‘farming’, it will determine how he or she interacts with the field. Now chapter 3 is then an outline of the field (ontology) and depending on the occupation (i.e. research discipline) he or she sees ‘different’ things in the same field. Chapter 4 puts the specific purpose of the chosen action (i.e. studied phenomena) into a wider context (historical, economical, societal, geographical etc.) relevant to the identified purpose. Now that the (theoretical) background is outlined, the individual presents their tools and provides a brief outline how these tools are meant to be used to farm the field (methodology and method section). The remainder of the work than presents the products that were reaped from farming the field, while constantly elaborating how these grew from the field with the methods that were used and what the farmer intends to do with these products in the future. The introduction summarises the overall aim and purpose of the farmer meanwhile, the conclusion is a reflection on how well the farmer was able to achieve his or her stated objectives. Navigating and becoming competent in ‘farming’ the research ecosystem is not unlike farming a real field, the difference is the content and subject area, not the patience, integrity and dedication needed to arrive at the required expertise.

4.6. Summary of the chapter
To recap, research impact is created when (research) knowledge is disseminated, adjusted and applied for a novel purpose that creates a change within larger society. The notion of the seamless web was used to reflect upon the understanding of the REF; of how research impact is created. According to the seamless web notion there are no distinct borders between research and the public domain in creating impact, as it is a continuous process of innovation. The REF’s notion of impact is conceptualised in much more confined terms. Furthermore, the chapter investigated the historical background of the REF and that of the proxy indicators of impact quality that were created (and lack thereof) in terms of performance indicators and the definitions of research impact. The REF attempts to circumvent the difficulties that were pointed out by the pilot exercise, but it is questionable if they succeeded, based on how fundamental the pointed out issues were (e.g. capturing impact, narrating impact and a potential conflict in telos). Although the definition of how impact is defined is broad, the guidelines on how such impact is to be presented are rather narrow, due to the practical necessity of the assessment process. Such strict presentation guidelines, may inadvertently lead to preferences of certain impacts over others. This means that proxy indicators of impact quality (the few that there are) discursively influence what research can and cannot be

47 Hegelian dialectic is a philosophical idealisation of an argumentation structure, where a thesis is attacked by an antithesis and the combination produces a synthesis. It is not an accident that a PhD thesis has this name.
presented. The takeaway message of literature review is; only by understanding research impact and the REF from an ecosystem perspective that includes how and why the assessment was created historically, does it start to make sense of understanding what research impact is within a REF context. Proxy indicators of scientific quality have developed over centuries focusing on the process of science (the means). Meanwhile, research impact introduces an assessment scheme that focuses on the outcome for society (ends) effectively subjugating the needs of the seamless web to that of the research ecosystem. Changing disciplinary norms, literally messes with the fabric of reality, as changing the procedures of how the field is ‘farmed’ influences the outcomes that can and cannot be produced. When this is done from a position that does not understand all the complexities involved in the craft that is science (e.g. Lysenkoism) this can have disastrous consequences.
“[W]hich realities [do we want]? Which do we want to help to make more real, and which less real? How do we want to interfere (because interfere we will, one way or another)?” (Law and Urry 2004:406)
5. METHODOLOGY AND METHOD

This chapter deals with the methodology and method of the here presented PhD research. Within this chapter, the design, operationalisation, conduct all which are inherent within the critical deconstruction, the analytical and rhetorical reconstruction of this study are being discussed. The chapter starts out by introducing the here chosen methodological approach, namely by elaborating on how the research ecosystem perspective was operationalised, situating it within the post-postmodernist tradition (5.1). The following section defines the research impact discourse and how it relates to the ecosystem perspective, outlining the here used ontology of STS and evolutionary psychology that were used as analytical lenses (5.2). The research instruments that will be used within this study are derived and elaborated as well; the study has three empirical strains which are outlined in the section after (5.3). The appropriate choice of these research methods, the ensuing demarcations, and issues surrounding data material, access, limitations and feasibility are also being discussed in relation to (5.3.1); the analysis of the REF impact disciplinary guidelines (5.3.2), the critical discourse analysis of REF impact submissions (5.3.3), the semi-structured interviews (5.3.4), the framework analysis and post hoc thematic analysis of the interviews and use of other studies investigating research impact (5.3.5). The section is finished by including a caveat on the here used rhetorical re-construct, emphasising how such writing requirements discipline knowledge production (5.3.6). The chapter is concluded by an ethical discussion based on the implications of the chosen methodology, but also connecting the research issue to a wider ethical debate of research’s role within society and the here used axiology (5.4). The chapter is finished by a summary of what was learned and introduces the three empirical parts of this thesis (5.5).

5.1. The methodological approach behind studying the ecosystem

In the last chapter, a sociological model was put forth on how the disciplinary process behind a social construction of a scientific fact functions (cf. 4.4). Sociologically, the ‘scientific method’ within a study starts out by doing a critical deconstruction of the existing literature (literature review). After the theoretical framework has been found, elaborated and synthesised the study continues to the analytical construction. Within this process appropriate methods and analytical frameworks are selected and the research instruments are elaborated on how the presented information was compiled. Then with the help of the rhetorical re-construction these findings can be written up, which in turn makes that they become a part of the established scientific hinterland (cf. 3.2). If these are done to accepted disciplinary satisfaction of the peers, a study is deemed ‘scientific’. What is different within the social sciences is that the actors are primarily unruly, alive and thinking human beings (cf. 3.1). This added complexity does not allow for “easy” simplification as done within the natural science. Garland (2014) describes that in Foucault’s case his (social) ‘scientific’ approach led him to:

“regard ‘theory’ as a toolbox of more or less useful instruments, each conceptual tool designed as a means of working on specific problems and furthering certain inquiries, rather than as an intellectual end in itself or as a building-block for a grand theoretical edifice.” (Garland 2014:366)

The ‘research ecosystem’ (cf. 2.1) should be considered in a similar fashion. However, one of the objectives of this thesis was the articulation of the process of how scientific knowledge accumulates and what principles are valued within (i.e. ends before the means). Furthermore, Gareau (1987)
refutes that very concept that ‘social science’ can be ‘scientific’, instead he proposes a ‘social studies’ approach that leaves openness for the multiplicity of human interpretation (cf. 3.3)\textsuperscript{48}. The ecosystem approach would only differ in the used nomenclature and not in the expressed sentiment. However, from the from the ecosystem nomenclature it would be more accurate to claim that what makes ‘social sciences’ into ‘scientific’ endeavours is the reaffirming of scientific (CUDOS) values (c.f. Merton 1973 & 2.4). Postmodernist toolsets like discourse analysis are mostly used to critique (societal) value structures. However, there is nothing logically preventing you to use discourse analysis also to reaffirm value structures. Furthermore, even whilst offering criticism of contemporary value structures, this can still be done in an ordered fashion acknowledging the value structures overall worth (e.g. Shapin 2012). Such post-postmodern (mode 3) line of thinking is not new, the Stanford Encyclopaedia of Philosophy (SEP) within their entry on the Philosophy of History write:

“This line of interpretation of human history found expression in the twentieth-century philosophical writings of Heidegger, Gadamer, Ricoeur, and Foucault. This tradition approaches the philosophy of history from the perspective of meaning and language. It argues that historical knowledge depends upon interpretation of meaningful human actions and practices. Historians should probe historical events and actions in order to discover the interconnections of meaning and symbolic interaction that human actions have created” (SEP [2007] 2016)

As was stated in the beginning of this thesis, this thesis represents an sociology of scientific knowledge studies history in the making, as such these philosophical problems of studying history also apply for this contemporary example. Now the way that this study achieves its ‘scientific’ validity is not only by theoretically describing how the scientific method functions on a sociological level. Every sentence, the entire method chapter, this entire thesis has been (socially-) constructed to ‘walk the talk’ (cf. Collins and Evans 2008:91-112) of showing how the opinion of one individual (i.e. the author) is performatively transformed into a scientific fact. This is done by utilising the disciplinary procedures that evolved from examples of individuals that best reaffirmed the scientific ethos according to the opinion of the author (cf. figure 5.1).

\textbf{Figure 5.1}, the left picture represents the author’s sketch of the scientific method, meanwhile the right image represents Prof. John Tribe’s sketch of the same process for the here presented PhD, cf. figure 4.5 in the previous chapter, that represents the formalised description that sprung from these initial sketches, source: author

\textsuperscript{48} He proposes that a ‘social studies’ approach should include transparency, plausibility and coherency in order to be considered trustworthy.
Figure 5.1 is a comparison between this PhD’s supervisor and the author’s sketch of how the PhD writing process manifests itself. Without further elaborations such representations are incomprehensible, however, what the ‘scientific method’ on a rhetorical level achieves is that it ‘translates’ different perceptions and expressions of reality into one uniform understanding, i.e. a scientific fact. The entire reason for including all the images within this method section is to create transparency, plausibility and show the coherency of how this thesis constructed the arguments contained within. Furthermore, it is also used to highlight how contingent such a rhetorical re-construction is upon the individual that is producing these facts, i.e. how the rhetorical re-construction disciplines the researcher. For all intents and purposes, such a process represents a social construction of knowledge, however that does not mean it is arbitrary or lacks authority. Following such disciplinary norms is a highly challenging endeavour, as it involves the correction of errors that may not be always apparent or understood fully by the individual that is adhering to these norms. Proxy-indicators of scientific quality allow the recipient of a knowledge claim to judge if the presented claim is reliable (cf. 3.4).

**Figure 5.2.** is the authors first attempts to structure the thesis in a ‘logical’ and ‘coherent’ fashion for the confirmation process. These ‘scribbles on the wall’ were only intelligible to the author in the beginning, nevertheless, by constantly circulating them back and forth to the supervisor’s an acceptable academic style was found after a long trial and (many) error(s) period, source: author

This chapter uses examples in the form of picture evidence to indicate that the procedural templates of this thesis applied methods discipline the knowledge that can be presented. Thereby, highlighting the discursive effect the rhetorical re-construction has on the production of (scientific) knowledge. The convention of social science research is to outline their epistemological and ontological position within their methodology in order to derive at a chosen method (cf. Bryman 2015). The researcher is meant to describe how the research relates to reality, how it was collected, verified and corroborated, to only name a few proxy indicators of scientific methodological quality (cf. Saunders et al. 2011). This research will do this as well, however it will add a minor caveat to this discussion, namely by also reporting on the rhetorical re-construction of the PhD thesis, something that is usually omitted within other scientific representations. For this thesis, this rhetorical re-construction process was something that the author had to (painfully) learn over all 3 years of PhD process (cf. figure 5.2).
Other potential methodological approaches could have been chosen, however the reason for utilising the research ecosystem epistemology is due to the need to understand that social reality can both be deconstructed on material and social constructions on how facts are established (cf. Latour 2005). A similar philosophical position that takes this ‘pragmatic’ approach to the nature of knowledge production is critical realism (cf. Collier 1994). Whilst the critical realist position shares the rejection of the claim that no observer can ever truly be detached from their context, from an ecosystem perspective certain critical realist claims beg the question on how reality and social constructions can be consolidated, as such the question is not solved but only deferred (e.g. Holmwood 2001). Another, strong proponent much closer aligned with the here introduced research ecosystem view is Actor-Network Theory (ANT, cf. Mol 2010), that posits that material alliances between actors have to be maintained in order for a certain version of reality to be reinforced. Also this research agrees that society is only ever an agglomeration of individuals there are also issues that spring up with ANT, one major one being that of its purely descriptive nature (cf. 2.3). This aspect leaves ANT mute to address issues of qualitative differences between the actors and different value structures, as the proposition is that these are only dependent upon the network (cf. Ingold 2008). The notion of expertise could have been used, with its focus on interactional expertise resolving conflict between different language communities and value structures (Collins and Evans, 2002). However, such a characterisation runs into problems, because the transferral of skills from one ecosystem to another do not have to be rendered anew each and every time but become part of the (human) actor (cf. Collins 2010). The post-postmodern approach to studying the research ecosystem can be envisioned as a tourist approach to epistemology and ontology, furthermore such an approach has to go hand in hand with a certain sense of wonder, just like the tourist exploring new and exciting places.49

Figure 5.3, sketch notes for the evolutionary psychology understanding of the research ecosystem, source: author

49 “Nietzsche recognises this attitude is typical to the wanderer, who “takes pleasure in change and transience […]. Insofar as the man devoted to knowledge has abandoned a belief in eternal truths […]. This fact does not deprive the journey of its value, or the wanderer of this enthusiasm. Each stage of the never-ending voyage of knowledge (i.e. each experience) is rather recognized as worth living for.” (Zavatta, 2015:264)
The research ecosystem idea that is utilised here combines material, social and human actors all into one interlinked living (eco)system, which corresponds accordingly to scientific and extra-scientific forces (cf. 2.1 & 3.1). Thereby, it effectively also includes an ontology within that chosen post-postmodernist epistemology (cf. figure 5.3). As such, I decided to use the ‘pragmatic’ approach of labelling the combination of elements of ANT, sociology of scientific knowledge, evolutionary psychology, philosophy, biology etc. as an exploration of the research ecosystem as a whole. Nevertheless, any attempt to a holistic understanding of reality is usually a ‘little vague’ when it comes to the methods and practises that are used. Either the outline of the methodology is only very brief (e.g. Galis and Lee 2014) or scholars of scientific knowledge production speak of the method in terms of metaphors.

The research ecosystem perspective departs from a “slowciology” (Latour 2005:122) that allows you not to crush the intricate, fragile and fleeting aspects of the ecosystem and not to fall into the analytical fallacies of the conventional epistemologies. Traditionally, quantitative or qualitative methods (e.g. as described in Saunders, Saunders et al. 2011) would surely give some insights into the behaviour of the subjects, which might be interesting in and of itself, but leaves you unable to address the why question and the influence of the value dimension (cf. 2.5). For example, not every outcome can be attributed to the initial desires, aspirations or intentions of individuals (cf. Ferguson et al. 1990). The approach could have been labelled differently, but the reason why it is not a realist position (cf. Hartman 2004), nor a social constructivist (cf. Ackerly and True 2010), nor is it a phenomenological position (cf. Moustakas 1994). Rather is represents an entire new epistemology, which has been called the ‘industrial model of truth’ (Latour et al. 2011). Is that from such a post-postmodern perspective, truth claims are consolidated according to material, social and individual actor’s choices that are creating more alliances, and consequently overwhelming an opposing proposition.

Law (2009) talks about the approach taken by science studies as being a ‘sensibility’ or Latour urges the researcher to ‘slow down’ in their methods (Latour 1993:12). This is sometimes deliberately done, in order to discourage the application of an ‘theory’ which will result in missing the complexities of a particular case (cf. Latour 1999). This particular approach complicates the choice of method, as in principle any method is as good as any other. Suggestions to ‘solving’ this issue, such as; “the answer to relativism is always more relativity” (Latour 2005:122) are not very instructive. Thereby, the methodological considerations become a practical heuristic, based on the phenomena studied that are dependent upon the telos in question (cf. chapter 3.5). If it has not already become obvious, the thesis departs from the CUDOS values of how scientific inquiry should be conducted (cf. 2.4). Such values guide research, for example the title of this thesis was from the start “what research impact?”, turning the entire PhD – as the title never changed – into an exploration of research impact, and these values discipline the recounting of what was learned.

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50 This represents a 26 page article where the field work and method section is outlined with only 57 words.
51 A good example of this is the whole discussion if ANT is a method or theory. In my opinion it is neither, a method gives you clear defined rules of conduct, which is something ANT is refusing to do. Similar, a theory creates a structure that you can analyse reality from, these are two things ANT is straight out refusing to do (cf. Latour 1999). The best way I personally envision ANT, is in the form of a Foucauldian anti-method.
5.2. Discourse and the research ecosystem

A basic methodological choice that has to be made is to apply quantitative or qualitative method (Saunders et al. 2011). As such, let’s now focus on the how the main methodological tool of this study, i.e. the research impact discourse is operationalised alongside a qualitative line. Any study applying some form of discourses analysis will inevitably need a definition of what is understood by the concept of discourse, as applying any form of discourse analysis is applying a whole “methodology – not just a method” (Phillips and Hardy 2002:5). The notion of discourse to study the process of knowledge production was first introduced by Michael Foucault (1926 – 1984) who applied it to study the construction of madness, science and homosexuality (Foucault 1964; 1972; 1977; 1978; 1980). A discursive approach presupposes a social constructivist and interpretivist epistemology making quantitative methods less applicable. Social constructivist in the sense, that: [w]ithout discourses, there is no social reality […] and we cannot understand our reality, our experiences, or ourselves.” (Phillips and Hardy 2002:2). Interpretivist in the sense that it boils down to the researcher that shapes the rhetorical construction. In this sense discourse can be seen as different belief systems that exist within the research ecosystem. The ecosystem idea that this study departs from incorporates such a view of social construction, i.e. seeing the construction of knowledge as a community process by the individual that is situated within a particular episteme (i.e. knowledge community) that inhabits a particular part of the research ecosystem (cf. 2.2). Nevertheless, as the knowledge production process represents a collective enterprise that is disciplined by material, sociological and psychological factors, these belief systems discursively influence the disciplinary norms that create the social construction of knowledge (cf. 4.4). All these factors come together, creating a complex (research) ecosystem that has to work in conjunction in order to produce knowledge and creating a semi-coherent scientific canon that is intelligible to our human evolved brains (cf. 2.1).

In a Foucauldian sense discourses are systems of thoughts, which in themselves are “products of history […] that are historically and socially defined” (cf. Gee 2015:180). They make certain things ‘thinkable’ and place novel information within an interpretive framework. For example, they regulate who has the authority and the ability to express certain thoughts (i.e. epistemic privilege, cf. 3.1). The core assumption being that “construction and reality are synonyms” (Latour et al. 2010:24) as we engage with the world through our language (Wittgenstein [1953] 2009). The way that this study understands discourses, is in this Foucauldian sense that discourses are disciplining, restricting and enabling systems of human thought (cf. Foucault, 1977), but broadens the disciplining to more than just the power dimension, by including social, material, cognitive and psychological factors that shape the development of the human ecosystem of ideas (cf. Dymitrów, Brauer, forthcoming). As such, the disciplining has to be materially reinforced to accomplish anything. In other words, there has to be a change in peoples behavioural patterns, as such the creation of a discourse represents a choreographed ‘coming together’ of values, materiality and psychological predispositions within one particular belief system to cognitively understand the world (cf. Latour 1987; Pinker 2003; Kahneman 2011; Collins 2014). The ecosystem idea combines philosophy, sociology, anthropology and evolutionary psychology all into one framework that is studying a discourse. As such, this post-postmodernistic nomenclature (cf. Figure 5.4) combines all this into studying the discourse that lives within the research ecosystem and society (i.e. the seamless web).

52 Studying discourse from a quantitative dimension is possible (e.g. Xie et al. 2011) but less suitable for complex discourse such as the here studied phenomena of research impact.
Discourse analysis is distinct from other qualitative methodologies, which presuppose that reality exists independently from our language (Phillips and Hardy 2002:8-10). Obviously, other ‘holistic’ qualitative methodological approaches could have been used to study the interface between science and society. For example actor-network theory (e.g. Mol 2002), anthropological inquiries (e.g. Collins 1974) or sociological approaches (e.g. MacKenzie 1993; Yearly 2004) have all been successfully applied to study the social construction of research ecosystem of ideas. However, what these approaches presuppose are ‘open-ended’ forms of inquiry, deemphasizing methodological guidelines and emphasising immersion in the praxis of construction (cf. Law 2009; Venturini 2010). Such an open-ended approach may be suitable when following a certain project from start to finish, however when touching upon societal wide discourses (e.g. what is the purpose of universities for society?) of which any project is only a manifestation, such ‘immersion’ turns into a Sisyphean task.53 Furthermore, for finished projects, like the REF 2014 such an immersion in the praxis of construction is less feasible, as the project is already completed. It is here where discourse analysis provides open-ended guidelines for a structured inquiry that does not suffocate the inquiry. As such, this approach allows the researcher to study human processes after their construction, allowing for inferences to the process of construction (cf. Phillips and Hardy 2002; Wodak and Krzyzanowski 2008; Gee 2015). This is why discourses analysis has been chosen as the qualitative method to analyse part of the empirical material of this research. As discourse analysis allows for an inquiry into uncovering the construction of research impact discourses and how they were created in the first place with sufficient guidelines to not ‘drown in the empirical material’.

53 Sisyphus is a figure from Greek mythology; he was punished for his deceitful behaviour and was forced to roll a large rock up a hill within Hades, only to have it roll down every evening, repeating the task for eternity. Such an open ended approach is antithetical to finishing any project within a given timeframe; as such limitations based on the particular case have to be made.
Societal wide discourses have been studied in philosophy, political studies, gender studies, semantics and linguistics (e.g. Edwards and Middelton 1986; Habermas 1996; Chouliaraki and Fairclough 1999; Lazar 2005; Hodges et al. 2008). Furthermore, nothing is preventing the researcher to use discourse analysis to reaffirm values, whilst at the same time remaining critical to the studied object of inquiry. This has been done in tourism management (Xiao, 2006), marketing research (Caruana et al. 2008), nursing (Boivin et al. 2009), human geography (Dymitrow, 2017) and pedagogy (Moje et al. 2004).

The specific discourse analysis that is applied depends on how discourse is understood. Schiffrin et al. (2008:1) divides discourse analysis into three distinct understandings of discourse. The first understanding sees discourses as creating meaning 'beyond the sentence level'. Whilst semantics, syntax, phonology and pragmatics deal with internal sentence structure and meaning of individual words, discourse analysis departs from the understanding that additional meaning is created when two or several sentences relate to each forming a narrative (Hodges et al. 2008:571). This type of discourse analysis is applied by linguistics which study the structure of language (e.g. Polanyi 1988). The second notion sees discourses; used by individuals that are engaged in 'doing language' within a specific context. This approach includes critical discourse analysis, which studies samples of written or oral language in use. In other words, how such a narrative shapes the meaning creation of thoughts (Hodges et al. 2008:571). This type of understanding of discourse is applied for example in conversation analysis (e.g. Edwards and Middelton, 1986). Lastly, by including non-linguistic practices into the definition of discourses, the notion is extended beyond language into general forms of representation and semiotics. This includes all instances of communication that do not count as linguistic pieces of information, or non-specific in the sense that these do not have to be understood perfectly, but rather a general vague notion or sentiment of what is implied is sufficient to create meaning (cf. Gee 2015). Out of these three different definitions, the second notion (associated with critical discourse analysis) with its focus on language in use is most applicable for this study. Such a philological approach to discourse allows for identifying different interpretations of the same phenomena, as will be explained below.

Fairclough's (2010) approach to critical discourse analysis argues for a three-dimensional approach to the construction of discourses, three-dimensional in the sense that the approach operationalises the construction of discourses into three levels of discourse (macro, meso and micro). On a macro scale, specific discursive practices tie into other discursive practices, creating competing discourses for a specific type of interpretation within the wider research ecosystem (cf. 2.5). Discursive practices describe the process through which social-constructions comes into being, i.e. becoming 'real' (cf. Foucault 1980). On a meso-scale; these specific texts (i.e. samples of the discourse) are influenced by discursive practices that dictate codes of production and consumption, disciplining a certain type of interpretation (cf. 3.3). At a micro scale, specific texts, documents, speech acts objects, etc. combine together and produce a specific sample of the particular discourse in question (cf. 4.4). Now, this division between micro, meso and macro can be challenged, as the actual practices 'criss-cross' between all these different dimensions and cumulatively produce the social reality (i.e. discourses, cf. Latour 2005:165-172). Or to put it into other words, claiming that there is a macro, meso and micro scale may give the impression that there is a difference “between 'big "D"' and 'small "d"' approaches in discourse analysis” (Fairclough 2010:352) which certainly is not the case. Nevertheless, as a form of operationalisation, this division is useful in that it demarcates the empirical inquiry into three pragmatic analytical levels. In this sense, specific samples of text create examples of the discourses (on a micro scale), that in themselves are the product of discursive norms (on a meso scale) which then compete with other types of discourses (on the macro scale). The critical discourse analysis follows the process of creation of discourses throughout a micro, meso and macro scale level of the empirical data.
5.3. Research instruments

In order to explore the research ecosystem around research impact discourses, methodological considerations have to be made. In a trivial sense, this research represents case study (Saunders et al. 2011:145-146), the case being the research impact that is connected to the research impact upon tourism that were reported to the REF 2014 research impact assessment. However, with the above mentioned epistemology in mind, several different methods could have been chosen. For example, a grounded theory approach could also be used, however, such an approach tends to run into difficulties of demarcation and as such was deemed unpractical for this particular study (Saunders, Lewis et al. 2011:148-149). A multi/mixed method approach (Saunders et al. 2011:151-152) could also be argued for, but would have to account for the different epistemological assumption for each method that is involved (e.g. quantitative vs. qualitative), therefore these mixed methods approaches are insufficient in capturing these “unpredictable […] non-linear flows and more mobile subjectivities” (Law and Urry 2004:399) that construct the social realities of the 21st century, like research impact. The epistemology of this thesis, i.e. the research ecosystem, is combined with a critical discourse analysis in order to capture research impact adequately. Furthermore, the analytical lenses used were tailor-made to the different aspects of my case study. As such, this study utilises the idea of discourse as the methodological starting point, the rationale behind this choice is elaborated next.

5.3.1. Operationalising research impact discourses

Research impact discourses, just like general discourses, are historically and socially contingent as they interact with other (competing) discourses on a macro scale. “‘[M]acro’ analysis of longer-term tendencies of specific discourse” (Fairclough 2010:136) reveal how discourses relate to other discourses, showing how sociological ordering of different discourses takes places due to a variety of different factors (cf. Foucault 1972). As outlined within chapter 2.5 there exists a multiplicity of different discourses within the research ecosystem, where impact discourses interrelate and compete with other discourses of science on such a ‘macro discursive scale’ (e.g. the Enlightenment science for its own sake telos, the social contract telos and the neoliberal telos). On a macro-scale a general discourse of science set the framework and context for any research impact discourse. They also set the context, as any research impact discourse relates to two specific contextual subsets of science discourses (e.g. paradigms, espitemes or disciplines), namely research discourses and impact discourses of a particular research ecosystem tradition. The intersection of these two specific subsets and the general science discourse that gets drawn upon constitutes a research impact discourse. In this sense research impact is one of these science discourses, as it presupposes that the purpose of science (and research by extension) ought to improve society, thereby making it an analogue to the societal contract telos of science (cf. 2.4). Other science discourses either forego this dimension or see it as a desirable by-product of scientific knowledge production. Similarly, research impact relates to research discourses, in the sense that if the intention of the discourse on research is to increase the benefit of research to society. Such a dimension of the research impact discourse presupposes a discourse that relates to the actual practice of how research can facilitate this change, as it is necessary to ensure the success of any intervention (see 4.3). The same applies to the impact discourse, for example there are different competing discourses on technological and knowledge implementation (cf. 4.1). Nevertheless, as these other discourses, they are not the research subject of this particular inquiry and when relevant are drawn upon by utilising other research that has empirically investigated these subjects.
Macro discourses, for this study primarily serve as contextualisation for the analysis of the meso and micro scale analysis of the documents and interviews. As research impact discourses are created on different scales, creating a corpus that captures across all of these different scales is a challenging task (Fairclough 2010:260-267). The macro, meso and micro separation is purely methodological in the sense that the macro scale deals with the content of the discourse (i.e. the type), meanwhile the meso scale focuses on the construction aspect, while the micro scale focus on the manifestations of such discourses. A pragmatic way to create a relevant data set for a critical discourse analysis is to ‘snowball’ the analysis, by preliminary selecting a set of texts, analysing, selecting more texts and then stopping when theoretical saturation is reached (Wodak and Krzyzanowski 2008:35-37). This type of immersion is less suitable for this particular study, as research impact discourse could be identified in newspapers, scientific articles, speeches to parliament etc. etc. creating a never ending list, making saturation infeasible. Instead, this study takes its point of departure from a specific case, the REF 2014 assessment of research impact relating to tourism, focusing on the particular manifestation of the discursive practice within this context. Such a selection, defines the data set to policy documents and submission documents related of the REF assessment. Nevertheless, as this approach would restrict the data set to the particular assessment, therefore it is complemented with interviews by tourism studies academics. The intention being threefold, firstly it pragmatically creates a bigger sample size for this study. Secondly, without the interviews the identified research impact discourses may appear static and defined (by only departing from printed media) which is not the case. Lastly, the interviews provided verification for if the critical discourse analysis coding that had identified salient issues within the analysis of the guidelines and submissions.54 Thereby, it provided a form of quality assurance, as it was possible to double check if the identified themes were recognisable by the interviewed.

By including interviews within the research design, it is stressed that discourses are fluid, as material effects “contribute to the creation and constant recreation” (Fairclough 2010:59) of discourses and represents a quality assurance for the coding. Additionally, it avoids ethical issues of pin-pointing specific individuals, which may create adverse consequences for those individuals or institutions in question, if the study would strictly depart from individuals involved within the REF. Ethical issues in the sense, that claiming that X, said Y in a specific document without allowing for the anonymity of the research subject, could be considered a breach of ethical research conduct (Silverman 2010:416-438). Therefore, the practical methodological considerations of conducting a critical discourse analysis and to separate this study on research impact into three different empirical strains allowed for good methodological and ethical etiquette demanded by the disciplinary methodological proxy indicators of scientific quality outlined within most research method textbooks.

5.3.2. Analysing the REF impact guidelines
The first part of the empirical objectives of this study comprised the document analysis of the REF 2014 material in relation to research impact. As the data material for the textual analysis of the REF documents are based on publically available material it could be considered a form of archival research (Saunders et al. 2011: 150). Nevertheless, that would omit the critical discourse aspect from such a methodological approach. The REF submission guidelines can be seen as discursive framing devise that are restrict and enable the creation of specific (micro) research impact discourse, e.g. impact case studies and impact templates. From a rhetorical re-construction aspect (cf. 4.4) the case studies are micro examples of the research impact discourse that are produced by the universities within the discussion section of the interviews the identified issues were discussed and elaborated.
going through the assessment process (meso discourses), which are tapping into socially salient issues (macro discourses). The produced impact case studies become manifestations of research impact, upon which the universities are then being assessed.

The meso discourses of research impact are outlined in the REF documents that describe how the assessment process will be conducted (i.e. what the disciplinary guidelines are around research impact, cf. Figure 5.5). The macro discourses are represented by how the disciplining of the research impact discourse shapes the research ecosystem outlined in the impact statements that the assessed universities had to submit. As such, the impact submissions (case studies and impact templates) can be seen as manifestations of these regulations on a micro scale. To oversimplify the relationships, the guidelines represent meso discourses that condition and discipline the micro discourses (case studies and impact templates). Table 5.1 lists all the official REF documents which relate to impact. In the sense that these outline the guidelines of how to prepare the submissions, define impact and how the impact was supposed to be assessed. Along with two publications of the REF pilot exercise, for their research impact assessment all publications are available at the official REF website. The documents that are marked in dark grey are documents were analysed here (cf. table 5.1), these documents were read and were submitted to a critical discourse analysis in order to understand; how the impact templates and impact case studies were drafted, created, polished and assessed, i.e. what restrictions the micro discourses faced in their rhetorical re-construction of research impact claim (case study) and approach to impact (impact template).

Figure 5.5, printed out version of the REF documents that relate to research impact, source: author

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Table 5.1. REF documents, documents in relation to impact highlighted in grey background

<table>
<thead>
<tr>
<th>Year</th>
<th>Document Title</th>
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<tbody>
<tr>
<td>2015</td>
<td>REF Manager’s report</td>
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<td>REF 2014 Panel overview reports</td>
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<td></td>
<td>Equality and diversity in the 2014 REF: A report by the Equality and Diversity Advisory Panel (EDAP)</td>
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<td></td>
<td>Institutional codes of practice on the selection of staff</td>
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<td></td>
<td>Final list of panel membership, specialist advisers and conflicts of interest</td>
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<td></td>
<td>Publication of the REF 2014 submissions</td>
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<tr>
<td>2014</td>
<td>REF 01.2014 Research Excellence Framework 2014: The results</td>
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<td></td>
<td>REF 2014 - Key facts leaflet</td>
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<td></td>
<td>News item announcing the results of the REF</td>
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<td></td>
<td>Arrangements for the publication of results</td>
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<tr>
<td>2013</td>
<td>Arrangements for the collection of final codes of practice and equality impact assessments</td>
</tr>
<tr>
<td></td>
<td>Invitation to make submissions to the REF</td>
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<tr>
<td></td>
<td>REF submission system user guide (updated September 2013)</td>
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<tr>
<td>2012</td>
<td>REF Codes of practice for the selection of staff: A report on good practice</td>
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<td></td>
<td>Invitation to complete the REF survey of submission intentions</td>
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<td></td>
<td>Summary of responses to the 'Consultation on draft panel criteria and working methods'</td>
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<td></td>
<td>Invitation to make requests for multiple submissions and for impact case studies requiring security clearance</td>
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<td></td>
<td>REF 01.2012 Panel criteria and working methods</td>
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<td></td>
<td>Invitation to submit codes of practice on the selection of staff for the REF</td>
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<tr>
<td>2011</td>
<td>REF 03.2011 Consultation on draft panel criteria and working methods</td>
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<td>Analysis of panel membership</td>
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<td>REF 02.2011 Assessment framework and guidance on submissions</td>
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<td>Guidance to panels</td>
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<td>Equality briefing for panels</td>
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<td>REF 01.2011 Decisions on assessing research impact (March 2011)</td>
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<td></td>
<td>REF 01.2010 Units of assessment and recruitment of expert panels</td>
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Other publications

- REF Codes of practice on the selection of staff: A report on good practice
- REF Research Impact Pilot Exercise Lessons-Learned Project: Feedback on Pilot Submissions - Technopolis
- Research Excellence Framework impact pilot exercise: Findings of the expert panels

Source: published on http://www.ref.ac.uk/pubs/, accessed 2015-06-20

These documents were then analysed with the critical focus on how research impact ought to be understood in the context of the REF 2014 research impact assessment. Thereby, the reading of the data material related to research impact, in the sense that it investigated the disciplining function these guidelines had for the creation of the research impact case studies (cf. 3.4). It was important that this reading was done prior to the critical discourse analysis of the research impact case studies, in order to sensitise the researcher for what the context was in which the research impact case studies where produced. As well as before conducting the semi-structured interviews, as it made it possible to retrace these meso discourses influencing the macro discourses the interviewed academics tapped into within the discussions that were held during the interviews.\(^{56}\) As such, the interviews represented a quality check, for the identified themes.

\(^{56}\) Several of the interviewed individuals were actively involved within process of constructing a REF impact case study.
5.3.3. Analysing the REF impact submissions

The second empirical objective of this study includes a critical discourse analysis of the research impact case studies and impact templates that were produced during the REF assessment. In regard to analysing the documents the approach is rather straight forward, as all of them were read multiple times. A preliminary reading of the submissions to tourism’s ‘home panel’, revealed that only very few tourism faculties submitted aspects relating to tourism studies (the others were related to either sports science or leisure). With each university submitting an impact template of three to five pages and two impact case studies of three to four pages per case (REF 2011B), the amount of documents to be read was deemed feasible. However, the reading was expanded to include all research impact that related to tourism. The submitted impact templates and impact case studies, which were finally collected, included the self-identified tourism faculties. These were collected from the same website as the publications. Usually when researchers select their data material from data bases, they define their keywords and use search modifiers allowing them to create search strings (cf. Bryman. 2015). This was not possible for this particular case, as the REF search engine did not recognise such modifiers; Table 5.2 is a visualisation of the attempt of using Boolean modifiers.

As table 5.2 shows the search engine of official REF website has significant problems when attempting to compile a comprehensive overview. For example, the author searched for the words “modelling” and “forecasting” without any added symbols, the result should have found the University Surrey case study titled: ‘Modelling and Forecasting International Tourism Demand’, but came back with no results. Therefore, the data material for the document analysis was collected by utilising single keyword searches. The keywords that were used where identified by taking inspiration from articles that summarised tourism studies (cf. Lew et al. 2008; Hannam and Knox, 2010; Tribe, Liburd, 2016). These keywords were: ‘tourism’, including its derivate words like ‘tour,’ ‘tourist’ ‘touristy’ (equivalent of tour*). Other words that were frequently mentioned in the literature related to tourism are: vacation, adventure, resort, globetrotting, retreat, travel, journey, destination, getaway, holiday, pilgrimage. All of these were used and the identified studies represent the case studies that reported research impact related to tourism. Out of these; getaway, holiday, vacation, adventure, retreat, pilgrimage, resort and globetrotting had no search results.

All impact template and impact case studies’ submission data of the REF 2014, is available online, the files were accessed on the 12th of July 2016. The documents were analysed 5 different times, in practice this represented that the research impact case studies and impact templates were read 5 times, each time with a different focus. These 5 different foci are the result of the literature review, intending to cover all aspects of a research impact discourse. A practical reading guide was constructed in order to focus the critical discourse analysis (cf. Table 5.3). This critical discourse reading guide was initially derived from the research objectives and the literature review. However, it was dynamically adopted through the analytical process in order to find the most significant themes. The reading guide is divided into 5 topical sections to show how the literature relates to these sensitising issues (types).
Table 5.2: attempts to use search modifiers and Boolean logic within the REF data base search

<table>
<thead>
<tr>
<th>With search modifiers</th>
<th>No results</th>
<th>Using AND, OR, NOT etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Search</td>
<td></td>
<td>Unit of assessment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Institution</td>
</tr>
<tr>
<td></td>
<td></td>
<td>REF form</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Search*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clear results</td>
</tr>
<tr>
<td>Showing search results for &quot;modeling&quot; AND &quot;forecasting&quot;</td>
<td>Clear results</td>
<td>No results were found.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>With search modifiers</th>
<th>No results</th>
<th>Using * at the end of words, to include multiple possible endings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Search</td>
<td></td>
<td>Unit of assessment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Institution</td>
</tr>
<tr>
<td></td>
<td></td>
<td>REF form</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Search*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clear results</td>
</tr>
<tr>
<td>Showing search results for 'model*.'</td>
<td>Clear results</td>
<td>No results were found.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Without search modifiers</th>
<th>No results</th>
<th>Using multiple specific words of existing case studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Search</td>
<td></td>
<td>Unit of assessment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Institution</td>
</tr>
<tr>
<td></td>
<td></td>
<td>REF form</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Search*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clear results</td>
</tr>
<tr>
<td>Showing search results for 'modeling/forecasting.'</td>
<td>Clear results</td>
<td>No results were found.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Searching for individual universities</th>
<th>No results</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Search</td>
<td></td>
<td>Unit of assessment</td>
</tr>
<tr>
<td>Institution</td>
<td></td>
<td>Bournemouth University</td>
</tr>
<tr>
<td>REF form</td>
<td></td>
<td>Impact case studies (REF36)</td>
</tr>
<tr>
<td>Search*</td>
<td></td>
<td><em>tourism</em></td>
</tr>
<tr>
<td>Clear results</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Showing search results for 'tourism.'</td>
<td>Clear results</td>
<td>No results were found.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Without search modifiers only using ONE word</th>
<th>Yielded search results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Search</td>
<td></td>
</tr>
<tr>
<td>Unit of assessment</td>
<td>25 - Sport and Exercise Sciences, Leisure and Tourism</td>
</tr>
<tr>
<td>Institution</td>
<td>Select (optional)</td>
</tr>
<tr>
<td>REF form</td>
<td>Impact case studies (REF36)</td>
</tr>
<tr>
<td>Search*</td>
<td><em>model</em></td>
</tr>
<tr>
<td>Clear results</td>
<td></td>
</tr>
<tr>
<td>Showing search results for 'model.'</td>
<td>Clear results</td>
</tr>
</tbody>
</table>

Show results 1 - 3 of 3

"Train in, not select out": Basic leadership training model decreased the high wastage rates in British army recruits and improved training practices
25: Sport and Exercise Sciences, Leisure and Tourism: Cardiff Metropolitan University / Joint submission with Bournemouth University.

Source: [http://results.ref.ac.uk/Search](http://results.ref.ac.uk/Search) accessed: 2016-07-12
The empirical aspect of the sensitising issues relate to the five types in the following ways. The purpose of scientific knowledge production, relates research objectives in that a research impact discourse is particular discourse of science. This is also the connection to macro discourse that pre-exist within the research ecosystem (cf. 2.4). This relates to the type of impact in that they set the frame for what is permissible and what is not, i.e. what type of impacts get reported. The practice of how research works, relates to the outlined research in as much as a research impact discourse presuppose a sentiment on research practice, as such discourses implies an intervention into practice e.g. research funding (cf. 3.3). The type of research, dictates how research is presented and evidenced. The intention behind a focus on research impact, relates to the research in as much as a research impact discourse presupposes a sentiment on research impact, as it includes an intervention into the practice of impact, e.g. maximizing impact (cf. 4.3). As such, research impact discourses also relates to; the type of impact, type of tourism, type of evidence and type of impact strategy in that it dictates how impact it is presented and evidenced. The intention behind these 5 types was that they should capture all the aspects that are involved within a rhetorical reconstruction of a research impact (micro) discourse (cf. 4.4).

The documents were to be prepared in order to comply with common strategies of discourse analysis in printed media (Wodak and Krzyzanowski 2008:30-53; 145-161). For the documents this involved identifying the 5 different types that were related to the different discourses of research impact (cf. Wodak and Krzyzanowski 2008:14-20 in relation to the preparations of documents). Figure 5.6 details this reading process further. First [1] the corpus was printed several times, each exemplar corresponding one type of reading. These were read consecutively, each time focusing only on one analytical focus. Secondly [2] each of the relevant sections where highlighted on the page and then summarised and elaborated, to what specific subcategory of the type they corresponded to (including examples of what type of impact). These subcategories, represented

<table>
<thead>
<tr>
<th>Sensitising issue</th>
<th>Empirical aspect</th>
</tr>
</thead>
<tbody>
<tr>
<td>[I] type of impact (REF’s own definition of impact used to identify research impact in the case studies)</td>
<td>[I] impact praxis What types of impacts are mentioned within the documents?</td>
</tr>
<tr>
<td>[II] type of research (universities own definition of what type of research they do is used for the identification)</td>
<td>[2] research praxis What different types of research are behind the claimed impact?</td>
</tr>
<tr>
<td>[III] type of tourism (Different broad definitions of tourism are derived from the tourism studies literature, and these are used to categorise the types of tourism)</td>
<td>[3] user discourses What type of tourism is mentioned as end-user of the research impact?</td>
</tr>
<tr>
<td>[IV] type of evidence (REF’s own regulations for evidencing are used to analyse how the claims where referenced)</td>
<td>[4] science discourse What type of evidence is used to reference the research AND the impact (similarities/differences)?</td>
</tr>
<tr>
<td>[IV] type of future (The impact templates, specifically address the commitment to research impact)</td>
<td>[5] research impact discourse What type of future implementation is mentioned, in a push to maximise research impact?</td>
</tr>
</tbody>
</table>

source: author
'proto themes' for the summarisation of the material. Afterwards [3], a table was created for each of the different proto themes (impact, research and tourism) with an example of the most indicative quote (from the original case study or impact templates). This step was followed [4], by removing these quotes and streamlining the table in coherent themes [5]. The last step of the analysis [6] represented the strategic selection of the most indicative quotes [see step 3], to be representative of the created category.


The analysis of the reading “is also likely that this approach will combine some elements of a deductive approach” (Saunders et al. 2011:490). The difference arises in what conclusion is drawn from this insight that is gained from the analysis. Because, only a few pages further, it is stated that this (highly subjective) interpretation can be validated by “rigorously testing your propositions against your data […] thereby your] conclusions will be verified” (Saunders et al. 2011:496, authors emphasis). Such contradictions are usually smoothed over by utilizing acceptable proxy indicators of scientific quality. If the correct quality markers are fulfilled the presented account appears rigorous and reliable. However, as stressed by the here used ecosystem perspective, in practice we know (e.g. Saunders et al. 2011:505) that this is not the case, that there are a myriad of uncertainties that always remain. Furthermore, Law and Urry (2004) make the same point about different narratives being equally true is also made in Saunders et al. (2011) when they write that one researcher’s interpretation of the data might differ from another’s. However, (as stated explicitly) “[i]t is not that one researcher is right and the other wrong; rather they are interpreting the data differently” (p. 493). This points to the discursive influence of disciplinary norms on knowledge production (cf. 3.3) which then is disciplined by the rhetorical re-construction (c.f. 4.4).

In relation to the data analysis, making sense of any type of complex discourse will always involve some degree of simplification and subjectivity. Nevertheless, research quality is assured by following standard procedures of how data material ought to be collected, prepared, analysed, synthesised and finally presented. Within the qualitative social science such issues are conventionally solved by invoking trustworthiness, plausibility, transparency and feasibility of the presented account (cf. Denzin
and Lincoln, 2011) making these aspects proxy indicators of scientific quality. Yet, how such a rhetorical re-construction is to be achieved in praxis is not explained within research method books, presupposing a certain amount of tacit knowledge of how such information is to be presented ‘scientifically’. This means that the way in which the whole account is presented should evoke a feeling of veracity on the part of the reader. In order to achieve this level of scientific trustworthiness this thesis documented how the coding process was conducted (to the degree the articulation of this process is possible).

5.3.4. Semi-structured interviews
The focus of the research was to outline the research impact ecosystem and the associated discourses of research impact. With such a broad aim, it is very easy to ask leading questions, imposing the researchers own view upon the subject (cf. Bryman 2015:149-162). To combat this aspect the main intention is to recirculate the themes that were identified with the two previous steps of the discourse analysis and circulating them back to members of the research ecosystem, i.e. the interview subjects in order to sublimate the researcher’s own bias. Furthermore, within the pilot interview, it became apparent that the interview guide led the interview into many different directions, on issues that could not be fully explored without the researcher asking specific guiding questions (Rapley 2008). This led to a methodological separation of the interview into an interview and discussion part. In practical terms, this meant that the first part of the interview was treated as ‘information disclosed by the interviewee’, while the second part of the interview represents a contextualization for arguments of this thesis that are not attributed to the interviewees. Nevertheless, in order to not lose this information discussed during the open forum, this research utilizes other reports to recount this information and issues discussed. Such an approach proved invaluable for the analysis, in that the collected interview data was constantly analysed throughout the entire data collection process. The analytical themes where constantly re-circulated to the next interviewee, repeating this process for every interview anew. In practical terms this meant that the data analysis stemmed from; recording interview 1, listening again to interview 1’s recording and analysing the themes contain within by taking notes. Then for interview 2, the themes from interview 1 would be discussed in the informal discussion part of the interview 2. In interview 3 the themes of interview 1 and 2 would be discussed and so forth. This iterative process of the data analysis was done for every consecutive interview anew. The intention of such conduct was threefold, firstly as aforementioned not to lose this information discussed within the open forum. Secondly, the discussion part of the interview represented a form of contextualization, so that the arguments of this thesis were dialectically sounded out and finally, with the help of other reports highlighting that the issues discussed here are salient for the research impact in general, not just tourism (scholars). Fulfilling such quality indicators makes the research design feasible and reliable.

57 For example, asking for the purpose of universities for western society represents a leading question, as this is hardly a question that is addressed on day to day basis. Such issues became apparent within the pilot interview and were amended accordingly. The pilot interview was conducted with Prof. Leo Jago, who at the time was not involved within this thesis project. Prof. Leo Jago joined as the co-supervisor in January 2017 after the departure of Prof. Nigel Morgan (previous co-supervisor) from the University of Surrey.

58 i.e. the themes of the critical discourse analysis of the case studies and impact templates as well as the notion of the research ecosystem were discussed with the interviewees in the discussion part of the interview.
In regard to the research impact discourses that were intended to be explored by using the interviews, this study took a more liberal approach. While the data material for the document analysis was restricted to the REF 2014 research impact context the interview subjects stem from a broad range of tourism studies researchers, which did not necessarily have submitted work to the REF 2014. As the intention of this study is to explore (micro, meso and macro) discourses of research impact, restricting the exploration of impact discourses to only a REF context would encounter two practical problems. Firstly, the sample size of potential tourism researchers that are directly connected to the REF 2014 assessment is fairly low, resulting in confidentiality issues. Secondly, with such a low sample size, the exploration of the macro discourses would be skewed towards individuals that have been disciplined by the REF process, potentially omitting critical and undisciplined voices.

Table 5.4: Semi-structured interview subjects

<table>
<thead>
<tr>
<th>Interview No.</th>
<th>Academic contacted</th>
<th>Skype / in person</th>
<th>Recording length</th>
<th>Interview date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lecturer A</td>
<td>Skype</td>
<td>00:50:10</td>
<td>2017-01-05</td>
</tr>
<tr>
<td>2</td>
<td>Professor A</td>
<td>Skype</td>
<td>00:45:39</td>
<td>2017-01-05</td>
</tr>
<tr>
<td>3</td>
<td>Deputy Dean</td>
<td>In person</td>
<td>01:05:21</td>
<td>2017-01-09</td>
</tr>
<tr>
<td>4</td>
<td>Professor B</td>
<td>In person</td>
<td>01:26:48</td>
<td>2017-01-12</td>
</tr>
<tr>
<td>5</td>
<td>Lecturer B</td>
<td>Skype</td>
<td>01:14:21</td>
<td>2017-01-27</td>
</tr>
<tr>
<td>6</td>
<td>Research Fellow</td>
<td>Skype</td>
<td>01:12:20</td>
<td>2017-02-02</td>
</tr>
<tr>
<td>7</td>
<td>Reader</td>
<td>In person</td>
<td>01:01:10</td>
<td>2017-02-06</td>
</tr>
<tr>
<td>8</td>
<td>Lecturer C</td>
<td>Skype</td>
<td>01:39:12 (no recording)</td>
<td>2017-02-10</td>
</tr>
<tr>
<td>9</td>
<td>Research Degree Coordinator</td>
<td>In person</td>
<td>01:19:30</td>
<td>2017-02-13</td>
</tr>
<tr>
<td>10</td>
<td>Principal Lecturer</td>
<td>In person</td>
<td>01:17:25</td>
<td>2017-02-14</td>
</tr>
<tr>
<td>11</td>
<td>Dean of School</td>
<td>In person</td>
<td>01:12:52</td>
<td>2017-02-20</td>
</tr>
<tr>
<td>12</td>
<td>Pro Vice Chancellor</td>
<td>In person</td>
<td>00:51:45</td>
<td>2017-02-22</td>
</tr>
<tr>
<td>13</td>
<td>Professor C</td>
<td>In person</td>
<td>00:47:46</td>
<td>2017-02-22</td>
</tr>
</tbody>
</table>

Source: author

When it came to sampling relevant interview subjects, the primary demarcation was based on the availability of the interview subjects, this lead to a purposive sampling (cf. Saunders et al. 2011:287-291). In order to achieve a greater distribution of covering academics that are present within the entire research ecosystem, a list of positions within the hierarchy of the research ecosystem was drawn up by the researcher, with the help of the supervisors (John Tribe, Nigel Morgan and Leo Jago). In order to comply with the ethical regulations of the University of Surrey an online ethics
This online ethics self-assessment form can be found here: https://www.surrey.ac.uk/content/fass-ethics-self-assessment, last accessed 2018-02-11. The entire research design was checked against this list; however as the content analysis and critical discourse analysis departed from publically available material the emphasis lay on the interview section. No major ethical considerations were found in need of addressing, hence requiring no official ethical approval.

The age represents an estimate of the researcher, as the interview subjects were not explicitly asked “how old are you”, as it was deemed irrelevant for the specific context of the interview with the individual and the level of familiarity with the ecosystem became evident within the answers given.
as further emails where not responded to. In total 14 hours and 45 minutes of recordings of the interviews was generated. The interviews were roughly between 45 minutes and an hour and 30 minutes long. The formal questions part of the interview would last 10 to 15 minutes, with the discussion being the remainder of the recording. This study utilised a semi-structured interview format. The semi structured interview format allows for explorative forms of inquiry, allowing to probe deeper and look at more complex issues that will not be obvious from the analysis of the documents (c.f. Saunders et al. 2011:482-485). The questions for the interviews were as follows, see table 5.5.

All theoretical questions are condensed from the literature review (cf. 5.1. on how the research ecosystem idea was operationalised here). The first two questions represented technical questions in the sense to gain the consent of the interviewee and in order to identify the interviewee in regard to their role within the research ecosystem. Question 1, was asked in order to gain an understanding what research impact meant to the interviewee and the reason for asking this first was to capture an uninfluenced notion as soon as possible. Question 2, focused on the main theoretical concept of this thesis and was intended to frame the subsequent discussion, i.e. getting the interviewee to think of research impact in terms of systematic changes to the entire research ecosystem. The notion of the research ecosystem turned out to be very useful, as it allowed the interview subjects to frame the narration within the bounds of the ecosystem idea. In cases where the interviewees did not intuitively grasp what was implied by the research ecosystem, a brief description by the interviewer elaborated the context (cf. 2.1). Question 3, was intended to further ground the notion of an research ecosystem for the interview subjects, in the sense that an ecosystem is responsive to different pressures (i.e. pushes) and to inquire into the perceived causality of the introduction of research impact and the multitude of ‘forces’ that influence the ecosystem (cf. 3.3). Question 4 was asked in order to open up for the problems surrounding the notion of research impact and its subjective dimension within such a wider seamless web that is the society wide ecosystem (cf. 4.3). The value questions turned out to be the most difficult to answer for the interviewees, not in the sense that they lacked views or understanding upon the subject, but rather all interview subjects professed their own ignorance in regard to what values ought to guide a research impact discourse. Question 5 and 6 were intended to let the interviewee further qualify their understanding of how research impact potentially changes the future conduct of research. The reason of why this aspect was broken up into two questions was in order to make it easier for the interviewee subject to associate that the notion of research impact potentially influences research conduct on all levels of the social construction, hence asking in regard for funding before asking for research conduct. In case the interviewee subjects were unsure, the statements where further qualified with follow up questions;

- Question 5:
  a. What aspects are emphasized within funding applications?
  b. What nomenclature is used to describe potential future research impacts?
  c. What weight do you think is placed on research impact, compared to rigour, feasibility, reach or other accepted scientific standards in deciding funding applications success?

- Question 6:
  a. How do you plan your research?
  b. How do you engage with your research subjects?
  c. How do you strategize around publishing your research?
Question 7 was intended to encourage the interviewee to see research impact from a holistic point of view and associate different incentives and punishments that were created by its introduction that are now disciplining research (cf. 4.4). The last questions, proved useful in reaching theoretical saturation of the collected empirical data material. After the first 5 interviews, the general ‘landscape’ of the research ecosystem started to outline itself within the themes that were explored within interviews. By the 10th interview no new themes started to emerge, therefore the study is confident that at least the rudimentary landscape of the research ecosystem, which the interviewees operated within, was outlined. This was particularly helpful for reaching theoretical saturation in the discussion section of the interview, as the answers given by the interviewees (after interview 5) did not reveal any more fundamentally new aspects of the research ecosystem, not yet covered by the research.

After the interview, the author would take notes of the information disclosed by the interviewee. Furthermore, specific themes that emerged out of the open discussion part of the interview would also be noted down (cf. figure 5.7). This proved particularly useful to reach theoretical saturation, as such issues where then discussed within the subsequent interviews. This circulation of analysis and data collection meant that the subsequent interviewees themselves were confronted with themes that would be used to analyse them. This was done for two reasons, firstly this allowed for combining and synthesising intersecting viewpoints with the help of the interviewees themselves. Secondly, the themes identified from the critical discourses and document analysis mentioned before, could be discussed and validated. Such conduct resulted in a mutually stimulating discussion and the next interviewee often would further qualify initial positions raised in earlier interviews.

The practical trials of the interview process proved more challenging. As both Skype and in person interviews were utilised, different issues arose. Although Skype had the advantage of cutting down the physical travel to the location of the interview. It also created other problems. In one interview due to technical difficulties, the interview could not be recorded, and the only remaining data material of that interview are the research notes that were written down after each and every interview. In general, face to face interviews were preferable, as the atmosphere of the interview allowed for a more free discussion. Within these situations, the anecdotes over the trials of travelling to interviews often represented a good ‘ice-breaker’ to relax the interview atmosphere and not prime the discussion too much. Within a skype context, this was less viable, as the physical act of establishing the Skype call catapulted the interviewee directly into a position where they expected to be formally interviewed.

5.3.5. Framework and post hoc thematic analysis of the interviews
The questions that were asked were structured around the theoretical framework of the research ecosystem (see previous sections). The analysis of the interviews began with writing notes immediately after the interview was finished. This step is encouraged within the methodology textbooks as it allows for capturing the ‘feel’ of the moment. Figure 5.7 shows an example of the authors interview notes that were written after an interview, this initial annotating represented the first step in the analytical process.
Figure 5.7. shows on the left hand side the notes that were taken after the interview with Dean of School (20-02-2017), on the right hand side are the notes taken after the interview with the Deputy Head (14-02-2017), source: author

These notes were invaluable for the analysis of the recordings, as they represented a first way into the data material. Nvivo or other coding software have become for coding qualitative data (cf. Bazeley and Jackson 2013) could have been used, but the researcher decided against the utilisation of such software for three reasons. Firstly, due to the data material being subdivided into three empirical strains, a manual approach allowed for better consolidation, as the analytical format was only contingent upon the researcher and not some additional requirement of an algorithm introduced by the software. Secondly, Nvivo creates an air of certainty, where the responsibility of coding is abdicated to the software, creating a false sense of objectivity; this is not warranted from an interpretivist approach. Instead, this research decided to circulate its themes to the interviewees, utilising Nvivo would make this process appear a lot more formal than it actually was. Lastly, not using Nvivo requires the researcher to cognitively process all information within their own head. This came in great use within the interviews, as the researcher from memory could recall large amounts of relevant information for the discussed issue. This enriched the discussions, allowing for the exploration of very esoteric yet relevant issues of research impact. As such, in principle Nvivo could have been used for the interviews (and other textual analysis), however, in practice it would have represented a hindrance to the research process rather than an aid. The recordings of the interviews were consulted several times, transcribing relevant passages to the identified framework and notes made during the interview. The main themes are illustrated within Figure 5.8. Quotes regarding to the definition of research impact are highlighted in green. The implication for research praxis are highlighted in yellow, conflicting telos in light blue, questions of size and accountability of academia in purple and identified instances of change of the research ecosystem in red.
Figure 5.8, is a screenshot of the post hoc thematic analysis phase of the analysis of the semi-structured interviews that were identified by departing from the ecosystem perspective, source: author

Nevertheless, the analysis also employed a post hoc thematic analysis of the interviews. The reason why this was done, was even though the interview subjects talked about the same research impact, they conceptualised the research impact discourse in a different manor (cf. 2.6). Therefore, it was deemed important, not to lose this level of nuance within the analysis and subsequent presentation of the empirical material. As already mentioned above, this is also one of the reasons why other reports were used within the presentation of the data material. In order to capture such nuances that extend to different aspects of the ecosystem. The reports that were used are; the research impact pilot exercise (REF 2010A; 2010B), a RAND study on the research impact assessment of the REF (RAND 2015A; 2015B), and Lord Stern’s review of the REF (Stern, 2016). The reason why these reports were selected, represent the timing when they were published. The pilot exercise was done before implementation, the RAND report immediately after finalising the exercise and the Stern report 2 years after publication of the REF results, illustrating the timeline of the introduction of impact.

The post hoc thematic analysis departed from a Piagetian notion of how human beings are encultured into a particular belief system of a specific culture (cf. Piaget and Inhelder 1969). This decision to use a psychological framework, in order to analyse the creation of a discourse is one of the reasons why this study represents a post-postmodernist approach (cf. 3.3). Traditionally, these two approaches are treated separately; however, within this particular context the similarities between enculturing (psychology) and disciplining (discourse) are overlapping so much, that such a combination is possible. Piaget’s theory of cognitive development seemed to fit very well with the observed differences in how these different conceptualisations discursively enforce a particular outcome. The reason being, the moral dimension on how the discourse of research impact was understood seemed to depend upon a level of familiarity with the research ecosystem the individual in question had reached within their academic career (i.e. within their moral cognitive development, cf. Kohlberg and Levine 1983). Now obviously, these traditional psychology theories have been criticised, for example Jonathan Haidt argues that individuals make moral judgments without considering abstract ethical values (cf. Haidt, 2001). However, as was argued within the literature
review section (cf. 4.4) scientific values discipline behaviour regardless of the level of awareness of the individual comprehension of how such disciplining is influenced by the underlying value structure. As long as the individual in question conforms to such disciplinary norms, the personal considerations are irrelevant for the ecosystem in general.

The combination of a framework analysis with a post hoc thematic analysis revealed that the level of familiarity with the research ecosystem was the biggest predictor of how an individual would understand the associated discourse around research impact. The next section will now further theoretically develop the discursive shaping that the ‘scientific method’ and the effect the associated disciplinary norms have on structuring and condensing multiple understandings of reality into one coherent presentation, i.e. a scientific fact (cf. 3.3).

5.3.6. The rhetorical re-construction
Within chapter 3, the scientific method was described as a set of ever evolving disciplinary norms. The PhD process was as an example of how these norms propagate and evolve within the research ecosystem (cf. 3.3). In general, all above sections represent the normal scope when outlining the used research instruments of a PhD thesis. These sections are expected by the external examiner, and as such they discipline the PhD student in the fashion that is expected within the particular research ecosystem. Within the previous chapter we discussed the importance and role the critical deconstruction that the literature review played for the growth of scientific knowledge (cf. 4.4). This chapter outlined the effect that the analytical construction has on knowledge production. However, as seen from an ecosystem perspective the rhetorical re-construction also discursively influences what type of knowledge can and cannot be produced.

In regard to the analytical construction many methodology text books go to great length detailing the disciplinary guidelines associated to such methods. However, when it comes to elaborating on how to present and account for the research results, such aspects are usually glossed over. Unfortunately for many PhD students, such writing rules play a critical role for the creation of scientific knowledge, because from an ecosystem point of view, without a shared language no collective scientific inquiry is possible (Collins and Evans, 2008). Hence, why the ecosystem perspective regards fulfilling disciplinary norms as proxy indicators of scientific quality, as they discipline a shared discursive frame of how information ought to be structured and presented. The reason for why they only represent a ‘proxy’ indicator is because what is a proper indicator is a contentious issue (cf. 2.2). Nevertheless, in regard to the rhetorical re-construction one way has to be decided upon to create one united scientific claim, e.g. writing up a thesis with one major aim. Hence, the research ecosystem also disciplines a specific literary style upon its practitioners in how a scientific fact ought to be constructed and presented. Or in more practical terms how a PhD study ought to be written.

Figure 5.9 is an illustration of how the rhetorical re-construction practically disciplined the writing of this PhD thesis. Early on within the supervising process, it became clear that the authors discipline in writing was not up to par for academic standards. This resulted in mutual frustration, as the many spelling mistakes, grammar errors and questionable choices of syntax made communication between supervisors and PhD student cumbersome. However, after implementation of the highlighted disciplinary regime, the manor of the supervising took on a more constructive fashion, as the PhD student now was able to prepare submissions in time with sufficient clarity that supervision became possible in the first place, i.e. a shared language was found. Maintaining and continuing to produce such clarity in the shared language is a complex task that disciplined the research(er).
Figure 5.9, is a picture of the author’s oversized calendar that structured and disciplined the rhetorical re-construction of this PhD from July 2016 to September 2017. On right side are; long terms goals broken down into years, months and weeks, disciplinary rules, things to remember as well as skills in need of improvement, source: author

Figure 5.10 shows illustrations of the rhetorical construction for the final writing stage of the PhD that began around July 2016. The first illustration represents a rudimentary sorting of the all of the associated information of the PhD research [1]. This allowed for identifying what information ought to be presented where within the thesis. Such a separation allowed for planning the writing process [2], and by abiding to a writing schedule the presented information within the text and the researcher are disciplined (from February to August 2017 the aim was to write/rewrite 2/3 chapters a month). During the writing process particular ‘gaps’ in the logic and argumentation were worked out, for example; image [3] represents the authors notebook sketch for how the literature review rhetorically connects to the empirical data to the literature review. This sketch was the initial idea for the theoretical model used to account for the creation of a scientific fact (cf. 4.4). Image [4] shows one of the intermediary print outs of the empirical chapter, these print outs would be read and corrected for spelling mistakes, grammar errors, loss of logic, proper referencing and presentation. Such corrected copies [5] would be sent to the supervisors, who then further commented upon errors and so forth. Such an iterative process of returning to the same piece of writing over and over again, corrected for mistakes and streamlined the narrative61. This allowed for the creation of a first draft [6], for which the entire process would then be repeated with a stronger focus on how the individual chapters fit together.

61 For example, in one of the supervisor meetings it became obvious that one impact case study submission to the REF was missing. This prompted the researcher to triple check all submissions, using the same keyword search again and searching for specific prominent tourism faculties that are active within the UK research ecosystem. This omission was a simple error on the behalf of the author and the cumbersome search engine of the REF (cf. Table 5.2), nevertheless if not corrected for it would have significantly reduced the perception of scientific quality of this thesis.
Figure 5.10 is an illustration of the rhetorical re-construction aspect of the PhD process. 1) separating information, 2) structuring the work schedule accordingly, 3) working out a narrative, 4) proofreading, 5) more proofreading and finally 6) more proofreading of the final draft, source: Author

Table 5.5: The different narrative boxes that need to be included in a PhD to fulfil proxy indicators of scientific quality, as demanded by the Enlightenment telos of science

<table>
<thead>
<tr>
<th>Introduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>• why should the reader care about the studied phenomena</td>
</tr>
<tr>
<td>• outline research aim and research objectives</td>
</tr>
<tr>
<td>• outline key concepts that are used within the thesis</td>
</tr>
<tr>
<td>• give brief scope over the thesis; context, method and content</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Literature review</th>
</tr>
</thead>
<tbody>
<tr>
<td>• what is the context of the studied phenomena</td>
</tr>
<tr>
<td>• how should we understand the studied phenomena</td>
</tr>
<tr>
<td>• identify knowledge gap in which you situate your study</td>
</tr>
<tr>
<td>• outline the theoretical lens that is used to understand the phenomena</td>
</tr>
<tr>
<td>• outline the context of the studied phenomena</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>• how was the phenomena studied</td>
</tr>
<tr>
<td>• outline how the sampling, analysis and empirical data material were treated</td>
</tr>
<tr>
<td>• outline the limitations of the study</td>
</tr>
<tr>
<td>• outline the ethical implications</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Discussions and findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>• how does the phenomenon manifest itself within the studied context</td>
</tr>
<tr>
<td>• outline the implications of the findings on our understanding of the phenomena</td>
</tr>
<tr>
<td>• outline how the findings link back to the literature that was introduced previously</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>• what is the opinion of the researcher on the studied phenomena, now AFTER they have done the study</td>
</tr>
<tr>
<td>• how has the study fulfilled the stated aims and objectives</td>
</tr>
<tr>
<td>• what future research should be done to investigate the phenomena and what is the take home message</td>
</tr>
</tbody>
</table>

Source: author

62 The identified rules stem from conversation with the supervisors, English language tutors and other academics. The above identified rules are articulations of behaviour patterns that exist within the research ecosystem that the majority of academics abide by, without grasping the full importance of these rules in what they accomplish for communicating ideas and structuring information. The reason why the author became so aware of their discursive influence was due to the initial problems of lack of discipline in regard to the writing process.
Now coming back to the reason of why the markers were called proxy indicators of scientific quality. The reason being; cognitively establishing if something is logically coherent can only be done if the presented account is literally coherent (Kahneman 2011). From an ecosystem perspective this means that language and consequently culture are linked through writing discipline to the cognitive structures that make things thinkable and imaginable (i.e. the discourse). This reveals the instrumental cognitive importance for following proper academic style (Pinker, 2014). One of the fellow PhD students at the University of Surrey expressed this poignantly when stating: ‘you can only think as clear as the framework and words you are using’

63 The above described process outlined how this thesis was constructed (i.e. written up), and if this work will be judged scientific depends upon the content and the presentation. However, it is not easy to distinguish between the quality of the content and the quality of the presentation. In regard to a PhD thesis, the scientific disciplinary norms that have grown since before the Enlightenment and have roughly created the following information structure of how a PhD thesis ought to be presented (cf. table 5.5).

Now obviously, other narrative boxes could have been used to further subdivide what issues should be taken up within a PhD. However, what such an information structure now functionally accomplishes is that the reader is presented with the information in such a fashion that it is intelligible and comprehensible (cf. 4.5), i.e. its ‘logical’. This particular structure; establishes relevance (introduction), reviews past knowledge (literature review), outlines how the knowledge was collected and analysed (method), presents the empirical findings relevant for the context (discussion and findings) and crystallises the essence of the argument (conclusion). Now masterfully ‘ticking those boxes’ is what makes something scientific (cf. 2.2). The structure now discursively transforms the perception of the reader from reading the opinion of Rene Brauer, to reading the findings of Rene Brauer the PhD researcher who studied the phenomena of research impact for more than 3 years, whilst developing a sociological description of the scientific method. How does the reader now know how to differentiate between these two positions based on the text alone? Without personal knowledge of the author i.e. how to know if the information can be trusted? Simple, the presented information is structured in a fashion that is in accordance with accepted proxy indicators of scientific quality, which are recognisable to other researchers who usually study the phenomena in question (cf. Collins and Evans, 2008:77-90). What is ‘logical’, what is ‘intelligible’, what is ‘comprehensible’ is only partly decided by how the information that is structured and presented. Rhetorical choices on behalf of the author represent the ‘subjective’ part of the scientific method, yet these writing rules reign in the speculative aspects and create an inter-subjectivity that appears objective (cf. Shapin 2012).

Within the literature review (cf. 3.3) it was commented upon Foucault’s (1978) work on the History of Sexuality and his ‘most misunderstood claim’ and that the connection between the ‘thing in itself’ and the ‘form’ describing it are all tangled up in ‘in all sorts of complicated ways’. Once again, the reason for including all the pictures that documents the process of creation of this PhD thesis was to highlight how non trivial such translation of theoretical knowledge is in praxis. Documenting my own disciplinary process, allowed me to be reflexive over the change in working patterns and associated changes in thought processes I underwent. The disciplining that is required of the individual by the Enlightenment ethos of the scientific method (cf. 4.4) can be both conceptualised as enabling and restrictive at the same time, which one usually is emphasized depends on the underlying ‘spirit’ of

63 This particular quote is thanks to Nathan McNamee, however similar stimulating discussions concerning the subject of this PhD were had with Simon Kimber, Tim Wray, James MacQuilken, Michael Humbracht, John Walsh, Teemu Makkonen and Filipe Worsdell.
the individual. Here I want to borrow Nietzsche’s ([1887] 1989) nomenclature of master and slave morality in order to explain the shift in conceptualisation I experienced during this disciplining.\(^{64}\)

From a ‘slave morality’ point of view these disciplinary guidelines imposed by the scientific method (i.e. proxy indicators of scientific quality) are restrictive as they prevent the individual from freely expressing themselves. Meanwhile, from a master morality point of view, such disciplinary guidelines aid the individual to articulate their thoughts so that they become comprehensible to other individuals. The crux here is that both views are correct within their frame of reference, and as language is the medium of communication choices around style, syntax, synonyms, rhetoric, structure, narration etc. become important for communication. Such choices may appear innocuous; however, as Foucault (1972) showed in his work on the *Archaeology of Knowledge* they are not. Such choices create an iterative process where the thoughts, ideas, conceptualisations of one individual then get transposed, cited, reinterpreted and used by other individuals. By reading this entire thesis, not only will the reader ‘learn’ things about the REF, research impact and the research ecosystem, but the author will also have imposed and transmitted his understanding, thoughts and ideas about the related concepts. Alongside how these things ought to be studied (i.e. epistemology), as well as how to interpret the phenomenon of study, i.e. research impact (i.e. the created ontology in relation to impact). As Foucault noted this process is iterative, in the sense that one idea of one person gets picked up cited, other people add on and so forth. Now from a master morality point of view we can look at this process and marvel at the human ingenuity that is inherent within the scientific method that allows people to collectively work out their individual subjective interpretations of the word (creating not necessarily an objective understanding, but at least an inter-subjective one, cf. Shapin 2012). Meanwhile, from a slave morality point of view we can take the cynical interpretation and state it is ‘just’ a social construct and all made up!

My positionality towards this knowledge creation process is inherent in the here used theoretical lens, i.e. the point of the research ecosystem idea is to emphasise that although science is certainly ‘made up’ by humans, it is at the same time the best structured mechanism that human beings have come up with to externalise their thoughts. Therefore, I recognise the human element of scientific knowledge production that is inherent in structuring the information flow into these narrative boxes imposed by the scientific method (e.g. introduction, literature review, methods, findings and discussions and conclusion cf. table 5.5), which allows the author to communicate with other individuals, ensuring that the message that the author wishes to convey is understood. The problem

\(^{64}\) Master morality puts an emphasis on pride; honour, strength, competency, determination and nobility to only mention a few. In essence the idea is to become that what is controlling the environment (subjugation to ones will is only one avenue how this can be achieved, another is reciprocal cooperation). Meanwhile, slave morality values things like kindness, empathy, humility and sympathy. From the perception of slave morality one is at the mercy of being controlled by their environment (only by imploring to other people’s ‘good nature’ can a tolerable existence be achieved). To reiterate, master morality emphasis control of your environment, meanwhile slave morality emphasises how you are being controlled by your environment, which one receives more emphasis decides how the intentions behind someone else’s behaviour are being interpreted. If the reader wants to have a more modernist take on this dichotomous interpretation of the same phenomena based on two non-overlapping value structures that human beings depart from, I recommend Thomas Sowell (2007) when he talks about an ‘constrained’ and ‘unconstrained’ visions of human nature. The former acknowledges the limits of human potential, whilst the latter departs from best possible scenario. Sowell’s characterisation does not perfectly map onto Nietzsche’s nomenclature, nevertheless it is still the case that both seem to be articulating a fundamental aspect of our collective human nature. Namely that certain belief structures can be so fundamentally incommensurable and diametrically opposed that at each level of the analysis, they are talking past each other. The division between means focus and end focus outlined within this thesis, represents another example of this contingency.
that arises with such proxy indicators of scientific quality is that these influence the quality of the presentation of the content (in fact this is the entire idea of the concept, cf. 3.3). As such, these indicators discursively discipline the information that is presented. Thereby, sometimes the disciplinary norms that researchers abide by can indeed be smarter than the researchers, where by following such disciplinary norms allows for the identification of correlations, which do not necessary signify real causation. Now the process by which the reader judges if it is real or not, is by being able to make the correct inferences from the literature review. However, if the reader departs from a different knowledge (which is likely), the only thing that remains is the proper fulfilment of proxy indicators scientific of quality, which then by that token become a (proxy) indicator for scientific quality. This should always be the case for any scientific work, as originality represents a scientific value that is inscribed into the scientific method (cf. 3.5). However, as Nietzsche stated, due to our ‘human, all too human’ nature it will always involve an individual’s ‘will to power’ that forces entities into existence, making them real. Nevertheless, due to the inherent difficulties within any form of philosophising, the post-postmodern point of view (which I adopt here) embraces such problems relating to reification rather than scoffing at the boundless responsibility it entails (Nietzsche [1887] 1989:11).

By definition, any research project that is fulfilling the traditional Enlightenment telos will address these narration boxes, as it involves the outlining of a knowledge gap, which then structures the entire inquiry. Now we can argue if such discursive influence represents a scientific or an extra-scientific factor, what seems clear is that such proxy indicators of scientific quality do discursively influence the type of knowledge that can and cannot be produced. For the assessment of research impact, similar issues with the written presentation and assessing the actual impact of the presented claim are in play. Namely that the individuals who present the research impacts, are not necessarily experts within the domain of the type of research impact that they are claiming, nevertheless they are disciplined in producing such reports. Within this method section alongside outlining a methodology for this PhD it was also outlined how the rhetorical re-construction part of a scientific fact is dependent upon the practitioners of science; as we will see below, the same applies for the construction of a research impact claim. The empirical presentation that follows in the remaining chapters will make a case for the power of such proxy indicators of impact quality discursively influence what research impact is reported. However, before embarking on the homeward part of the rhetorical re-construction through the empirical data material, let’s briefly discuss the ethical issues of this thesis and how they relate to the here used axiology of the traditional Enlightenment telos of science.

5.4. Ethical issues
By applying a particular research method, any scientific study enacts and reinforces a particular set of values (cf. Law and Urry 2004). The reason for this is that research choices are performative in what types of values are reinforced or undermined. For example, using Nvivo represents an alliance for the reliability of that method; meanwhile choosing not to use Nvivo requires the articulation of

65 “[…] But this is an old, eternal story: what happened back then with the Stoics still happens today, just as soon as philosophy begins believing in itself. It always creates the world in its own image, it cannot do otherwise; philosophy is this tyrannical drive itself, the most spiritual will to power, to the “creation of the world”, to the *causa prima*.” [italics in original]

66 Note that the research impact case studies are lacking a method section in their presentation of research impact (cf. 4.2). In specific, Chapter 7 will focus on the practical implications that the absence of this information has for the veracity of the presented research impact claims.
reasons why it was not used. Either choice is performative, in the sense that one set of values gets undermined and one is reinforced. Now methodological choices like this may appear innocuous, but the same is true for research design, use of epistemological framework, use of ontology etc. Merton codified the traditional values that aided such choices into the so called CUDOS norms (universalism, communalism, disinterestedness and organised scepticism, cf. 2.4). As will be made clear from the conclusion of this PhD thesis, these were the values adopted here, as these values structure and discipline the research conduct into our best approximation of reality. One of the main ethical issues that this thesis is revolving around is that the introduction of research impact (if done badly) can be in conflict with the enlightenment telos of science (cf. 4.4).

When scholars of science studies first presented their sociological research findings it was criticised for being Machiavellian (cf. Miettinen 1999). The term Machiavellian in the English language has a general negative connotation, because it refers to the misuse of power for the gain of an individual at the expense of society. Machiavelli ([1532] 2008) argues in The Prince that his commitment to “[a]bstract truth [is philosophical interesting … but only practical] truth matters” (Cascardi 2012:16). The danger is now perceived because truth is seen as a “political metaphor […] the notion of relational power, expressed in terms like will and force, to cover every” (Lee and Brown 1994:778) aspect of the network, rather than actually being ‘true’. By outlining, how the research ecosystem works, what is considered important, what gets rewarded etc., you automatically also create a manual of how to exploit the system that is being analysed. In the context of ever growing pressure on academics to perform, this is a real potential possibility (Roland 2007).

Disregarding such large axiological issues, there are some other more specific ethical considerations for this study. For example, as the used material for the reading were publically available documents, the analysis departed from material that is available within the public domain. Now as the data material was not specifically produced for this thesis it is important to keep this in mind. Furthermore, some of the data material included case studies from the University of Surrey, the author’s home institution. The author has on occasion spoken with the individuals that produced these case studies in an informal manor, however in order to avoid potential conflicts of interest the analysis restricts itself to the publically available material. For the interview material of the study, individuals from the University of Surrey were not approached due to such potential conflict of interests. Furthermore, all interview subjects are anonymised in so far as their job position, to which every interviewee consented, the interviewees also consented that the interviews were recorded in order to archive the empirical material. However, only the researcher and the supervisor team had access to this information. Their verbal consent is recorded at the beginning of each interview67; this was done in order to conform to good ethics practice (cf. Saunders et al. 2011 168-209).

Ethical issues that are anticipated for the researcher are primarily concerned with issues of future employability. The reason being, that this research intends to analyse underlying rationales and value judgments, as such there is a potential that in the discussion the researchers personal conclusions (based on the values of the researcher) may clash with what is deemed to be ‘desirable’. When it comes to potential ethical issues for the use of this research material, the potential implications are vast, as it covers a very topical subject, i.e. the REF, which is involved with research funding of the entire UK research ecosystem (involving over one billion pounds sterling for the year 2015/2016, cf. DBIS 2014). Because, knowledge of how a system works and to predict future outcomes can be

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67 The interview subjects were informed of the intention of the PhD subject and asked if their recording (up to the discussion part) could be used for the here presented study and future research on the same subject.
used to; improve, exploit or destroy the research ecosystem that is studied. The here expressed ethical issues were part of all of the open discussion section of the interviews, all the interviewees encouraged the researcher to present his findings and furthermore expressed interest in reading the finished thesis, regardless of the ethical concerns presented here.

5.5. Summary of the chapter and disposition of the empirical part
In this chapter, the methodology for the thesis was outlined. For methodological purposes the identification of the research impact was separated into three distinct levels, micro, meso and macro. The micro and meso discourses are addressed through the analysis of the documents surrounding the REF 2014 research impact assessment. The argument was raised that the rhetorical construction of micro discourses disciplines knowledge production, by using the PhD thesis as an example. Furthermore, it was explained how the science studies approach was consolidated with an evolutionary psychology approach in analysing the semi-structured interviews. The here chosen post-postmodernist approach departs from the traditional Enlightenment values in its rhetorical reconstruction. The remaining part of the thesis will focus on the findings of the analysis and discusses them in the context of the research impact discourses. Chapter 6 focuses on the micro discourses, in specific the case studies that related to impacts upon tourism. However, these are also put into relation to macro discourses that exist within the seamless web that is society. Chapter 7 focuses on the meso discourses that the guidelines are producing, analysing them with examples form the case studies. Chapter 8 focuses on the macro discourses, based on the analysis of the interviews and discusses these in relation to other studies that investigated the REF impact assessment. As previously mentioned, the separation between micro, meso and macro discourses is not hermetic, nevertheless, for narrative purposes the following chapters are separated along these broad themes in order to highlight that the (social-) construction of a research impact discourse stretches over many different dimensions and mediums.
“While the impact of this project is yet to be felt ...” (Research impact case study)
6. RESEARCH IMPACT ACCORDING TO REF 2014

This chapter is the first of the three empirical chapters of this thesis. Specifically, this chapter presents two of the contributions of this thesis. The first is the mapping out of all research impacts in relation to the themes of research, tourism and impact, which were identified from the discourse analysis of the REF impact database. As well as the analysis of the significance of that reported impact (cf. 5.3.3). The chapter starts out by further elaborating on the analytical distinctions that were made in order to identify the micro discourses within the case studies (6.1). This is followed by a walkthrough of all the research impact that related to tourism, which was submitted to the REF 2014 impact assessment (6.2). The following section then summarises the micro discourses (6.3), breaking it down depending upon the; type of research (6.3.1), the type of tourism (6.3.2) and the type of impact (6.3.3) in how they were presented within the case studies. Afterwards, the presented impact discourses are compared to other macro discourses that exist within the wider tourism research ecosystem (6.4). This is done by first elaborating on the heuristic that is used here to outline what is understood as reach and significance of research impact, based on macro discourses from the tourism research ecosystem and the wider seamless web of society (6.4.1). This is followed by categorising the micro discourses along this outline (6.4.2), which then is summarised by a discussion on what the implications are for the reach and significance of the here identified research impacts (6.4.3). A summary finalises this chapter (6.5).

6.1. Identifying micro discourses of tourism research impact

In the previous chapter the way in which research impact discourses were understood was outlined, namely that they can exist on a micro, meso and macro scale (cf. 5.2.2). This analytical distinction will be used throughout the entire study, in specific this study understands the actual case studies and impact templates that were produced by the REF 2014 assessment process as micro discourses. The ‘topics’, ‘themes’, ‘issues’, ‘notions’, ‘understandings’, ‘conceptualisations’ or ‘presuppositions’ that shape such micro discourses of research impact are influenced by bigger (macro) discourses (values, agendas, structures etc.) that the specific micro discourse relates to (cf. Figure 6.1). Furthermore, such micro discourses are also disciplined by the meso discourses that are inherent within the definitions of research impact based on the assessment structure (cf. 4.4 & 5.3.6) and chapter 7 will deal with such meso discourses. Nevertheless, even here it is important to stress, that such guidelines and the resulting structure and discipline needs to be in place in order to get the universities to produce the micro discourses according to a uniform manor (i.e. research impact case studies and impact templates), as outlined by the assessment standards (cf. 4.2). As such, this chapter will investigate the micro discourses and how they tap into the macro discourses surrounding research impact (c.f. Foucault 1972). In specific a micro discourse is understood here to be comprised of the following sub-discourses; relating to the type of research that is presented, relating to the type of tourism that it described and the type of impact that was presented (cf. Figure 6.1).
From the view of the research ecosystem (cf. 2.2) such micro discourses of research impact become part of the landscape of the ecosystem, as the case studies that are being favourably judged will become templates for future studies on how to report and present research impact, creating part of the 'landscape' of how tourism research impact ought to be presented and judged in the future. In regard to the understanding that is used here as an analytical foci to identify the micro discourses, these are informed by the discussion that was part of the seamless web understanding of how research impact functions (cf. 4.1). Or to express in other words, a successful research impact discourse weaves together all these different sub-discourses into one coherent narration (this is represented by the overlap of the different spheres within figure 6.1). One of the aims of this chapter is to establish in general what research impact (?) the REF is referring to in relation to tourism, in specific; who conducted the research (i.e. the type of research, 6.3.1), for whom is the presented impact is relevant (i.e. the type of tourism, 6.3.2), and what impact are we talking about here (i.e. the type of impact, 6.3.3). However, before we can do this we first need to introduce the encountered tourism research impact that was reported to the REF 2014.

6.2. Outlining the (REF’s) research impact upon tourism
The following section represents all the identified REF 2014 impact case studies that reported research impact upon tourism. Table 6.1 represents a summary of all the identified case studies from the keyword search (cf. 5.2.2 for an elaboration of how the keywords were selected). In total 23 impact case studies were identified. The impact case studies are labelled in the fashion that the first letter indicates the REF’s main panel correspondence, the second ID indicates the unit of assessment and the third ID is a consecutive number in order of presentation. For example, this means that the label of the University of Durham is D-30-19, as the submission was made to main panel D, in specific the unit of assessment 30 and represents the 19th submission relating to impacts that was identified for this study. All case studies were accessed in the period between July and October 2016. Highlighted in light grey are the submissions of the self-identified tourism studies institutions, that will be used in chapter 7 to investigate the influence of the meso discourses on the construction of the here presented micro discourses. In general, there were many tourism studies faculties that did not seem to have submitted research impact to the REF in relation to tourism, while having strong academic tourism profiles (e.g. Oxford Brooks or Strathclyde). These issues will be addressed within chapter 7 that deals with the disciplining function of the REF. The categories that are used within table 6.1 will be elaborated when they are first mentioned in the descriptive outline below. Note, that the bold marked words within the descriptions represent the categories of type of research, type of tourism and type of impact (cf. figure 6.1.) that were identified in the discourse analysis of the case studies. The types of tourism are defined theoretically and those definitions then also apply for the subsequent uses. The types of impact are based on thematic trends that were identified across the impact case studies (i.e. if more than two case studies mentioned a similar research impact). The type of research category will not be elaborated, as these categories are taken to be self-evident and were based upon the institution’s self-reported affiliation of their official website (cf. 5.2.2).
Table 6.1: Identified case studies relating to research impact upon tourism submitted to the REF 2014 research impact assessment

<table>
<thead>
<tr>
<th>ID</th>
<th>Name of Unit of Assessment</th>
<th>Higher Education Institution</th>
<th>Case study title</th>
<th>Type of research</th>
<th>Type of impact (NOTE: impacts are NOT in hierarchical order)</th>
<th>Type of tourism</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-5-1</td>
<td>Biological Sciences</td>
<td>University of Leeds</td>
<td>Biosecurity and sustainable tourism in the Galapagos Islands</td>
<td>biological research</td>
<td>wildlife conservation policy advice</td>
<td>mainstream tourism</td>
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<td>ecotourism</td>
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<td></td>
<td>wildlife tourism</td>
</tr>
<tr>
<td>B-10-2</td>
<td>Mathematical Sciences</td>
<td>University of York</td>
<td>MAT03 - Traffic control and traveller choice</td>
<td>mathematical research</td>
<td>no explicit tourism impact</td>
<td>impossible to determine</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>note: tourism was only mentioned once, as a potential application, but not further elaborated</td>
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</tr>
<tr>
<td>C-17-3</td>
<td>Geography, Environmental Studies and Archaeology</td>
<td>University College London</td>
<td>Supporting tourism and recognition of Maya heritage at Lamanai and on Ambergris Caye</td>
<td>archaeological research</td>
<td>lobbying</td>
<td>mainstream tourism</td>
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<td></td>
<td>economic impact conservation</td>
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<tr>
<td>C-17-4</td>
<td>Geography, Environmental Studies and Archaeology</td>
<td>University of Leicester</td>
<td>Coin Hoards and Helmets: Iron Age treasure boosts tourism, underpins museum expansion and inspires new sense of community pride</td>
<td>archaeological research</td>
<td>economic impact conservation</td>
<td>heritage tourism</td>
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<tr>
<td>C-19-5</td>
<td>Business and Management Studies</td>
<td>University of Nottingham</td>
<td>Informing Social Tourism Policy and Practice</td>
<td>tourism studies research</td>
<td>raised awareness policy advice</td>
<td>social tourism</td>
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<td></td>
<td>environmental sustainability policy advice</td>
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<tr>
<td>C-19-6</td>
<td>Business and Management Studies</td>
<td>Cardiff University</td>
<td>Understanding the economic and environmental impacts of tourism</td>
<td>tourism studies research</td>
<td>environmental sustainability policy advice</td>
<td>mainstream tourism</td>
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<td>economic impact</td>
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<tr>
<td>C-19-7</td>
<td>Business and Management Studies</td>
<td>University of Kent</td>
<td>Backpackers or Cruise Ships? Shaping the Tourism Policy Agenda for Small Island States and Coastal Communities</td>
<td>tourism studies research</td>
<td>raised awareness policy advice</td>
<td>mainstream tourism</td>
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<td>economic impact</td>
<td>sustainable tourism</td>
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<tr>
<td>C-24-8</td>
<td>Anthropology and Development Studies</td>
<td>University of Roehampton</td>
<td>Effects of Tourism on Wild Primates</td>
<td>anthropological research</td>
<td>raised awareness policy advice</td>
<td>mainstream tourism</td>
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<td>environmental sustainability policy advice</td>
<td>wildlife tourism</td>
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<td>economic impact</td>
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<tr>
<td>C-26-9</td>
<td>Sport and Exercise Sciences, Leisure and Tourism</td>
<td>University of Sunderland</td>
<td>Integrated e-Services for Advanced Access to Heritage in Cultural Tourist Destinations (ISAAC)</td>
<td>tourism studies research</td>
<td>DMO development</td>
<td>heritage tourism</td>
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<td>sustainable tourism</td>
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<td>cultural tourism</td>
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<td>food tourism</td>
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<tr>
<td>C-26-10</td>
<td>Sport and Exercise Sciences, Leisure and Tourism</td>
<td>University of Bedfordshire</td>
<td>The impact of food tourism on sustainable development in rural regions</td>
<td>tourism studies research</td>
<td>DMO development</td>
<td>cultural tourism</td>
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<td></td>
<td></td>
<td></td>
<td>raising awareness</td>
<td></td>
</tr>
<tr>
<td>C-26-11</td>
<td>Sport and Exercise Sciences, Leisure and Tourism</td>
<td>University of Surrey</td>
<td>Modelling and Forecasting International Tourism Demand: Methodological Advancements and Innovations</td>
<td>tourism studies research</td>
<td>economic impact policy advice</td>
<td>mainstream tourism</td>
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<td></td>
<td>DMO development</td>
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<tr>
<td>C-26-12</td>
<td>Sport and Exercise Sciences, Leisure and Tourism</td>
<td>University of Surrey</td>
<td>Reducing social exclusion through participation in tourism</td>
<td>tourism studies research</td>
<td>raised awareness policy advice</td>
<td>social tourism</td>
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<td></td>
<td>improving QOL policy advice</td>
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</tr>
<tr>
<td>Code</td>
<td>Discipline</td>
<td>University</td>
<td>Title</td>
<td>Field of Research</td>
<td>Policy Advice</td>
<td>Economic Impact</td>
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<tr>
<td>C-26-13</td>
<td>Sport and Exercise Sciences, Leisure and Tourism</td>
<td>University of Brighton</td>
<td>Redesigning tourism policy and practices in Africa</td>
<td>tourism studies research</td>
<td>DMO development policy advice</td>
<td>economic impact</td>
</tr>
<tr>
<td>C-26-14</td>
<td>Sport and Exercise Sciences, Leisure and Tourism</td>
<td>Bournemouth University</td>
<td>Modelling economic impact for national governments</td>
<td>tourism studies research</td>
<td>economic impact</td>
<td>environmental sustainability</td>
</tr>
<tr>
<td>D-29-15</td>
<td>English Language and Literature</td>
<td>University of Exeter</td>
<td>The Evliya Çelebi Way Project: history, travel, culture</td>
<td>historical research</td>
<td>raised awareness</td>
<td>heritage conservation</td>
</tr>
<tr>
<td>D-29-16</td>
<td>English Language and Literature</td>
<td>Swansea University</td>
<td>The Library of Wales: influencing Government Policy to benefit the Creative Industries, Cultural Tourism, Education and General Readers</td>
<td>literature research</td>
<td>DMO development</td>
<td>heritage conservation</td>
</tr>
<tr>
<td>D-29-17</td>
<td>English Language and Literature</td>
<td>University of Bristol</td>
<td>The Revival or Re-invention of Early European Performing Arts as an Instrument of Civic Regeneration and Cultural Tourism</td>
<td>historical performance research</td>
<td>heritage conservation</td>
<td>mainstream tourism</td>
</tr>
<tr>
<td>D-30-18</td>
<td>History</td>
<td>University of Leicester</td>
<td>KEPT – Knowledge Exchange Partnerships for Tourism: supporting the tourist economy and improving visitor experience at historic destinations</td>
<td>digital humanities research</td>
<td>raised awareness</td>
<td>heritage conservation</td>
</tr>
<tr>
<td>D-30-19</td>
<td>History</td>
<td>University of Durham</td>
<td>The Lindisfarne Gospels Exhibition, Durham 2013: cultural heritage, education, and tourism</td>
<td>historical research</td>
<td>public education</td>
<td>raising awareness</td>
</tr>
<tr>
<td>D-33-20</td>
<td>Theology and Religious Studies</td>
<td>University of St Andrews</td>
<td>Promoting Pilgrimage in Churches, Cultural Heritage and Tourism</td>
<td>historical research</td>
<td>heritage conservation</td>
<td>economic impact</td>
</tr>
<tr>
<td>D-34-21</td>
<td>Art and Design: History, Practice and Theory</td>
<td>University of East Anglia</td>
<td>Butrint (Albania), Archaeology, Heritage and Tourism</td>
<td>archaeological research</td>
<td>economic impact</td>
<td>heritage conservation</td>
</tr>
<tr>
<td>D-35-22</td>
<td>Music</td>
<td>Liverpool Hope University</td>
<td>The Annotated Beatles Bibliography: Supporting tourism in Liverpool</td>
<td>music research</td>
<td>DMO development</td>
<td>economic impact</td>
</tr>
<tr>
<td>D-36-23</td>
<td>Communication, Cultural and Media Studies, Library and Information Management</td>
<td>York St John University</td>
<td>Cultural Heritage, Tourism and Engagement</td>
<td>heritage research</td>
<td>DMO development</td>
<td>heritage conservation</td>
</tr>
</tbody>
</table>

Source: REF 2014 and authors
A-5-1 - University of Leeds

The University of Leeds, presented biological research which focused on preserving the “globally important biodiversity of [the] Galapagos” islands. As such, in regard to what important issue this corresponds to, it can be argued that the research helped preserve the biodiversity of the Galapagos Island. Therefore, they emphasised that this biodiversity was threatened by unsustainable tourism practices. Furthermore, their research impact has been classified as wildlife conservation and policy advice as it was stated that they advised policy makers in Ecuador on measures to protect that biodiversity in order to maintain “Galapagos [as] the basis of a significant fraction of the tourist and national economy of Ecuador”. In regard to the type of tourism that they referred to was mainstream tourism in the sense that it was causing damage to the biodiversity and ecotourism and wildlife tourism were evoked as sustainable alternatives.

B-10-2 - University of York

The University of York in their case study presented mathematical research that created a predictive model in order to estimate (air) traffic flows and as such was used to model infrastructure developments. Tourism was mentioned as a beneficiary (one time) within the case study; however, it was not explicitly elaborated how tourism specifically gained from this research impact. Hence, their research most probably had an impact (upon tourism) but it was impossible to classify just how tourism was impacted. As such, the research impact could not be classified; furthermore what type of tourism was referred could neither be classified due to the lack of specifics.

C-17-3 - University College London

The University College London’s case study built upon archaeological research that provided instrumental evidence “to have Marco Gonzalez declared a protected site, and thus prevent catastrophic damage.” This effort was classified as a form of lobbying as their involvement led to having the site put under protective status. They reported an active role in having helped to protect “Maya culture and [the] heritage [that] survived to the present day.” Due to the subject matter of their research impact, the impact was also classified as heritage conservation. Furthermore, as the site attracted 212,800 visitors during 2008–2013, the economic impact that the site had generated was also specifically mentioned. What was not mentioned was how large the visitor numbers would have been without their involvement. As the case study was concerned with protecting the heritage of a particular destination, it can be argued that it corresponded to ‘maintaining’ the ‘cultural resources’ of said destination. As the upgrade to protect the site’s status is arguably an important step in preserving the site for future tourists. In regard to the types of tourism they mentioned, they envisioned mainstream tourism as something negative that the sites should be protected from; instead they wanted to attract a sustainable form of heritage tourism.

68 Mainstream tourism or mass tourism is seen as the activity that a large number of people travel for a short period of time to places of leisure interest. These travel destinations are developed to fulfil the tourism requirements, by selling a commoditized tourism experience that appeal to the greatest number of people (Poon 1993).

69 Ecotourism is primarily concerned with preserving sensitive and undisturbed natural areas whilst still allowing (a limited) number of tourists to enjoy those areas. It can have several different shapes, either; educating the traveller, providing funds for conservation efforts or directly building sustainable small-scale tourism economies in sensitive ecological areas (Coria and Calfucura 2012).

70 Wildlife tourism refers to the viewing of animals in their natural habitat. Wildlife tourism is a considerable part of the tourism industries in South America, Africa, Australia and elsewhere (Ballantyne et al 2011).
C-17-4 - University of Leicester
The University of Leicester case study also built upon archaeological research and they emphasised heritage conservation in their case study, stating that the “research project, […] discoveries directly inspired the South East Leicestershire Treasure project [leading to …] a major programme encompassing museum redevelopment, travelling exhibitions and a suite of learning resources.” They also detailed very specific visitor numbers that different museums had attracted, however it is not clear if these museum charged entrance fees. Nevertheless, they state that “from £0.26m in 2009 the economic impact of tourist visitors had risen to £0.75m by 2012, with the combined total for 2011-12 reaching £1.34m” which was based on an estimate calculated by the Scarborough Tourism Economic Assessment Model and not actual reported data. Regardless, of these finer details, their research impact was still classified here has having had an economic impact of the implied heritage tourism.71

C-19-5 - University of Nottingham
The University of Nottingham presented tourism studies research and highlighted their research impact has having “informed the development of policy and practice and raised awareness of issues concerning the inclusion of disadvantaged people in leisure travel. […] Furthermore, [a] charity has used the research to inform policymaker’s understanding of the issues and to drive forward the agenda for social tourism in the Scottish Parliament.” As such, their research impact was classified as raised awareness, policy advice and improving quality of life (QOL) as they primarily focused on “disabled people and low-income groups to access tourism.” Furthermore, their impact was also classified as lobbying as they closely collaborated with the Family Holiday Association in promoting issues of social tourism72 in order to “drive forward the agenda for social tourism”.

C-19-6 - Cardiff University
Cardiff University presented tourism studies research and stated that a collaboration with the Welsh Economic Research Unit “has significantly contributed to developing methodologies to quantify tourism’s socio-economic impact at different scales” which has helped “optimise value for money whilst minimising undesirable environmental impact.” They specifically focused on larger sports events (e.g. the Rugby World Cup, the Wales Rally GB, and the Tour de France grand depart). They also mention that it was used to evaluate policy interventions like the “£120m Environment for Growth initiative (2006-2013), funded by the European Regional Development Fund” and what impact it had on the region. As such, their research impact was classified as furthering environmental sustainability as it optimised resource allocation (explicitly presented within these terms) and policy advice as it was used as a guide and assessment tool of such interventions. However, when it came to quantifying their exact economic impact they merely stated general tourism figures for the entire UK and that they have help with “precise understanding of tourism’s economic and environmental impact” but failed to quantify how much money was saved/earned due to their own intervention. They primarily focused on event tourism, yet stated that their model also had applications for mainstream tourism.

71 Heritage tourism represents a form of cultural tourism (see footnote below) that focuses on cultural heritage activities or sites. (cf. Porter and Salazar 2005). The distinction is maintained as a majority of the universities placed emphasis on heritage.

72 Social tourism is the intention of extending the benefits of tourism to socially and physically marginalised people, in order to include them into the tourism experience which otherwise they could not afford. This type of tourism emphasizes tourism as potential means to improve people’s lives and lived experiences (McCabe 2009).
C-19-7 - University of Kent
The University of Kent also represented tourism studies research and reported in their case study that their research has helped small island developing states and poor coastal communities to challenge major trends within cruise ship tourism and protect their local economies. No measures of the economic or social benefits were provided, it was simply stated that it did have an economic impact in providing a “sustainable basis for economic growth.” Lobbying is mentioned in the sense that the key-researcher personally advocated for policy change and participated in several policy workshops that were co-organised with an advocacy group (Swisscontact) regarding backpacking in Malaysia. The aim of these workshops was to influence policy and raise “awareness” in order to help vulnerable states formulate effective policies and develop appropriate tourism initiatives”. As the key-researcher was actively involved in such advocacy the distinction between lobbying and policy advice becomes somewhat fluid. In general, mainstream tourism was presented as being damaging to these communities and small scale tourism (e.g. backpacking) was presented as an alternative form of sustainable tourism.

C-24-8 - University of Roehampton
The University of Roehampton presented a combination of anthropological research and biological research within their case study and that they have successfully raised awareness and “inform[ed] development of guidelines relating to primate tourism.” As their research was conducted due to “an invitation from the Moroccan Primate Conservation Foundation [and they] contributed to the Conservation Action Plan for the Barbary macaque (Macaca sylvanus)” their research impact was further classified as policy advice and wildlife conservation. Furthermore, they also highlight their collaboration with Association of British Travel Agents and their lobbying efforts that produced a report on Global Welfare Guidance for Animals in Tourism that was distributed to major tourism operators, governments and their own 1200 members. They discussed mainstream tourism in negative terms of damaging the environment, understanding such forms of tourism as being unsustainable and referring to other forms of ecotourism and sustainable tourism as viable alternatives for the desired type of wildlife tourism. Yet, they failed to outline how exactly these different types of tourism ought to be manifested.

C-26-9 - University of Sunderland
The University of Sunderland tourism studies research helped to provide an “integrated and user-friendly tourism e-services facilitating an advanced access to European cultural heritage assets [for the] three destinations [of] Leipzig, Amsterdam and Genoa.” The platform allowed for the capturing of feedback and other metrics that could be used for marketing of these destinations as well as provide visitors with an interface to explore these destinations. As such, their research impact was classified as DMO development (DMO stands for destination management organisation). They mentioned that the focus of their research had a “practical impact in the fields of heritage and tourism, integrating dispersed knowledge on cultural tourism and local heritage” however, beyond “current marketing and positioning strategies” no specifics were mentioned upon how tourism could be utilised as “a key

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73 Sustainable tourism in essence is not a new form of tourism. However, especially mainstream tourism and to a lesser degree the different types of tourism presented so far have been extensively criticised from voices within and outside academia (cf. Wilson et al. 2008; Pritchard et al. 2011. This has led to the creation of alternative forms of tourism or so called responsible tourism that focuses on the sustainable management of the tourism experience. The concept of sustainable tourism is expansive, stressing that the tourism experience should not create a negative impact on the environment, host society or economy (Spenceley 2012).
generator of the resources necessary to preserve and enhance cultural heritage in a sustainable way”. Regardless of the specifics, the types of tourism they referred to, these were classified as **heritage tourism**, **sustainable tourism**, **cultural tourism**⁷⁴ and **eTourism**⁷⁵ as all these were implied within the case study.

**C-26-10 - University of Bedfordshire**

The University of Bedfordshire represented **tourism studies research** and their research impact focused on “research funded by the Esmée Fairbairn Foundation during 2009-2011 into how food tourism can be used for sustainable development.” As such, this research impact was classified as **lobbying** as the intention was to influence policy makers in order to shape tourism within Wales and Northern Ireland. Furthermore, as the research findings are now used by “Causeway Coast and Glens of North Ulster; the Brecon Beacons National Park; and Fáilte Ireland […] in their strategy development” it was also classified as **DMO development**. However, as no specifics were provided to what economic or social gains were reaped apart from raising awareness due the strengthening of “economic linkages and multiplier effects within regional and local economies; encouraging cultural identity and distinctiveness; and the reduction of environmental pollution from food transportation” no other classification of impact was possible. In terms of tourism they envisioned potential **cultural tourism** with an emphasis on **food tourism**⁷⁶ and **sustainable tourism** in facilitating these ‘economic linkages’ that were reported.

**C-26-11 - University of Surrey**

Both of the University of Surrey case studies related to **tourism studies research**. In their first case study they mentioned how their statistical model was used as a tool for planning in regard to tourism forecasting for the “370 tourism-related organisations and government agencies from 39 countries [which] have subscribed to the system.” As such, their research impact was classified as **DMO development**, **policy advice** and **economic impact**. As they outlined examples where their tool helped “Pacific Asia Tourism Association (PATA) to produce annual tourism forecasting reports” and that “Hong Kang Disneyland (HKD) has built its attendance demand projection model by applying the forecasts provided by the Surrey-designed system” which helped “HKD generated record revenues of HK$4,272 million, 18% higher than 2011, and a net profit of HK$109 million, the first annual profit since the resort’s opening.” Another example is provided, in that Surrey was “responding to the European Parliament’s Preparatory Action “Tourism Accessibility for All”, although they admitted that while “the impact of this project is yet to be felt, the impact […] is primarily in being able to bring more advanced understanding to other areas of tourism demand.” As such, the research focused mainly on **mainstream tourism** and how it could be improved.

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⁷⁴ Cultural tourism or culture tourism relates to an areas (country, region or distinct place) culture. The tourism experience focuses specifically on the lifestyle of the locals within those areas, their history, art, architecture and other elements that shaped those cultures (Smith 2009).

⁷⁵ eTourism refers to the use of technology to enhance the tourism experience. eTourism can be conceived as the implementation and application of IT and other e-commerce solutions within the tourism industry, in order to enhance or improve the tourism experience or efficiency (Buhalis and Law 2008).

⁷⁶ Food tourism or culinary tourism can also be conceived as a subset of cultural tourism. Food tourism elevates the consumption of food and beverage to the central part of the tourism experience. Similar to the above mentioned heritage tourism, being a subset of cultural tourism, the distinction here is kept to differentiate the different forms of cultural tourism (McKercher et al. 2008).
C-26-12 - University of Surrey

In their second case study, the University of Surrey outlined how their tourism studies research on social tourism has helped to identify how tourism can improve the “significant non-material aspect of well-being” in improving QOL of “disabled people and low-income groups” by gaining access to tourism. Furthermore, they mention how their research was used by an All Party Parliamentary Group and other advocacy groups in lobbying policy around the agenda of social tourism. In that they helped raise awareness for the case of social tourism as their “study provided the first conclusive evidence” for a link between subjective well-being and tourism. In the same vein, they claim that part of their impact lies in outlining “the demand for accessible tourism in Europe.” That demand, according to them, “exceeds 127 million (27% of the European population).” Due to their findings, their involvement also became the foundation for policy advice as “Surrey is quoted in [a] EU document [that] stress[es] the need to place greater emphasis on accessibility and consumer protection in the EU” with a special emphasis on social tourism. Yet, the separation between where policy advice ends and lobbying starts for the ‘demand of social tourism’ is non-existent based on the presented information.

C-26-13 - University of Brighton

Within their case study the University of Brighton presents their tourism studies research as being directly involved in the economic impacts that were reaped, as well as preventing economic loses, yet the only concrete data that was provided was the amount that the Gambian government invested in building a Tourism and Hospitality Institute (€2.7m). As such, they helped with DMO development in terms of “customer service skills training [and] government guidelines for ecotourism […] in West Africa”. In regard to social sustainability they state that their research impact was “was transformative on both sides leading to direct and indirect support for local businesses, having far-reaching social and economic benefits within the wider community” yet they failed to give specifics of the exact economic impact that these ‘transformative’ changes facilitated. The same applies for their research impact on environmental sustainability, they state there were “unsustainable tourism practices [which] have already led to irreparable damage to fragile ecosystems and significant economic losses,” as they failed to mentioned specifics of the policy advice that presumably helped mitigate these problems. Within the research section of the case study they discuss the negative implications of mainstream tourism, furthermore they claim that they “demonstrated the opportunities and challenges for linking the rapidly growing phenomenon of ecotourism and volunteer tourism to development,” nevertheless, they are vague on the specific details of how exactly this was achieved within the particular case study.

C-26-14 - Bournemouth University

Bournemouth University presented tourism studies research with a strong focus on economics, they argued that their research had generated economic impact and increased environmental sustainability with their policy advice in regard to providing DMO development an evidence base for decisions of the 2012 Olympic Games and “Visit Scotland naming 2013 the ‘Year of Natural Scotland’; to inform a Parliamentary debate on music tourism and establish greater representation of music in Visit Britain marketing material; and to inform the Government of Gibraltar of the impact of changes, such as the benefits of cross-border activity.” In regard to the type tourism they argued that they had provided the evidence base, for the Scottish government to focus on wildlife tourism as they

Volunteer tourism, is similar to social tourism in that it has the intention to utilize tourism in order to improve people’s lives. The difference is that in this form of tourism, the volunteer uses their ‘holiday’ to improve the lives of people in marginalised communities around the world (McGehee and Santos 2005).
estimated that “wildlife tourists spent £276 million in Scotland during 2009, which contributed £65 million to Scotland’s gross domestic product (GDP)” and cultural tourism in that the focused on the utilisation of music in marketing material. In general, the presented economic modelling techniques are presented as beneficial for mainstream tourism as they “more accurately predict the outcome of events, policy changes or other major economic decisions”. The evidence for the impacts are always presented in economic terms, not surprising for a research impact focused on economics.

D-29-15 - University of Exeter
The University of Exeter presented historical research and highlighted how their involvement “has raised public awareness of early modern Ottoman history and promoted sustainable equestrian tourism by establishing a UNESCO Cultural Route, the Evliya Çelebi Way.” As the university was directly involved within the establishment of the tourism activity, this is also classified as a form of lobbying. In terms of economic impact they state that “[t]he number of tourists visiting Evliya’s ancestral province of Kütahya doubled from 81,855 in 2008 to 170,597 in 2010”. However, it is unclear what percentage of that raise in visitor figures was due the university’s participation or due to the sponsoring by the “the Turkish Ministry of Culture and Tourism, The Turkish Jockey Club, the Joukowsky Foundation, and local Turkish businesses Avis-Koç, Kütahya Porcelain, and Zetinoğlu Yem.” Nevertheless, the involvement did “preserve, conserve, and present cultural heritage” of Ottoman history. The heritage tourism that is mentioned within the case study is presented as a form of sustainable tourism, yet they are very vague in outlining exactly how this was achieved.

D-29-16 - Swansea University
Swansea University presented literature research and reported in their case study how Wales as a destination could better utilize the Wales Library archive to attract visitors in the future, as this has been a very successful exhibition locally. They state that the “evidence was based on research carried out at Swansea University, and made the case for bringing a neglected but artistically and culturally important body of literature back into print,” thereby representing a form of heritage conservation as well as a form of DMO development. However, in terms of economic benefits they focused on the economic impact the “38 titles [which] have appeared, 25 of those published since 2008, accruing total sales of 56,000.” None of the beneficiaries mentioned related to tourism, other than in that these titles might raise awareness for heritage tourism, “cultural centres and tourist venues” which then potentially will have increased tourism, creating the impression that the “culturally important body of literature” was their main concern, not the actual (tourism) impact that was generated.

D-29-17 - University of Bristol
The University of Bristol presented historical performance research and highlighted how their knowledge of medieval culture could potentially create cultural festivals that could preserve these traditions and be a contributor (i.e. potential) to increase “community cohesion and identity, to understandings of local heritage, and as generators of cultural tourism”. The manifested impact restricted itself to the researcher being “invited to become academic consultant, with special advisory roles relating to the production of a text, and to the inducting of performers into appropriate performance styles etc., to the Gloucester Mystery Play” and other similar roles in heritage conservation of specific exhibitions which are facilitated by these types of event tourism78. When it came to other research impacts

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78 Event tourism, with its subsection of ‘sports tourism’ (the aspect that the aforementioned case focused upon), involves either observing or participating in an event marketed to attract visitors. Events are planned operations and each event is “unique because of interactions among the setting, people, and management systems—including design elements and the program” (Getz 2008:404).
they were described in the following terms: “in order to assist other cities to establish medieval festivals, maximising the quality and ambition of their productions, while reducing their financial risks, maximising profit for chosen charities, including different sectors of their communities, and attracting new tourists. At the time of writing, the service is engaged in initial discussions with two potential client cities […]” (authors’ emphasis on the discursive framing of the impact presentation i.e. the current non-existent impacts). This research impact was framed as representing the potential for heritage tourism and cultural tourism in general. The above mentioned event was the only concrete example, the rest of the case study focuses upon the potential aspects. However, the case study did spend a great deal on elaborating the ‘cultural importance’ of these activities, giving the impression that this is regarded as their main contribution.

D-30-18 - University of Leicester
The University of Leicester presented digital humanities research79 and highlighted their help in aiding UK sites in the transition of converting their paper based archives to digital media, preserving the stored information for future generations. As they helped to “create innovative tourist information resources for historic sites in the UK” their impact was classified as a form of heritage conservation. In terms of raising awareness they quoted a CEO of the trust they collaborated with who stated: “[the] partnership has delivered original, high quality research and education for the enhancement of the public’s understanding” but failed to give further specifics of how it was educational. In terms of economic impact they mentioned Lindisfarne Priory, the 7th most visited property in England, to which they helped to produce a new Red Guide for the site, stating that: “[s]ince it was first published in 2005, more than 48,000 copies of the Red Guide to Lindisfarne Priory have been sold (32,500 since 2008, more than 5,000 in 2012), representing sales to 1 in 10 visitors, generating income to EH of about £200,000,” based on the presented information alone, it is impossible to ascertain how much the old guide would have sold during the same period without their involvement. The type of tourism was classified as heritage tourism and cultural tourism, as the tourism examples stretch from specific heritage sites to general references of tourism. Furthermore, as they had a specific emphasis on digital methods and how it could be used to generate new interactive tourism experiences it was also classified as eTourism, but it was taken as self-evident that preserving the cultural heritage is important.

D-30-19 - University of Durham
The University of Durham presented historical research and highlighted their involvement in the “2013 Lindisfarne Gospels exhibition” that received “national media attention” and was therefore classified as raising awareness. They also claimed public educational impact in the sense that the “2,199 comments left in the visitors’ book to 31 July showed them to be overwhelmingly positive; the most commonly-used terms were ‘informative’ (73%), ‘learned a lot’ (10%), ‘enlightening’ (10%) and ‘educational’ (8%).” In terms of economic impact they cited “approximately 35,000 visitors [which] had attended the exhibition (visitor data were collected in weekly tranches: 33,133 had visited by 29 July; 40,259 by 5 August),” but failed to mention what the admission fees were, how much money was spend on food or other economic measurable variables, making it a proxy indicator of economic impact at best. In terms of heritage conservation the exhibition served as a “contextualisation of the Gospels as a pinnacle of a wider early-medieval culture”. As the impact revolved around a specific heritage event, the tourism was classified as event tourism and heritage tourism.

79 Digital humanities research is in essence conventional humanities research; however the emphasis is on the introduction of computational digital methods, as opposed to more traditional style of textual (analogue) scholarship (Brauer and Fridlund 2013).
D-33-20 - University of St. Andrews

The University of St. Andrews presented research that departed from both historical and practical theological research. They highlighted “research on the history and practice of pilgrimage in Scotland [which] has had an impact on public understanding of cultural heritage, on the tourist industry, and on the development of new practices by local authorities, churches and the military.” The economic impact that the research facilitated was estimated to have generated over £250,000, which were directly linked to the improvements of the pilgrimages that were devised by the mentioned heritage conservation efforts. The DMO development that was undertaken by the Scottish Pilgrim Routes Forum “had a direct impact in increasing visitor numbers to significant sites.” The research led to (policy) advice in sense that the British Army in order “to discuss and develop with their commanding officers initiatives to involve troops relocated from Germany to Scotland in pilgrim trail infrastructure work”. As the case specifically focused on pilgrimages, the tourism was classified as religious tourism.80

D-34-21 - University of East Anglia

The University of East Anglia reported within their case study that they have guide “the development of the UNESCO World Heritage Site at Butrint, Albania, a major Adriatic port and fortress, occupied from c.600 BC until its abandonment from around 1500 AD.” The archaeological research and historical research, apart from contributing to the heritage conservation, also led to “visitor figures having risen from under 1000 per year in the 1990s to 281,441 during the REF period”, with presumable economic impact for the region. Furthermore, as “UEA–trained personnel have from time to time been involved in the management, presentation and development of both the Berat and Gjirokastra World Heritage Sites since 2005,” it is also reasonable to assume that they have contributed to the DMO development of the site. In addition, they also have an exchange programme including bursaries “to enable Albanian students to come to UEA to study for MA degrees which involved research dissertations based on work in Butrint and the region around” alongside funding for “[t]wo PhDs at UEA [that] were part funded by the programme” this was possible by two grants from “Packard Humanities Institute totalling £388,465” and the “the deputy head of cultural heritage management in the Ministry of Culture and Tourism trained at UEA.” As the case study dealt with a single heritage destination, the type of tourism was classified as heritage tourism.

D-35-22 - Liverpool Hope University

Liverpool Hope University’s music research aided in creating an annotated Beatles bibliography tour and was presented in a fashion that the contributions helped to preserve Liverpool’s cultural heritage (conservation). In regard to DMO development they reported how their annotated Beatles bibliography tour had now become part of the marketed attraction of the cities tourist activities. In terms of economic impact, they mentioned that the “first run of the bibliography [published in both paper and eBook] has now sold-out in the US and the editorial board is also considering new technologies in the dissemination of the work.” Yet, no figures were given on exactly how many visitors the tour managed to attract. Furthermore, it is also unclear how an eBook can “sell-out.” As the mentioned tourism referenced emphasised cultural heritage and pop culture, due to the usage of new electronic devices the tourism was classified as eTourism, alongside cultural tourism and heritage tourism.

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80 Religious tourism can also be seen as a subset of cultural tourism as religion is a specific form of culture. Nevertheless, for this study it is treated as separate categories, as the underlying motivation (e.g. religious pilgrimage) is motivated by religious belief, rather than tourism experience (Raj and Griffin, 2015).
Within the case study of the York St John University, they mentioned that within their heritage research they “focussed on a re-theorisation of issues such as visuality and representation in the public sphere of cultural and heritage tourism and the ways in which this is implicated in modalities of marketing, destination development and the community management of cultural heritage resources” (author’s emphasis). Nevertheless, they failed to provide specifics on how exactly this “re-theorisation” had helped more than citing individuals that stated that it had “significant impact on the development of strategy in a city that is recognized for its good practice in the strategic management of tourism.” In regard to what (new) type of tourism this re-theorisation now managed to attract they were similarly vague, as such it was only labelled as cultural and heritage tourism.

6.3. Outlining the discourse of research impact

The case studies represent all research impact that was reported to the REF relating to tourism in some form or another. Now follows an elaboration using all the identified themes and how they related to the specific subsets of the research impact discourse (cf. 6.1). In specific, the differences that were depending on the underlying type of research (6.3.1), the types of tourism that were reported to the REF (6.3.2) and in relation to the type of impact (6.3.3) in order to answer the title question of this research ‘what research impact?’.

6.3.1. Based on the reported research

In regard to what micro discourse emerged in relation to how research was conceptualised we can find the following. Firstly, we can observe that research from the entire academic spectrum (sciences, social sciences and the humanities) reported research impact upon tourism. However, the bulk of the reported research impact stemmed from social sciences (main panel C) and the humanities (main panel D), yet we can also observe that some key tourism studies faculties were missing, i.e. not reported tourism research impacts.

In general, we can observe that mainstream tourism was presented in an almost exclusively negative fashion regardless of research affiliation, only three case studies specifically focused on improving mainstream tourism (C-19-7, C-26-11 & C-26-14). The rest of the case studies always presented alternatives forms of tourism or just did not bother to outline how the tourism experience could be improved or what specific aspect of it were deemed ‘unsustainable’ (other than attracting more visitors). Any references to ‘improving’ mainstream tourism either took the form of DMO development or improving tourism without giving detailed elaborations on how such an impact was achieved or is potentially achieved. In general the stance towards mainstream tourism was that negative impact has to be mitigated and the research was rhetorically located as an intermediary in solving such a negative impacts of tourism (cf. 3.5 on how a the rhetorical construction influences the framing of how tourism is viewed).

Another general trend that can be observed is that for the majority of case studies that reported to main panel C, were concerned with underlying social issues. Meanwhile the conservation of cultural heritage was at the heart of the concern for case studies that submitted to main panel D. Such discursive framing fits well with the area of interest of these respective disciplines. Tourism in those types of case studies was conceptualised as a facilitator to aid in these other identified concerns, which then happened to align with their area of research interest. As previously mentioned, the case studies that did engage in detail with the tourism experience (i.e. self-identified tourism studies HEI’s) submitted both to the unit of assessment 19 and 26. However, the issues that these case studies addressed did not diverge substantially, begging the question of why they choose to submit
to a different panel? The answer presumably lies in tourism studies disputed status as a discipline in its own right (cf. chapter 3.4 on the discussion of tourism studies status as a discipline), in that they did a cost-benefit analysis and decided that they would be more favourably judged within a business unit of assessment (19) rather than a composite unit of assessment which included sport science and leisure alongside tourism (26). Furthermore, this could also explain the absence of other tourism studies faculties, which would be expected to have submitted impact but didn’t.

If such a simplistic treatment of tourism is an indication that research from the natural sciences is less interested in issues of tourism or if the assessment format is less suitable for impact of these disciplines on tourism is difficult to ascertain based on the here conducted analysis alone. Much more likely is that they were unaware of how their research was influencing tourism (cf. 4.3.5). The reason being, for example it is undeniable that the development of computers has had an impact on society. However, the individuals developing such expertise are not experts in sociologically tracing their own impact. Nevertheless, the meso discourse of the guidelines still disciplines the presented research impact (cf. 6.4). Such an eventuality resulted in that despite reporting similar research impacts, the tourism studies faculties decided to submit to two different units of assessment (19 and 26 respectively). This is indicative of strategizing the universities do when participating within the assessment framework. However, regardless of where they submitted their presentation was more similar than not, highlighting the effect of the disciplining (cf. 4.4).

6.3.2. Based on the reported tourism

Now the primary reason why we can observe such a stratification of the different research interests may not be so much that the universities were not interested in the tourism experience per se, but rather the cultural, social or environmental significance was deemed more important, and tourism was just utilised as a context or facilitator, in which the ‘real’ interest could be engaged within (cf. 4.3.4). Nevertheless, such discursive framing factored over in how tourism was described and understood within the micro discourse.

The case studies that submitted to panel D conceptualised tourism either as an end-user of the cultural activities that were created or as potential consumers. The economic contribution could then help with the conservation effort, which was the ‘real’ research impact that these institutions were concerned with. This was done regardless of what type of tourism was referred to, or in other words, tourism was treated as a secondary issue compared to preserving the cultural heritage, which appeared to be the main concern of case studies that submitted to panel D. In contrast, the studies that submitted to panel C showed no particular preference for any type of tourism. However, in regard to the reported social tourism, it also became clear that the emphasis was not on tourism per se, but rather what tourism could generate in terms of socio-economic benefits for marginalised people. In regard to sustainable forms of tourism, the discourse of (environmental) sustainability was treated as a ‘catch all phrase’ to summarise the achieved impact. For example, in a case study that focused on wildlife conservation (C-24-8) sustainable tourism was mentioned, but it was left open for interpretation how it was actually implemented. The necessary detail required of the seamless web that would allow for such impacts was not elaborated. In general, in the majority of cases when the concept of sustainability was invoked in the micro discourse (either social, economic or environmental) and how tourism could serve as a facilitator to achieve such goals, the specifics were often lacking, regardless of the type of tourism in question.
In general, ecotourism, wildlife tourism, heritage tourism, social tourism, event tourism, sustainable tourism, cultural tourism, food tourism, volunteer tourism or religious tourism are not treated as ends in and of themselves, but rather facilitators to achieve other more “pressing” concerns within the discourse of research impact that emerged from the analysis of the case studies. eTourism was only mentioned in conjunction with heritage tourism and the case studies that mentioned eTourism conceptualised technological advances as being an improvement of cultural and heritage tourism. However, in their discursive framing of these micro discourses they conceded that these technological solutions had potential benefits in attracting more visitors, by either providing additional information or being used as marketing tool. However, they stressed the potential aspects as evidence for such trends were often lacking. In general, such a lack of specifics was also present within the descriptions of the achieved (tourism) research impacts. As such, the causality described that created the change in the seamless web in society (i.e. research impact) is not sufficiently detailed in the majority of the case studies that presented research impact on tourism (based on the information presented in the case studies alone).

6.3.3 Based on the reported impact

In regard to what type of impacts that is present within the micro discourses, we can find the following; in panel C the pressing concerns revolved around, DMO development, wildlife conservation, improving quality of life, environmental sustainability and social sustainability with raised awareness being mentioned in connection to these concerns. The tourism research faculties were the case studies that addressed more than just a one dimensional concern in relation to tourism. In comparison, in Panel D the primary concern revolved around heritage conservation with public education and DMO development being mentioned as facilitators for the heritage conservation effort. Note, that the public education aspect mention in the University of Durham case study (D-30-19) is acceptable as a research impact, as it mentioned primary and not higher education (cf. 4.2.3 on the REF’s definition of impact). Furthermore, raised awareness in panel D related exclusively to issues of heritage, which makes the presented types of impact rather limited.

When economic impacts were mentioned within the micro discourses, they were often reported in conjunction with visitor figures or other forms of proxy indicators of impact quality (e.g. book sells, ticket sales or revenue figures) or it was simply stated that the research had an economic impact without further elaboration on the cost-benefits. As such, it was never possible to determine if a reported economic impact was beneficial, as none of the case studies reported a scale by which such claims could be judged. Instead, the discourse always stressed the positive aspects of the research impact, without specifying in detail how the causality behind the research impact functions (cf. 4.3.5 on the difficulties involved in sorting out issues of causality in relation to research impact). For example, the case study of the University of St. Andrews (D-33-20) is indicative here, as they reported that their research had generated “quantifiable economic benefits of over £250,000.” Indeed this may have been the case, however, they failed to outline if this was the profit or the income of

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81 The general pressing concerns for main Panel A and B could not be identified due to their limited sample.
82 E.g. how much money was invested in the research, compared to how much money was gained from the reported research impact?
83 Notable exception were; University of Leicester (C-17-4), Cardiff University (C-19-6), Surrey University (C-26-11) and Bournemouth University (C-26-14) which all provided an estimate of their generated economic impact on a regional scale, based on an economic calculation. However, none of them did state how much the underlying research cost to conduct in the first place. The argument is not that monetary sums are better/worse in reporting impact; rather a scale/context is needed to make any type of inference if the reported research impact was beneficial or not.
the ticket sales, and neither did they mention how much the event cost, how it related to other external costs, who were the beneficiaries of this economic benefit, no more than this figure was given. In social science case studies, aware of these issues such accounts were provided and much more carefully worded (cf. Bournemouth University case study on economic modelling C-26-14). Such, a contingency highlights that the expertise needed to create research impact claims is not the same expertise needed to conduct the underlying research (cf. Collins and Evans, 2008). Furthermore, due to the sociological intricacies that can occur within the seamless web when creating impact (cf. 4.1), it is even doubtful if the researchers even have the expertise to appreciate their own impact, if that impact does not happen within their own area of expertise.\footnote{For example, if you are an expert in let’s say computer engineering and develop the new iPhone app that revolutionises money transfer in third world countries, in order to identify this ‘research impact’, you need to be: A) aware of this, B) have the necessary expertise to research how this impact was created in order to highlight your own role, and C) need to have the time necessary to conduct the research on top of your normal research and teaching commitments. These are all non-trivial issues in positing research impact as a performance indicator for research quality.} In the more general cases, it makes it logically impossible to judge if there actually has been a (positive) impact, based solely on the presented information within the case study (cf. 4.3.4 on the discussion of how it is decided what a positive or negative research impact is). In general, none of the impact case studies reported on how much of an investment that was made due to the research impact compared to the yielded profits, only that economic impact was generated. The same applied for DMO development, all case studies reported that their research had aided DMO development in some way (mostly failing to outline specifics in how this was achieved). Such, a lack of proxy indicators of impact quality was common to all the case studies, expect a few exceptions.

In regard to the lobbying and policy advice, there is the potential for ethical transgression of what it means to be a good academic. The reason being, because in some of the cases the separation is more an arbitrary consequence of the used labels, i.e. researchers actively lobbied for the same social cause they were researching on. Such a lack of distinction removes the boundary between researcher and activist, opening up for a whole host of ethical issues and conflicts of interest that are traditionally addressed by adhering to the Enlightenment telos of science (cf. 2.4). For example, in the case study of the University of Surrey (C-26-15) relating to social tourism there is no explicit boundary between the advocacy of the activist group lobbying for social tourism and the researchers’ position. The only palpable separation is in the evidencing, not in how the research impact is presented, within the actual case study the narration switches fluidly back and forth between the researchers’ taking the same position as the advocacy group that lobbies for the agenda. Such an approach legitimises the ends of that advocacy body; elevating the end over the means according, conflicting with the Mertonian norm of disinterestedness (cf. 2.4 & 4.4). This was the case for all studies that mentioned some form of lobbying in conjunction with policy advice. Thereby, researchers could be inadvertently caught up in social causes (feminism, anarchism, Marxism, neoliberalism, etc.) and genuinely claim the destruction of the patriarchy, overthrow of capitalism or the exploitation of the working class in society as a credible positive research impact (cf. 4.3.4). Obviously, the research impact cases were not or will be worded in such a fashion. However, if researchers do not actively disassociate themselves from lobby groups that they are collaborating with, they are at risk of jeopardising their integrity (cf. 3.2). Within a context of research impact this is important, because the reliability of the researcher is contingent upon the accuracy of the description of reality (means) and not the fulfilment of some special interest of an advocacy group (ends).
In regard to raised awareness, it was generally unclear what specific aspect of the awareness was “raised,” only that it related to the presented concern in some way (cf. 4.3.1, 4.3.2 & 4.3.3 on the difficulties on accounting for how academics influence the public debate, industry and society). The majority of the case studies evidenced their “raised awareness” by taking part in exhibitions, workshops, being quoted in policy reports or that some form of educational benefit had been achieved. Such case studies often ‘failed’ to outline exactly what the issue in question was, other than that it had ‘raised’ the awareness of some (often unspecified) individuals within the seamless web that is society. The types of impacts reported to panel D primarily related to the preservation of some form of heritage, positioning heritage conservation as a self-evident goal in and of itself. In specific, heritage conservation, focused on how research could help preserve and promote existing cultural heritage, with the money generated from tourism being an instrumental part in the conservation effort. In general, the majority of case studies cast research impact of tourism in this facilitating role, the notable exception being C-19-7, C-26-11 & C-26-14 which focused on improving mainstream tourism. This is not to say that the other case studies were not concerned with improving tourism, rather it appeared not to be their main priority.

The micro research impact discourse, which emerged from the analysis of the case studies, appear to be primarily focused on small scale, local changes with a specific research projects being mentioned as having impacted the contingency at hand. Now in a sense, this discourse of research impact has created an inversion of the understanding of a ‘best case study’ (cf. 4.3.5 on the difficulties in identifying the causality of a research impact claim) of how a case study should be constructed. In the sense that instead of the universities having a case study on a specific research impact, they departed from a specific research case and then reported the impact of that specific research. As such, it appears that the linear understanding of the REF’s view on how research impact manifests itself found its way into the narration of the research impacts, rather than an understanding of the complexities involved in creating impact within the seamless web that is society (cf. 4.1). The consequence of this inversion in understanding is that the reported impacts by that token inadvertently become small scale, as the accountability (i.e. disciplining) aspect becomes the main focus, rather than the impacts that flow out from the research. However, this confusion maybe more due to the design of the case study assessment format and the evidence requirement (cf. 4.2.4), as well as universities own ignorance over their own research impact rather than a concerted effort to ‘game the system’. Nevertheless, if the here identified micro discourse, of the reported research impact represent the ‘best case’ scenarios in terms of reach and significance as defined by the REF (cf. chapter 4.2.3) on the one hand this means large areas of societal relevance seem to be lacking. On the other hand, this also could be simply a contingency of the key tourism studies faculties not having submitted their research impact, having chosen to submit certain types of impact or have decided to focus on other areas, regardless there seems to be a certain discourse emerging. The next section now categorises the research impact discourses and compares them to a list of identified socially salient concerns (macro discourses) in order to get a better appreciation of the scale of the identified research impact.
6.4. Identifying the emergent landscape of research impact ecosystem

As the title of this thesis suggest, it is important to specify what research impact one is referring to when talking about research impact in general. In terms of the type of impact we can identify the start of the landscape that is laying itself out in the newly established (tourism) research impact ecosystem. Such a landscape is created by the collective efforts of individuals within the ecosystem coming to a similar conclusion of how to solve the issue of attribution of recognition for research impact that is now enforced by external forces as the ecosystem has to branch out to involve other actors i.e. the impacted (cf. 2.1 & 4.3 for a discussion on the difficulties in attribution). Furthermore, as discussed in chapter 3, there are a myriad of different extra-scientific factors that discipline and influence the conduct of research. One of these factors, are the macro discourses of societal relevance that the funding bodies of research operate within, these set the tone for what gets researched and what is not. This is by no means the only extra-scientific factor that shapes the landscape of the research ecosystem, however, it does represent an initial discursive shaping that then frames the epistemology, ontology and methodology of the subsequent research (cf. 3.4), which in turn disciplines the micro discourses that are then produced (i.e. the research impact case studies). In fact, such a discursive framing of the (scientific) discourse is the power/knowledge dichotomy that is a common theme to much of Foucault’s work on discourse (Foucault, 1980).

6.4.1. Defining reach and significance of research impact

Within the REF assessment of research impact, they based their definitions used for the assessment process (for research impact, reach and significance, etc.) on experiences gained through the pilot exercise (cf. chapter 4.2.1), the knowledge gained from previous exercises (4.2.2) and the tacit knowledge of the recruited academic and end-user experts that participated within the assessment (4.2.3). This allowed the REF to define their understanding of reach and significance of how to judge an impact. Thereby, in their selection of experts from tourism research and industry, they relied on the tacit knowledge of these individuals for what constituted reach and significance for the specific case when these were assessed (cf. Collins, 2010). Obviously, such tacit understanding is not available here; therefore in order to conduct such an analysis there is a need to construct a workable heuristic that can stand in for such a task. As the question of ‘what are the most important issues in tourism’ is obviously a value judgment it can always be contested on such grounds. Thereby, any holistic description will by necessity be an approximation of such underlying differences in values. Such a polemic in regard to these value judgments is exemplified every year anew when Prof. David Edgell publishes his ‘top ten issues of tourism’ (cf. Edgell, 2017) within the TRINET mailing list for tourism scholars. Almost immediately other tourism scholars start to question the inclusion or omission of some points over others. However, as will be shown below this list actually covers the aspirations, desires, hopes, goals of governments, industry, research, education and other tourism advocates in a reasonable fashion.85

85 Edgell (2017) makes the point that his list represents a heuristic as well in his references, he states the following; “Sources of information: university discussions, conferences and seminars, tourism documents, Internet, survey information, industry data, books, articles, and publications, utilization of a modified Delphi approach to gather certain research information, and comments from interested colleagues, students, and others. Work on a new edition of Tourism Policy and Planning (third edition-2018, Edgell and Swanson) - will become available in 2018; “The Essence of Understanding Issues that Portent the Future of Global Tourism” (David L. Edgell in Volume 11 Number 2, 2013 of the Journal of Hospitality and Tourism); “International Sustainable Tourism Policy” in the Brown Journal of World Affairs, Volume XXII, Issue 1, Fall/Winter, 2015; Managing Sustainable Tourism: A Legacy for the Future (second edition-2016 Edgell); and, “Sustainable
Table 6.2. Top 10 issues in tourism

(1) Maintaining a destination’s sustainable tourism development: social, cultural, natural and built resources
(2) Concerns for safety and security remain an important issue for the travel and tourism industry
(3) Impact on the travel and tourism industry resulting from a global economic-political perspective
(4) Responding to increased interest in the long-term impacts on tourism of climate change and global warming
(5) Necessity for increased local/regional/national leadership in tourism policy and strategic planning
(6) Educating users about optimizing the application of new technologies in the tourism industry
(7) Resolving barriers to travel: visas, passports, airline services, fees, and delays
(8) Understanding the transformative effect that tourism has on the geopolitics of socio-economic progress
(9) Effect on travel and tourism from natural/human-induced disasters, health issues, and political disruptions
(10) Changes in tourism demand resulting from increased travel by emerging nations

Source: Edgell 2017

The top 10 issues are presented in table 6.2. The reason why this research posits these issues as a good heuristic for understanding the significance and reach of the reported impact; is that they are echoed by many of the prominent tourism research, education bodies, industry forums and governments around the world and within the UK in relation to their desires of how they would like to see the development of tourism in the future (cf. table 6.3). As such, they reasonably represent an outline of the value structure of the seamless web of society that is now effectively disciplining the research ecosystem, through funding expectations, alliances or structural forces. In this causality, the REF represents a powerful force on the research ecosystem, disciplining a shift in the scientific telos away from intrinsic to the extrinsic values.

Table 6.2. Tourism bodies consulted in order to corroborate that Edgell’s top 10 list is a workable heuristic to what macro discourses of impact are salient within the UK tourism research ecosystem

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Name</th>
<th>Type of body</th>
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<tbody>
<tr>
<td>GSTC</td>
<td>Global Sustainable Tourism Council</td>
<td>Environmental advocate</td>
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<tr>
<td>UNWTC</td>
<td>United Nations World Tourism Council</td>
<td>Industry advocate</td>
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<tr>
<td>WTTC</td>
<td>The World Travel &amp; Tourism Council</td>
<td>Industry advocate</td>
</tr>
<tr>
<td>PATA</td>
<td>Pacific Asia Travel Organisation</td>
<td>Industry advocate</td>
</tr>
<tr>
<td>VB</td>
<td>Visit Britain</td>
<td>UK government/DMO</td>
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<td>VE</td>
<td>Visit England</td>
<td>UK government/DMO</td>
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<tr>
<td>TIC</td>
<td>(UK) Tourism Industry Council</td>
<td>UK government/industry advocate</td>
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<tr>
<td>EC</td>
<td>European Commission on internal Market, Industry and Entrepreneurship</td>
<td>EU government/industry advocate</td>
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<tr>
<td>ATHE</td>
<td>Association for Tourism in Higher Education</td>
<td>Tourism education/research advocate</td>
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<tr>
<td>IAST</td>
<td>International Academy for the Study of Tourism</td>
<td>Tourism research advocate</td>
</tr>
<tr>
<td>RC50</td>
<td>Research Committee on tourism of the International Sociological Association</td>
<td>Tourism research advocate</td>
</tr>
<tr>
<td>ESRC</td>
<td>Economic and Social Research Council</td>
<td>Research funding body</td>
</tr>
</tbody>
</table>

Source: author
While going through all these tourism advocacy bodies that promote tourism in terms of industry, environment, education, research or government involvement in shaping future trends, Edgell’s list gets corroborated. For example, the Global Sustainable Tourism Council within their strategic goals of their annually published report state their important goals for tourism are to “[e]ncourage greater market access to [a] sustainable [tourism] product”86 or that awareness ought to be raised for sustainability issues, like climate change in specific, echoing several of Edgell’s listed points. Similarly, the United Nations’ World Tourism Organisation stresses that they:

“[encourage] the implementation of the Global Code of Ethics for Tourism, to maximize tourism’s socio-economic contribution while minimizing its possible negative impacts, and is committed to promoting tourism as an instrument in achieving the Sustainable Development Goals (SDGs), geared towards reducing poverty and fostering sustainable development worldwide.” (UNWTO87, author’s emphasis)

Thereby, they also touch upon several points raised within Edgell’s list of improving the impact that tourism has globally and locally. In a similar vein, the World Travel and Tourism Council (WTTC) stresses on their websites that their goals are to increase the freedom to travel, which according to them means: “ensuring that people have the right to cross international borders safely and efficiently for tourism purposes.”88 Furthermore, they also stress the socio-economic dimension pointed out by Edgell in their policies for growth, which they understand as: “planning and investing in appropriate infrastructure and creating a tax regime that allows the private sector to be competitive” and having “policies that encourage a healthy business environment, one which is conducive to stimulating our sector, not stifling its development.”89 The WTTC also states that “social and environmental pressures increase, and tourism itself continues to grow year on year, there is an urgent need for sustainable practices to become mainstream within the tourism sector.”90 As well as redefining the entire understanding of tourism and the associated developments, as pointed out by Edgell.

Similar sentiments are raised by the Pacific Asia Travel Organisation (PATA),91 within their chapter on sustainability they stress that in order to “to develop travel and tourism to, from and within the Asia Pacific”92 issues relating to environmental and economic sustainability93 have to be addressed as mentioned by Edgell. In relation to governmental advocacy for the tourism industry we can observe similar convergence of echoing many of Edgell’s points. For example, the UK government in their Tourism Action Plan that was endorsed by Visit Britain and Visit England state that it is important to make travel easier, addressing industry demands and “[c]utting red tape with sensible regulation”94 and so forth, all in order to increase the economic and social benefits reaped from tourism. That plan is also endorsed by the (UK) Tourism Industry Council, which define their role as to “provide collaborative action between government and industry to implement the Government’s 5 Point Plan”.95

86 https://www.gstcouncil.org/ accessed 2017-06-10
87 http://www2.unwto.org/content/who-we-are-0 accessed 2017-06-10
89 https://www.wttc.org/mission/policies-for-growth/ accessed 2017-06-10
91 PATA was included as several of the case studies reported research impacts outside of a European context
92 http://www.pata.org/chapters/about-pata-chapters/#sthash.b8XvNkFd.dpuf accessed 2017-06-10
93 http://sustain.pata.org/ accessed 2017-06-06
95 https://www.gov.uk/government/groups/tourism-council#role-of-the-group accessed 2017-06-06
The European Commission stresses on their website that; security and safety, economic competitiveness, incorporating technological advancement, and being able to respond to changing markets and competition, are important issues for a healthy tourism industry.

In terms of higher education, Edgell’s point to include furthering understating of the transformative effect of tourism can also be identified. For example, the Association for Tourism in Higher Education (ATHE) makes it clear in their objectives that they intend to: “[t]o promote the development and recognition of tourism as a subject of study in the UK and liaise as appropriate with other European Union countries and internationally.”96 Similarly, the International Academy for the Study of Tourism (ISAT) describes within their twin goals as: “(a) encouraging the application of tourism research findings and (b) advancing the international diffusion and exchange of knowledge about tourism”97 as important issues. Similarly, the RC 50 which is part of the International Sociological Association stresses that “maintaining a continuous academic dialogue on tourism”98 is of paramount importance, echoing Edgell’s point about improving the better understanding of the tourism phenomena. Lastly, the Economic and Social Research Council,99 in their definition and understanding of research impact also fits neatly with Edgell’s points as they stress that impact can be academic, economic, societal, instrumental,100 conceptual,101 or focus on capacity building.

In conclusion, obviously Edgell’s 10 point list can be challenged on having a very tourism centric view, and not putting tourism into a larger context or having a short term focus. Similarly, the list could also be challenged on the ground that it is primarily developed by academics with little or marginal input from industry and government. Furthermore, other issues that could be pointed out are that discussions on gender, race or building human capital are absent from the list.102 However, as the above discussion showed, this does not so much appear to be criticism of the summary of Edgell per se, but rather a criticism of the underlying value structures that exist within the seamless web of society in the first place. Edgell’s top 10 list therefore appears to be a good heuristic that captures the conceptualisation of what are macro discourses that exist within the wider tourism ecosystem rather well, outlining its overall landscape. Thereby, they ought to represent a good heuristic to judge the reported research impact reach and significance. However, before we can discuss how the reported research impacts relate to these identified issues, we first need to systematically identify which of these issues relate to the presented impact that was found within the case studies. The next section deals with this.

6.4.2. Assessing reach and significance of the reported research impacts

Table 6.4 is a visualisation of how the reported research impact corresponds to the top 10 issues of tourism. The crosses in the table indicate which of Edgell’s identified issues the specific case study related to. Tourism studies faculties are marked in with a bold outline within the table.

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96 https://www.athe.org.uk/ accessed 2017-07-06
97 https://www.polyu.edu.hk/htm/academy/about.php accessed 2017-07-06
98 http://home4309.wix.com/rc50-website-build1 accessed 2017-07-07
100 “influencing the development of policy, practice or service provision, shaping legislation, altering behaviour”
101 “contributing to the understanding of policy issues, reframing debates”
102 None of the case studies that are elaborated here related to issues of gender or race, and the University of Brighton (C-26-13) was the only case study that related to improving human capital in relation to tourism.
Table 6.4 Top 10 issues in tourism compared to the reported impact to the REF 2014

<table>
<thead>
<tr>
<th>University with tourism impact</th>
<th>University of Leeds</th>
<th>University of York</th>
<th>University College London</th>
<th>University of Leicester</th>
<th>Cardiff University</th>
<th>University of Nottingham</th>
<th>University of Kent</th>
<th>University of Roehampton</th>
<th>University of Sunderland</th>
<th>University of Bedfordshire</th>
<th>University of Surrey</th>
<th>University of Brighton</th>
<th>Bournemouth University</th>
<th>University of Exeter</th>
<th>Swansea University</th>
<th>University of Bristol</th>
<th>University of Leicester</th>
<th>University of Durham</th>
<th>University of St. Andrews</th>
<th>University of East Anglia</th>
<th>Liverpool Hope University</th>
<th>York St. John University</th>
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<tbody>
<tr>
<td>1) Maintaining a destination’s sustainable tourism development: social, cultural, natural and built resources</td>
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<td>2) Concerns for safety and security remain an important issue for the travel and tourism industry</td>
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<td>4) Responding to increased interest in potential long-term consequences of climate change impacts on tourism</td>
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<td>6) Educating users about optimizing the application of new technologies in the tourism industry</td>
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<td>7) Resolving barriers to travel: visas, passports, airline services, fees, and delay</td>
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<td>8) Understanding the transformative effect that travel and tourism has on global socio-economic progress</td>
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<td>9) Effect on travel and tourism from natural/human-induced disasters, health issues, and political disruptions</td>
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<td>10) Changes in tourism demand resulting from increased travel by emerging nations</td>
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Source: author inspired by Edgell, 2017
(A) UoA 5 - Biological Sciences
In the case of the University of Leeds (A-5-1) the reported research impact corresponds to the first of the top ten issues, “Importance of maintaining a destination’s sustainability regarding social, cultural, natural and built resources” Edgell, 2016) in that it “maintains” the “natural resource” that can be found in the target area (Galapagos islands), which make the destination attractive for tourists in the first place. Similarly, as it focused on mitigating environmental damage caused by unsustainable tourism practices it can also be regarded to relate to issue 9.

(B) UoA 10 - Mathematical Sciences
In the case of for the University of York (B-10-2) due to the lack of specifics for tourism related activities, it was not possible to judge what type of the issues this case corresponded to.

(C) UoA 17 - Geography, Environmental Studies and Archaeology
In regard to the social sciences (main panel C), the University College London (C-17-3) research impact can be argued that it relates to the first point, as the case study revolved around the preservation of a specific historical site (Marco Gonzalez) and preserving the cultural heritage that this site offers.

In regard to the University of Leicester (C-17-4) research impact, it can be argued that the uncovered historical treasures that are now being displayed, thereby it has contributed to creating a new tourist destination. However, it does not directly address one of the top 10 issues in tourism, more in that the cultural significance of the uncovered artefacts will be preserved for future generations. Nevertheless, in an indirect sense it can be considered to relate to number 1 of the top ten, as exhibitions showcasing these treasures were created.

(C) UoA 19 - Business and Management Studies
For the first set of self-identified tourism studies faculties that reported to panel 19 it seems they are covering more than just the first of Edgell’s points. The University of Nottingham (C-19-5) in their case study on social tourism seems to relate to two issues. The first issue being that it highlighted linkage between an increased well-being and the tourism experience and this can be regarded as a ‘transformative socio-economic effect’ (No. 8). Secondly, as they also pointed out improvements in QOL, this can be conceived as an improvement of ‘health issues’ (No. 9).

The second tourism studies faculty was Cardiff University (C-19-6) and only seems to be relevant for issue No. 5, in that it contributes to ‘local/regional’ planning of tourism events. By necessity these events have to take place at a destination, even though this might frequently keep changing. As such, in order to be lenient it could be argued that the reported research impact also corresponds to issue No.1, because by reducing undesirable environmental impacts, these events are made more sustainable wherever they now take place.

In regard to the case study of the University of Kent (C-19-7) it can be argued that this research impact corresponded to issue No. 3. In that that it highlighted struggles that arose from cruise-ship tourism (presumably by western tourists) coming to small developing island, as such it addressed a (negative) impact of the tourism industry for the local economies. Similarly, as it was concerned with how the tourism industries influenced the socio-economic situation of these small island populations it can also be classified as No. 8, in that it increased understanding of these global tourism flows. Furthermore, as it explored alternative forms of travel, it can also be argued that it contributed to issue no. 1 in that it explored sustainable alternatives for these communities, in order to protect their destinations and make them viable for long term access by tourists.
(C) UoA 22 - Social Work and Social Policy
In regard to the case study of the University of Roehampton (C-22-8), it can be argued that it corresponded to issue No. 1 in that the focus on sustainability protects the natural environment, i.e. the Barbary macaque and issue no. 9 in that the threats to the environment were man-made i.e. tourist induced.

(C) UoA 26 - Sport and Exercise Sciences, Leisure and Tourism
In regard to the second set of self-identified tourism studies faculties, the University of Sunderland (C-26-9) reported research impact that can be understood as contributing to the tourists understanding of new technologies for the tourism experience (no. 6). Furthermore, as this technology allowed for the capturing of tourist information that could be used for marketing purposes, in a vague sense it also correlates to issues No. 1 and No. 5. In that this information (potentially) increased the competitiveness of the mentioned destinations and in that it can (potentially) be used for strategic local planning in order to create a sustainable location.

The University of Bedfordshire (C-26-10) reported research impact corresponds to issue No. 1 and No. 5. In the sense that the promoting of local food tourism, (potentially) creates a sustainable destination and that this information represents a strategic planning for tourism on the regional level, by drawing together the food culture of the region in question.

The first research impact that was reported by the University of Surrey (C-26-11) can be conceived to correspond to four issues. The first being issue No. 3, as a forecasting model used for international air travel, is inadvertently making judgments on tourism effects on the ‘global economic perspective’. Secondly, it represents a local, regional and global planning tool that is used by a wide range of companies, as such corresponding to issue No. 5. Furthermore, it can be argued that it corresponded to issue No. 8, as the model basis itself on historical trends within tourism behaviour, and therefore can be conceived to be aiding the understanding of the ‘transformative effect’ of tourism on a global scale. Lastly, it can also be conceived in relation to issue No. 1 in that it helped a particular destination to plan for future demand (Hong Kong Disneyland).

The second reported research impact by the University of Surrey (C-26-12) is very similar to the case study of the University of Nottingham (C-19-6) and as such the same two issues apply for this case study. However, as mentioned before the connection to improvement of overall health (No. 9) and the transformative effect on the socio-economic situation (No. 8) of the (social) tourists should be considered only to marginally relate to these broad categories as the focus was on marginalised groups specifically and not the overall tourism phenomena.

The University of Brighton (C-26-13) in their reported research impact corresponds to the issue No. 1, in the sense that improved training of the hospitality staff (potentially) increases the sustainability of the destinations and improving their competitiveness. Furthermore, as the countries in question, where all located in Sub-Saharan Africa, and the research explicitly focused on the impacts of volunteer and ecotourism on the local environment and the local economy it can be argued to correspond to issue No. 8 & 9 as well.

Bournemouth University (C-26-14) with their research on economic modelling helped with planning the long term consequences from the Olympic Games, Gibraltar and the Scottish tourism council (No.1). Similarly, as they focused on economic evidence base of such policy guidance on regional and national level, they could be argued to correspond to the focus on global and economic perspective (No. 3), increased evidence based planning (No. 5) and the transformative effect tourism has (No. 8).
(D) UoA 29 - English Language and Literature
In regard to the humanities (main panel D), the University of Exeter (D-29-15) research impact can be argued to correspond to maintaining the cultural heritage of this destination (No. 1) as it related to promoting and improving specific tourist destination (the Evliya Çelebi Way).

Similarly, the research impact reported by Swansea University (D-29-16) could also be argued that it corresponded to issue No. 1, as it argued for the importance of maintaining cultural artefacts, and as such contributing to the sustainability of the destination, as it contributed to an exhibition by the Wales library.

The same applies for University of Bristol (D-29-17) research impact, as it was primarily concerned with maintaining and preservation of cultural heritage of medieval performance, in a vague sense this can be conceived as corresponding to issue No. 1 as it contributed to Gloucester Mystery Play festival.

(D) UoA 30 - History
Similarly, to the previous case studies that reported humanities research impact the University of Leicester (D-30-18) research case study can be conceived as corresponding to issue No. 1, as it facilitates the preservation of the cultural heritage. Additionally, it can also be argued that it corresponds to issue No. 6, as it is utilising new technology solutions in order to improve the tourism experience.

The impact reported by the University of Durham (D-30-19) is in line with the focus on cultural heritage preservation common to the humanities, and therefore can be argued to correspond to issue No. 1, as one of the main prerogatives was to maintain the cultural heritage which resulted in the 2013 Lindisfarne Gospels exhibition.

(D) UoA 33 - Theology and Religious Studies
The University of St. Andrews (D-33-20) research impact focused on cultural heritage and its preservation in relation to the Scottish Pilgrim Routes. Therefore, it can be argued that it only corresponds to issue No. 1 out of the top ten issues within tourism.

(D) UoA 34 - Art and Design: History, Practice and Theory
In regard to University of East Anglia (D-34-21) research impact, in line with all the case studies that had the conservation of cultural heritage at the centre of their reported research impact, it can be argued that the reported impact can be situated within issue No. 1 as it revolved around the preservation of a specific historic site (Butrint, Albania).

(D) UoA 35 - Music, Drama, Dance and Performing Arts
The reported research impact by the Liverpool Hope University (D-35-22) is similar to that of the University of Leicester (D-30-7) in regard to what issues of the top ten issues in tourism it corresponds. As this research focused is on a music guided tour of Liverpool and it applies new technology in order to engage tourist with the cultural heritage that is intended to be preserved, the impacts could be argued to relate to Edgell’s is No. 1 & 6.

(D) UoA 36 - Communication, Cultural & Media Studies, Library & Information Management
The reported research impact of the York St John University (D-36-23) focused on “re-theorisation of issues such as visuality and representation in the public sphere of cultural and heritage tourism,” as such, it can be argued that it (potentially) improves the competitiveness of the city of York, as this was the topic of the presented research and thereby improving a particular destination (No. 1).
6.4.3. What research impact again?

Although most likely the REF did not define their understanding of reach and significance (cf. 4.2.3), based on the analysis, these do indeed give an indication of what reach and significance the reported research impact had. Once again, it is important to stress that this is the research impact according the REF, to which certain tourism studies faculties choose to omit to report research impact. As such, it is only indicative of a certain framing of the overall research impact of tourism research. However, the impact that was presented seems marginal at best, compared to the fundamental societal issues and problems discussed within the Edgell list.

In terms of reach, as pointed out previously the reported research impacts seem to be much localised. Just from a brief view upon the table 6.4, it becomes clear that almost all research impacts related to some form of development or maintenance of a specific destination (issue No. 1). Only the self-identified tourism studies faculties, reported research impacts that focused on more broad themes than just impacting a tourism destination in some form. Even the exceptions still all departed from only a small selection of cases within their case study. Such an approach was usually concerned with either; increasing the attractiveness of a destination, which resulted in more visitors, or that the attractiveness of a destination (in terms natural recourses or cultural heritage) was to be protected in order to maintain the number of visitors and associated economic benefits. Regardless, of what type of research impact was reported, the contingency that they focused only upon a particularly destination kept the reach of the reported research impact usually very local.

When it comes to issues of significance, the difficulties of accounting for research impact in terms of causality become evident (cf. 4.3.5). For example, research impacts that relate to the issues of global safety and security (No. 2), climate change (No. 4), resolving travel barriers (No. 7) and/or tourism trends within emerging nations (No. 10) were not addressed at all, in the here uncovered sample. Especially, the omission of issue on climate change is instructive here, as preventing climate change was often mentioned by many of the consulted tourism bodies as a primary goal of research related to tourism (cf. 6.4.1), yet no such research impacts could be found. This not to say that there are not (tourism) scholars who are working on such issues, but rather such types of (complex) research impacts are not well suited for the assessment structure created by the REF, the next chapter will address this issue that is created by the discursive framing in more detail.

The research impacts that the universities did choose represented, are the ‘best case scenarios’ of research impact, as the REF assessment format did not require a comprehensible overview of all research impact. However, from the lack of (reported) research impacts in these other societal wide impacts, it becomes impossible to tell, if there is no impactful research that is concerned with such areas, if the universities choose to omit such impacts due to the difficulties in accounting for their research impact, or if they are simply are not aware of how their research impacts society wide developments or have some other strategic reason for not reporting their research. Regardless, of which contingency is the case, it seems that there is a need for external (impact) experts to analyse the universities impacts that go into the reported case studies. Without such external consultation, the reported impacts seem to restrict themselves to the easy to identify research impacts and the presentation of their impact is lacking in proxy indicators of impact quality, if the people writing the cases studies are not trained in working out societal wide changes (e.g. economic modelling). The result being, that the current significance of the reported research impact appears to be rather lacklustre.
The central notion that this thesis is introducing is that of the UK research ecosystem is disciplined through the accounting for the claimed impacts. As such, all of the here presented research impact case studies, should be considered as representing products (micro discourses) that are indicative of the (meso & macro) discourses that steer and influences (i.e. extra-scientific factors) the ecosystem as a whole. The contingency, that not all of the identified issues were addressed is indicative of that ‘other forces’ shape the landscape of the newly emergent (impact) tourism research ecosystem. The next chapter will now address one of these (extra-)scientific factors, namely the influence of the disciplinary guidelines and how they discursively shape what impact gets reported and which is (potentially) omitted. However, before proceeding to the next empirical aspect of this study, let’s first summarize the contributions that this analysis had brought to the forefront within this chapter.

6.5. Summary of the chapter
Within this chapter, two of the key contributions of this thesis were outlined. The first being the outlining of all the research impact that related to tourism that was submitted to the REF 2014 impact assessment. The emergent micro discourse seemed to primarily focus on small scale impacts, instead of engaging with more significant issues. In regard to the specific micro discourses that emerged, in terms of type of research the impacts that were reported came from the entire academic spectrum, but primarily from the social sciences and humanities. The case studies focused primarily on a singular research example in their framing of their (micro) research impact discourse, rather than making the case for a specific impact that resulted from a body of research. In regard to the type of tourism, the research impact usually described mass tourism in negative connotation that needed to be addressed, whilst positioning the research as a means to (potentially) mitigate negative impact of (mainstream) tourism. Or tourism was simply viewed as a means to end for other more pressing interests (e.g. preserving cultural heritage, protecting the environment or other social issues). The (micro) research impact discourse surrounding tourism also differed depending upon the underlying research that was reported to have an impact. Only tourism studies facilities seemed to discursively frame tourism as more than just a means to some end or a monolithic entity that is causing unsustainable circumstances that need to be amended. In regard to the second key contribution, the research could identify that the reported impact did address a number of relevant research areas of societal relevance. However, issues such as global safety, climate change, reducing barriers for travel and trends of tourism in the emerging nations were entirely absent. Presumably, because of the high complexity of such concerns, it is less challenging to identify the causality of attribution of recognition in localised areas of concerns. The next chapter will now explore the effect of the REF’s laissez faire approach on impact in more detail by focusing on the submission of the tourism studies faculties only. The main argument is that the REF does not impose what type of impact can be claimed in principle; however the assessment structure does favour small scale impacts in praxis, due to the evidence requirement and lack of method section. And lastly, the REF disciplines the research ecosystem to focus on extrinsic values salient within society at large, rather than furthering an intrinsic (Enlightenment) telos.
“Impact is not going to go away.” (Finch, 2016:6)\textsuperscript{103}

\textsuperscript{103} Professor Dame Janet Finch was one of the four main panel chairs in the REF 2014
7. RESEARCH DISCIPLINE THROUGH PROXY INDICATORS

This chapter will explore in detail how the REF’s 2014 meso level discourses (i.e. submission and assessment guidelines) discipline the creation of the micro discourses of the assessment through proxy indicators of quality (e.g. narration, rhetoric and evidencing practices used for the creation of the case studies). The main contribution that this chapter sets out to highlight is that the disciplining occurs not only in the construction of the research impact claims but also disciplines academic conduct within the research ecosystem in general. Such a discursive framing is enforced within the universities by merely participating within the REF assessment. The chapter starts off by detailing the narration practices that were used within the case studies; showcasing how the assessment standards discursively shape what research impact is claimed (7.1). The next section continues with outlining the evidencing practices that were used within the analysed case studies to account for research impact, utilising a specific example in detail and for a the self-identified tourism studies faculties in general (7.1.1). This is extrapolated to identify scientific proxy indicators of quality and showcasing how they were adapted for an impact context (cf. 7.1.2). In specific, commenting upon difference problems that arise within an impact context, which are not a problem per se within a scientific context (7.1.3), especially focusing on the type of references that were used and what this implies for the impact that is claimed (7.1.4). The section finishes by combining what was learnt within the narrative analysis, outlining the emergent meso discourses that were considered acceptable proxy indicators for research impact quality (7.1.5). The following section outlines the results of a critical discourse analysis of the research impact templates of the tourism studies faculties that submitted to the REF (7.2). In specific focusing on the disciplinary costs that were outlined within the templates in terms of what type of research impact strategy was put forth (7.2.1), what the emphasis on applied research meant in practice (7.2.2), how it related to monitoring strategies of research impact (7.2.3) and concluding in a discussion of the establishment of research impact officers (7.2.4). The general argument that is put forth within this chapter, is that the participation within the REF assessment not only disciplines the presentation of case studies and impact templates, but has broader disciplining effect for the wider UK (tourism) research ecosystem in general (7.3). The chapter concludes with a summary of what was learnt from the here conducted critical discourse analysis (see 7.4).

7.1. Narration practices of research impact

Within chapter 3, one of the main points raised was to highlight the role discipline plays for proper research conduct. Just to reiterate, research discipline is enforced by constant repetition of the proper norms of conduct, reinforced by values and institutions of the research ecosystem. Within any community, the enculturing process starts off with imitation, research is no different (undergraduate program, apprenticeship or on the job training, cf. 3.3). Although many sociologists of scientific knowledge are acutely aware of the power dimension that is created, they are less aware of the psychological dimension that such discipline cause. Piaget and Inhelder (1969) outlined the psychology behind this process of enculturation

Figure 7.1, shows the so called ‘dunce hat’, exemplifying how discipline enforces proper social norms of discourse and behaviour. Source: http://real-life-villains.wikia.com/wiki/Dunce_Hat accessed: 2017-09-28.
and how discipline is used to control and shape human psychological thought patterns. Within a research context, alongside learning a lot of ‘facts’ the scholar also internalizes the values, rhetorical tools and norms of how these facts ought to be created and presented (cf. 3.5). Such an enculturing process is not unlike how a child learns the norms and values of the culture it is brought up in. Figure 7.1 is a visualisation of the so called ‘dunce hat’. The name ‘dunce’ is derived from the followers of Duns Scotus (1266-1308), a Scottish scholastic theologian, who pioneered early childhood education. The main thrust of the idea was that such a thinking cap should ‘inspire’ the student to use their reasoning faculties and reflect upon why they were being punished. However, later protestant and humanist thinkers viewed the ‘Dunsman’ or the ‘Dunce’ (as the accolades of Duns Scotus were called) with suspicion and scorn, leading the word ‘dunce’ to acquire its modern negative connotation (Chico, 2013:116). However, from an ecosystem perspective the difference between education and indoctrination is more localised to the individual (willing participation vs. unwilling participation), rather than a difference in what mechanisms are used. Regardless, of the connotation of what disciplinary measures are used, the function of such disciplinary measures is to enculture the individual into the proper way of thinking and conduct (cf. Foucault, 1975), i.e. the consolidated norms of what is acceptable discourse or what is not, within the research ecosystem (cf. 2.3).

Within this thesis the notion of ‘meso discourses’ is used to describe such discursive disciplinary framing (cf. 5.2.1), the idea being that such meso discourses discipline the narration of certain (micro) discourse (i.e. a piece of writing like a case study or an impact template). The argument that is pursued within this chapter is to highlight that the way that the case study template were constructed disciplines the narration of the research impact claims, same applies for the impact templates and academic behaviour. This was the reason for including the account of the rhetorical re-construction and it’s disciplining function for this thesis into the method section (cf. 5.3.6), the argument is that the writing norms of the REF’s impact definition create a similar disciplinary regime. The here conducted critical analysis was done based on the post-postmodern understanding discipline and psychology intertwine when the individuals were constructing these case studies and impact templates. I.e. such considerations are salient in relation to: how the claims were to be presented, how the evidence was supposed to be used and how impact was understood and implemented. Within a research impact context, all such practices form proxy indicators of impact quality depart from an understanding of a research impact discourse of: a) what is required, b) what is possible and c) what is expedient (cf. 6.4). The critical discourses analysis that was conducted upon the case study data material (cf. 5.2.2) departs from an understanding of how discursive forces shape the conduct of research. Such proxy indicators are defined according to the REF guidelines on how the case studies are to be written and how they will be assessed by the unit of assessment (cf. 4.2), i.e. they represent the meso discourse that disciplines the research impact claims. However, as this iteration of the REF’s focus on impact was the first instalment, academics were left to figure out most of these practical issues by themselves.

To reiterate, how the REF expected a case study to be presented (cf. 4.2), the narrative structure of how such a case study claim ought to be constructed, is subdivided into 5 distinct ‘narrative boxes’ (cf. 5.3.6 on how narrative structure disciplines the presentation). Each section requires a specific type of information, that in their totality are taken to be considered as the impact claim that was put forth. The impact claim ought to start off with a ‘summary of the impact’, where a broad overview of the presented research impact is to be given. The next section within the case study, is the ‘underpinning research’ section, where the intent is to outline the research that caused the research impact, followed by a section ‘references to the research’, where the research references are to be
presented. This is followed by a section entitled ‘details of the impact’, where the impact (that was caused by the research) is to be presented in detail. The last section is ‘sources to corroborate the impact’ and represents the space where the references for the impact are to be provided. Thereby, in a real sense, these subsections become the components of the meso discourse that disciplines the rhetorical-reconstruction of how a research impact claim is to be presented within a research impact case study (in extension disciplining academic behaviour). In order to highlight this discursive dimension the focus here is on the fourth section (details of the impact), however as stressed within the literature review (c.f. 4.4) such a disciplinary regime of the micro discourses radiates outwards and disciplining academic behaviour in general.

7.1.1 Deconstructing a research impact claims argumentation structure
The quotes below are extracts of the details of the impact statement by the University of Brighton’s research impact case study (C-26-13). However, the narration style that was used within this case study is common to all research impact case studies (that were identified based on the keyword search, cf. 6.2). The style of the rhetorical re-construction that the majority of the case studies took is elaborated in connection to these extracts below. The case study usually starts out with broadly claiming the research impact, in the Brighton case this was done as follows:

“The underpinning research and participatory methods have impacted on policies that aim to address the lack of tourism and hospitality human resources capacity, which is key to any nation’s successful tourism development” (C-26-13, authors’ emphasis).

As such, the narration starts out by affirming the causal impact of the research, alongside identifying a concern of “lack of […] resources capacity” that presumably the research impact addressed. Right from the start, the narration has rhetorically located the research as a mediator (i.e. causal link) in creating the impact. Now in order to judge if the impact has been achieved or not, any impact claim has to establish in its narration a point of reference by which these claims will be judged (cf. 4.3.5). As such, the lack of resources has to be outlined and then the narrative has to include a section that shows how these were fulfilled (or not). This outlining is akin to how proxy indicators of scientific quality discipline the creation of scientific facts (cf. 3.4). The case study of Brighton continues in this fashion:

“The World Bank commissioned research into education, capacity building and training in Gambia, which led to a re-designed education and training policy. The research influenced the decision of the Spanish government to fund The Gambia Tourism and Hospitality Institute (GTHI), a national centre of excellence for tourism and hospitality education. The research provided: a feasibility assessment (2009) and business plan (2011) to direct policy, later implemented through ‘The Gambia Tourism and Hospitality Institute Bill’, which sought to create an enabling environment for Gambians to study up to the level of a Higher National Diploma in travel, tourism and hospitality. This bill was approved by the National Assembly in 2011 (source 5.8). Drawing upon the University of Brighton’s recommendations, the GTHI was inaugurated in 2013 after an investment of €2.7m. The GTHI aims to train an average of 200 school leavers per year and upgrade the level of professional training amongst the 30,000 workers in tourism and hospitality, a sector that contributes 16% to the national GDP” (C-26-13, authors’ emphasis)
In this section, the narration does further qualify “lack of [...] resources capacity”, but we do not learn any specifics of what capacities have been lacking other than “education, capacity building and training”. No further elaboration on what sort of training (catering, customer service, staff management etc.) are provided. In regard to evaluating if these impacts have been achieved we learn, that there has been a “feasibility assessment” and a “plan” that “aims” (implying at some future point) to improve a current important economic sector, yet again no elaboration if these changes actually have been achieved. However, the evidence for the achieved research impact is still invoked to serve as proxy indicators of impact quality that supposedly testify to the fact that research impacts have been achieved. The presentation continued to describe the research impact, qualifying it in the following fashion:

“UNESCO-funded research in Nigeria led to a new national curriculum for leisure, tourism and hospitality workforce training. As part of a larger project aimed at revitalising Nigeria’s Technical and Vocational Education and Training (TVET), in collaboration with the Nigeria Board of Technical Education (NBTE), NOVELLI produced a ‘Leisure, Tourism and Hospitality Curriculum Review’ (2004), followed by a ‘Capacity Building/Train-the-Trainers Programme’ (NOVELLI and BURNS 2009). This led to the adoption of new industry and employment-centred leisure, tourism and hospitality teaching materials and a new national curriculum replacing the previous redundant one, which dated back to colonial times. An evaluation of the material and curriculum undertaken by the NBTE concluded that the impacts had spread beyond Nigeria and that: ‘The tangible outcomes of the initiative have been accepted for adoption in the ECOWAS countries... Other counties outside the region, e.g. Libya, Bahrain, Ethiopia, etc. have also benefitted from its achievement and have used the curricula developed as part of their own national curricula.’ (5.6).” (C-26-16, authors’ emphasis)

Similarly, in this section we learn that some form of education has been implemented into a “new national curriculum.” However, there is no information available in regard to the success of the intervention; the only available reference states that it has “also benefitted”, yet again failing to give specifics to what these benefits were. However, authoritative institutions are invoked, like the UNESCO and national governments to justify the claim. Furthermore, the case study also mentions “unsustainable tourism practices” that have caused “irreparable damage to fragile ecosystems and significant economic losses”, however, they fail to mention what damages or losses had occurred, just implying that tourism caused these damages without elaborating how. What is done instead is that authoritative sources are evoked and the legitimacy of these sources then corroborate the (need and) research impact that is presented. Thereby, these references and their associated authority become proxy indicators of impact quality rather than descriptions and elaborations of the content. Now to be fair, there is only so much detail that can be included in a 4 page document, however, the narrations of impact were more often than not in the above described vague fashion.

In general, the case studies always referenced needs, that were referenced with authoritative and reputable institutions whilst positioning their research impact as a solution without explicitly mentioning specific problems or how the causality of how these have been achieved. Even ‘non-impacts’ were claimed as research impacts with the right wording, below is an extract from the University of Surrey’s (C-26-11) case study:
“Finally, the application of the methodologies developed has allowed the Surrey team to assess the demand for accessible tourism across Europe, responding to the European Parliament’s Preparatory Action “Tourism Accessibility for All”. While the impact of this project is yet to be felt, the impact of the methodological work described above is in being able to bring more advanced understanding to other areas of tourism demand.” (C-26-11, authors’ emphasis)

Table 7.1 represents an analysis of the verb, nouns and contexts used by the tourism studies faculties that reported research impact to the REF 2014 impact assessment. This selection was based on the ‘narrative box’ (cf. 5.3.6) ‘summary of the impact’ and summarises the research impact provided by the University of Nottingham (C-19-5), Cardiff University (C-19-6), University of Kent (C-19-7), University of Sunderland (C-26-9), University of Bedfordshire (C-26-10), University of Surrey (C-26-11 & C-26-12) University of Brighton (C-26-13) and Bournemouth University (C-26-14).

<table>
<thead>
<tr>
<th>Verb</th>
<th>Noun</th>
<th>Context</th>
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<tr>
<td>informed</td>
<td>development</td>
<td>(tourism) policy</td>
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<tr>
<td>raised</td>
<td>awareness</td>
<td>inclusion of disadvantaged/disabled/low income people</td>
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<td>underpinned</td>
<td>changes</td>
<td>charity practices</td>
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<td>enhanced</td>
<td>capacity</td>
<td>tourism’s socio-economic impact</td>
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<tr>
<td>understanding</td>
<td>(conventional) wisdom</td>
<td>minimising undesirable environmental impacts</td>
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<td>contributed</td>
<td>(economic) growth</td>
<td>Tourism Impact Model</td>
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<tr>
<td>quantify</td>
<td>relationship</td>
<td>small island developing states</td>
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<tr>
<td>developing</td>
<td>platform</td>
<td>niche tourism</td>
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<tr>
<td>optimise</td>
<td>(intangible) aspects</td>
<td>Information Communication Technology</td>
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<td>challenge</td>
<td>strategy</td>
<td>marketing and positioning strategies</td>
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<tr>
<td>identify</td>
<td>impacts</td>
<td>regional and local economies</td>
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<tr>
<td>draw upon</td>
<td>(economic) linkages</td>
<td>cultural identity and distinctiveness</td>
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<td>enhance</td>
<td>reduction</td>
<td>evidence based policy/strategy</td>
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<td>novel</td>
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<td>human resource management</td>
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<td>integrated</td>
<td>innovations</td>
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<td>provided</td>
<td>advancements</td>
<td>tourism demand</td>
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<td>used</td>
<td>(scientific) foundation</td>
<td>benefits of crossborder activity</td>
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<td>strengthening</td>
<td>risks</td>
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<td>encouraging</td>
<td>failures</td>
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<td>provided</td>
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<td>improved</td>
<td>well-being</td>
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<td>assisted</td>
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source: author
We can see that the proxy indicators of scientific quality have been re-interpreted in the rhetorical reconstruction of applying proxy indicators of research impact. However, as was seen in the previous chapter (c.f. 6.4) issues such as climate change, safety and security, resolving travel barriers and/or tourism trends within emerging nations were not addressed at all. Furthermore, as was shown in the above detailed analysis of the rhetoric used was that the causality of the impact claims was usually brushed over. What this state of affairs means, is that these narrative guidelines of the REF may restrict research impact claims that can be made, as the requirements posed by the assessment structure (page limit, evidence structure, narration style etc., cf. 4.2) limits the type of impact that can be claimed. The limited amount of reach and significance of the reported impacts (cf. 6.4) seems to corroborate such a contingency. The reason being, because the meso discourses that discipline how a case study is structured imply that there is a direct linkage between the research and the claimed impact. This assumptions depart from the REF understanding of research impact and how it functions (cf. 4.1), meanwhile the seamless web understanding sees research impact as a complex, non-trivial and often indirect process of implementation. Thereby, the structure that the meso discourse of the REF assessment guidelines imposes in terms of how an impact is expected to manifest itself (i.e. linear implementation) is reinforced by the structure of how an impact case study ought to be constructed and presented. This disciplines academic behaviour, and we could observe that in the rhetorical re-construction of the University of Brighton case study (C-26-13), it created an authoritative ‘impact fact’ that couldn’t be verified based on the narration alone. Nevertheless, the structure of the impact case study template still disciplines the universities to present their impact as if it had such direct traceable connections, enforcing the linear understanding of how research impact manifest itself (cf. 4.1).

In general, the narration of the case studies were often very vague, which may be indicative of the underlying uncertainty that is involved in re-tracing the causality of the claimed impact within the seamless web that is society. Although the narrative structure did impose some measures of discipline, it still seems that the restrictions left plenty of room for individual interpretation of how the universities wanted to claim their research impact or what type of impact was presented. Nevertheless, it is arguably ‘easier’ to give quantifiable evidence (visitor figures, revenue figures or number of book sales) compared to evidencing some sort of qualitative research impact that is more difficult to trace (e.g. change of cultural values, improvement in quality of life or changes in life philosophy). This is presumably the reason why many of the submitting universities choose to evidence their impact along these grounds, because if the ‘details of impact’ section has a indicative word limit of 750 words (cf. 4.2.4). Thereby, it is arguably easier to construct a more information ‘dense’ impact claim based on such figures rather than on other more qualitative information, which by their very nature requires more words to elaborate. Nevertheless, as the case studies were often written in such a vague style, the evoked evidence of any research impact claims became key proxy indicators of impact quality in examining the veracity of the claimed research impact.

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104 The Brighton case study (C-26-13) did deal with developing nations; however it focused on tourism to these nations from developed nations and not the tourism profile within these nations.
105 Meaning that implementation requires creative thinking in its own right and as such academic knowledge is not merely applied but has to be adjusted and transformed to make it applicable for a new (often innovative) purpose cf. 4.3.5.
106 In the following chapter, interviews with tourism studies academics will be presented. However, to underscore this point, when interviewing individuals that were actively involved with the creation of research impact case studies, they often lamented the painful ‘warping of reality’ that they had to go through in their rhetorical re-construction in order to satisfy the REF’s requirements.
7.1.2. Proxy indicators of impact quality

In the following sections, the critical discourse analysis focuses (cf. 5.2.2) on how the proxy indicators of scientific quality (cf. 3.4) were used within the case studies within an research impact context, effectively being presented as proxy indicators of impact quality (cf. 7.1.3). In practice this means what type of references were evoked in order to corroborate the presented research impact claims (cf. 7.1.4). Finally, the difference and the created problems between scientific and impact proxy indicators of quality are elaborated upon (cf. 7.2.5). In the previous section, the argument was raised that proxy indicators of scientific quality were translated into proxy indicators of impact quality in recounting research impact claims. However, as stated in the literature (cf. 3.5) the underlying research and the presented impact claims, depart from two different areas of expertise. Thereby, the following section will now focus on unpacking some of the evidence that was used as these proxy indicators of impact quality that were rhetorically mobilised to construct the research impact claims, highlighting the difficulties and problems that arose from such a one to one translation. Furthermore, the research argues, that the strategizing involved in orchestrating the available proxy indicators of research impact with the requirements of the presentation disciplines what research impact can be claimed. The resulting discursive ‘pressure’ upon the research ecosystem also seems provide a further reason why some tourism studies faculties choose not to submit at all. As such, let’s investigate this in more detail by examining the evidence trail of the self-identified tourism studies faculties.

However, before we can start with such an analysis, it is important to reiterate that the REF guidelines also influence the evidence that is used for the construction of a research impact claim. For example, the REF made it clear, that the research impact had to stem from excellent research (REF 2011B) (cf. 4.2). Excellent research is defined by the REF as research that was be published in reputable scientific journals where “quality that is recognised internationally in terms of originality, significance and rigour” (REF 2011B:29) and has been deemed “least equivalent to two star” (REF 2011B:29). However, such a judgment of ‘two star quality’ is not as straight forward as it might appear to be, as many of the research papers that were submitted for which the impact was claimed were never officially analysed by a REF panel. The idea of proxy indicators of scientific quality was to account for how the rhetorical re-construction disciplines meso discourses and turning them into indicators for the reliability of research claims (, i.e. it becomes a fact cf. 3.3, 4.4 & 5.3.6). Such proxy indicators of scientific quality are specific to a research community and can consist of knowing; whom to cite, what are the best journals in the discipline or what sources of secondary data are acceptable and which are not. In other words, they are key indicators to develop trust and reliability (according to the established norms) of what knowledge claims are acceptable and which are not. Within a research impact context, no such uniform understanding seems currently to exist, beyond the guidelines created by the REF. However, these do not easily translate to a research impact context as the analysis below will show (cf. 4.3.5).

The meso discourses that are outlined by the REF assessment criteria (cf. 4.2) attempt to codify such proxy indicators of what is acceptable research impact and what is not. Nevertheless, there still seems to be plenty of specificity required into consolidating what is understood by ‘underpinned by excellent’ research or evidence that is ‘independently verifiable’. Furthermore, it is even questionable if this type of information of how the case studies were assessed is even still available at all, as the assessment guidelines state in specific obligations during the criteria-setting phase (REF, 2011):
“Where such confidential information has not already been made public by the REF team, copies shall not be made except as is necessary to carry out functions as a panel member. Originals and any copies that may be made of such confidential information shall be destroyed, or returned to the REF manager, as soon as they are no longer needed for that function or on the request of the REF manager, whichever is sooner. This provision applies equally to paper copies or those stored in electronic or other non-paper formats. “(REF 2012:105)

The destruction of the evaluation material does indeed create a ‘black box’ out of the assessment process, violating the Enlightenment telos of organised scepticism (c.f. 2.4). Nevertheless, by departing from the insights of the here applied post-postmodern understanding of how knowledge claims are constructed and how the rhetorical re-construction disciplines academic behaviour, we can draw inferences to the process of construction. All self-identified tourism studies case studies that were submitted to the REF were analysed in the here presented detail, however only the most prominent trends are exemplified below.

7.1.3. The role of proxy indicators of impact quality

In regard to the role that such proxy indicators of impact quality, we can establish the following trends. For example, the University of Surrey (C-26-11) and the University of Brighton (C-26-13) referenced their research within the case studies as follows:

“[Key researches name] ([publication year]) ‘[article title]’. [journal title] [ABS Grade 4] (University of Surrey, C-26-11, author’s emphasis)

“[Key researches name] ([publication year]) [article title]. [journal title] [Quality validation: output in leading peer-reviewed journal]. (University of Brighton, C-26-13, author’s emphasis)

Such, presentation style is common scientific practice and is now applied to represent a proxy indicator of impact quality, by adding additional qualifiers in line with the research impact assessment standards. In comparison the University of Sunderland (C-26-9) published their research without such qualifiers. Presumably, such adding of proxy indicators made it easier for the assessment panel to deem if the underpinned research was of 2* quality or above. Furthermore, case studies that referenced their impact with references that were authored by the key researcher themselves sometimes changed the references in order to not draw attention to this connection. For example, the University of Surrey (C-26-12) choose not to disclose this information in how they cited that their self-authored impact references in one of their case studies, instead they referenced the report as:

C3) FETE final report http://www.slideshare.net/toerismevlaanderen/evaluatierapport-first-european-travel-experience(C-26-12, p. 4)

Nevertheless, the report was written by one of the key researchers from the University of Surrey for whom the research impact in question was claimed. In the previous section, it was mentioned that authoritative reference were evoked to corroborate the impact, rather than stating what the impact was. By referring to the authority of the collective body, the impression is created of an objective assessment, rather an individual claiming that they had impact and then referencing themselves. Such a contingency is presumably why they choose to reference this particular source in this way. As seen above when the University of Brighton (C-26-13) referenced testimonials of the World Bank without outlining further specifics, more than claiming that there was an impact (cf. 7.1). An
addition to evoking authoritative references was that monetary amounts were also presented, for example it is either mentioned within the text or within the references:

“Following these recommendations, in 2011 Tourism Flanders funded (€375,000) the development of a network of regional ‘travel shops’ in social support organisations. These travel shops comprise teams of support workers who specialise in helping socially excluded groups to overcome barriers to tourism participation.” (C-26-12, author’s emphasis)

“Research awards […] [Key research name]. ([year]). An economic assessment of the Boscombe Artificial Surf Reef, Crown Estate’s Marine Stewardship Programme. £78,000.” (C-26-14, author’s emphasis)

A reference to how much money an organisation is willing to put up, is certainly an indication of interest, however, it is not always clear from the case study what the effects of this investment had due to their vague nature, or to what degree the research was responsible for the (not elaborated) research impacts. However, collectively it does serve as a proxy indicator of impact quality as it showcases the commitment of external bodies that had literally invested in the research. In combination with other claims, such rhetorical practices boost the impression of relevance of the presented claim. Yet, how such ethical problems in relation to vested interest and protecting academic integrity are addressed is entirely absent from their case study account. Furthermore, when assessing the provided references, especially website references were often not available (see next sub-section). The argument that is put forth here, is that because there is as of yet, no uniform standard of how to ascertain the quality of research impact the universities had to fend for themselves in how to interpret what is considered ‘good quality’. Based on the available rankings alone it is impossible to ascertain if this specific aspect did make a difference to the total assessment. As the impact scores were only available on an aggregate level, it is likely that this aspect in combination with the other rhetoric polishing techniques presented here, did influence how these case studies were assessed and what types of research impact was selected to be put forward for the assessment, or decided against for a submission, influencing the overall type of impact that is reported to the REF (cf. 6.4). This will become even more evident when the evoked references are untangled, in regard to what they imply for the impacts that are put forth, which will be elaborated next.

7.1.4. Research impact references untangled

Specifically within this sub-section we now want to look at the referencing practices that form the evidence trail that was used to report the presented research impacts. In specific we look at how the references were presented and contrast this to how it related to verifying the impact claim that is put forth. As the testimonials were not publically available; these references could not be corroborated and therefore do not form part of this analysis. This does represent a limitation, however based on the overall picture it appears not to be fatal for the argument pursed here. As based on the provided research impact references alone; it is difficult to ascertain the significance and reach of a specific impact in question (cf. 4.2). Thereby, it is unlikely that the account of one or three individuals (the maximum number of used testimonials was three) the overall picture changes drastically. Note, this claim does not imply that the presented research impacts did not occur, rather that the evidencing of such impacts is exceedingly challenging under the linear understanding that is disciplined by the REF’s narrative structure (cf. 7.1) through the specific proxy indicators of impact quality that are required by the REF impact assessments process.
The untangling of the impact references is done as follows; first the universities own summary of their research impact are presented, alongside the references that were given within the case studies. The only change is that the names of the key researchers have been retracted, as their identity is irrelevant for the argument. Three example case studies are discussed here; the University of Surrey (C-26-12), University of Kent (C-19-7) and University of Bedfordshire (C-26-10). The intention is to highlight the differences in how these institutions choose to present their impact references, i.e. highlight how they choose to interpret the meso discourses that the REF guidelines required for what was acceptable as proxy indicators of impact quality. Therefore, in regard to what can be considered a skilful translation of scientific proxy indicators of quality into proxy indicator of impact quality the case of the one of the University of Surrey’s case studies is instructive. The University of Surrey (C-26-12) summarised their impact as follows (cf. table 7.2) and they presented their references for this case study in the following fashion (cf. table 7.3).

<table>
<thead>
<tr>
<th>Table 7.2 Summary of impact by the University of Surrey (C-26-12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research at the University of Surrey, has assisted disabled people and low-income groups to access tourism, a significant non-material aspect of well-being. This was achieved by influencing policy and policy recommendations in the UK, Belgium and the EU and by influencing behaviour, action and policy of either demand or supply:</td>
</tr>
<tr>
<td>- Demand: Increasing information and support options by establishing ‘Travel Support Points’, exchange schemes and travel facilitating websites</td>
</tr>
<tr>
<td>- Supply: Supporting tourism businesses by establishing accessibility tourism networks and influencing the biggest social tourism provider in Wallonia (Belgium) to extend existing inclusion measures, and introduce new initiatives</td>
</tr>
<tr>
<td>Source: University of Surrey, C-26-12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 7.3 References for the University of Surrey case study on social tourism to corroborate their impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>For impact 4.1</td>
</tr>
<tr>
<td>C1) European website on accessible travel: <a href="http://www.europeforall.com">www.europeforall.com</a></td>
</tr>
<tr>
<td>C2) ‘Tourism For All – UK’ (Provided statement)</td>
</tr>
<tr>
<td>C3) FETE final report <a href="http://www.slideshare.net/toerismevlaanderen/evaluatierapport-first-european-travel-experience">http://www.slideshare.net/toerismevlaanderen/evaluatierapport-first-european-travel-experience</a></td>
</tr>
<tr>
<td>For impact 4.2</td>
</tr>
<tr>
<td>C4) <a href="http://www.visitoslo.com/en/your-oslo/oslo-for-all/project-background/">http://www.visitoslo.com/en/your-oslo/oslo-for-all/project-background/</a></td>
</tr>
<tr>
<td>C5) Knowledge-based network for SMEs: <a href="http://ceta.enat.be/">http://ceta.enat.be/</a></td>
</tr>
<tr>
<td>C6) VACA Tourism – (Provided statement)</td>
</tr>
<tr>
<td>For impact 4.3</td>
</tr>
<tr>
<td>C8) Press release: <a href="http://www.ttrweekly.com/site/2011/12/ministry-to-help-disabled-tourists/">http://www.ttrweekly.com/site/2011/12/ministry-to-help-disabled-tourists/</a> – “Ministry to help disabled tourists” as further evidence that OSSATE demand study (‘Accessibility Market and Stakeholder Analysis’) has influenced their decision to initiate this project on accessibility.</td>
</tr>
<tr>
<td>C10) Tourism Flanders (Provided statement)</td>
</tr>
<tr>
<td>Source: University of Surrey, C-26-12</td>
</tr>
</tbody>
</table>
First of all, note that the University of Surrey included the max of 10 references and created sub categories for their references according to different impacts that were claimed. Secondly, note also that this separation of different aspects of their impact is also present within the summary of the research impact (cf. table 7.2). When assessing the provided references the first reference (C1) was a website that displays information on destinations for easy access travel. The websites states:

“The overall aim of 'Europe for All' is to enable better communications between tourism providers and their customers, especially by providing accurate and reliable information about the accessibility of venues and services.” (C-26-12, C1 accessed: 2016-11-04)

Yet, the only information that can be gained in regard to claimed impact is that the website exists. There are no user figures, evaluation of the social impact or how much the research of the University of Surrey was responsible for the creation of the cited website. The next reference is a statement provided by that website (C2), which was not accessible. The last reference for impact 4.1 (C3) is the final report of the research project that the University of Surrey was involved in. As aforementioned, the University of Surrey choose not to disclose that one of the key researchers’ authored the cited report. The report did state that the social well-being of the individuals was improved, as “for many the air travel and the activities were new and unforgettable” (C3:23) on an individual level. However, when it came to the overall goal that was set out to which the report supposedly served as a reference, the report states:

“FETE [First European Travel Experience] has shown that 11 months is insufficient to both build innovative links in destinations with social tourism and tourism partners where these links are non-existent, and design, market and run pilot holidays.” (C-26-12, C3:15, author’s emphasis)

The report continues, that due to this contingency more research is needed for the development of such links, in order to develop “system[s] for post-pilot implementation [...]in order to exploit untapped potential in the commercial and social economy” (C-26-12, C3: 5). As such, the report states that it has failed to fulfil on its main objectives, nevertheless, the report is still evoked to show that an impact was made. For impact 4.2 the first reference (C4) takes one to a page that could not be found (see figure 7.2). The website (visitoslo.com) does still exist, but only contains links to external sites and not the referenced project description. The next webpage reference (C5) redirects to a website where the domain can be bought.
For impact 4.3 the first reference (C7) is a policy document that references the research implementation into policy but says nothing about the outcome of the intervention. The next reference (C8) is referencing a press release, however when attempting to access the website the page could not be found (see figure 7.2). The last two are statements by two interest groups that are actively lobbying for the inclusion of social tourism. The argument is not that these references never existed, they may have at the time when these case studies were constructed, however, the fact that they now no longer exist is an indication of the reach and significance of the claimed research impacts. Therefore, even though the presentation is done according to standards of proxy indicators for scientific quality in regard to the quality of impact it is still lacking. Because, in order to judge and assess the causality of impact according to a seamless web understanding (cf. 4.1) not enough proxy indicators of impact quality are provided to univocally make such claims. This trend can be observed in other case studies as well. For example, the University of Kent summarises their research impact in similar terms (cf. table 7.4 & table 7.5).

### Table 7.4 Summary of impact by the University of Kent, C-19-7)

<table>
<thead>
<tr>
<th>Reference</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Key researcher’s name] research informs tourism policy for the world’s 40 small island developing states (SIDS) and poor coastal communities. He generates data that challenge conventional wisdom about the value of large scale tourism for these fragile economies. His findings identify niche tourism as a more sustainable basis for economic growth. The Commonwealth, World Bank and individual governments, as well as numerous other NGOs and industry associations, are amongst those who draw upon [Key researcher’s name] research findings in order to help vulnerable states formulate effective policies and develop appropriate tourism initiatives.</td>
<td></td>
</tr>
</tbody>
</table>

Source: University of Kent, C-19-8

### Table 7.5 References for the University of Kent case study on small scale tourism

<table>
<thead>
<tr>
<th>Reference</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.4 World Bank/Commonwealth Secretariat meeting 'Data for Growth': Key Issues and Outcomes. (December 2012).</td>
<td></td>
</tr>
<tr>
<td>5.5 Statement from Programme Director, Wilton Park (21 June 2013).</td>
<td></td>
</tr>
<tr>
<td>5.7 Statement from Strategic Planning and International Division Malaysian Ministry of Tourism (29 May 2013).”</td>
<td></td>
</tr>
</tbody>
</table>

Source: University of Kent, C-19-8

First of all note that majority of the references are authored by the key researcher (four out of seven in total) and that not the full number of references are provided. As indicated earlier, when these references are authored by the key researcher, this is in essence claiming that they themselves did have an impact. The problem that arises with evoking such references by the key researcher, is when the claim is that ‘conventional assumptions are challenged’ the impression is immediately created that the claimed impacts are localised, as no other individuals have picked up the on such criticisms. Furthermore, by referencing the key researcher themselves that the impact is claimed for, potential conflicts of interest arise which is presumably why the University of Surrey choose to not mention this aspect. In regard to 5.4 (cf. table 7.5) this reference primarily focuses on the challenges that are faced by vulnerable communities; it only mentions outcomes (i.e. impacts) in a general sense.
that are unrelated to specifics of the claimed research impact. The two remaining references (5.5 & 5.7) are testimonials by individuals that had personal relations to the researcher which were not available. Therefore, the entire case study claim, in a strict sense cannot be considered 'independently verifiable' as the key researcher had been involved in the majority of the references provided. Such potential for conflict of interest is presumably why higher ranking institutions in general choose to omit this strategy of using their own research outputs to qualify their research impact claims. Similar to the University of Surrey, the impact accounts observe rules for proxy indicators of scientific quality (in the 'Underpinning research of the impact in question' section), but is sparse on proxy indicators of impact quality (in the 'Details of impact' section). Another example of the University of Bedfordshire is instructive here for this difficulty of differentiating between these two proxy indicators. They summarised their research impact and presented their references as follows (cf. table 7.6 & 7.7).

Table 7.6 Summary of impact by the University of Bedfordshire, C-26-10

<table>
<thead>
<tr>
<th>The focus of this statement is upon research funded by the Esmée Fairbairn Foundation during 2009-2011 into how food tourism can be used for sustainable development. We understand this to be the first externally funded research project on this subject. Food tourism strategies and associated sustainable development policies informed by the research include the Causeway Coast and Glens of North Ulster; the Brecon Beacons National Park; and Fáilte Ireland are using the research results in their strategy development. The impacts of food tourism in rural areas related to sustainable development include: the strengthening of economic linkages and multiplier effects within regional and local economies; encouraging cultural identity and distinctiveness; and the reduction of environmental pollution from food transportation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source: Ref webpage</td>
</tr>
</tbody>
</table>

Table 7.7 References for the University of Bedfordshire (C-26-10)

| 5. Sources to corroborate the impact |
| 5.1 Supporting Testimonial A – Miller Research |
| 5.2 Supporting Testimonial B – email correspondence with Fáilte Ireland |
| 5.3 [www.beds.ac.uk/knowledgehub/events/khnews/2010/aug/100831-foodtourism](http://www.beds.ac.uk/knowledgehub/events/khnews/2010/aug/100831-foodtourism) |
| 5.5 The report (with p.16 outlining the seminar) [www.ruralgateway.org.uk/sites/default/files/Taste%20Scottish%20Borders%20Project.ppt](http://www.ruralgateway.org.uk/sites/default/files/Taste%20Scottish%20Borders%20Project.ppt) |
| 5.7 [www.ukfoodtourism.com](http://www.ukfoodtourism.com) |

(University of Bedfordshire, C-26-10)

First of all note, that no qualifiers for what the provided web links were are included, or when these were accessed and neither are the full 10 references provided. Reference 5.1 is a supporting testimonial by the think tank that commissioned the research in question, once again not ethical account of how to avoid potential of conflict of interests is provided. The next reference (5.2) is by a tourism board that was interested in promoting the destination in question; as such both of these evoked references have an inherent conflict of interest in regard to the claimed research impact. Both of these testimonials were not publically available and as such could not be used here to corroborate the impact. The next reference (5.3) redirects to a page not found. Similarly, reference (5.4) re-directs to the homepage of the Sandic hotels, and reference (5.5) also redirects to a page not found and the last reference, with reference 5.6 being the same report. The last reference (5.7), once again redirects to a page that is not found (see figure 7.3). As aforementioned, the fact that such web pages no longer exist, a mere two years after the assessment was conducted, is not an
indication that they did not exist when the case study was written and assessed. However, it is an indication of how much value the institutions that maintain such websites placed on the value of the impact in question, when they simply deleted them. In other word is not a very good implication for the reach and significance of the claimed research impact.

7.1.5. Research impact presentation rules

As we have seen, the meso discourse of creating an impact claim is not only disciplined by the REF guidelines, but also by the availability of the evidence that can be rhetorically mobilised (cf. 3.2). The argument that is pursued here, postulates that these practices are not inherent to the type of impact that was presented (the above cited examples all present different types of research impact, cf. 6.3.3), but rather a function of the difficulties of claiming any sort of research impact in general (cf. 4.3) and possibly explain why in the previous chapter the identified tourism impacts primarily focused on small scale impacts. As presumably, it was ‘easier’ to reference small scale impacts which the researchers’ in question have direct personal knowledge of. However, by only relying on personal knowledge, the impacts appear limited in reach (cf. 6.4). In general, the provided references made it difficult to judge the veracity of the presented research impact claims. Especially, when individuals are referencing their own work, it creates a circular framework of references, by either referencing themselves or referencing an exterior source that commissioned the research potential conflicts in attribution are not mitigated (cf. 4.3.5). Similar issues of a potential conflict of interests arise when the funding bodies or interest groups behind the research are evoked as references.

This is not to say that the research in question didn’t have an impact, but it makes the independently verifiable requirement rather difficult, without adequate proxy indicators of impact quality. In regard to the references that were provided, we can see that the following conflation that could arise, websites, personal statements, or policy reports that they themselves have influenced or even written seem not to be the most reliable sources for impact quality, even though these might be acceptable from a scientific point of view. Given the here identified types of references presented, it was not possible to verify if an impact had or had not occurred (while not having access to the testimonials). The here implied inference is that the way that these studies were presented, did have an impact on how they were judged and based on the narrative analysis and the here conducted analysis of the proxy indicators of impact quality and evoked references. In general it seemed that
for what 'skilful' measures were used when applying knowledge of how to construct a scientific claim to an impact context, these are as follows:

1. Firstly, present the impact in a general format, this allowed for the impression of reach, without having the problem of getting bogged down in the intricacies of the specific research impact in question (cf. 4.3.5).

2. Secondly, research references are presented academically in addition to the journal ranking scores (particularly ABS scores if possible), as it creates the impression that research in question is of high quality.

3. Thirdly, mention the amount of research grants received (if possible), alongside other verifiable monetary investments made that can be linked to the research, in order to showcase the reach of the impact (even if no causal connection can be identified, cf. 4.3.2).

4. Create an interlocking reference network that clearly tiers what reference corresponds to what claimed impact, furthermore, make sure to mention the name of the authoritative sources (World Bank, EU, big companies etc.) as much as possible in the text and references, as these give indications of how the research impact is situated within the seamless web of society (cf. 4.3.3).

5. Lastly, avoid using your own research as references for the research impact, as this creates potential conflicts of interests. Furthermore, if you absolutely have to use such references, reference them in such a way that they appear to be authored by a collective body, whilst avoiding web references where this can be verified.

Now the cynical interpretation is that such writing rules are 'gaming the system', and to a certain degree this may very well be the case. As following such proxy indicators of impact quality can greatly improve the rhetorical re-construction of an impact claim. However, following such disciplinary rules of presentation does have to link into some changes within the seamless web of society (cf. 4.4). The point of including proxy indicators of scientific quality in such writing rules within a scientific context was that they restrict the potential of interpretation (cf. 3.4), allowing for a reliable scientific account. The same applies for the how the REF constructed the proxy indicators of impact quality (cf. 4.2), the reason is that without such structure the assessment becomes infeasible, as the assessors have to ascertain the quality of the presented research impact. From an evaluation point of view, the sheer amount of workload that the assessors have to go through is very demanding on the individual and this creates a significant challenge in its own right. Sayer (2014) raised this point in his criticism of the REF 2014, in specific he focused on the peer-review process for assessing the output quality, however the same ought to apply to judging the impact aspect. His biggest criticism is directed towards the workload of the assessment, he states in regard for the output assessment:

“If one evaluator read each output and workloads were evenly divided between History panel members, each would still have to read and evaluate 250 substantial articles or books. Any double reading would only add to this burden.” (Sayer 2014:35, author’s emphasis)

Now add to this that research impact assessment is read by the same people that assess the output and by end-users assessors that have busy jobs in general (cf. 4.2). These individuals are often highly established within their discipline or sector and are doing the assessment alongside their normal work. As such, the references and more importantly the presentation of the research impact seem to become the key factors on which the research impact claim were ranked, rather than the content.
In the REF guidelines it states that assessor will not make collective judgments about the contributions (REF 2012:117) meaning that the assessors’ judgment ideally will be based on the individual consultation of the evidence material. However, based on the time constraints in question it is doubtful to what a degree this is even possible. Therefore, it appears that the presentation matters greatly and future submitting universities should ensure that their presented impact claims are as easily accessible as possible in terms of structuring the information flow, including a scale to verify the impact by, elaborating on potential ethical conflicts and showcase rigour. Obviously, this will aid the assessment, however it will also aid public accountability as it makes the data material more accessible for the general public. Nevertheless, as shown above such a structure does discipline a linear understanding of the causality of research impact into the presented research impact claim, where often such direct causal linkages may not be present or easily identifiable (cf. 4.1).

7.2. The disciplining of universities’ behaviour

The disciplining of the behaviour of the universities does not stop with the understanding of impact that is enforced. Another form of disciplining can be observed within the impact templates that were submitted to a critical discourse analysis (cf. 5.2.2). Within these templates universities outlined their future strategies of how they would implement research impact. In this section we will address the disciplining that the REF exerts upon the assessed tourism studies faculties in specific by teleologically elevating the ends over the means focus enforced by the REF (cf. 4.4). Within the research ecosystem such a disciplining cost, has to be mitigated somehow in order for the universities to be eligible to apply for the research funding that exists within the larger research ecosystem. As such, whatever disciplinary requirement the REF imposes (cf. 4.2) the universities have to play this game, in order to be part of the funding ecosystem.

From the ecosystem sense such extra-scientific factors, such as values that exist within wider society (cf. 6.3) now officially discipline research conduct. This happens, because impact is now fully integrated into the assessment structure and by that token fulfils a disciplining function of the REF assessment. Such disciplining is a by-product of merely participating within the assessment. The disciplining occurs because the REF and the submitting universities have overlapping magisteria of interest, where the universities have to submit to the authority of the REF. The union of researchers (employee), universities (institution) and the REF 2014 assessment system (disciplinary body) together create a union that is both enabling and restrictive within the larger ecosystem that is the seamless web of society (cf. 4.4). The REF is able to claim that there have been “impressive research impacts,” which are of mutual vested interest to the universities, as they are able to claim these research impacts now in their marketing campaigns\(^{107}\) and future research funding applications. The UK government is invested in the assessment, as they have spent several hundred million GBP in tax payer money on the exercise to evaluate the performance of the universities. Similarly, placing high within the rankings justifies the universities monitory investments that they have committed to research impact. These overlapping magisteria of interest mutually reinforce each other by the specific vested interests and create a symbiotic relationship within the larger research ecosystem, as

\(^{107}\) However, the Advertising Standards Authority (ASA) had to reprimand universities for using their REF results in a misleading fashion. For example: “[t]he University of Strathclyde, meanwhile, was found to have "misleadingly implied" its physics department had been ranked a top-performing department directly by the Research Excellent Framework (REF) in 2014. The ASA said that it broke the rules because the REF did not formally rank the universities.” source: [https://www.buzzfeed.com/saraspary/a-bunch-of-british-universities-made-misleading-and?utm_term=.vrZ5GrD6#.sg15LaY2v](https://www.buzzfeed.com/saraspary/a-bunch-of-british-universities-made-misleading-and?utm_term=.vrZ5GrD6#.sg15LaY2v) accessed 2017-11-26
the REF and the universities are now officially recognised as representing research impact. The cost for the UK government to justify the several billion pounds it spends annually on research\textsuperscript{108} is the several million the assessment cost to conduct.\textsuperscript{109} However, what is the price that maintaining such a symbiotic ecosystem costs the universities, apart from creating the case study in question and avoiding being caught when using the rankings in marketing in a ‘misleading’ fashion?

When analysing the impact templates of the tourism studies faculties such disciplinary costs become apparent, in specific four major uniformities could be identified. They all put a strong emphasis on maximising research impact as their goal of the research impact strategy (7.3.1). This was to be achieved by facilitating a stronger emphasis on applied research (7.3.2) and having an emphasis on recording and marketing of research and its impact (7.3.3). Lastly, there was also an emphasis on impact officers that were meant to increase industry research collaboration and guide researchers on their mission to facilitate research impact (7.3.4). Such general trends were present regardless if the tourism studies faculties submitted to Panel 19 (Business and Management Studies) or their designated home panel 26 (Sport and Exercise Sciences, Leisure and Tourism), once again showing the success of such disciplinary measures of the REF in disciplining the universities conduct within the UK research ecosystem.

7.2.1. Maximising research impact

The way that all assessed tourism studies faculties narrated their impact templates was that research impact ought to be increased. All faculties embraced research impact; committing monetary investments to the facilitating more research impact. For example the University of Kent (C-19-7), stated that they will provide “a one year research assistant position and £10,000 in funding from other school sources to support [research impact].” The University of Cardiff (C-19-6) pledged that “all research active staff having a £3K Individual Research Budget which may be used to support impact generating activities” and the University of Brighton (C-26-13) pledged a “£145k investment in the sport and exercise ‘polyomics’ laboratory” all in order to maximise research impact. In regard to the mentioned “tourism applied research centre” this was presented by a similar pledge to research impact (through applied research) but without stating the specific monetary sum. In general, all tourism studies faculties committed themselves with large investments to facilitate more research impact, either mentioned explicitly or implied in the extension of research impact facilities or research centres. As such, in combination to the traditional scientific norms of conduct, the newly established and disciplinary norm now seems to be; thou shall have research impact and no cost seemed too great in order to facilitate this now explicit telos of scientific inquiry. However, if such fervour to maximise impact will always result in benevolent outcomes remains to be seen as the ‘road to hell is usually paved with good intentions’ (cf. Dymitrow and Brauer, 2016).

7.2.2. Emphasis on applied research

How such increase in research impact was to be facilitated was through applied research and this differed slightly for the assessed universities. For example, Bournemouth University states that the monetary investments by the university and industry partners create “industry-facing studentships underpin each of our research clusters by providing support for researchers pursuing industry funded projects” (C-26-14). Similarly, the University of Kent (C-19-7) focused on improving the underlying research infrastructure, with a specific focus to “[d]evelop the structure and focus of our applied

research centres” and the University of Sunderland (C-26-9) “recognise[d] the importance of applied research, international collaboration and knowledge transfer” emphasizing this aspect in their research impact strategy. Meanwhile, the University of Brighton (C-26-13) emphasized a commitment to multidisciplinary research\textsuperscript{110} with a commitment to marketing their research findings, in order to “[disseminate] the impacts of research on expertise and skill acquisition within the UK and Europe.” The University of Surrey (C-26-11 & 12), stressed that in order “[t]o maximise the extent and reach of impact [they need to work] closely with existing long-term partners and creating new industry partners. “ The University of Nottingham (C-19-5), wants to introduce an “annual Impact Awards, with financial rewards attached, for the best examples of research impact.” So regardless, of the specific strategy tourism studies faculties pledged that their applied research centres and business collaborations ought to be increased in order to facilitate more research impact, disciplining their behaviour further by emphasising collaboration, incentives and monitoring system.

7.2.3. Monitoring research impact
The monitoring aspects, was also a commonality found in all submitting tourism studies faculties. However, how such monitoring was supposed to be implemented and what potential benefits were outlined differed slightly. For example, the University of Kent (C-19-7) explicitly described their monitoring practice in such terms;

“\textit{We will maintain records of our impact activity to retain examples of best practice and create an institutional memory of our previous achievements.}”

– University of Kent (C-19-7), author’s emphasis

Bournemouth University stated that their “strategy will require more systematic recording and evaluation of research studies” (C-26-14). Meanwhile, the University of Surrey (C-26-11 & 12) just stated that there is a need to “[t]o systematically monitor and review our impact strategy and outcomes.” In general, the monitoring and internal assessment (i.e. disciplining) of research impact was presented as an essential part for achieving more research impact in the future. This presumably, will introduce performance indicators for academics within the universities themselves modelled after the REF, further disciplining impact into the research ecosystem. Such a development is akin to the focus on research outputs and what it did in the past to create the ‘publish or perish’ culture (cf. Redden 2008). Furthermore, as the evidencing of the research impact was difficult (cf. 7.2.2) presumably such monitoring systems will also facilitate better evidencing in the future, by identifying acceptable proxy indicators of impact quality. As such, the disciplinary cost of such monitoring represents an additional cost that the REF enforces upon the tourism studies faculty staff members and research infrastructure. One suggestion that this research can make based on the encounter empirical material (cf. 7.2.2), is for universities claiming impact to either refrain from using website references or creating their own backup system of the referenced websites.

7.2.4. Impact officers
In regard to impact officers, it is particularly illustrative of such symbiotic disciplinary relationship of the REF and the tourism studies faculties within the research ecosystem and the associated disciplinary cost. For example, the University of Cardiff (C-19-6) expressed their choice as follows:

\textit{\textsuperscript{110}“For the period 2014 to 2020 SaSM has reaffirmed its core mission to produce applied multidisciplinary research that benefits global and national decision makers, grassroots organisations, elite sport specialists, Paralympic athletes and citizens in many countries. “ University of Brighton impact template, author’s emphasis}
“In addition, the appointment of the School’s first Research Impact Officer, based in the Research Office, assisted in connecting academic research with various potential beneficiaries. The role has involved two key components: a) creating knowledge about how impact can be effectively achieved throughout the multiple and complex stages of research, and b) building sustainable processes to embed impact-related activity within the School.” – University of Cardiff (C-19-6), author’s emphasis

The University of Nottingham (C-19-5) echoes such a conceptualisation of what an impact officer’s role, they state:

“Establishing a School Impact Officer to champion awareness and development of Impact related issues (with a position on Research Directorate).” – University of Nottingham (C-19-5), author’s emphasis

The same applied for tourism faculties that submitted to the unit of assessment 26, for example the University of Brighton (C-26-13) states:

“The university’s impact officer will strengthen the expertise needed to advise on the development of collaborations and offer training courses to SaSM researchers on how to stimulate, document and publicise impact.” - University of Brighton (C-26-13), author’s emphasis

Out of all the identified Tourism studies HEI’s, three mentioned an ‘impact officer’ explicitly. However, the ones that did not mention it explicitly implied a similar job role of ‘development officer’ (Bournemouth University, C-26-14) or some other synonym. For example, the University of Kent (C-19-7) stated aspects like having “Research Services’ public engagement experts” Similarly, the University of Sunderland (C-26-9) stated that they will set up a:

“University Research and Innovation Committee, which helps to determine strategy and tactics, sets and monitors targets, and identify and take advantage of opportunities, as well as helping to implement appropriate academic governance” University of Sunderland (C-26-9), author’s emphasis

Lastly, even though the University of Surrey (C-26-11 & 12) did not explicitly mentioned an impact officer in their impact template, they did state their intent to “maximise the extent and reach of impact by working closely with existing long-term partners and creating new industry partners” and at the point of writing, they now also employ three Business Partnership Managers. The University of Kent now employs an Impact and Engagement Officer and the University of Sunderland now employs a Research Development Officer. Bournemouth University now employs a ‘Knowledge, Exchange and Impact Manager’. As such, regardless of the job title description of

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111 Job posting for Research Impact Officer at the University of Surrey, http://www.jobs.ac.uk/job/BEN004/research-impact-officer/ accessed: 2018-02-08  
112 Job posting for Business Partnership Manager at the University of Bedfordshire http://www.jobs.ac.uk/job/avy995/business-partnership-manager accessed: 2018-02-08  
113 Impact and Engagement Officer, https://www.kent.ac.uk/researchservices/staff/ accessed: 2016-09-20  
114 https://www.sunderland.ac.uk/more/research/contact-research-support/contact-funding-development/ accessed: 2016-09-17  
Impact Champion, Impact Officer or Business Partnership Manager, etc. the monitoring of research impact, the focus on facilitating more impact through applied research all seem to represent disciplining measures that the universities had to take in order to qualify for the assessment and remain part of the symbiotic research ecosystem. The differences that did exist between the templates were primarily in the finer details of how research impact was meant to be achieved in practice. In general all faculties embraced this focus on research impact, in that they fully commit themselves towards the telos of increasing research impact (cf. 4.4).

In the contemporary REF assessment, research impact comprised only 20% of the assessment criteria of the total REF assessment.\(^\text{116}\) However, it is explicitly stated that there is an “intention of increasing this in subsequent exercises” (REF, 2011C). The rationale that is given for this change in focus is to provide “benchmarking information and establish reputational yardsticks” for the UK universities that is used to influence and guide decisions on research funding, but also to provide “accountability for public investment in research and produces evidence of the benefits of this investment”. Presumably, this is a reason why all tourism studies faculties approached their commitment to research impact in such a uniform manner. As such, the assessment is not only an evaluation; it also disciplines universities, steering them to focus on extrinsic values of ‘the greater good of society’.

7.3. The future of research impact

As mentioned in the introduction, the postulation that this research makes is that the REF represents a disciplining that UK universities have to obey in order to be eligible for government funding, i.e. remain a prominent member of the research ecosystem. This puts the REF assessment into a disciplining position, as the participation within the assessment enforces the research impact discourse that the REF is advocating. The guidelines and assessment standards become the disciplining tool that structures and guides future behaviour within the research ecosystem. In general, all case studies reported their research impact in a positive manner, presenting their research as having had a definite research impact. This is to be expected by the very nature of the exercise, in the sense that it is an assessment of research quality. As such, universities have a vested interest in self-promoting and only choosing the very best cases of their research impact. However, these ‘very best’ cases seemed to be geared more towards the assessment structure, rather than actual research impact (cf. 6.3). Nevertheless, such issues may explain why the universities choose to reinterpret a ‘best case’ scenario as localised impacts, rather than the ones that the most significance and reach (cf. 6.4) as these are much harder to evidence. There were finer differences in how the research impact was presented, but in general impact was presented the outlined manor, using flowery and positive rhetoric whilst actually not saying a lot. This was the case not just for the tourism studies faculties. Furthermore, as maintained within this chapter, the border between indoctrination and education in disciplining is far less clear than we would like to admit. For example, here is a translation of the Stasi museum web page entry:\(^\text{117}\)

"The rulers created a system of power based on force, threats, rewards and privilege. Individuals were taught to conform, comply and, whenever possible, participate."

\(^\text{116}\) The way that quality research is conceptualised is with a focus on research impact. It was initially suggested that the impact of research assessment was supposed to count for 25 % of the total assessment which later got changed to the current 20%, research outputs contributing 65% and environment 15% (REF, 2010).

\(^\text{117}\) [http://www.stasimuseum.de/en/enausstellung.htm](http://www.stasimuseum.de/en/enausstellung.htm) accessed: 2017-11-26. SED stands for Sozialistische Einheitspartei Deutschlands which was the communist leading party of East Germany, they used similar positive and flowery rhetoric of such disciplinary measure, e.g. Stasi is short State Security Service (Staatssicherheitsdienst, SSD) of the Ministry for State Security (German: Ministerium für Staatssicherheit, MfS).
The SED, with unrestrained access to almost all areas of life [...] was able to comprehensively control the population and to reward and reprimand as needed.” (Author’s emphasis on the disconnect between disciplinary regime and flowery rhetoric)

The pictures of the disciplining effect of putting the ends above the means in the case of the East German sports program that were used within the literature review (c.f. 4.4) came from a special exhibition at the Stasi museum. As has become clear within this chapter, the ‘impact’ of the REF is far bigger than just dictating the style on how research impact ought to be claimed. As was most clear from the impact templates, the assessment of the REF has a disciplining function for the entire UK research ecosystem. This happens because, if the assessed universities do not conform to the disciplinary norms outlined, they will be judged unfavourably. Within the impact templates when the universities outlined their approach to impact they mentioned a commitment to applied research, impact officers, networking, funding/building research impact support infrastructure and facilities etc. The academic cultural change that this type of commitment to research impact will bring to the UK research ecosystem is already underway, as research “[I]mpact is not going to go away” (Finch, 2016:6). Therefore, the new performance indicator of research impact and the associated value structure of what research ought to be (cf. 2.4) will become the new standard for the next REF assessment.

The here outlined difficulties found in this iteration of the REF will presumably be fewer for the next round, as universities now have precedent cases of how ‘good’ impact ought to be presented (cf. 7.2.3). Furthermore, based on such insights and the REF’s announcement that research impact will get a bigger emphasis in the next assessment (REF 2021) it is fair to assume that research impact will become a third performance indicator for academics that want to remain within the UK research ecosystem. The first performance indicator is teaching for obvious reasons. The second one is research publication and now the newest one will be research impact, all in all further increasing academic competition and workload. The question now becomes, with such an increase in workload of academics, what will give; quality, enthusiasm or integrity to only mention a few of the potential victims (cf. 4.4). As was seen within the critical discourse analysis of the case studies, there were substantial problems in verifying the presented research impact claims due to the lack of an account of how the research impact claims were constructed. In general, one of the key findings of this chapter is that such a disciplining function of the research impact assessment makes the REF into more than an exercise for public accountability and benchmarking, it literally is controlling/disciplining the entire UK research ecosystem. Such concerns for infringing on academic freedom and integrity, were the primary reason why interviews with academics active within the UK (tourism) research were conducted, however, before moving on to this aspect let’s summarize what was learned within this chapter.

7.4. Summary of the chapter

The chapter outlined how the proxy indicators of impact quality discipline the universities, as part of the (meso) research impact discourses that are inherent within the disciplinary framework. These standards discipline the narration practices involved in constructing a research impact claim, however there appears to be no consensus yet how to best follow such guidelines. Nevertheless, the REF guidelines in combination with the submitted case studies; now set a precedence of how such information ought to be referenced, presented and evaluated, further consolidating the impact telos into the research ecosystem. By unpacking the presented evidence trail of the case studies, the challenges that are involved in constructing a research impact claim could be highlighted. Currently, in the absence of a uniform standard on how to achieve research impact, the universities face a
compromise between self-promotion and accuracy in their impact claims. Nevertheless, the emerging disciplinary standard of how to; present, narrate and evidence research impact will presumably be determined by the academics that now take inspiration from established case studies, for the next iteration of the REF. The analysis of the impact templates (i.e. universities self-imposed disciplinary measures) showed that although the presentation of the commitment to impact differed, many faculties have now implemented similar strategies in dedicating their research more strongly to telos of research impact. The takeaway message from this chapter is that the meso discourse (of research impact) are discursively disseminated throughout the entire research ecosystem as the universities self-impose disciplinary measures in order to win favours within the funding regime. The dual assessment of reviewing past impact claims (research impact case study) and future strategy (impact template) now consecrates the authority of the REF and their (linear) vision of research impact (cf. 4.1) into the wider research ecosystem.
“[A]ll this stuff about impact is sort of a game that is played, but not everybody is listening to it, or not everybody is understanding it” (Professor of Tourism B, 2017-01-12)
8. RESEARCH ECOSYSTEM WIDE CHANGE

This chapter presents the analysis of the identified macro level discourses of research impact that resulted from engaging with individuals that are active within the research ecosystem of tourism studies. These academics are representative of the entire hierarchy of the research ecosystem, nevertheless due to the limited sample size; the findings are triangulated by reference to other studies that investigated the notion of research impact and the REF assessment process. This is done in order to emphasize that the identified discourses exist within the research ecosystem beyond the approached individuals. Within the methodology chapter the different individuals that were contacted for the semi-structured interviews are outlined (cf. 5.3). First the chapter starts out by reiterating how multiplicity and the difference of values (cf. 2.5) create different interpretation of the same phenomena within the research ecosystem (8.1). Using this analytical lens three broadly defined categories of the discourses surrounding research impact could be identified; these were an implementation based understanding, a game playing understanding and a value based understanding. These are discussed in the context of what it meant for understanding the definition of research impact (cf. 8.1.1) and what it meant in terms of the cognitively achieving these stages (8.1.2). Afterwards the research discusses the notion of the ‘the academic game’ of research impact and how some academics perceived the impact agenda as mere surface engagement (8.1.3). The following section then challenges this assumption, teasing out the ways in which the introduction of research impact does indeed seem to have changed academic praxis (8.1.4), concluding the interview section with a general discussion on the changing UK research ecosystem. Additionally, the reports used for the discussion are the REF’s own pilot study (8.2.1), a RAND report evaluating the REF 2014 assessment (8.2.2) and Lord Stern’s review that was published in summer 2016 (8.2.3). These three reports give insights into the development of the changing research ecosystem as well as providing a framework to discuss the informants more speculative opinions (8.3). The chapter concludes with summarising the conflicts and opportunities that are created for the research ecosystem (cf. 8.4).

8.1. Voices of the REF'ed

As this thesis understands human activity as part of a (human) ecosystem, our human proclivities and limitations become an extra-scientific factor (cf. chapter 3) that influences the research ecosystem (cf. chapter 2). Within such an ecosystem humans engage in intra species cooperation, just like other social animals. What makes the human animal different from other social animals is the degree of sophistication to which we humans have taken this cooperation. Human cooperation has made the human animal so successful, that it has spread through all corners of the globe, establishing human beings as the dominant species on the planet. However, even though such cooperation is beneficial for the individual it comes at a price, namely the subjugation of individuality for the telos of this cooperation and the maintenance of the technology and institutions that enables such conduct. As we have seen in the previous chapter, a change within the rules facilitated a change within the behaviours of the individuals i.e. it discursively disciplined them (cf. 7.3). When now the disciplinary rules of one particular ecosystem change; the individuals that comprise that particular social system will consciously or unconsciously have to adjust to such new rules and circumstances. Within the UK research ecosystem, the introduction of research impact as a new performance indicator represents such a (research) ecosystem wide change. Furthermore, as the research praxis represents a specific culture in its own right (cf. chapter 3) the associated rules and norms will change accordingly. Furthermore, such rules and norms depart from particular value structures (cf. 2.4) that become performative once the individual is disciplined according to these disciplinary
regimes (cf. Piaget, 1950; Foucault 1972; Lyotard 1984, Collins, 2010). Figure 8.1 shows the consequences that happen when the technology underlying such cultural interaction breaks down, but the performativity requirement of people’s values is still in place (i.e. ‘I have to be at work on time’).

Figure 8.1 illustrates London in the morning during a Tube strike, on-route to an interview scheduled that same morning. The technology of public mass transportation is vital to maintain the cultural ecosystem of London; such an infrastructure disruption is analogous to the changes the REF brought into the disciplinary dimension of the UK research ecosystem. Once an infrastructure or disciplinary regime is in place, any changes, downsizing, interrupting or destroying these will result in the manifestation of different social interaction within the changed ecosystem. The affected people will just try to go about their everyday businesses and will have to make do with their new circumstances if they aim (telos) is to maintain their current standard of living (i.e. wage earning) of the individual. 2017-01-09, source: author

Within chapter 5, the analytical framework for the interviews was introduced; the analysis was subdivided into a framework analysis and post hoc thematic analysis. In regard to the framework analysis, different disciplinary aspects of the research ecosystem were identified from the recordings of the interviews, namely a focus on research praxis, research funding, research accreditation and associated research values (cf. 5.3.5). The intention was to map out the level of familiarity of the individual in question with such rules and norms that structure the research ecosystem. In regard to the post hoc thematic analysis, the study took inspiration from the Piagetian notion of how human beings develop cognitively within different cultures (cf. 3.3). This approach allowed for identifying more or less discrete categories of (cognitive) development of how an individual conceptualised and understood the discourse surrounding research impact. The following sections are structured around these different ‘stages’ of cognitive development that could be identified within the interviews. These stages of cognitive development are discussed in regard to the function of research impact and different aspects of the research ecosystem. One important caveat to add is
that these stages were expressed as being additive rather than antagonistic.\footnote{118} This meant that there seemed to be a hierarchy between the identified levels and when an individual reached a new ‘stage’ within their cognitive development, the older understanding was not abandoned but reconceptualised and integrated with their current ‘higher’ understanding.

Furthermore, even if personal values may appear subjective, there is a performative dimension to enacting values that are constraint of the environment (wishing you can fly will not make it so), the in-group (try lying and cheating all the time and see how far you come) or you own body (try living without sustenance). In analogy, each individual football player may have their personal wishes and desires; however, we can only talk of the ‘game’ of football if all players behave according to the rules of the game (i.e. common value structure). The referee’s role is to enforce discipline (i.e. the values of football) as such ensuring the smooth continuation of the game, if not he has the power to punish the participants so that the game does not fall apart. So even the underlying values and understanding of research impact appear subjective to the individual, the ‘rules of the game’ of how you organize scientific inquiry (i.e. the game) are far from it (cf. 4.4). The reason for this is because you are dealing with human beings that have a (somewhat fixed) biological nature (cf. Sapolsky 2005).

The post-postmodern perspective introduced within this thesis (cf. 3.1) acknowledges the socially constructed aspect that allows for minor adjustment and room of interpretation of these collective values structures, however the underlying biology is not a ‘blank slate’ (cf. Pinker, 2003). Within one particular value system certain contributions are then deemed more or less valuable as it positively or negatively affects the in-group (e.g. goal scoring averages, red cards received or number of substitutions) and this creates meaning for the in individuals that are familiar within the language domain of this particular culture (i.e. game). However, as such rules deal with human beings that have certain biological proclivities and tendencies; they cannot be modified indefinitely without the ecosystem collapsing from environmental strain.\footnote{119}

As was stressed several times within this thesis, disciplinary frameworks lock down certain interpretations of reality, making them appear static, factual and ‘true’ (cf. 2.3). However, in praxis there is always a multitude of different interpretation that arises due to our bounded human perspectivism (cf. 3.2). Figure 8.2 is the first known illustration of the duck-rabbit famously used by Wittgenstein (1958) to emphasize our use of language games. It was published on the 23 October 1892 issue of Fliegende Blätter (“Flying Leaves”) which was a German weekly non-political humour and satire leaflet that operated between 1845 and 1944 in Munich (Smolderen 2014).

\footnote{118}{The reason why the word ‘higher’ and ‘stages’ are written with quotation marks in the following sentence, is because the ‘highest’ understanding of research impact conceptualised research impact as being influenced by competing values. As such, the words ‘higher’ and ‘stages’ lose some of their meaning from such an understanding, as it relates to competing values that structure the hierarchy and influence the categorisation, rather than inherent issues of rank within one particular hierarchy or one ontology.}

\footnote{119}{For example, the idea about the intrinsic worth of the human (soul) is a religious presupposition to include renewal into the value structure of the in-group (cf. Peterson, 1998). Without this aspect the ossification of contemporary values leaves the culture ill prepared to deal with future changes in the environment. The post-postmodern understanding acknowledges that human values may appear subjective, however if the highest goal is a stable society, the secure upbringing of the next generation and the prosperity of the individual the resulting value structure by necessity cannot be arbitrary. Furthermore, even if the way that we humans learn to understand this non-mutability of value structures (i.e. the holy spirit, the id, your character, human nature) and how culture (i.e. God, superego, value structures, the state) has made sense of our biological nature, so that the individual (i.e. the soul, the ego, your consciousness, the self) can navigate (human) reality differs as well. However, only because the nomenclature differs, does not mean that the underlying human behavioural patterns can be arbitrary to achieve the stated telos. Similarly, understanding this and embodying this are two different things as well (cf. Collins and Evans, 2008).}
Wittgenstein (1958) used this cartoon to emphasize that there is a difference between the signified (i.e. the thing in itself) and the signifier (i.e. the word used to describe the phenomena). The duck-rabbit (cf. figure 8.2) highlights the inherent multiplicity of human bounded perspectivism that is inherent within the highly complex phenomena of research impact, the following analysis stresses this point. Furthermore, as Machiavelli ([1532] 2008) already noted ‘practical truth’ (i.e. what people believe) is more important for social organisation than philosophical truth (i.e. what is actually true, cf. 2.3). Therefore, what research impact is, is actually less important for the here presented argument compared to how the individuals academics are being disciplined and how this is influencing their behaviour and relationship to the values of the research ecosystem that are being imposed.

The research ecosystem is structured within a hierarchical fashion, similar to all human social endeavours that are structured around a particular telos (cf. Peterson, 1998). From a Piagetian perspective, this could be understood as representing different levels of cognitive development within the enculturing process, in regard to the degree of familiarity with the rules of the game (cf. 3.3). From a research ecosystem perspective this would be expressed as the discourse around research impact can be understood as a kaleidoscope of multiple understandings that inhabit the same research ecosystem (cf. 2.4). The thematic framework that was used to outline the rules of the ‘academic game’ for the interviewees broke down to conceptualising research impact according to; research in practice, impact in practice, evidences for research impact, the purpose of research impact and research impact as a performance indicator (cf. 5.3). All of these ‘proto’ categories were used within the interview discussion section to investigate different aspects of research impact game. The identified categories represented the ‘voices’ of the interviewees that were shared by more than one individual, either within or across ranks within research ecosystem hierarchy (i.e. the ‘REF’ed’ are the individuals that operate within the research ecosystem). Table 8.1 shows how the issues of the framework analysis related to the post hoc thematic analysis, i.e. each ‘understanding’ interpreted the same aspects according to its own presumptions.

| Table 8.1. outline of the categories used within this chapter and their ‘duck-rabbit’ relationship |
|-----------------------------------------------|-----------------------------------------------|
| **Categories of the post hoc thematic analysis** | **Categories of the framework analysis** |
| A. implementation based understanding | 1. research in practice |
| B. game playing understanding | 2. impact in practice |
| C. value based understanding | 3. evidences for research impact |
|                                           | 4. the purpose of research impact |
|                                           | 5. research impact as a performance indicator |

Source: author

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In regard to the different aspects of research impact (i.e. framework analysis categories 1 to 5) each particular understanding would interpret the same point differently. For example, in the presentation below A2, B2 and C2 will be contrasted in relation to salient issues that emerged from the critical analysis of the interviews. Within each of these aspects the same phenomena is discussed but depending upon the particular conceptualisation (A, B or C) a different interpretation of reality is created (c.f. 3.2). The following presentation of the analysis will now discuss this multiplicity and the consequences for the three categories of the post hoc thematic analysis along what it meant for; the definition of research impact (8.1.1), the different ranks in the social hierarchy of the research ecosystem in relation to cognitive learning (8.1.2), the academic research impact game (8.1.3), the shift in telos imposed by the REF (8.1.4) and the consequences for the changing research ecosystem (8.1.5). The point of this chosen presentation style is to emphasize that the multiplicity that was created by the differences in understanding (between A, B or C) represented an extra-scientific factor that shapes the research ecosystem in its own right. When faced with difficult ethical decisions in times of uncertainty, human beings easily abdicate responsibility to authority (cf. Zimbardo 2008).

8.1.1. The definition of research impact

In regards to how the interview subjects understood research impact, most took their lead from the official REF definition of research impact, clearly showing the disciplining effect the REF framework has on the research ecosystem (cf. 6.4 & 7.3). The difference in the associated understanding of the discourse was only a slight variation of that definition. For example, the following sentiments were often expressed:

"Well according to the last REF, impact for research is basically the sort of effect that your research has on the wider society, i.e. not in academia. [...] It is about external effects to academia, how far reaching your research is and what kind of change it has made or had it stopped a change in terms of the wider society." (Professor of Tourism A, 2017-01-05)

However, where the understandings often differed significantly was how they were interpreted. The word, concept, category or however the research impact phenomena was interpreted, there seemed to exist enough flexibility within each understanding surrounding the impact discourse that multiple interpretations of the same discourse could exist side by side within the same research ecosystem. One commonality that all interviewed individuals expressed, was exemplified by research impact positively laden rhetoric that was used to describe impact. Namely that research impact ought to influence society outside of academia in a constructive fashion; echoing sentiments of a social contract view (cf. 2.4). As such, there was also agreement upon connecting research outputs to societal needs. However, as discussed within chapter 6, how this type of impact was to be manifested, measured or implemented showed less agreement. One aspect that was often raised in regard to the REF’s decision to exclude teaching within the definition of research impact, most interviewed academics thought that this was not desirable. According to their understanding of how research impact functioned, such a contingency precluded a large part of how academics facilitate research impact (cf. 4.3.1). For example, one individual felt it necessary to distinguish between direct and indirect impact in their understanding of how research impact manifest:
“Now the reason I say directly or indirectly is because many academics effect change because of who they are and what they know, which is the product of their research rather than the connection between a particular paper and a particular research project and effecting change.” (Dean of School, 2017-02-20)

Such an understanding of how research impact functions conceptualises research impact through the individual academic, not in connection to a particular research output as was defined by the REF (cf. 4.2). Thereby, a whole different discourse of research impact is drawn upon when the individual in question conceptualises research impact in regard to how it ought to be implemented, functions and ultimately evaluated (cf. 4.1). In the above quoted interview, the individual was referring to the technical aspect that the narrative account of the case studies required a specific piece of research to be linked to a research impact (cf. 4.2). Within the previous chapter, we observed some of these difficulties when examining the research impact references (cf. 7.1). The here quoted comment reflected a different understanding of how research impact should discipline research compared to that of the REF. Another academic commented upon such a contingency; of how different individuals within the research ecosystem understand research impact differently, by stating:

“[…] research impact to my institutions means something completely different, like that basically means publishing in journals in the ABS list that are ranked three or four star.” (Lecturer B, 2017-01-27)

Now we can say the individual above may have an 'incorrect' understanding what research impact means to their institutions, however this does not change the fact that this understanding still influences the behaviour of the individual. Once again, different discourse and their different foci; are inferred in regard to the practical measures on the level of the institution, the individual or societal need that are being called forth as examples. Such a contingency multiples the complexity of what aspects are involved when research impact is discussed according to a neoliberal, social contract or Enlightenment telos of science (cf. 2.5). This is the reason why the discourse around research impact was earlier described as kaleidoscopic. For the lecturer in question, their understanding of research impact was expressed as:

“I think research impact to me means having an impact on the society that I study and I would do that by publishing where the people that I would want to impact have access to.” (Lecturer B, 2017-01-27)

So here we have an example of the institution being perceived to aligning themselves with very practical (neoliberal) values, meanwhile the researcher adopts a social contract view, while at the same time the institution and disciplinary body proclaim to further scientific knowledge. To say that the impact discussion opens a complex set of values is an understatement. In general, the academics commented upon the difficulties that arose due to the official evidence requirement that the REF imposes, in regard due to the practicalities of the assessment process (page limits, evidence requirement, narrative choices, etc., cf. 7.1) but focused less on these value conflicts, if they were even aware of them. Nevertheless, all agreed that the imposed disciplining structure of research impact as implemented by the REF made showcasing their impact more difficult. This lead some individuals to align their understanding of research impact in more 'practical measures', for example:
“[…] for me I think a practical way of looking at it is, downloads, citations and then that people are taking note of your research and the best would be actually influence policy makers.” (Research Fellow, 2017-02-02)

Such a focus on proxy-indicators of impact quality as defined by the REF may have been a good strategy in the past when the assessment was merely focused on outputs, however this no longer seems to be the case, and the resulting value conflict is not easily solved for an individual alone (cf. 4.4). As we observed within the previous chapter (cf. 7.3) as of now, there seems to be no consensus of what the best proxy indicators of impact quality are. The three specific understandings of research impact that could be identified from the post hoc thematic analysis, represented a: implementation based understanding, game-playing understanding and value based understanding surrounding research impact.

The discourse around the implementation based understanding focused on the practical dimension of research impact, e.g. how to best facilitate, advertise or present impact. Although not exclusively, the understanding that departed from such a discourse tended to be expressed by individuals that were in the early stages of their career and felt “there are things you still need time to learn.” (Lecturer A, 2017-01-05) in terms of publishing, applying for funding and building an academic career and other disciplinary rules and structures of the research ecosystem. In terms of learning how to publish this related to learning the rules of academic writing, structuring argumentation and knowing the associated field and other associated proxy indicators of scientific quality (not to mention proxy indicators relating to quality of impact). In terms of applying for funding this meant writing applications, knowing where to apply and how to formulate a funding application etc. meaning the understanding associated with this research impact discourse focused more on the praxis of implementing research impact. For such individuals, research impact represented a new set of disciplinary rules and associated proxy indicators of scientific quality (making no distinction between research and impact) that academics had to abide by, in combination with the traditional disciplinary rules they still tried to master. The examples raised and the problems discussed usually focused on the difficulties associated with the technical implementation of conducting their research. Such turmoil within the research ecosystem could be a symptom of the lack of accepted proxy indicators of impact quality, analogues to an external shock to any ecosystem (cf. figure 8.1).

The game-playing understanding of the discourse surrounding research impact departed from an understanding that “those behaviour changes that have become implemented relate largely to promotion and game-playing” (Dean of School, 2017-02-20), thereby such individuals understood research impact as the new academic ‘game’ that researchers were forced to play. Such an understanding interpreted the newly established proxy indicators of impact quality as lacking legitimacy, and this was often expressed in negative connotations, often in regard to how academics are being assessed, highlighting the difficulties associated with adequately capturing research impact. However, such individuals emphasised different aspects of the difficulties of practically defining research impact, compared to the previous conceptualisation of the discourse. They focused on department politics, careerism or political inclinations to only mention the few of the extra-scientific ‘games’ academics have to play in order to progress through the academic hierarchy within the research ecosystem. Such a conceptualisation of the research impact discourse viewed the impact agenda as surface

121 Public engagement, teaching, publishing, conferences attendance, performance assessments and so forth
engagement\textsuperscript{122} without any real behaviour changes to academic praxis merely imposing \textit{faux} proxy indicators of impact quality. This type of research impact discourse was primarily expressed by individuals who were in the middle of their career.

The value based understanding surrounding the discourse of research impact was conceptualised as a potential competitor for the Enlightenment telos of higher education, academia and science for society in general (cf. 2.4). The discussions of research impact focused on questions such as: What impact \textit{should} research have on society? What are good academic \textit{values}, how to best assess research performance or what is the \textit{purpose} of universities and research for society? One individual, departing from this understanding, commented upon the multitude of different forces that influence the research ecosystem, by stating that "research agendas are dictated by other factors which are beyond the REF" (Professor of Tourism B, 2017-01-12).\textsuperscript{123} Thereby, such a discourse evokes extra-scientific factors and sees research impact as just one of the responsibilities that academics have to align themselves within the research ecosystem. Research impact from this view is competing with other values (blue sky research, teaching, academic integrity, cf. 2.4 on the multiplicity of interpretations within the same ecosystem). This type of understanding was primarily expressed by individuals within senior positions (i.e. professors and other positions of leadership).

8.1.2. The social hierarchy and different stages of cognitive learning

Now let's analyse these three different stages of the research impact discourse from the post-postmodern ecosystem lens. From a Piagetian perspective, cognitive learning and being enculturated into a belief system is a time consuming process. For any human endeavour the individual has to become familiar with the cultural norms in question (i.e. learning the rules of the 'game'), before it can become a member of the specific community. As such, different discourses and their associated understanding of what the purpose, function and mechanisms of research impact are and the associated proxy indicators, could be seen as 'mastering' the rules of the impact game\textsuperscript{124}. The reason why this takes time within an academic context is because; the individuals within the early stages of their career understandably are preoccupied with learning the rules of the game of research in general. After routinisation and internalisation of the 'rules' has been achieved frustration with such rules sets in. As the individual in question do not yet fully understand the mechanism or purpose of such rules.\textsuperscript{125} Finally, once the rules are mastered or properly understood, the individual proceeds to add to the rules of the game. As such these three discourses that emerged from the post-hoc thematic analysis could be seen as a function of time, in regard to how familiar an individual was with the research ecosystem and the culture of academia (cf. 3.3).

\textsuperscript{122} Full quote: cf. 8.1.3 game playing quote from Dean of School, 2017-02-20
\textsuperscript{123} Full quote: “Now we are going to have the REF in 2021 and you can change your research agendas a little bit, you can think about it, you can think about impacts and you can get the show going, whereas when you don’t know who tourism is going to be in bed with […] I can’t target properly, because otherwise it is going to be a mickey mouse turn around at the last minute, cause you got your research agendas and these research agendas are dictated by other factors.” (Professor of Tourism B, 2017-01-12)
\textsuperscript{124} A game is here understood as a normalised set of rules for a particular cultural activity; in which the participants willingly engage within, without necessarily having an articulated understanding of all the underlying rules of the game in question (Piaget, 1932).
\textsuperscript{125} “Now as a younger researcher you can be a little bit different in that you can establish your research agenda in relation to the REF and to some extent I have already be working with new researchers in such a fashion.” (Professor of Tourism B, 2017-01-12)
The next sections will explore some of the themes from the post hoc thematic analysis in more detail, by utilising parts of the framework analysis that were used to create the interview questions. However, before exploring these discourses further let’s just briefly focus how even the understanding the different ‘rules’ of the academic game in question differed among all interviewed academics. For example, if a disciplinary norm of academic conduct is that research impact ought to have a positive influence on society (social contract view of science), as research impact is now defined by the REF (cf. 4.4). The three identified discourses differed in the following way; the implementation based understanding acknowledged that a real cultural change had taken place within academia, one individual stated:

“I would say […] it is in our psyche now, thinking about beyond how this [research] will be disseminated; via publications or public events or key conferences and symposia, certainly it has to go beyond that now.” (Principal Lecturer, 2017-02-14)

The game-playing understanding, acknowledged how research impact has partially influenced how research is done, but was less certain in how this has changed academics attitudes. One individual stated. This means that while “[…] pathways to impact have to be planned into the project, i.e. how do we collect, evidence […]” (Professor of Tourism A, 2017-01-05) and that is a change that academics are now expected to contend with, it was less clear how the mind-set had changed. As such, these changes were still seen as if these were mere surface engagement, as one individual stated;

“If it were seen to be desirable for me it would be, because it leads to a better education of students, it leads to a more engaged population of students who then go on into work, you now work professional jobs and that, it is that ways of looking at the work, ways of evaluating, thinking about things would be our greatest legacy and that would be the impact I would want to pursue.” (Dean of School, 2017-02-20)

In this particular case, the individual expressed a desire to manifest impact through teaching, yet the REF excludes this dimension as a potential avenue towards research impact (4.2.3). Such a clash of values may possibly explain the frustration that some academics felt with the impact agenda. In general, many academics expressed that there hasn’t been a real change in attitudes in how academics go about their tasks. From the values based understanding, the notion that research impact was something new for academics was also challenged, stating that “advocacy was always part of university conduct” (Professor of Tourism B, 2017-01-12)\(^{126}\). What has changed is that who is doing the advocacy and how the questions are framed within the research impact discourse:

“I think it is explicit now, what is going to be your value to society, let’s actually have that discussion […] Previously, it was more like; look here is a research gap and then we involve them, as a body of people that we grab data from as opposed to as partners.” (Deputy Dean, 2017-01-09).

\(^{126}\) Full quote: “… if you are an old fart like me, you have established these research agendas 20 or 30 years ago and fine tuning them and your expected to stay on them, because that’s where you are asked to do key note deliveries, your asked to go to all the conferences to speak and its quite hard getting out from under them to go in a new direction just to reflect wherever your institution or whatever is married to what should go in the REF. […] furthermore, in my old institution [name retracted] we also regarded it as a home-truth that the best researchers also tended to be the best teachers and what is now understood as impact related to what we called advocacy.” (Professor of Tourism B, 2017-01-12)
From a traditional Enlightenment point of view the concept of a ‘research gap’ represented an old disciplinary norm that structured and organised research conduct (cf. 3.5). However, a focus on research impact seems now to come into conflict to what value should guide research conduct (cf. 4.4). The implication being that regardless, if the understanding of research practice has changed or not, the ecosystem will change if disciplinary norms are changed. Thereby, behavioural changes are performative in as much as they reaffirm or contradict a specific value structure. The risk being that society focuses on contemporary values gets enshrined into academic institutions. As such, not only have the universities now to contend with extra-scientific factors dictating the agenda, but such an external focus may ossify contemporary values and led to ignoring future needs (e.g. pandemics, asteroid impact or specific gender issues facing men, all research areas with great ‘impact’ potential that currently fall outside of the purview of mainstream societal and academic discourse). Within the discussion parts of the interview, the younger academics were often unfamiliar with this potential value conflict, meanwhile the more senior academics understood the potential conflict of values.

In general, the understanding of the disciplinary consequences and how far reaching they were, differed also according to the particular academic rank of the individual within the research ecosystem. One respondent commented upon the individuals who were being assessed. Stating that while previously, “there [were] only a handful of people that receive funding this way” (Dean of School, 2017-02-20), i.e. actively applying and arguing for why your research is justified to its funding, now the re-imagining of advocacy (research impact) is part of the entire ecosystem assessment process. Other individuals commented upon how everyone in the department that wanted to be considered as research active, now also has to think about impact.127 Thereby, every stage of the research academic hierarchy within the research ecosystem is now discursively influenced by the research impact agenda and research impact is strongly disciplined into the ‘psyche’ of academics. In essence, this relocates the ‘advocacy’ requirement from head of departments, professors or other high level academics to every member of the research ecosystem. This influences how individuals and institutions strategize about their own future, as these three examples show:

"So my current strategy is that I focus more on the research outputs, once I have enough research outputs to show up to another university then I focus on the research impact.” (Lecturer A, 2017-01-05)

“I know that for the last REF there were one or two case studies that were developed but they weren’t actually submitted, because it was felt that they hadn’t progressed sufficiently and they would become kind of ripe till the next REF” (Research Degree Coordinator, 2017-02-13)

“I would imagine there is a lot more collaboration going on more interdisciplinary inquiry to really think about the robustness and significance the impact of your research, to maximize, I think the opportunity that whatever you are doing has something that is meaningful and has value and that it can transform to it.” (Principal Lecturer, 2017-02-14)

127 One department made every researcher write a research impact case study as an exercise to select a case study for the REF.
What was less acknowledged by the individuals making these claims was that their personal strategies can be conflicting with universities interest, Enlightenment values or even facilitating impact. For example, issues discussed with Lecturer A revolved around the conflict of the attribution of recognition, the discussion with the Research Degree Co-ordinator included aspects of the serendipity involved in creating impact and with the Principal Lecturer on how collaboration is encouraged on an inter department level to collaborate but discourages collaboration on a intra department level. Furthermore, this personal strategizing that aligns researchers with the official requirements potentially stifles creativity, several individuals that departed from the value based understanding commented upon this contingency in the following manner:

"I think it has changed it very noticeably actually, because now I think it has changed in terms of blue sky research that used to be done. [...] I think in that sense it has changed of how we do research and how we decide on what kind of research we do.” (Professor of Tourism A, 2017-01-05)

“I suppose there is a danger that it might limit creation and creativity in terms of what you might want to do, because, it got to have something else attached to it, some kind of plans, some kind of impact.” (Research Degree Co-ordinator, 2017-02-13)

“Like any rules they have their place and they are often good, but they can stifle individuality and creative thinking a bit and they do if I am honest. Particularly for younger people who are really concerned about building a career” (Professor of Tourism C, 2017-02-22)

While superficially, this disciplining of research impact upon research praxis was deemed as something desirable when digging deeper such points of contention did arise within the interviews in terms of adversely affecting creativity and rigour. Regardless of the understanding of the research impact discourse, there clearly was an awareness that the academic rules are changing. However, as one individual put it; “all this stuff about impact is sort of a game that is played, but not everybody is listening to it, or not everybody is understanding it” (Professor of Tourism B, 2017-01-12). This research suggests, that these different understanding were contingent upon the level of familiarity with the research ecosystem and academic culture.

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128 The research output ‘travels’ with the individual, while the impact stays with university, thereby, focusing on the impact aspect is discouraged, if the aim of the current research is to become eligible to a better institution.

129 The individual recounted an example, where they were involved in a small project, with limited funds several years ago. This was only a side project, and had now grown into something that could potentially be considered for submission to the impact assessment.

130 As only a few case studies are selected, there is prestige in having ones case study selected.

131 One of the most powerful experiences for the author during the empirical data collection was the interview with an individual who departed from the game playing understanding. In the discussion part of that interview the author outlined how cultural expedient research can be used by academics to further their own profile. Collectively, this then creates a situation similar to that in Nazi Germany or East Germany, where the individuals have a public opinion and privately they may disagree with such ‘political correct’ narratives, nevertheless, they use them as they are expedient to further their own career. As the researcher was outlining this argument of the ‘banality of evil’ (cf. Arendt 1963) the individual became bright red in the face. After the interview whilst checking their publication record which consisted almost exclusively of quantitative papers, the second last article published was on LGBT issues and stood out as the potential culprit that elicited this social anxiety and the involuntary blushing. Furthermore, the interviewee in the remainder of the interview made it clear to that they did not endorse such a political correct agenda, yet in print condoning it.
8.1.3. The academic game of research impact

This section aims to further elaborate on the ‘academic game’ (of research impact) that some academics were referring to within the interviews. Individuals that voiced discontent with the research impact agenda expressed their opposition to the current REF assessment framework by invoking the term ‘game’ to describe the impact agenda. Such opposition was framed in terms of aversion towards unnecessary work and not the type of work that would further the telos of the research impact agenda (as understood by them). For example, when asked how a desirable research project would be conceptualised in order to maximise research impact one individual stated:

I would say that anything that fits the REF criteria, because that is the game we play. If we are honest about it is that desirability when we mean; ‘Is it going to be REFable?’ (Professor of Tourism C, 2017-02-22)

The phrase ‘REFable’ kept returning again and again within the interviews, in several contexts and connotations. When this metaphor for the discourse was evoked, the associations that were drawn upon often reflected negative views of the definitions and structure of the research impact assessment. One individual stated the understanding of the term REFable within these terms:

“What I do think has happened is that there is game playing going on, we must tweet, we must have stories, we must appear on any opportunity to promote ourselves via the media, and actually in some sense has led to a devaluing on academic work, because, some of the practices become borderline unethical, frankly.” (Dean of School, 2017-02-20)

These and other potential ‘forces’ that shape the research ecosystem and the academic game were identified as: neoliberal agendas (value for money), pushes from the government, reputational damage or control of the academic community to only mention a few, as expressed by the following individuals:

“I think in things of making things more efficient at the universities in terms of research, really pinpoint what they have been doing. (Research Fellow, 2017-02-02)

“I suppose the punishment is now because it is so explicit in the REF it is very concrete, if you don’t submit your case study in terms of that a consequence is reputational damage” (Deputy Dean, 2017-01-09).

“I would suspect that it has to do with the direction of government and getting value for money. […] but it also about control it is about control, it is a way of how you can control your academic community much more closely if you tie this impact.” (Reader in Tourism, 2017-02-06)

132 “... will it raise our standards in the eyes of our peers, will it bring us more income, so that is the fairly ruthless bottom line to it.” Professor of Tourism C, 2017-02-22

133 The quote continues “[...] I think it might have come from outside, the government somebody thought that university people are lazy ass people they just sit there and drink coffee and think about grand ideas and do not end up doing much.” Research Fellow, 2017-02-02
The value based understating incorporated the two other discourses and reinterpreted them. So from a value based understanding the 'academic game' was understood as an ecosystem wide struggle between funding, disciplinary breadth, political demands, market demands, managerial issues and internal academic interests. These sometimes extra-scientific factors were conceptualised as the source of the created conflicts, rather than individual choices of members of the research ecosystem. One of the respondents summed up the conflict nicely, in stating that:

“I think that the whole impact agenda, again has positive and negative impacts on institutions, I am not talking about any academics now, in that that there are areas in that as an institutions you will invest in because you have your eyes on REF 2021 and will change your investment in subject areas and which staff are engaged within that.” (Pro-Vice Chancellor, 2017-02-22)

Thereby from a value based understanding, the ‘academic game’ that is played is a macro game of what values in society are important in contrast to what is possible, what is more important the ends or the means (?), addressing fundamental value questions such as; How much resources does a society have to spend on research that might or might not be useful in the future? What is the purpose of universities for society? How many academics does a society need? Where should one draw the boundary between political interest and scientific authority? What makes a good academic?

The above quoted individual continues:

“If you go to any scientific discipline, in any discovery there has been an element of serendipity there and an element of chance, and when you start to add that your activities now have to meet specific indicators, you tend to lose the breadth that can produce that serendipity. I think it is detrimental to blue sky research in terms of coming up with fairly fundamental changes.” (Pro-Vice Chancellor, 2017-02-22)

However, breadth also implies that a significant bigger number of individuals are doing research. Now regardless of the value of this research, more individuals participating within research also means more funds that are needed in order to pay the salaries of those researchers. This creates a need for accountability in using government funds, another individual that also departed from the value based understanding commented upon this contingency that magnitude takes on quality of its own:

“There is more of us doing research now, if you think of a hundred years ago it was a handful of people where now there is many more of us doing research in whatever our disciplines or backgrounds and I think it makes sense for what is essentially publically funded money are used for what is for the good of society and the public” (Professor of Tourism C, 2017-02-22)

The size issue is separate from the value aspects but it does have an influence. The conflict lies in that academic valuable (e.g. blue-sky research) and financial possibility are contingent upon the size of the endeavour. A handful of people may very well be able to study the nature of the universe, map the genome or discover deep ocean tranches out of pure intellectual curiosity. However, if the majority of academics are doing that, than fewer people are concerned with implementation of such discoveries. Within the literature review, it was stressed highly that the implementation of technological advances into the seamless web of society is a nontrivial and costly enterprise in its
own right (cf. 4.1). The implementation based understanding saw research impact as just another ‘rule’ in the academic game and usually did not discuss such this value dimension. The game-playing understanding saw the forces behind the push for research impact as a tool for the UK government to control their academics. Meanwhile, from a value-based understanding, the academic game was interpreted as being a discussion about steering the university’s agenda, or the telos of research, universities and society as a whole.

8.1.4. A new telos for research?
Another aspect that became clear throughout the interviews was, if research impact represented a new telos for research or not. In the sense of what is the purpose for research for society? In practical terms, the REF has now defined impact in such a way that it has opened up an alternative avenue to compete within academically, as one individual put it: ’so suddenly they said, you not only need publications, but now also you need to have impact.’ (Lecturer A, 2017-01-05). Thereby, academics now not only compete within a research focused end-goal (commonly referred to as 'publish or perish'), but also in a defined end-goal assessment structure (i.e. research impact). Such rules of the game that focus on outcomes may have existed previously within the research ecosystem however, what is new is that it is explicit within the discourse and official assessment structures putting more and more emphasis on it:

“I think increasingly the impact is becoming more prominent, in the research councils and even charitable foundations and who are providing research funding are looking for increasing the box of what is the impact, the word count getting bigger and bigger and probably rightly so.” (Deputy Dean, 2017-01-09).

From a value based understanding, research impact has always been part of the discussion surrounding the question of what is the purpose of academia within society. What has changed now is the emphasis that is put on it. One individual stated it within these terms:

“I think it was always there, but in the background. So I think it has made people think about it and articulate it more clearly. So we didn’t really have a word for it before other than research that is useful or research that is practical.” (Professor of Tourism C, 2017-02-22)

The ‘new’ telos that is being emphasized in the emerging research impact discourse sees impact now as an important part of the research ecosystem, as one individual stated “it is on my radar in terms of much more than it was 10 years ago.” (Principal Lecturer, 2017-02-14). Thereby, this seems to be an indication of disciplinary change that was identified within the previous chapter (cf. 7.3) having also affected academics that were not officially involved within the REF process. According to the implementation based understanding the traditional telos of research was conceptualised in the following fashion:

“Institutions are much more competitive and they are trying to work like private businesses, rather than as higher education institutions as we traditionally known them in this country.” (Lecturer B, 2017-01-27)
In general the implementation based understanding usually was very simplistic in terms of identifying the nuances within the different values; other more personal values were much more discussed and perceived as more pressing concerns. In regard to why research impact was not resisted within all of the different interpretations of the research impact discourse, was because academics understood research impact as part of their academic responsibilities to society. As such, the disciplining of today’s academic discourse functions according to the same discursive lines as it always has, i.e. for the ‘greater good of society’ and only a ‘fool’ would resist it (cf. Foucault, 1961 on the history of madness and civilisation). Among other things, this was conceptualised in terms of accountability, as the following exchange in one interview showed:

“I think when you see things like big research councils and the funding I think there are many reasons but I think one of them is the taxpayer, so increasingly I think universities are justifying their own existence.”

René: “So it is a kind of accountability?”

“I think it is, I think is accountability as well as responsibility that academics have to society, given that we are at a very privileged position, that’s acknowledged and from that position we have a responsibility” (Deputy Dean, 2017-01-09).

Thereby, the research impact discourse can be understood as a tool to assess academic performativity (cf. 3.3) and to ensure academic excellence, but also to account for academics responsibilities to society (cf. 2.4). In regard to what other alternatives could have been chosen the potential for academics to make their own case can be conceived as benign, as the academics in principle still have the possibility to make their own case for relevancy. However, as the research impact assessment is elevated to be part of the social contract that academics are expected to abide by, such a discursive move puts the impact agenda beyond criticism. In practical terms, every researcher is now potentially expected to make a case for their own research based on their impact. This ‘free market’ approach to assessing academic performance may be undesirable for the individual researcher, but from a managerial point of view it may be a mere consequence of departmental organisation, research agendas, funding availability, societal needs, and the sheer size of the academic sector. Thereby, research impact becomes the disciplining tool by which the government discursively steers academia one individual at a time, and it seems to be working as universities fall in line (cf. 7.3) and it is constantly on the mind of academics operating within the research ecosystem. Such a disciplining effect was strongly felt by the ‘REF’ed’, one individual expressed it within these terms by stating:

“It is like the omnipresent thing, it is always there and depending on where you are in your career it might mean slightly different things.” (Professor of Tourism C, 2017-02-22)

As stated previously, the understanding of research impact differed based on where in their career stage an academic was located within the academic hierarchy of the research ecosystem. What was noticeable was that some of the younger individuals and mid-career researchers were somewhat confounded when the conversation of research impact turned to morals, values and society within the discussion part of the interview. One individual even paused and had to contemplate on the implications when specifically asked for the value dimension (cf. 5.3.4):
“Yeah, yeah, but it is a difficult question because I think that the impact that is desirable to me, is definitely not the same that is desirable to my institution [...]. I am not sure that this is even ethical, to influence society for the good, you know what I mean? Of course this is according to me and I decide what is good and what isn't good…

[2 second pause]

Yeah [laughs] so that’s…

[5 second pause]

I am not sure that I even agree with…

[3 second pause]

But or at least, I suppose to create questions in society.” (Lecturer B, 2017-01-27)

This lack of the understanding of the value dimension was present within early to mid-career researchers meanwhile individuals within senior positions within the research ecosystem conceptualised the telos of research impact as part of ethical considerations of the research process. Now such individuals differed in what values should dictate academic conduct, one individual included several of these values within their definition of research impact:

“Research impact to me is how the discovering new knowledge influences and makes life better for society, for economies and for the future trajectory of human beings on the planet.” [Pro-Vice Chancellor, 2017-02-22]

This difference in how individual academics related to the underlying value conflicts was highly contingent upon the rank within the academic hierarchy. The more senior an individual was the more he or she was aware of the potential conflict between scientific values and political expedience for example. The reverse was also true for younger academics. Although, the number of individuals interviewed for this study was limited, the enculturing into the academic community and the position of the individual within the research ecosystem seemed to influence the understanding of the telos of research and what values should and shouldn’t influence research conduct. Thereby, the change in telos or research is perceived by the academics as an attempt to steer UK research by the government. With this in mind, it is also understandable why some academics were less enthusiastic of the impact agenda, as in very real terms it represents a new explicit performance indicator that has now been formally established within the UK research ecosystem that influences academic discipline. As such, the reason why some individuals were critical of the research impact agenda was not because they disagreed with the impact agenda, but rather because their area of expertise fell outside of the purview of the assessment criteria. Or that they were annoyed about the extra amount of work that an additional performance indicator would bring. Only in very select cases during the discussion parts did some (senior) academics acknowledge fundamental flaws of conflicts of values that the assessment structure of the REF poses to the Enlightenment telos of scientific research.

134 Question 4: What type of research impact is desirable and how is that desirability decided?
8.1.5. The changing research ecosystem

One line of argument that this thesis has explored, was that writing norms discipline behaviour through the rhetorical re-construction of phase of the scientific method, regardless if the individuals whom are obeying them agree with them or not (cf. 5.3.6). Tribe (2006) previously described tourism studies as a potential refuge from the 'tyranny of the disciplines', now as tourism is brought into the impact fold it has to abide by the implicit and explicit rules of 'the impact game'. One academic used the term 'the impact formula' to describe this contingency (Lecturer C, 2017-02-10), stating that what decides what is ‘REFable’ within the ‘impact game’ that is played by the REF is:

\[ \text{[Research impact]} + \text{[associated high ranking journal publication]} = \text{[REF research impact]} \]

Based on the critical discourse analysis of the impact submission, I would further qualify this formula by adding [political/social/industry expediency] of the chosen type of impact (cf. 6.3) and the [availability of evidence] (cf. 7.2) into what decides what finally gets submitted to the REF. Such a disciplinary arrangement makes that the research impact agenda discursively enforces ecosystem wide changes that potentially can impose restraining rules on what gets researched and what is not researched based on external expedience rather than intellectual value. The change in disciplinary norms that put research impact as a competitor for the guiding telos of research has already had an effect. In general it seems that the UK research ecosystem is changing and we are at the beginning of that shift in telos, with research impact being one of the forces that facilitates this change of the (research) ecosystem, as one individual put it:

“It does shape the research landscape and we are at the very early stage of it. So if you ask someone who will be in my position in 20 years’ time, I imagine things will look quite differently. It really has become ingrained in what we do in higher education, certainly in the UK” (Professor of Tourism C, 2017-02-22)

If now the individual academic that comprise the research ecosystem are changing their rules of their research culture, then it would make sense that the discourse of research impact also differs depending on the position of the individual within the wider research ecosystem. Individuals in their early career stages perceived the institutions as being a force behind ecosystem change. Middle level academics viewed such a contingency much more pragmatically. By claiming that, these same institutions are also seeking funds through other means (student fees, private funding or EU grants). Thereby, another 'force' that is shaping the research ecosystem are the individual actions of researchers. Similarly, to how institutions are trying to survive by competing with other institutions, within these institutions individual researchers compete for privileges and status. Individual strategies also create a force behind ecosystem change (cf. 2.5). Other forces are more germane to the nature of the topic in question; one individual outlined these as follows:

That said, do I think, in departments that have courses like tourism, hospitality management, event management and that is what the courses are called notwithstanding many colleges wanting to present them as other things or who have research interests that are not about event management, maybe about tourism events, but as we are a department that has those courses and that the vast majority of money that we are receiving as such it is about delivering these courses” (Dean of School, 2017-02-20)
Thereby, all these disciplinary norms of existing and expected university conduct (teaching, research, outreach etc.) are now augmented with a research impact focus. Now add to this that tourism studies may simply be in the particular phase of boundary work in terms of creating a distinctive discipline (3.4). The causality of how such a discursive refocus operates within the research ecosystem is hidden beneath the practical complexities that are created by the changing rules that are now introduced by the authoritative control that is exerted by the REF. Nevertheless, as was shown in chapter 7 there seems to be a real lack of consensus of what accepted proxy indicators of impact quality were. This lack of consensus once again fractured the discourse surrounding research impact into the kaleidoscope that was depending upon the phase in the enculturing and familiarisation process that academics undergo as part of their disciplinary training (i.e. their rank within the academic hierarchy, cf. 3.3). Now that research impact has become a performance indicator, the research ecosystem is in the process of changing the rules of the academic game (i.e. they are looking for acceptable proxy indicators of impact quality). Thereby, research impact represents a tool for the UK government to steer their university agendas and ultimately the academics. Although no academics were fundamentally opposed to the idea of research impact, the practicalities of this shift in telos where criticised deeply by the some academics. For example one academic stated:

“They brought it in, in a very clumsy way and very ill judged, in my opinion, it was brought in such a way that people were scrubbing around in the universities trying to make sense of this. So in institutions that I am familiar with, there is a lot of angst, a lot of problems from this slightly botched way of doing it” (Reader in Tourism, 2017-02-06)

Regardless of what forces were identified by the interviewees’ as being responsible for the introduction of research impact as a performance indicator, it was acknowledged that the research ecosystem was changing. What the implications for tourism studies boundary work would be was less clear (cf. 3.4). One individual speculated that it might be difficult to understand the consequences, “when the [tourism] academic community doesn’t even understand what it is” (Professor of Tourism B, 2017-01-12). Furthermore, evidence of this change expressed itself in the uncertainty that surrounds how research impact related to the other pre-existing proxy indicators of scientific quality (e.g. output and environment). This argument was raised by several individuals during the discussion phase of the interviews. The contention was that the official evidence, narration requirements and word counts drive what impact can and cannot be claimed, corroborating the inferences made in earlier chapters (cf. 6.4 & 7.4). Thereby, these new proxy indicators of impact quality now represent a material bottleneck that is discursively shaping the research ecosystem. This is highly relevant for individuals that are part of this assessment process, but less relevant for individuals indirectly influenced by these forces; nevertheless, it still discursively influences their behaviour. One individual summed it up nicely when commenting upon the connection between metrics and research impact:

“I think the UK system is quite crazy. I said that I look to citations and stuff like that but in the UK they are really obsessed with the star system or the ranking system of the journal. Basically, if you publish an article in a journal that is not 3 or 4 star you have no impact. That is not the way how it goes, as you can make an impact on policy makers, on the general public or even researchers if you publish somewhere else than in these few top ranked journals.” (Research Fellow, 2017-02-02)
All this factors back to how research impact is: understood, judged and assessed. These practical difficulties in connection to the implementation make it questionable if the outcome of the intervention will genuinely promote more research impact (cf. 4.4). Nevertheless, the practicalities of the assessment dictate what research gets funded and which does not. Thereby, the impact telos is being discursively disseminated throughout the research ecosystem as academics are conforming to these new rules. Thereby, regardless of what specific forces where identified to be the cause of environmental change of the research ecosystem, a change had been observed and implemented. How that change was perceived depended as much on the theoretical understanding of research impact as with the position of the individual being influenced by the boundary work involved in the changing research ecosystem. The academics were observant that academic cultural norms within the UK are changing due to the introduction of research impact. The next section explores these more general trends in connection to other reports that investigated the REF and research impact, creating a timeline from prior to post implementation within the REF.

8.2. Research impact, the ecosystem and other studies

The interviews were complemented with a discussion section, in which many aspects that were discussed above were raised, yet the responses of the interviewees are not reported due to the methodological design of the study. The reason for this was that during the discussion part of the interview the researcher interjected viewpoints presented within chapter 6 and 7 and as such cannot be regarded as being uninfluenced (cf. 5.3.4). Although, this was incredibly valuable in order to triangulate the here presented arguments, such conduct means if quotes would be used the ideas expressed would not be strictly speaking those of the interviewee (cf. 5.3.5). Nevertheless, in order to discuss the raised issues and highlight the salience of these issues within the research ecosystem in general, the findings are compared to other studies that investigated the notion of research impact and the REF assessment process. This process represents comparing the general issues that were triangulated within the interview discussions, to other studies that have found similar issues with the REF impact assessment. As such, the following walkthrough of these reports is also informed by that feedback of the interviewed academics.

Within this subsection the research reviews three different assessments of other evaluations that looked at research impact. In specific these are the REF research impact pilot study (8.3.1) that occurred before the introduction of research impact as an official assessment requirement. A RAND report that evaluated the REF 2014 impact assessment shortly after the completion of the official REF assessment (8.3.2) and finally the STERN report (8.3.3) that put forth recommendations for the next iteration of the REF published in summer 2016 (a year and half after the official publications of the results). Thereby, these reports also showcase a timeline of the incorporation of research impact into the academic culture, i.e. they represent a time line for the changing research ecosystem. The section finishes with a synthesis of the here discussed reports and relating them back to what was discussed within the interviews (8.2.4).

8.2.1. Research impact pilot study

Showcasing research impact within tourism is a difficult task, as discussed within chapter 7. Many of the interviewees commented upon the potential difficulties that could arise. It is not a stretch of the imagination to see the new introduction of the assessment of a focus on research impact as an attempt to mitigate some of these problems and criticism that earlier iterations of the REF faced (cf.

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135 As far as the researcher can tell no researchers’ were physically harmed within the disciplinary assessment, although the sometimes strong and emotive language used may suggest otherwise.
4.2). However, what the REF also does as became clear in the interviews is that it steers and controls the UK research ecosystem by imposing a new disciplinary regime (i.e. research impact). Now, if the REF is an attempt to enforce a ‘social contract’ upon the accountability of research, the reverse is also true for the REF itself. When the decision was made to include research impact as an assessment criteria it was also decided to run a pilot exercise. The findings of this exercise where published in a 2010 report with the title ‘REF Research Impact Pilot Exercise Lessons-Learned Project: Feedback on Pilot Submissions’ (from here on REF 2010A). This was accompanied by another report titled: ‘Research Excellence Framework impact pilot exercise: Findings of the expert panels’ (from here on REF 2010B).

For this pilot exercise it was decided to focus on 5 different disciplines, these were; clinical medicine, physics, earth systems and environmental sciences, social work and social policy & English language and literature. 29 universities were invited to participate and submit (at least) two submission to each different unit of assessment’s (UoA). The design of the submissions and the procedures were in constant feedback with the universities that submitted, and many of the suggestions made by the universities in this process were implemented into the assessment of the REF. A few examples of the suggestions that were raised were:

- Have the scoring of impact lower for the first round, as it is a new exercise. Which led to the score of impact being reduced to 20% of the overall score (REF 2010A:38)
- The ‘impact’ judgment cannot be compared across all UoAs (REF 2010A:38)
- The primary focus of the assessment should lie on the case study assessment, and the impact template should only count for a smaller fraction. Case studies counted for 80% of the score and impact templates for 20% of the score in the final REF, as they were deemed to represent the most suitable approach to judge the impact of research (REF 2010A:38)

These and other suggestions were implemented in the final REF. However, as seen above it is unclear how the underlying issues that led the panels to make these suggestions were addressed. In the interviews academics felt that impact should be part of the academic judgment, however, not in the way it was currently implemented. Only academics that departed from value based understand (8.1.2) incorporated the contest of telos that the REF creates.

In the pilot exercise leading up to the REF (2010B) such a contingency, that the ‘best’ research impact might not necessarily be the impact that had the ‘most impact’ but rather, the research impact that could be referenced the best was also mentioned. Based on the narrations of the case studies it appears to be a similar case in the actual assessment (cf. 6.4.3). Whenever there was a possibility to mention proxy indicators of impact quality (cf. 7.2.2) they were mentioned, regardless if they actually gave an indication of the size of the impact or not. Rather, they served primarily to embellish the impact by providing any quantifiable measures that could be identified. This is presumably due to the difficulties in outlining an impact claim in general, rather than a concerted effort to deceive (cf. 4.3.5). Furthermore, as this preselection pressure exists (cf. 3.5), how representative the reported research impact are compared to the ‘actual research impact’ is impossible to judge based on the REF assessment alone, due to the here discussed difficulties. As such, presumably it was easier to report an impact based on the evidence that is available, rather investigate and evaluate how research does make a significant different to society. In the pilot exercise the difficulty of presenting research impact within parameters given by the assessment process (cf. 4.2) was explicitly commented, corroborating the here raised argument that the rhetorical re-construction disciplines academic behaviour, because:
“Keeping to word counts: Succinctly describing an impact and giving its context in only 500 words for a mixed academic/user Assessment Panel was a challenge requiring specific writing skills. [...] and word length limits of case studies [which] were found to be problematic in several cases” (REF 2010B:28/38 author’s emphasis)

As seen in the previous chapter (cf. 7.1) the research impact case study of the University of Brighton (C-26-13) made broad sweeping claims of social and economic impact of their research, but failed to provide specifics. However, to reinterpret such a contingency as a Machiavellian attempt to embellish the impact seems to be misplaced. Much more banally, in an African economic context the governmental statistics to prove such impact might simply not exist, as statistics are not as extensive as within a UK context (cf. Bournemouth University (C-26-14), which departs from a UK context). Within the interviews such problems of evidencing research impact were frequently commented upon. This became even more apparent in the case of ‘negative impact.’ In the pilot exercise it was stated that:

“Impact can be realised through the cessation of some practice or other, where research has shown a policy or process to be problematic or otherwise undesirable, so how does one go about counting the benefits of not doing something?” (REF 2010A:15)

Now, the REF acknowledges this type of ‘negative impact’ of not doing something as a potential impact (cf. 4.2), yet none of the submitted case studies choose to present such an impact (cf. 6.2). If negative implications where mentioned, they were always conceptualised in stemming from mainstream tourism which the research helped to mitigate (cf. 6.3). Presumably, these and other difficulties in reporting any research impact are the reasons why some tourism faculties choose to submit to the Unit of Assessment 19 instead of 26, as they presumably did a cost-benefit analysis of where their research impact would be judged most favourably. Within the interviews it was confirmed that universities are engaged in such strategic consideration, if they intend to be ‘REFable’ (cf. 8.1.3). Furthermore, what is clear is that the word length limit seems to restrict the possibility to elaborate in full detail upon research impacts. Specifics of the claimed research impact are sparse and far in between for all of the here identified research impact case studies (cf. 6.2). Furthermore, the compromise between accuracy and generality is exuberated by the burden of independently verifiable evidence and linking the impact to a single published ‘high quality’ research paper. Many of the interviewed academics touched upon this contingency, similarly in the pilot exercise they stated:

“One of the major problems we faced was linking these impacts back to single published research papers of a given ‘quality’.” (REF 2010A:30)

This comment reflects once again upon the non-linear character of research impact that is applied here within this study understanding of the seamless web that is society and how research impact is facilitated (cf. 4.1). For example, it was noted in the pilot exercise that “areas of applied research lend themselves much more readily towards impact assessment than theoretical research” (REF 2010:30). This is presumably, why only one case study presented theoretical research and tried to create an impact case around that. In this particular case, of the York St John University (D-36-23), the details of the research impact were even sparser, compared to the already existing general vagueness of the other case studies (cf. 7.1). In the sense that it was only claimed that it had an impact without further elaborating what the specifics of the impact that re-theorisation “issues such as visuality and representation” (D-36-23) helped, other than individuals were quoted saying that it did have an impact.
In general, the entire assessment appears as a symbiotic relationship between the submitting universities and the REF, where universities are attempting to justify their raison d’être by any available data that could be found post hoc. The interviewed academics that were familiar with the rules of the ‘game’ (cf. 8.1.3) and departed from the value based understanding (cf. 8.1.2) lamented such a contingency, as it led for example to the exclusion of teaching as an avenue to impact, further diminishing the value of academic integrity. However, at the same time, they contested that this was the ‘game’ that they were playing and submitted to this new status quo. The universities that were involved in the pilot exercise noted a similar contingency, because despite all the identified issues they stated:

“Many of the institutions commented on how useful the experience had been in terms of producing a new and rather valuable overview of their contributions to the wider world and some really useful case examples to include in their marketing and communications work.” (author’s emphasis, REF 2010B:52)

The results show, that the research part is referenced and narrated in an academic style and there seemed to be consistency in how this was presented (cf. 7.1 & 7.2). This was presumably done, as the individuals crafting such case studies were academics themselves, using their tacit knowledge (cf. Collins 2010) of how to craft a scientific fact to craft an ‘impact fact’. However, when it came to the quality of such narration and evidence no such unity existed. Within the interviews it became clear that when drafting case studies individuals solely departed from personal knowledge of their own research impact and attempted to justify their research impact post hoc, as the majority were unfamiliar with justifying their research based on these grounds. In general, the presentation of the impact seemed to be inspired by the academic writing and referencing style, however each case study had its own interpretation of how to best achieve such a goal. Academic writing style in this particular instance means (utilising journal articles as references, writing in an authoritative third person perspective and following academic presentation standards). For writing an impact claim, no such uniform rules or what were accepted proxy indicators of impact quality existed for the rhetorical re-construction (cf. 5.3.6) and the interviewed academics confirmed their own ignorance in such matters. Although, they stated that the next iteration should run smoother, as now the academics have become familiar with what is expected of them.

The annoyance with the practical requirements of how impact was to be assessed was very clear in the discussions. For example, as the REF employs a stringent page limit and focus on certain types of evidence, making it difficult to showcase impact that is complex to account for and hard to be evidenced (7.2). Here might be a potential reason why the universities choose to submit only some type of research impact, one that was specifically suited for the assessment exercise (cf. chapter 6.3) The approach that was chosen to ‘clarify’ the observed feeling of the vagueness of the definition that was suggested within the pilot exercise was to primarily include more examples. Given the criticism voiced on the general confusion of ‘what impact actually entails’ by the people interviewed here, it is doubtful that the inclusion of a few more examples actually made a difference.

In the analysis it became clear that the “game playing” aspect had been utilised fully within the last round of the REF. However, how much these aspects were faux proxy indicators for impact quality is debateable. The reason being, desirable research will necessarily be defined according to the assessment, as one of the intentions with the assessment from the government is to discriminate in future funding applications. Thereby, the question becomes what value should guide the assessment structure, or ‘where do you want to drive your car’ was one metaphor used by an interviewed
Thereby, the discussion of research impact is at its core about values regardless of all the cries for ‘better definitions’ by younger academics that haven’t fully grasped the ecosystem in which they are operating. Nevertheless, many academics were in agreement that other factors than there mere practically of judging impact ought to influence what academic research gets funded or not (cf. 2.4). The pilot exercise concluded that the ‘impact’ of such a change in assessment should be fairly marginal and the value based understanding seems to agree with that assessment. Nevertheless, for people who did not depart from this discourse, the newly introduced changes were not perceived to be marginal at all, but rather represented a fundamental reshaping of the telos of academia and universities for society, when confronted with the here discussed research results.

This once again the kaleidoscopic nature of the discourse around research impact shines through. In their own way all of these assumptions are correct. Traditionally, yes universities had been working with industry and society collaborations and the added impact focus only helped them to make it more explicit. However, the additional costs for; developing new data storages to showcase impact, employ impact officers or disciplining young researchers to think about impact etc. might not simply be added on to the cost of doing research. These new disciplinary regimes will now in a very real sense influence research conduct, as conflicting time commitments now interfere with the actual process of doing research (cf. 4.4). Thereby, how ‘marginal’ such issues were always depended upon which associated discourse the individual in question departed from. Nevertheless, regardless of the individual academics understanding all academics contested that impact now is an official requirement and as such represents a new avenue for competition that has had opened up for academics, for better or worse.

8.2.2. RAND report

Another evaluation of the REF 2014 assessment was made by the RAND think tank. They found in their assessment that the REF assessors had to send evidence queries in order to request a piece of evidence, i.e. a research impact reference (cf. 4.2). Furthermore, they also found that the nature of the assessment differed within different sub-panels, the most contention revolved around the issue of evidencing, or what is here called proxy indicators of impact quality (cf. 7.2). Where some units of assessment were discouraged of undertaking their own (online) queries when assessing the research impact case study (RAND 2015B:35). In some cases the submission of an audit query (i.e. checking the validity of the claimed research impacts) sometimes took up to three weeks (RAND 2015B:47) or was simply not done. Given the here encountered nature of the impact reference this can be interpreted as an attempt by the REF to ‘black box’ the assessment. Similarly, the interviewed academics that were actively involved within the creation of the case studies expressed frustration with the opaque nature of the assessment structure. In general, the panel members reported mixed results if they had access to all provided evidence. Presumably, this added labour burden and the nature of the testimonials led some assessors to purely judge the research impact based on the information presented within the case study. In the report it states:

“It was also highlighted by areas of Main Panel C that multiple requests for corroborating evidence were made and that its compilation would have been a huge amount of work. One individual said that the REF team were only auditing 5–10 per cent of case studies and that they did not have the resources to do more than that. Another panellist thought that asking for this evidence was not a good use of time as, in their cases, it did not contribute to any changes in scores.” (RAND 2015B, 48-49, authors emphasis)
As such, the conflict over *faux* proxy indicators of impact quality, mentioned within the interviews, by the game playing understanding, to some extent seems to be born out in the actual assessment. Furthermore, as we have seen in the previous chapter, by consulting the evidence directly, a completely different image of the reach and significance of the reported impact was revealed (cf. 7.2). Within the interviews, many researchers commented upon the standards that are used to judge their work and the ‘games’ they have to play in order to become eligible. Few of the factors mentioned related to the actual kind of impact. Much more emphasis was put on ‘making it look scientific’, transposing proxy indicators of scientific quality into the impact presentation. In essence, the game playing understanding viewed the general notion of proxy indicators of impact quality and how these shape academic conduct as extra-scientific, i.e. not relevant scientific disciplinary norm (3.3). Yet, such individuals acknowledged that they had to abide by such rules if they wanted to continue their academic careers. However, from the RAND report, it becomes clear how vital such proxy indicators of impact quality were for establishing the veracity of a research impact claim. The evidence was deemed a contentious issue within the REF assessment process, the RAND report states the following:

“Evidence was the most difficult element of creating the [impact case study] document and as a result, you ended up thinking more about the evidence rather than the impact. The question was, can I evidence this?” (RAND 2015A:14)

As such, from the point of view of the assessed, the REF’s evidencing requirement creates challenging proxy indicators of quality, which discursively enforce the REF’s vision of research impact through the rhetorical re-construction (i.e. disciplining the research ecosystem). Such challenges in relation to proxy indicators of quality revolved around:

- Finding evidence for different types of research impacts
- Having to reconstruct that evidence retrospectively
- Potentially violating confidentiality arrangements with research users and,
- an underdeveloped understanding of research impact (RAND 2015:16-17).

Nevertheless, even though the RAND report could identify many of these issues (cf. 4.3), they merely presented them as list of challenges that needed to be addressed and left it at that. Similarly, the implementation and game playing understanding expressed frustration with such disciplinary measures however; they did only perceive them as a nuisance. Only academics that departed from the value base understanding (after being confronted with the here encountered examples) admitted that fundamental values of scientific integrity are at stake. From the RAND report it is not clear what panels these individuals making these statements submitted to. As such, it is unfair to assume that the assessors of the case studies did not check the references at the time of the assessment. Regardless, the disciplining that such requirements facilitated will still be discursively disseminated throughout the entire research ecosystem and influence what academic work is deemed valuable (cf. 2.4). This was clearly felt, especially by the young career researchers that commented frequently about the pressures that they were under. The implementation based understanding involved stressed that they needed associations with professors, having high ranking publications and other points to embellish their academic CV. Otherwise, in their perception, they were ‘out of the game’ of academia or to put in other words, this reflected proxy indicators of quality, not yet mastered by the individuals in question.
In general, the kaleidoscopic nature of impact does seem to be contingent upon the level of familiarity and position held within the research ecosystem as was shown within the interviews (cf. 8.1.2). The RAND report showed a similar contingency, in respect to their question if individual felt that the definitions of reach (above) and significance (below) were an adequate tool to capture research impact, cf. figure 8.1. This multiplicity in how one ‘feels’ about research impact seems to be a general trend, specifically, depending on where in the research ecosystem hierarchy an individual was located, influenced the individuals understanding of the research impact discourse.

![Figure 8.1](image_url)

**Figure 8.1**, showcases the RAND survey on to which extend the respondents’ felt the criteria of reach (above) and significance (below) enabled them to assess impact case studies fairly and reliably RAND evaluation of the research impact assessment, according to the respondents (sample size; 534). Source: RAND 2015B:35.

Compare this layering of confidence about with that what Donald MacKenzie (1993) called the ‘certainty trough’ which he used to elaborate on for his sociology of nuclear missile guidance (cf. figure 8.2). His contention was, the more removed an individual was from the actual praxis of knowledge production the more uncertainty they had about the technology (young researchers’ in this case not included in the RAND survey). The same was true for the experts that were directly involved, albeit for different reasons. The most confidence in the technology was by individuals who were only tangentially involved with the technology (administrators, bureaucrats, students or users).
Figure 8.2. the ‘certainty trough’ used as an explanation of the confidence in the accuracy and reliability of nuclear technology, source: MacKenzie 1993:372

Similar to the interviews, the closer an individual was to the construction of the research impact claim (i.e. the actual process of writing or checking a case study) the more they became aware of the struggles and problems involved in such a construction of the ‘research impact facts’ that were put forth for the assessment (cf. 7.1 & 7.2). The same applied to the academics understanding of research impact that were interviewed for this study. The closer an interviewed individual was to actually arguing for the relevance of their own research and actively applying for funding, the less ‘new’ the telos of research impact seemed to new them, and the more problems they saw with it (cf. 8.1.3). In the RAND case, the academic sub panel members and the impact assessors would have read all or a significant part of the case study (hence low confidence). The secretariat would have been involved in case of auditing references revealing the uncertainties in construction of these research impact claims. Indeed, there seems to a consolidation among the interviewed academics, that research impact has become a part of day to day practice. As research impact now acts as an academic performance indicator it is only a matter of time until norms and rules will establish itself on how the assessment ought to be structured, how the information ought to be presented, what methods of reporting a permissible and what not etc. resulting in a changing research ecosystem (cf. 8.1.5). However, this discursive work of what are the appropriate proxy indicators of impact quality is currently still being debated within the research ecosystem, but so far within that discussion a focus on a conflict of values that this ‘new’ telos creates for research is largely absent.

8.2.3. The Stern review of the REF
On the 28th of July 2016 the President of the British Academy, Lord Nicholas Stern published a report reviewing the REF assessment process, colloquially referred to as known as ‘Stern review’ (Stern 2016). The report looked at the entire assessment process (outputs, impacts and environment) and places them within a bigger context of assessing academic quality for the entire research ecosystem. The report also presents recommendations for the next iteration of the REF assessment (REF 2021). Research impact was considered as a welcomed addition to the evaluation of UK research, in that it showcased the effects that research had on the wider society in an officially recognised framework. Thereby, the lack of opposition and acknowledgment of the social contract that some of the interviewed academics touched upon were also reflected upon within the judgement of the Stern review, it states:
The responses to the review highlight the importance of the new impact section of REF2014 in broadening and in some ways deepening the nature of the REF exercise, in evidencing the importance of UK research to society, industry, the third sector and policy-makers, and cultural health, and in encouraging scholars to consider different constituencies for their work. (Stern 2016:16)

In general, the review acknowledges some limitations to the assessment but acknowledges research impact as an important part of the new REF, which should be kept and implemented for future iterations (REF 2021). The positive sentiment of including research impact into the assessment was also reflected within the recommendations that were given in relation to research impact:

“Recommendation 5:
Institutions should be given more flexibility to showcase their interdisciplinary and collaborative impacts by submitting ‘institutional’ level impact case studies, part of a new institutional level assessment” (Stern 2016:22)

“Recommendation 6:
Impact should be based on research of demonstrable quality. However, case studies could be linked to a research activity and a body of work as well as to a broad range of research outputs.” (Stern 2016:23)

“Recommendation 7:
Guidance on the REF should make it clear that impact case studies should not be narrowly interpreted, need not solely focus on socio-economic impacts but should also include impact on government policy, on public engagement and understanding, on cultural life, on academic impacts outside the field, and impacts on teaching.” (Stern 2016:23)

In regard to the criticism, there was concern for how to link “impact case studies to the numbers of individuals” (p.17) which was recognised and may have distorted the presented impact, as was argued within this study (cf. 6.4). Furthermore, it was also acknowledged that this potentiality has led to that “very valuable channels whereby the UK’s research base impacts on industry, public engagement, and policy advice are not being captured” (p.17). The link between teaching and research was also addressed:

“It will also be important to ensure that the introduction of the Teaching Excellence Framework (TEF) is carefully considered in developing the REF, to ensure that consistent approaches are taken, and that TEF and REF do not incentivise universities to separate inappropriately or dichotomise their research and teaching missions.” (Stern 2016:17)

Furthermore, the report concluded that the REF impact definition is:

“[…] very broad. However, there is some evidence that some types of impact were narrowly interpreted or not well understood by the community, or that they have been cautious about how their impact might be understood and assessed.” (Stern 2016:23).
As such, the report closely mirrors some of the issues found within the interviews that were conducted for this particular study. Nevertheless, issues that were not taken up were questions in regard to if research impact represented a new telos or not or what value academia brings to society beyond impact. However, the Stern report did recommend that the number of case studies is lowered to one per submitting institutions in order to support smaller institutions, also giving them the chance to showcase their research impact. Now, if this puts less or more emphasis on the research impact agenda, it is difficult to say. The impact template was proposed to become part of the environment assessment however; the Stern review stated “it is important that the total weighting for impact does not comprise less than 20% in the next exercise” (p.27). This makes it quite clear that impact is now well and truly a (disciplinary) part of the research ecosystem. Thereby, the struggles and difficulties that this new assessment poses will now be a constant pressure on future ecosystem development for the UK universities. In general, we can observe that the academic community appears to have ‘come to terms’ with research impact being part of their everyday life, although no one understands how to measure, account and manifest impact in such a way that is satisfactory to the wider community. What became clear within the interviews was that the academics created a ‘public persona’ that welcomed research impact and utilised it to the best of their abilities. However, when pressed and confronted with some of the more fundamental challenges such a shift in telos creates for the Enlightenment telos of scientific inquiry (cf. 2.4) many academics professed their own ignorance and own distaste of this agenda. Furthermore, academics stressed that the only thing that was in their power, was to influence their own behaviour and that of people within direct connection within the research ecosystem.

8.3. The research ecosystem is changing before our eyes

This thesis started out with the quote ‘history never seems like it when you are living through it’ and the introduction of research impact into the UK research ecosystem seems to fall under this category. In chapter 2, three science discourses were outlined in relationship to the telos of science, an Enlightenment view that view science as a worthwhile enterprise for its own sake, a social contract view that viewed science as accountable to the general public and a commodified neoliberal view that understood the value of science restricted only to the measurable outcomes it can produce. The outlined commodified view of science was less present within the interviews and the studied reports. However, it seems to be clear that we can overserve an historic shift in the telos of science, from an Enlightenment focus to a social contract understanding, where the government uses the REF to ensure academic excellence and accountability through neoliberal measures. Universities, previously had a lot more autonomy with deciding how to allocate their funds, this seems to be changing.

This research shows that research impact is a very complex (macro) discourse, as it touches upon many different aspects simultaneously. Aspects of causality, values, practicalities, definitions or personal agendas are all encompassed by the discourse (cf. 4.3). The research impact discourse spans questions of a practical and theoretical nature of how impact is facilitated. The three reports discussed here represent snapshots of the timeframe of the introduction of research impact into the wider ecosystem. As the changes that we are seeing are incremental; a change of one assessment standard here, the introduction of a new research centre there or renaming of a conference theme etc. academics who are not directly involved with the impact assessment may not even notice the changes (as was the case within interviews with younger academics) of the research ecosystem as they are still ‘making sense’ of the research ecosystem in general (cf. 8.1.2). Nevertheless, the cumulative effect of what these changes mean for academic praxis is not very well understood, this
was even expressed by individuals that departed from the value based understanding. At least, that was the consensus that came out of the interviews from the academics that were being disciplined by the impact agenda.

Another point of consensus for the interviewees was that research ought to contribute in a positive manor to society. Thereby, research impact is now enshrining a social contract ideal within the assessment of UK academia. However, the way that this ideal is implemented, inadvertently leads to a very neoliberal, quantifiable and mechanistic assessment of that research impact, generally disliked by the ‘REF’ed’. However, regardless of their personal grievances the majority of academics went along with the impact agenda. Only two out of the thirteen interviewed academics, expressed forms of silent resistance, by either choosing to work in a ‘worse’ ranked institution or claiming that they exercise ‘passive resistance’, the rest manifested tacit agreement (even when expressing personal dissatisfaction with this new status quo). These forms of resistances are not enough to challenge the impact agenda, which is currently seems to be steamrolling the UK research ecosystem in focusing on the ends over the means (cf. 4.4). All the while, science still enjoys its reputation of ‘unbiased pursuit of knowledge for its own sake’ within the public eye. What the REF effectively does, due to introduction of research impact as a performance indicator, disciplining academic conduct, thereby the tacit implication is that researchers are expected to resolve societal wide value conflicts within their own research. At the time of the impact pilot study, many of these potential practical and ethical issues of conflicting values where mentioned, nevertheless the change in the disciplinary regime pushed forward. It is particular instructive here, that the interviewed academics echoed many of the concerns expressed within that first pilot study, highlighting that such fundamental problems have not been resolved. The RAND report, showed that within the actual assessment, these issues and problems had not been addressed either, presumably leading to a very generous research impact judgment (84% of all impacts were ranked 3* or above). Now for the context of this REF iteration being the first time around, such a generous judgment is justifiable, as was mentioned within the STERN review. However, even though this report is published well after the conclusion of the REF, with time for reflection the push for impact has not quieted down, to the contrary it seems to be increasing as expressed by the interviewed academics.

None of the fundamental structural problems that lead to the issues and contradictions were addressed within the recommendations; on the contrary, the changes that were proposed merely seem to be minor tweaks of the existing disciplinary structure. Within chapter 6 we could observe the outcome of this disciplinary process, in that the research impact tended to cluster towards certain types of impacts, rather than addressing the whole spectrum of (tourist and) society wide needs, showing a clear indication of which alliances wins out in the conflict of truth, society or economic reality (cf. 2.4). Furthermore, within chapter 7, we observed the mechanism of how this disciplining is accomplished, namely by discursively creating definitions of impact and assessment standards that discipline an impact focus into research praxis. This in combination with commitment to impact by the universities themselves (research centres, training courses, monetary incentives etc.) represents the mechanism of how the (new) telos of research impact is being enforced throughout the UK research ecosystem. Nevertheless, what the long term impact of research impact will be on the UK research ecosystem is still difficult to estimate at this point. This will depend on the aggregate actions of the individual academics within the research ecosystem (cf. 2.5), if they choose to prioritise the ends over the means. However, what the outcome of such prioritisation seems unambiguous, in that it leads to oppressive power structures as contemporary authority is removed from criticism (cf. 4.4).
The presented main argument of this thesis is that research impact may potentially be ‘the death by a thousand cuts’ for academic integrity, as the telos of research slowly shifts from an intrinsic Enlightenment focus to a neoliberal focus, all under the guise of a social contract ideal. In regard to the REF 2021, the assessment most likely will be similar to the previous one; in that people will find it difficult to prove their impact, embellish their impact claims when expedient and, make strategic decisions of where to be judged and what type of impact is selected to be judged. What will change is that we now have a precedent setting data base of research impact and how research impact is to be presented. Within the interviews, when discussing these future issues the consensus seemed to be that within the next iteration the impact assessment will not necessarily be better run, rather academics will just be smarter in how to play the impact game (cf. 8.1.3). The conclusion of this PhD thesis will discuss such long term developments and what they potentially mean for the authority of science and its institutions, however before this let’s just quickly summarise what was learned within this chapter.

8.4. Summary of the chapter
The introduction of research impact by the REF 2014 represents a redefinition of the boundaries of academic practice, and by extension its telos. The academics that occupy the research ecosystem showed different understandings of the same phenomena, which created uncertainty and anxiety. In this iteration of the REF the impact assessment represented 20% of the total assessment. This is expected to change in the future as more emphasis is put on research impact. Yet some of the problems that arose with the implementation of research impact have not been addressed so far. Despite claims to the contrary, the evaluation method is not neutral as it significantly influences what research gets submitted and which does not for the impact assessment, directly factoring over what research is worth doing and which is not. Furthermore, as the universities are engaged in an evaluation process, the push to claim ‘good’ impacts becomes incentivised, leading to game playing both between and within institutions and on an individual level. As opposed to the social construction of scientific facts, there is not yet a commonly agreed standard of how to commodify a research impact into an impact fact. The research impact fact creation of the REF process is still taking shape, as acknowledged by external reviews of the REF process and the individuals interviewed. However what is clear is that the ecosystem is changing as the amount of resistance to these new changes seems fairly low. The changes that have become implemented are that research impact now represents a new avenue for academic competition and subsequently recognition. The challenges with this new avenue of competition will slowly work out their kinks in the future as more and more individuals compete on these terms. Yet, what trajectory this development will take as of yet is difficult to estimate as there exists no agreement on how to facilitate, measure or narrate research impact.
“[S]ociety without respect for science is too awful to contemplate” (Collins 2009:30)
9. A DEFENCE OF THE SCIENTIFIC METHOD

This chapter represents the conclusion of this PhD thesis. As such, the individual sections will all summarise different aspects of this PhD research. The first section focuses on explanation of how the stated aims and objectives were achieved. Furthermore, relating it the changing research ecosystem as well as discussing the contributions to knowledge that were made within this thesis (9.1). The following section focuses on the limitations of this thesis and the implications for future research (9.2). The sections after that, discusses the potential dangers associated with the research impact focus for UK universities (9.3). While the next section focuses more on the potential benefits associated with integrating a research impact focus (9.4). The conclusion finishes by providing a conservative argument of why the Enlightenment telos should reign supreme, even when talking about research impact (9.5).

9.1. Scientific values are performative in maintaining truth creation

This study showed quite clearly that the discourse around research impact has become part and parcel of the contemporary UK research ecosystem. This study had 4 major stated objectives (cf. 1.3); the first one was to conduct a critical review of the literature (1), the second was to critically contrast themes of the research impact discourse that emerged from reported tourism research impact (2), the third one was to critically evaluate the disciplinary guidelines posed by the REF’s research impact assessment (3) and finally to conduct interviews with academics active within the research ecosystem that is now being disciplined along research impact (4).

This study maintains that the articulation of the research ecosystem represents a contribution to scientific knowledge, as this post-postmodern perspective allows for putting research impact into a bigger evolutionary context where the development and introduction of research impact represents just the latest change of scientific values. The reason why this was pivotal and a key contribution to knowledge are as follows; this post-postmodern perspective allows for the reaffirming of value structures and not simply criticising them because they do not fulfil some idealised version of how things ought to be. Rather, locating such values to actual performances and behavioural patterns, that allows for contrasting and evaluating their different influences on ecosystem wide developments. This is directly addressing the knowledge gap posed by Collins and Evans (2002) that inquiries into scientific knowledge production should also be able to reaffirm the vertical dimension of epistemology and not only present criticism (cf. 2.3). Furthermore, this is a development of theory as it extends sociological understanding of discourse to include insights from psychology and evolutionary biology, recognising that value structures cannot be arbitrary if the fulfilment is a certain task. The scientific telos of establishing truth is enshrined into the Mertonian norms (cf. 2.4) that are articulations of the scientific method (cf. 3.3). The ergon (function)\textsuperscript{136} of these Enlightenment values is to maintain that truth creation is maintained in an structured bottom up process, where truth can emerge through dialogue, instead of being ordained high from priestly, divine or state sanctioned authority (cf. 4.4), the result of which we call ‘objective’, ‘rational’, ‘logical’ or indeed true (cf. 2.3).

\textsuperscript{136} “No one tries to live well for the sake of some further goal; rather, being eudaimon is the highest end, and all subordinate goals—health, wealth, and other such resources—are sought because they promote well-being, not because they are what well-being consists in. But unless we can determine which good or goods happiness consists in, it is of little use to acknowledge that it is the highest end. To resolve this issue, Aristotle asks what the ergon (“function,” “task,” “work”) of a human being is, and argues that it consists in activity of the rational part of the soul in accordance with virtue.” taken from \url{https://plato.stanford.edu/entries/aristotle-ethics/} accessed: 2017-10-31.
In regard to fulfilling the second aim of this thesis, in chapter 6 we saw the effect of this disciplining, where the universities reinterpreted the REF’s laissez faire approach to research impact in submitting ‘the best’ research impact for assessment. However, due to the extra-scientific pressure of the assessment structure such disciplinary guidelines exert, it seems that the ‘best’ research impact was not necessarily the research impact that was most significant or with the widest reach, rather the ones that were easiest to reference and account for. (cf. 6.4) What is important to remember here, is that expertise in research impact claims primarily rely upon social research methods (cf. 4.3.5). This type of expertise may not be possessed by people compiling and assessing the impact claims outside of the social sciences (and even within the social sciences disciplines not everyone is dealing with this type of knowledge).

In regard to fulfilling the third aim of this thesis, chapter 7 showed the problems inherent with claiming any sort of research impact and the issues that arise with accounting for the evidence and tying this to a specific piece of research (cf. 7.2). Nevertheless, a disciplining still occurs as universities are incentivised/disciplined by the REF assessment structure to perform according to this newly introduced telos of research impact. This happens because the REF represents a material bottleneck that universities have to circumnavigate if they want to stay relevant within the UK research ecosystem. The key contribution to knowledge here is that this disciplining occurs even in the most ‘rational’ of human enterprise (i.e. scientific pursuits) often without the individual that is being disciplined being fully aware of how this disciplining occurs. Merely, as the universities align their disciplinary regimes (cf. 7.3) in order to align with the desires of the REF such a change in telos will be manifested (cf. 3.4) as these are discursively disseminated into academic culture.

The last aim of this thesis was fulfilled by accounting of the voices of the ‘REFed’ (cf. Ch. 8). In the presentation of the critical analysis of the interviews it was shown that research impact is disciplining the research ecosystem at every level of the academic hierarchy. Furthermore, this disciplining occurs if the academics conforming to these disciplinary measures are aware of their own impact, like/dislike the enforced disciplinary measures or grasp the implications of a shift in telos for the reliability of the scientific values enshrined within. As long as the members of the research ecosystem (i.e. the academics) conform according to these changed rules, the ecosystem and its products will change. The contribution to knowledge that this thesis makes, is that it shows that despite the difficulties to estimate what the exact outcome of this shift in telos will be for the UK ecosystem, we can draw inferences from other developments of the human ecosystem (cf. 4.4). The post-postmodern approach that is introduced within this thesis is confident, that when the ends are prioritised over the means, such an eventually will lead to a degradation of the ecosystem in question. This occurs as trust in (scientific) authority of that (research) ecosystem is undermined by individual transgression of members that ‘game’ the system for personal benefit to the detriment of the ecosystem as a whole. The only way to prevent, such a calamity is to ensure that such a contingency does not manifest itself, because as Nietzsche said; I am not sad that you lied to me, I am sad that I cannot trust you anymore (cf. Nietzsche [1886] 1989). Once a critical mass is reached that is ‘gaming’ the system for personal benefits the system will collapse. Then post hoc, we can argue if that was due to the intervention of God, greed of neoliberal system or as proposed here as a consequence of the collapse of in-group harmony due to a deterioration of a unifying telos, is secondary in the humble opinion of the author.

As Foucault (1964) showed with his study into the history of madness, power and knowledge are inseparably linked in terms of authority, funding and legitimacy within the human ecosystem (cf. Chapter 2). As such, the current fervour that is created by the introduction of the research impact
discourse can be understood as just another ‘normal’ development of the evolving research ecosystem (cf. 3.1). The wider human ecosystem is always changing and evolving, and such developments eventually influencing the research ecosystem as well (cf. 4.3). Within, such situations of flux, change can either actively be embraced or resisted, there is no passivity\(^\text{137}\). In light of such conflict between progress and tradition (cf. 4.4), Collins (2014) asked what are the values and expertise that guides us out from such chaos, creating consensus out of confusion (cf. 2.3). His answer was that the traditional scientific values (i.e. Merton CUDOS norms) are all focused around an ergon (function) of maintaining the process of creating scientific truth, ordering and structuring information in so that democratic principles can guide political decisions (cf. 2.4). Subsequently, these values have been enshrined within proxy indicators of scientific quality (cf. 3.3 & 3.5). However, with the introduction of research impact, research conduct will and has changed. This is occurring, because creating research impact does not have to overlap with scientific truth creation (cf. 4.4. on the discussion of ends vs. means). Hence, the underlying research ecosystem is trying to adjust and the resulting uncertainty is a manifestation of this process (cf. 6.4, 7.4 & 8.3).

9.2. Limitations and future research

One of the accepted proxy indicators of scientific quality is to acknowledge the limitations of the presented research (cf. 5.3.6), something that is not yet done for research impact. Each of the three empirical strains of this PhD research has their limitations, and some of these were already discussed within the method section (cf. 5.3). However, here we want to focus on three major limitations that resulted from the availability of data material, the research design and open up for potential future avenues to mitigate such limitations further. In regard to chapter 6, the analysis of how the reported research impacts (cf. 6.4) may give the impression that the universities were lacking research impact in very important socially relevant areas (climate change, global security and emergent tourism from the third world etc.). However, it is important to remember that this was only the reported research impact, meaning that the universities may have research impact within these other areas, however they choose not submit for a variety of reason (cf. 8.1.3). Investigating what these reason were, could represent a fruitful task for potential future research projects. Within the thesis it was suggested that the reason why these other research impact were not submitted was threefold, firstly they may have simply been unaware of the research impact they had, secondly their research impact was not suitable for how the REF defined research impact and thirdly, there may have not been enough evidence available to showcase the research impact in question (cf. 6.4, 7.1 & 7.2).

In regard to empirical material within chapter 7, the presentation may give the impression that the universities were ‘cheating’ or ‘fluffing up’ their data, and yes there may have been some cases where this was indeed happening. However, based on the empirical material no such inference can be made (cf. 7.2). Firstly, the testimonials that were referenced within the research impact case studies were not available for verification, clearly limiting the assessment of the presented research impact. Secondly, the deletion of some of the websites that presented the research impact also made it difficult to ascertain what impact was had (on the local scale that it did). Lastly, as the creation process of the case studies was only discussed in the abstract (with the individuals that did indeed submit case studies, out of the interviewees), the inference of the process of construction are primarily theoretical (cf. 7.1). As such, a potential future research project might be following an impact case study from its process of creation, through the editing, submission, assessment and finally

\(^{137}\) Even choosing not to participate is performative in the sense that the disciplinary guidelines that require participation are not adhered to.
feedback and implementations. With the next REF already on the horizon, this would indeed seem a feasible research project, although issues of access and confidentiality would have to be addressed. Another serious limitation in assessing the quality of research impact was that the case study account lacked an account of how the research impact claims were constructed (cf. 7.2).

In regard to the empirical material in chapter 8, the interviews proved to be the best tool that helped to contextualise the abstract ideas discussed within chapter 6 and 7. The interviews allowed for describing the research ecosystem in such a fashion that it became clear that it depends on human to human interaction, disciplined by performance indicators and driven by ambition, strategizing and curiosity of the individual (cf. 8.1). However, the interviewed represent one 'tribe' that operates within the research ecosystem, namely the academics. To get a better understanding of the whole research ecosystem, it would be instructive to interview; policy makers’, end users’ and other facilitators that maintain and shape the assessment of the research ecosystem (cf. 8.2.2). As this research shows, such extra-scientific factors do shape research conduct on a minute level, as the entire research ecosystem is refocused to embrace a shift in telos to research impact (cf. 8.3). By casting this broader net with interviews, it should be possible to better investigate the underlying forces that cause such changes to the research ecosystem. In a rhetorical sense, research impact discourse draws their authority from a social contract understanding of how science ought to function (cf. 3.2). However, the reported impact that was put forth hardly touched all important areas of interest that could be identified (cf. 6.3). Another potential future research project could investigate if indeed the universities had impact within such areas or not. This is another recommendation, that could be made for the universities going forth to the next iteration of the REF, external (sociological) research impact investigators should be consulted, as they can help identify relevant research impact, help present it and narrate it in an acceptable fashion and do it rigorously as this represents their area of expertise. Nevertheless, there appear to be some serious downsides to the whole research impact agenda as well.

9.3. The dangers of the new telos

One of the key research findings of this thesis is that the REF process is disciplining research conduct, merely by having universities participating within the impact assessment (cf. chapter 7). The practical implementation is difficult to get right due to the materiality of what this implies for research conduct (cf. 4.3). As soon as one manifestation is (materially) locked into an official assessment framework (like the REF), one particular definition of impact is enacted and effectively disciplines what can and cannot be expressed. Within this thesis, such problems were discussed within chapter 4, when the limitations of the page limits, the definition of impact and the evaluation (e.g. the definitions of reach and significance) were highlighted. Within chapter 6 and 7 with the overview of the empirical material that was used for the REF impact assessment, it became clear that there still seemed to be many issues that needed ironing out in regard to creating acceptable proxy indicators of impact quality (cf. 7.2). Although the universities were showing signs of disciplining within their impact templates (cf. 7.3), within the interviews it became clear just how much confusion there exists within the research ecosystem in relation to the research impact discourse (cf. 8.1.2). Academics seem to struggle to present their own impact (due to absence of evidence, difficulties in facilitating impact, failing to showcase high quality research tied to an impact or simply being unaware of their own impact). Therefore, it is not surprising that universities played it safe and reported impact that aligned with certain type of impacts (small scale, easy to reference and present, cf. 6.4).
This brings us to the contest in values, which has been a unifying theme that stretches throughout this thesis. The type of impact that is reported now locks in what is an 'acceptable' type of impact, performatively enacting a certain type of value system that is disciplining the research ecosystem (cf. 2.5). However, the value aspect stretches to far more fundamental aspects. The conflict between a research impact telos of the research ecosystem compared to a traditional Enlightenment truth focused telos is akin to a focus on the ends vs. the means and all the associated problems of prioritising the ends over the means (cf. 4.4). The reason why I say that they are in conflict and cannot be complimentary is because the so called 'scientific method' seems to focus on (scientific) truth very in a specific way. Scientific truths are created by a method, they are not self-evident God given truths, neither are scientific truths beyond criticism, such method in the current assessment format is absent (cf. 3.1). Scientific 'truths' become true, through a process of construction that disciplines the production of knowledge to avoid biases and account for the choices made within the research (means, cf. 3.2). Meanwhile, a research impact focus disciplines the research conduct to focus on the outcomes (ends, cf. 4.1). In order to become complementary, the research impact assessment format had to incorporate this means focus of the values surrounding the scientific method (cf. 3.5) which is currently not the case.

The current science studies understanding of the so called scientific method is that it represents a collection of (scientific) values, rhetorical practices and (scientific) norms of conduct that have been developed and retained from the Enlightenment (Shapin and Schaffer 1985) to today (which in itself are Christian/Western values that developed over millennia, cf. Nietzsche, [1887] 1989 and van Doren, 1992 as well as cf. 3.1). Such values represent among others, rigour, empiricism, openness to criticism to only mention a few (Collins, 2014), most famously encapsulated within the Mertionian CUDOS norms (cf. 2.4). Within this thesis the 'scientific method' has been subdivided into three performative steps that need to be embodied by the researcher, namely a critical deconstruction of the existing theory, followed by an analytical construction of the studied empirical data material that is presented in rhetorical re-construction that presents the unified scientific claim (cf. 4.4). In regard to rhetorical re-construction, this can be how an argument ought to be structured (Latour 1999), what information is supposed to be introduced where in the argumentation chain or when to use the passive or active voice, to only mention a few (Pinker 2014). In regard to other writing norms, these can be; that references ought to be cited, supernatural explanations are not accepted (Collins and Pinch, 1993) or that academic work ought to be peer reviewed by experts within the field (Collins and Evans, 2008, cf. 5.3.6). What all these rules of the game allow us to do; is to have a discussion in a civilised manner working out ideas without animosity. Karl Popper called this Greek invention a 'war of ideas'. He not only placed it as a fundamental premise inherent within science, he also attributed it with fundamental societal importance, stressing:

"It is one of the most important inventions ever made. Indeed, the possibility of fighting with words instead of fighting with swords is the very basis of our civilization, and especially of all its legal and parliamentary institutions. (Popper, [1963] 2002:501)

However, the scientific culture is just like other cultures in that the majority of these cultural rules are implicit (cf. 3.3). Collins (2008) writes; ‘[w]e must choose, or ‘elect’, to put the values that underpin scientific thinking back in the centre of our world.’(p.30), the reason being, such rules structure the information exchange among people and thereby allowing human beings to constructively externalise

138 The concept of 'game' is here understood to mean a formalised structured interaction between participant in which they voluntary want to participate within in the Piagetian sense (cf. Piaget 1932) as well as cf. 5.3.6.
their thoughts and make them accessible for improvements within their respective (research) community and beyond. The current structure of the REF impact assessment process seems antithetical to these Enlightenment values as it rewards the outcome over the process of creation, without incorporating a focus on the means of constructing such claims (cf. 4.4).

What happens when an end goal focus, like research impact discourse, is reinforced by institutions like the REF is that such end goals are elevated as the primary purpose of research. (Why do research? So you can have an impact) that then in turn shape what is researched and what is not (cf. 6.3). Such a dichotomy, may appear extreme, however, the consequences of such a development of unfettered focus on research impact are that they potentially undermine the trust and authority of scientific institutions (cf. 7.2). Science cannot deliver “absolute certainties of religion or morality, and scientists were not priests but rather skilful artisans, reaching towards universal truths but inevitably falling short.” (Collins 2008:31). Research impact now forces the artisan to become a ‘telemarketer’, removing familiarity and setting science up for results that it cannot deliver. Within science studies, the performative dimension of research on values and society has been labelled as ‘ontological politics’ (cf. chapter 3.1) and hither though this has only been an implicit aspect of the research conduct (cf. Mol 2002; Law 2004). Now it is explicit and every time a new assessment regime is introduced people will either; adjust, resist or exploit it (cf. 8.1) As such, it is important that there are checks and balances built into the system in order to prevent exploitation (cf. 4.4).

Within a poorly defined framework scepticism can easily be levelled against the presented claims of individuals and if now the “godlike [certainty] of some natural scientists” (Collins 2008:30) is applied to the context of research impact, it is only a matter of time until one research impact turns out to be not quite so (e.g. leaded fuel, chlorofluorocarbons or thalidomide). It is not a question if these negative types of impacts will happen, but rather when (cf. 4.3.4). However, if now research impact is associated with such calamities that are then tied up in government funding, the assessment of academic quality and research, such incidents will not remain isolated cases but rather create ripple effects casting doubt over the entire institutional framework, if not controlled for. The reason being scientific veracity is achieved by performing under a long list of proxy indicators of scientific quality (cf. 3.3) any one transgression will cast doubt over the entire enterprise. This is not so much a problem of how “human beings are”, but more that human beings are individuals and not mindless drones. Morals, values and abstract ideals are interesting to discuss within context like this doctoral thesis (cf. 2.4). However, academics are still people that have to strategize how to balance their ambitions, needs and opportunities within an ecosystem (cf. 4.4). Within any environment with little oversight, ways to game the system will be found. Nietzsche likened this individualistic drive of human beings, as a relentless motor that drivers us forward, he writes:

“[… ] it is like those sun-seeking climbing plants in Java—they are called Sipo Matador,— which encircle an oak so long and so often with their arms, until at last, high above it, but supported by it, they can unfold their tops in the open light, and exhibit their happiness. (Nietzsche [1886] 1989: 252)

According to Nietzsche, such a characterisation is to be embraced and celebrated and obviously there are admirable aspects to such individuals. However, what Nietzsche puts less emphasis on is the ‘role of the oak’. Within the here used post-postmodern understanding that the oak represents society’s institutions (like academia), which are used by individuals to elevate themselves and that are important to lock down the infinite number of interpretations of reality. As such, for individuals not to be parasites, but rather symbionts, there needs to be a respect for the values of these institutions. These institutions can only fulfil their ‘proper’ function if not too many ‘parasites’ divert resources
away, in the pursuit of their individual happiness. Meaning, if disciplinary rules of an institution are poorly implemented, people loose respect for the institution, potentially causing exploitation and consequently the collapse of such institution (cf. 4.4). Furthermore, such loss of respect coincides with more and more people gaming the system, which slowly deprives the institution of its moral justification and rationale. Within a scientific context, such developments are detrimental, because once trust in scientific institutions is lost the whole foundation of what makes scientific facts ‘true’ are undermined (cf. 5.3.6). If such a developed is allowed to continue without proper checks and balances, respect for scientific intuitions in society will go the same way as respects for politics and journalism, due to identity politics and fake news. If no major changes are done to the assessment structure (cf. 8.2), this seems to be the inevitable future of the research ecosystem, such “[…] prospect of a society that entirely rejects the values of science [may be] too awful to contemplate.” (Collins 2008:30), However, this is what most likely will happen if the current assessment structure is maintained without changes.

9.4. The benefits of the new telos
The previous section summarised negative implications of a shift of telos from truth to impact and undeniably, there are some really concerning issues that crop up. However, there are also some positive features to the whole impact agenda. While Alexander von Humboldt was able to exert influence over the German intelligentsia at the time, this seems unfeasible today as academia is on a whole different scale (cf. 2.4). Consequently, a different method had to be found to steer the UK research ecosystem. Another key contribution of this research represents just that, chapter 7 outlines just how this mechanism by which research impact is disciplined throughout the research ecosystem takes place. When faced with resource allocation, there are several ways of how such resources can be divided (winner takes all, equal outcome, based on merit etc.). When considering the introduction of impact, it does solve the problem of size very elegantly (cf. 4.2). The way the REF has chosen within their focus on impact, at least in principle, is based on merit. The version that is enacted by the REF in principle allows each and every researcher to make a case for their own research (impact), even though the underlying grasp of how research impact functions may be lacking (cf. 4.1). So in principle, this approach is very meritocratic, which aligns well with the traditional (CUDOS) norms of science (cf. 2.4). Furthermore, as such the inclusion of research impact may hold the potential to break the toxic publish or perish culture that has manifested itself within Western academic institutions, by providing an alternative means of how to allocate merit.

Another benefit that the REF’s focus on research impact does it that it disciplines all members of the research ecosystem to think about their research in societal wide implication. Traditionally, ethical consideration have had a strong part of the scientific conduct, what research impact now does is to make the performative dimension of scientific truths explicit to members of the research ecosystem that may have been previously unaware of these implications. By disciplining the academics in such a way, accountability of how tax payer money is spent is emphasized and researchers have to acknowledge this. Our modern society and all their technological advances surely are a good testimony to the veracity of the scientific approach, regardless of what the practical difficulties in retracing such developments may be. However, as discussed within the previous section, the issue is not that it does (ends), the problem lies in how this is done (means, cf. 4.4). If the research impact assessment is done correctly, it indeed represents a good disciplinary measure by which the UK government can enforce public accountability upon the research ecosystem. Nevertheless, as shown in this thesis what is the ‘correct’ way requires a complex discussion on what values ought to guide research. Raising such a discussion would be the ideal research impact of the here presented PhD thesis.
Lastly, the potentiality that people will ‘game the system’ will always exist within any human ecosystem. The best way to guide and influence other people is always to lead by example. This research is no different, the inclusion of outlining the process of creation within the method section detailing how the rhetorical re-construction of this thesis was done is the intention to ‘walk the talk’ (Collins and Evans, 2008) in showing how important this aspect is for the verification of trust in the presented knowledge claims (c.f. 5.3.6). Such a performative dimension potentially creates another positive aspect of research impact, namely that it opens the possibility to showcase good scientific practice. Although, we do not yet fully understand why human beings choose to follow certain rules while disobeying others, reducing human choice to a simple nature (biologically determined) or nurture (socially reinforced) dichotomy touches on important aspects, but it’s not the whole picture. Even when combining ‘nature’ and ‘nurture’, as done within the here used post-postmodernistic approach of describing the research ecosystem, it is impossible to tell how an individual will react in a certain situation. With the introduction of research impact, it becomes possible to uplift positive examples of how academics ought to behave, creating very concrete examples of ‘good conduct’ that can be emulated by other members of the research ecosystem.

9.5. A case for conservatism in scientific values

This PhD thesis has developed a systematic approach toward research impact, claiming that research is produced by an ecosystem that contains many contradictory interpretations within (cf. Ch. 2). For a specific claim, fact or argument any interpretation collapses this multiplicity into a particular interpretation. The crucial point is how this is done, i.e. enforcing consensus, may not necessarily arise only due to the research conduct alone but rather through external means (cf. Ch. 3). What now happens when success is attributed based on the outcome (i.e. research impact) and not best adherence of the rules of the game, this inherently changes these rules. It changes it in such a subtle and unnoticeable fashion, that the players (i.e. researchers) themselves may not even notice that they are playing a completely different game (i.e. change in disciplinary rules, cf. Ch. 4). The implication of the here outlined account for tourism research is that the initial short term consequences are being perceived as positive, as everyone can congratulate themselves on the impact that they already have caused. Nevertheless, chapter 6 also outlined the resulting significance gap in the reported research impact. The accumulative consequence of such conduct is that research that has expedient research impact will be further legitimised and incentivised to create more of this particular impact. Thereby, contemporary research impact ossifies the underlying value structure that caused the research impact to be interpreted in a beneficial fashion in the first place. Chapter 7 showed that mere participation within the assessment is enough to discipline conformity into the universities conduct. This happens because the underlying value structure is disseminated through disciplinary means (i.e. impact officer, business partnership managers, REF officer etc.). Chapter 8 then highlighted the resulting confusion of what impact meant, and depending upon the rank in the academic hierarchy research impact was conceptualised differently. These disciplinary measures potentially infringe on intellectual freedom and prevent tourism knowledge production from updating and challenging itself from within, nevertheless academics go along with this conduct due to their particular personal reasons. The theoretical implication for understanding scientific knowledge production is that the outlined mechanism offers an explanation of how knowledge systems transform overtime into an (ideological) echo-chambers. Namely, the disciplined uniformity that is required in order to justify any research impact ‘positive’ interpretation will slowly over time become disseminated through disciplinary structures (in order to ensure unity). As the majority of the ecosystem is engaged within justifying the positive impact, potential problems with such an approach will be overlooked until it’s too late to deal with.
In regard to practical implications for tourism knowledge production, empathising personal accountability in relation to research impact may appear as an undue add-on or even oxymoronic. What makes this contingency so difficult to comprehend, is that on a surface level research impact does appear to be a form of accountability. However, it is a certain type of accountability that disciplines an end focused value structure, due to merely participating within the process of assessment. However, our human biological brains function in a certain fashion, what cognitively happens to us due to our brain plasticity is that when we write ‘how wonderful our own (tourism) research impact is,’ we internalise this mode of thinking, i.e. we are being disciplined by it (cf. 7.3). We can literally convince ourselves, that 'yes, it was the right thing to do', having rationalised away our own choices by having come up with some smart reason why it's OK. However, the real underlying reason for us arguing for our 'great research impact' was not because we necessarily believed this was the case, but rather because a disciplinary requirement compelled us to do so. The main point here is, that we cannot abdicate our own responsibility for our own choices (if that is now because we find ourselves within a Milgram style experiment and authority figure says it's OK or otherwise). The abdication of responsibility happens as there are no demands that the individual needs to articulate their own values and choices; by requiring that the researcher needs to engage with ethical consideration, issues around data collection or limitations of the research that was used to investigate the presented impact claim, to only mention a few. In the past, such conduct that emphasized the importance of the process of creating knowledge claims (means focus) was ensured by the Enlightenment ethos and the associated ‘proxy indicators of scientific quality’ that disciplined organised criticism into academic conduct. Such proxy indicators of scientific quality literally disciplined civility into (tourism) knowledge production. In regard to research impact, as of yet, no analogues mechanism exist and what the effect of such absence will be is anyone’s guess. Regardless, of such uncertainty the research ecosystem machinery, now set in motion, is slowly hammering out an emergent landscape of tourism research impact (cf. 6.4.3).

The question is now, is this hard won 'scientific method' something we are willing to give up in the face of facilitating more research impact? Or, is it possible that every individual researcher will take disciplinary responsibility in their enactment of their own research impact? Without such disciplinary measures in relation to establishing research impact claims, only time will tell what is going to unfold. However, what is clear is that the research ecosystem is changing. So to address the here identified knowledge gap (cf. 2.3) any institution can only ever be as trustworthy as the individuals that comprise it. By hiding behind obtuse dense prose and not outlining how the presented knowledge claims were constructed, individual responsibility is only deferred, with predictable detrimental outcomes for the trust in the institutions that lend credibility to such ‘scientific’ research impact claims.

The here presented thesis described the research impact discourse that were connected to the REF 2014 research impact assessment and tourism studies. Yet the implications stretch far beyond this context. There may have existed similar notions previously within the research ecosystem, which fulfilled similar roles in terms of advocacy, justifying funding or industry engagement. However, the new emergent research impact discourse is different, as it now represents an official performance indicator, disciplining the research conduct of academics directly and indirectly. Within chapter 6 we observed how the emergent research impact landscape of the research ecosystem laid itself out. Primarily research impact discourse seemed to be focused on small scale impacts that were easy to reference. Within chapter 7 we learned that the assessment standards discipline what type of research impact discourses can be presented, explaining the peculiar selection choices of the universities. Furthermore, an analysis of the impact templates of the self-identified tourism studies
faculties showed just how ingrained research impact had become, with the universities allocating large monetary sums. Within 8, we observed that the research could be subdivided into three discrete understandings (implementation based, game playing and value based).

Now the way research impact differs from traditional advocacy is that the research impact discourse now locates the advocacy dimension of the research within each and every individual academic, as they now have to also justify their research’s raison d’être within it. Such boundary work (cf. chapter 3.4) in relation to research impact is still in its early stages, leaving the current research ecosystem in a state of confusion in their search for arguments and attempts to cope with this change in environment (cf. 8.1.5). Currently, we seem to be in the very early stages as accepted proxy indicators of impact quality are slowly starting to emerge from the assessment process. However, currently they are not yet on par with proxy indicators of scientific quality and therefore do not yet provide a plethora of examples to choose from (cf. 7.2). This presumably, will change with the next iteration of the REF, when academics start to reverse engineer what were good impact claims and how these were judged; aligning their impact with these avenues and using the same proxy indicators of impact quality to present their own research impact (cf. 7.4). As such, the process of actively demarcating academic expertise along a research impact dimension is new, even if professors or other high ranking members of the research hierarchy were engaged in similar pursuits previously (cf. 8.1.4).

The trust that scientific facts and the associated proxy indicators of scientific quality enjoy wasn’t built overnight, it represents a complex evolutionary process that stretches back beyond the Enlightenment (cf. 3.1). As such, for research impact not to undermine the trust in scientific authority, the conservative argument made within this thesis is that researchers have to follow the Western values of never putting the ends above the means in their scientific pursuit of the truth or their attempts to justify their research. To be fair, research impact is only a symptom of the loss of trust in the research ecosystem, not the cause. To elaborate on the underlying driving causes would require a thesis in its own right, that draws together the revolutionary technological changes (e.g. the jet engine, the birth control pill, the internet etc.), changes in demographic patterns (lowered birth rate, changes in female/male ratios at every level of education and the workplace, open borders, etc.), sociological changes (universities becoming education factories instead of institutions of higher learning, atomization of research interests, loss of respect for the classics, etc.) and psychological and biological aspects (differences between men and women, differences between liberals and conservatives, emotive thinking vs. conscientiousness etc.) that are all fundamentally changing and influencing the human ecosystem. The changes of the research ecosystem are downstream from these broader societal wide changes. All these aspects could not be adequately dealt with within this thesis. However, without a doubt these extra-scientific factors influence how the research ecosystem develops over time (e.g. Brauer and Dymitrow 2017). Regardless of these uncertainties, there is still something the individual researcher can do.

As stated in the introduction of this thesis, research impact may follow the law of unintended consequences (Merton 1936) iatrogenically leading to that trust in scientific institution is undermined. The ‘war of ideas’ (cf. Popper, [1963] 2002) that we today call science (including the social sciences and humanities) stretches back through the old Greeks, the Stoics, the scholastic tradition, the reformation, the Enlightenment and scholars have always faced external threats to their integrity (Shapin 2010). The only way to ensure that the research ecosystem reliably can produce more beneficial research impacts is to understand that it is the aesthetic ideal of truth that propels people to become scholars in the first place. The ‘gay sciences’ (cf. Nietzsche [1882] 1974)
were only able to create “enormous impact on the world over the centuries” - that the University of Oxford is now using in their promotional material – as their focus was on the process of creation. No amount of luck, extrinsic reward or ‘rational’ logic can justify the perseverance of the researcher to stick to ‘their truth’ and faith in the scientific method, success and research impacts is then merely epiphenomena. As such, rather than using research impact as a self-congratulatory metaphor that allows us to smugly stand on the shoulders of giants; why not emulate the actions of our elders that turned them into giants in the first place? Such an individual emphasis on the Mertonian CUDOS norms would not only create genuine research impact and preserve the Enlightenment ethos. It would also serve as a counterbalance to the neoliberal impact agenda, whilst still fulfilling the social contract ideal of public accountability. Furthermore, maintaining such an ethos within the entire research process creates a bulwark against the ‘death by a thousand cuts’, preserving the respect and authority of academic institutions. Otherwise, research impact has the potential to turn into the ‘identity politics’ or ‘fake news’ phenomena that undermined trust in political authority and journalistic integrity respectively.
“If it is not right do not do it; if it is not true do not say it.” (Marcus Aurelius 121 – 180)
10. RESEARCH REFERENCES

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