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Heather Ellis

Beyond the University: Higher Education Institutions Across Time and Space

This chapter makes the case for a history of higher education institutions which looks beyond the university. Building on recent historiographical developments, it argues that the history of higher education must not be limited to the history of the university, an institution fixed in space and time, but must rather adopt a transnational and transhistorical approach. It also argues for a broader definition of 'institution' which includes concepts, ideas and practices which have become 'institutionalized' alongside traditional understandings of institutions as sites with fixed locations and physical forms. Beginning with an exploration of higher education and learning across the globe in the ancient world, it goes on to study significant developments in higher education during the medieval, Renaissance, Enlightenment and modern periods. While considerable attention is paid to the development of the university in Europe and around the world, the role and significance of other higher education institutions are stressed throughout. Particular weight is placed on the importance of learned societies and academies as sites of research development and training in the late eighteenth and nineteenth centuries. The chapter concludes with reflections on the ways in which the prominence of the research university since the Second World War has shaped the writing of the history of higher education in recent years, most notably, the dominant position given to the university as institution. Potentially fruitful directions for future research are also discussed, in particular, the need to focus on alternative higher education institutions.

The history of higher education does not really exist as a field of inquiry in its own right. What people normally read about is the history of universities. There are several academic journals with this title as well as a number of national and international learned societies.[1] This is largely due to the fact that in the later twentieth century, when these societies were founded, the history of higher education was widely viewed as synonymous and coextensive with the history of the university. There is no doubt that in today's world, the university, as institution, has achieved an unprecedented dominance in the field of higher education and research, particularly in STEM fields (Powell et al., 2017; Wellmon, 2015). As John Caputo and Mark Yount (2010) have argued, in the world of knowledge-making, the voice of the university has become uniquely powerful. Drawing on Foucault, they urge acts of 'resistance' which can challenge 'the university's claims to truth, its regulation of what can count as true and of who can do the reckoning' (16). The

[1] Journals include *History of Universities* (founded 1981), *Jahrbuch für Universitätsgeschichte* (founded 1998) and *CIAN-Revista de Historia de las Universidades* (founded 1998). Learned societies include the International Commission for the History of Universities (founded 1960) and the Gesellschaft für Universitäts- und Wissenschaftsgeschichte (founded 1995). More recently (in 2014) a Research Group on University History was founded at the University of Manchester.

dominance of the university would appear to make a chapter focused on 'institutions' in the history of higher education easy to write. All that is needed, it would seem, is an account of the emergence of the university and its rise to global supremacy.

Such an account has already been written, many times over. There already exists a well-developed history of universities – in individual countries, in geographical regions and at a global scale.[2] As this chapter will argue, however, the history of higher education is much larger than the history of the university and embraces a wider range of institutions, some of which were of short duration, and others which have exercised a lasting influence up to the present day. A history of higher education (rather than simply of universities), invites researchers, for example, to look more closely at the (frequently blurred) boundaries between secondary and tertiary education in the past (Anderson, 2017). Two examples may suffice here. Until the middle of the nineteenth century, Scottish universities recruited students who were on average between 14 and 16 years old, an age more usually associated with secondary education. Likewise, in France under Napoleon, the new examination taken at the end of secondary school was called the baccalauréat (or bachelor degree), and had been deliberately removed from the purview of the traditional universities (Anderson 2004).

The university, as a distinctive institution, is also fixed in space and time, being a peculiar product of medieval Europe (Rashdall, 1936; Lowe and Yasuhara, 2016). The broader category of higher education, by contrast, is a transhistorical and transnational phenomenon, that allows us to explore both earlier periods of human history and a wider geographical range. It also encourages a focus on the specific activities and practices which constitute higher education – teaching, research, the training of future researchers - rather than on a particular institutional context. In so doing, alternative, frequently neglected, institutions carrying out specific aspects or functions of higher education, alongside or sometimes in opposition to, universities, are thrown into greater relief.

In light of work in recent decades, particularly by Michel Foucault and those influenced by his approach, it is sensible to broaden our definition of 'institution' to include any idea, concept, practice or discourse which has become 'institutionalized' in particular socio-cultural contexts (Caputo and Yount, 2010: 4-7). With this in mind, a chapter looking at institutions in higher education should pay attention to 'schools of thought' as well as physical institutions. The two are intimately connected with the former frequently leading to the latter. It is also important to recognize that higher education institutions with a fixed location and physical form also exert a powerful, if intangible, normalizing force over academic and intellectual practices (Caputo and Yount, 2010: 14).

In its structure this chapter adopts a broadly chronological and transnational approach. It begins with a consideration of higher education and learning across the globe in the ancient world, before moving on to examine key developments in higher education during the medieval, Renaissance, Enlightenment and modern eras. It is inevitable that the choice of these time periods to some extent reinscribes a Eurocentric approach. The chosen chronology reflects the prominence of the

[2] For a helpful recent overview of European scholarship in the history of universities, see *CIAN-Revista de Historia de las Universidades* 20:1 (2017).

European university in the analysis presented here. Yet, while considerable attention is paid to the development of the university in Europe and around the world, the role and significance of other higher education institutions will be stressed throughout.

Higher Education in the Ancient World

There are some general preconditions which are crucial to the successful development of higher education institutions across space and time. Historically, large empires with relatively stable political situations have provided a steady supply of students willing to travel considerable distances to learn. As Roy Lowe and Yoshihito Yasuhara (2016) argue, such empires are also more likely to have 'widespread literacy, an administrative class, and a fairly advanced writing technology' which are crucial preconditions for the successful dissemination of information and development of educational institutions (170).

Religious beliefs and practices were crucial to the emergence of higher education institutions in different parts of the ancient world. With many religions containing a strong element of enquiry, it is frequently impossible to distinguish between religious and intellectual activity. Some of the most famous seats of learning in the ancient world including the 'university' of Taxila or Taksasila in modern-day Pakistan had their origins in sites of religious activity. Originally famed for Brahmanical learning, Taxila came to embrace many different branches of knowledge over time with a particular focus on medicine. It achieved prominence again in the mid-second century CE as an important seat of Buddhist scholarship under the rule of Kanishka (Lowe and Yasuhara, 2016).

The Buddhist monastery at Nalanda in what is now India developed a similar reputation for scholarship and higher learning. Yet it is important to note that both Taxila and Nalanda only became large-scale teaching and learning institutions due to the reputations of the eminent scholars who first settled there with their disciples. Institutionalization is a complicated process, combining the benefits and advantages of particular locations with the attractive power of a succession of notable scholars who have decided to base themselves there. Over time, sites like Taxila and Nalanda became hubs of scholarship and higher learning, acquiring a reputation and an ability to attract students in their own right. At the same time, semi-permanent features developed including student fees, scholarship programmes and buildings for the common residence of students and teachers. 'The monastery at Nalanda was, for all intents and purposes, an Institute of Higher Learning or postgraduate studies', Lowe and Yasuhara (2016) have concluded. 'Some of the larger Buddhist monasteries became, effectively, the world's first proto-universities' (54). While applying modern terms like this can obscure significant differences between ancient sites of learning and modern HEIs, it does serve to highlight common features that reveal higher education as a human activity with a much longer history than is often acknowledged.

The patronage of kings, emperors and other leaders was another crucial factor in the development of higher education in the ancient world. 'Many rulers', Peter Meusberger (2015) writes, 'have endeavoured to consolidate or widen their power and their epistemological advantage by setting up centers of knowledge' (19). He argues that scholars have always been called to the courts of

kings and other rulers, to what Bruno Latour has termed 'centres of calculation,' because 'the power of authority has always tended to take advantage of the power of knowledge' (21).

In ancient China, for example, individual scholars, sometimes with their disciples, would frequently migrate between regional rulers. It is telling that the 'Hundred Schools of Thought' which flourished in China from the sixth to the third century BCE referred not to physical schools in fixed locations (institutions in the familiar sense of the word) but to the various philosophical approaches of individual itinerant scholars. The most famous of these was Confucius who left no known physical school or permanent institutional establishment. His legacy was rather his 3500 disciples who spread his ideas all over China and beyond. Over time, fixed seats of learning did emerge in China but only (as in India and other parts of the ancient world), after the settlement of significant numbers of previously mobile individual scholars and their disciples (Lowe and Yasuhara, 2016).

There were comparable centres of higher learning in the ancient Greek and Roman world (Clarke, 1971). Plato's Academy was founded in Athens around 387 BCE and endured in one form or another for over 900 years. Around the year 335 BCE, Aristotle, a former student of Plato's, established the Peripatetic school. Aristotle's students are thought to have met at the Lyceum – a gymnasium in Athens dedicated to Apollo Lyceus. The Peripatetic School is believed to have closed permanently following Sulla's siege and subsequent sacking of Athens in 86 BCE. The Musaeum in Alexandria (which included the famous Library) became the leading research institute in the ancient Mediterranean world during the Hellenistic period and was particularly prolific in natural philosophy and engineering. In the course of the second and third centuries CE the Musaeum declined, following repeated purges and periods of repression by a succession of Roman emperors. In early Christian Europe, the centre of higher learning was arguably the Pandidakterion of Constantinople which was established around 425 CE and was primarily designed to train students for positions in the imperial civil service and in the Church.

Early Medieval Developments

There was, therefore, a rich and complicated history of higher education long before the period when historians of universities traditionally begin their own analysis in the early medieval period. It is important to stress that there was no definitive break between the higher education arrangements of the ancient world and those of the early medieval period. Many features of the earliest European universities were, to a large extent, derivative of earlier forms of higher learning which have been briefly examined in the previous section.

The period identified as 'early medieval' in a European context also witnessed the central phase of what has been termed the Islamic Golden Age – the flowering of education and culture across the lands captured in the Arab conquests of the early-to-mid seventh century CE. It was during this period that the famous House of Wisdom in Baghdad flourished, a centre of learning associated with the patronage of Caliph al-Mamun, and that has often been described as a 'proto-university' (Lowe and Yasuhara, 2016: 105). While its scholars may have had access to the Caliph's personal library, the House itself lacked any formal premises. Meeting in private dwellings or at the court of the Caliph, it comprised a collection of individuals working together to translate and interpret thousands of texts covering many different subject areas. A significant number of these texts

included the works of ancient Greek thinkers and scholars including Plato, Aristotle, Hippocrates, Galen and Euclid. In the case of Ptolemy, whose *Almagest* they translated into Arabic, it was scholars associated with the House of Wisdom who preserved his work when it had been forgotten in early medieval Europe (Lowe and Yasuhara 2016).

The transnational world of higher education and learning explored in the first section of this chapter continued into what is now thought of as the early medieval period. The life of the itinerant scholar, moving between the courts of different rulers, monasteries and other religious sites remained the norm. Gerbert d'Aurillac, who ultimately became Pope Sylvester II in 999CE, spent time among monks in Catalonia and witnessed the large-scale translation of Arabic texts into Latin. In the monasteries of Catalonia he learned Arabic, Maths and Astronomy as well as the works of Aristotle whose logic became a crucial part of his own teaching. His experience was in no way unique. It is in large part to this growing acquaintance with Arabic scholarship that the gradual rise of Aristotelianism among European scholars over subsequent centuries can be traced. Closely associated with this was a growing 'readiness to broaden the field of human intellectual inquiry as well as a new rigour in the development of argument' (Lowe and Yasuhara, 2016).

Thus, the twelfth-century English scholar, Adelard of Bath, undertook journeys to destinations as distant as Sicily, Greece and Palestine, where he came into contact with ancient Greek and Arabic learning. Through studying Arabic, he came to know Euclid's *Elements*, making three separate translations of them from Arabic into Latin. Adelard's travels were mirrored by those of hundreds of other scholars in what has come to be known as the Twelfth-Century Renaissance. Gerard of Cremona was an Italian scholar who travelled to Toledo in the Kingdom of Castile. In the city's libraries he accessed many texts which had been originally written in Greek but which were unavailable in either Greek or Latin in Europe at that time. He was responsible for more than eighty translations including one of Ptolemy's *Almagest* in 1175 from the Arabic (Lowe and Yasuhara, 2016).

Just as was the case in the ancient world, when significant numbers of renowned scholars and their disciples settled in particular locations, then buildings and other more permanent structures came into being. Driven by the intense activity associated with the discovery of ancient Greek, Latin and Arabic scholarship, sites in Italy, Spain and the Middle East came to function as semi-institutionalized centres of higher education (Leff, 1992). As well as itinerant scholars travelling abroad to imbibe scholarship preserved in Arabic and Greek, the spread of Catholic monasticism across Europe in the early medieval period did much to preserve extant Latin versions of Greek and Roman texts. As early as the sixth century CE, Cassiodorus's best-known work – *De Institutione* – had encouraged monks to collect manuscripts with a view to preserving and passing on known classical culture. This call was answered with particular enthusiasm in the case of the Benedictine order. Scholarly practices such as reading, writing and translation were institutionalized in the monastic life long before universities and other institutions of higher education emerged (Lowe and Yasuhara, 2016).

Once again, as in the ancient world, the support of secular rulers was crucial to the development of higher education in the medieval period. Charlemagne provided crucial support for Christian scholarship during his reign and Alfred of Wessex promoted the translation of Latin works into English. It was likewise under the aegis of secular rulers that the expansion of cathedral schools in

Europe between 1000 and 1200 took place and the associated rise in the number of lay students receiving an education. This development was, however, as much a product of the general increase in the size of Europe's population and the growth of trade and urbanization which was seen in the same period.

Some cathedral schools developed into centres of higher learning in their own right and a new type of institution – the *studium generale* – emerged. This has traditionally been the starting point for the history of universities. Hastings Rashdall (1936) was right to caution against applying 'the name [of university] to the Schools of ancient Athens or Alexandria.' 'The university is a distinctly Medieval institution', he declared, '- as much so as constitutional kingship, or parliaments, or trial by jury' (3). Yet there were important similarities which the first universities shared with earlier higher education institutions. A number of European universities had started life as groups of scholars – independent and self-governing - who had come together to teach and to learn. In their early years, they did not possess land or buildings of their own. As a number of historians have written, one of the earliest universities – in Paris – grew rather than was founded (e.g. Novikoff, 2013: 139). Scholars still moved freely between Oxford and Paris in the thirteenth century.

There was similar continuity when it came to what was taught within the new universities. As Lowe and Yasuhara (2016) argue, 'the rise of the universities was a direct result of [the] rich intercourse and transfer of knowledge between the Islamic-Arabic world and Europe' (175). Scholars working in Europe's medieval universities 'were able to feed off the knowledge and, in a range of disciplines, develop curricula which drew on or were derived from Arab, Indian, or even indirectly, Chinese scholarship' (169).

The Renaissance

The development of higher education in Europe continued to be driven by a complex dialogue with the knowledge and practices of the ancient past. The scholastic system with its curriculum of the trivium (grammar, logic and rhetoric) and quadrivium (arithmetic, geometry, music and astronomy) drew heavily on the ancient Greek and Arab learning which came to dominate the universities of medieval Europe.

The fourteenth and fifteenth centuries saw renewed interest in the ancient world. Petrarch, Boccacio and other humanist scholars identified the period between the fall of Rome and the present day as the dark ages. To bring back the light of knowledge, they argued, one had to carefully study and imitate classical authors - Cicero in particular. *Umanista* came to refer to a range of subjects influenced by ancient Greek and Roman authors including grammar, rhetoric, poetry, moral philosophy and history (Klein and Frodeman, 2017).

In origin, however, humanist scholarship developed largely outside the walls of the university. Humanist scholars criticized the 'barbarous' Latin of the universities and challenged the legitimacy of those subjects which had come to dominate university teaching in the later Middle Ages – jurisprudence, theology and medicine (Kristeller, 1990: 113-114). While Petrarch, for example, had attended university at Montpellier and Bologna, he denounced the legal training offered there and went on to focus on Latin literature (especially Cicero, whose letters he rediscovered) while

holding a series of clerical positions outside academia. Boccacio similarly rejected the traditional legal course of the university and pursued his humanistic studies through a mixture of royal and noble patronage. Indeed, Eugenio Garin has gone as far as to argue that Renaissance humanism developed chiefly 'in cloisters and the chancelleries, in princely courts and academies, that is, the free assemblies of learned men' (Grendler, 2003: 78). In Paul Grendler's words, Garin has framed it as something of 'a pitched battle' between scholastic Aristotelian professors in the universities and an 'iconoclastic humanistic philosophy of life held by innovative Renaissance intellectuals' (Grendler, 2003: 78).

Yet it must be acknowledged that while humanism in its earliest stages developed outside the universities (and, indeed, in opposition to its scholasticism), within one or two generations, especially in Italy, humanist scholars began to gain entry and develop influence within academia. Several of Garin's examples of humanist scholars were well-known university professors including Pietro Pomponazzi (1462-1525) and Girolamo Cardano (1501-1576). Prominent humanists born in the 1370s had little to do with universities - scholars such as Leonardo Bruni (c. 1370-1444) and Vittorino da Feltre (1378-1446). But this had changed by the early to middle years of the fifteenth century. Humanists like Lorenzo Valla (c. 1407-1457) began to hold professorships in Italian universities in small but significant numbers. In the second half of the fifteenth century, university employment became an important aim of Italian humanist scholars. In the 1420s, the University of Bologna established a Professorship of Greek with Florence following in the 1430s. Most other Italian universities had followed suit by the 1460s (Grendler, 2003).

In the first years of the sixteenth century, humanist scholars from northern Europe were becoming professors in northern universities. This did not occur without opposition - especially from Theology professors; and Law and Medicine remained the dominant subjects at the Italian universities. 'Nevertheless', as Grendler (2003) concludes, 'humanism had a major impact on universities because it changed the approach and content of research and teaching in the other disciplines' (79). By the end of the fifteenth century, it had transformed scholarship in Aristotelian natural philosophy and medicine by imbuing it with a new, critical outlook which tended to find fault with medieval authors and approaches. Medical humanists, who were almost all based at universities, applied humanistic philological techniques to critique both medieval and ancient medical texts. Humanism's impact upon the teaching of Law (especially in Italy) and Theology was much less significant, however.

The story is similarly complicated when it comes to advances in natural knowledge associated with the Scientific Revolution. In Italy and Germany, universities and university professors were central to the development of scientific teaching and research. This was also the case in Scotland where the Scottish universities developed an international reputation in various branches of natural philosophy and medicine. The situation in England, however, was very different. While dissenting academies offered a limited scientific curriculum, the ancient universities of Oxford and Cambridge played little part in the development of scientific knowledge and research. Rather, it was to be in the metropolitan circles of London, in the Royal Society and at the royal court that science and scientific training were to flourish (Anderson, 2004).

Enlightenment and the Emergence of the Modern Research University

While, in continental Europe at least, the universities had played a central role in the growth and development of scientific knowledge in the seventeenth century, 'decline', according to Robert Anderson (2004), 'was the predominant note in the eighteenth century' (5). Other institutions such as Jesuit schools and scientific academies increasingly replaced universities as the preferred educational institutions for the sons of Europe's elite. '[A]s the nineteenth century dawned', Laurence Brockliss (1997) has written, 'the university looked like a doomed species' (99). Given that the eighteenth century witnessed one of the most significant periods of development and transformation in the history of human knowledge, it is necessary to ask how central the traditional university was to the changes associated with the Enlightenment.

Although sharing a common origin and basic framework, Europe's universities had diverged considerably from each other over the intervening centuries. Most significant, perhaps, in this process of differentiation, was the impact of the Reformation. In Protestant states, universities were frequently under the direct control of secular rulers; in Catholic lands, by contrast, considerable influence was exercised by the supranational Jesuit order (Anderson, 2004). In England, the eighteenth century is generally viewed as a period of retrenchment. Student participation rates did not return to the pre-Civil War highpoint reached in the 1630s until after the First World War. The international mobility of students also decreased in eighteenth-century Europe. Rulers made it increasingly difficult for young men to go abroad to study at the same time as a growth in religious tolerance meant fewer students had to travel outside their own country to access higher education. The sons of the aristocracy with the wealth to travel also became less interested in a university education (de Ridder-Symoens, 1996; Anderson, 2004).

As Robert Anderson (2004) has written, Enlightenment intellectuals in France generally came from outside the universities. In England and France, the Enlightenment passed by what he terms 'the moribund universities'; but in Scotland, the Netherlands, Germany and Italy it was 'university professors who developed and taught enlightened ideas' (20). In states which were ruled through a system of enlightened absolutism, a common pattern was emerging. In the Habsburg lands, for instance, a centralized system developed in which the universities were subordinated to a common institutional pattern and linked to a unified system of secondary schools. In this context, the training of civil servants came to be viewed as the university's chief function; reforming law faculties was another important aim as this helped to facilitate one of the great projects of enlightened absolutism – the codification of existing law.

Surviving features of scholasticism in the universities were targeted and new subjects introduced into the curriculum. In many cases, the traditional faculties were split into two - philosophical, on the one hand, and mathematical or physical, on the other. This reflected a new appreciation of science as a distinct realm of intellectual inquiry. Colleges of engineering, both civil and military, flourished outside the universities in many countries and 'survived to become the basis of an alternative higher education sector in the nineteenth century' (Anderson, 2004: 22-23). In France, the state came to play a much more interventionist role in higher education after 1789. Under Napoleon, advanced training and research were separated from undergraduate teaching. Institutions offering courses of general learning were classified as schools and were restricted to undergraduates.

The modern research university – the institution now viewed as the norm – is a comparably recent addition to the rich and complex landscape of higher education examined so far in this chapter. While most scholars associate its beginnings with the foundation of the University of Berlin by Wilhelm von Humboldt in 1810, essential parts of the research university were already in place in Prussia and Hanover before 1789 (Anderson, 2004). Particularly important at Göttingen was the development of Philology which promoted the critical study of language and classical texts. Göttingen has a good case to be seen as the birthplace of *Wissenschaft*, the system of knowledge underlying the modern research university. From the beginning, there was a close relationship with the state. Prussia was the first state in Europe to systematize the introduction of examinations for entry to the civil service. Key to the development of a modern bureaucracy in Prussia was the standardization of the relationship between schools and university entry. In general, reform of universities in the nineteenth century was furthest-reaching in those countries which were more effectively under the control of a centralized state authority (Anderson, 2004).

It is easy to forget how comparably recent it is that universities came to be viewed as the prime sites of research and intellectual innovation. As Peter Burke (2016) reminds us, 'creating new knowledge' has been one of their chief functions only 'since the rise of the research university in the nineteenth century' (Burke, 2016: 20). This development can certainly be traced back to fundamental changes in the way knowledge was understood which took place during the Enlightenment. As William Clark (2006) argues, it was during this period that universities finally gave up their theological, transcendental mission, replacing it with an ideal of rational scientific authority and state service. Clark examines the origins of the modern research university in the everyday practices of the Prussian state – the setting of office hours, the collection of information about the activities of academics and the application of measures to manage universities more efficiently.

Foucault saw a similar shift taking place in the eighteenth century, which he identified as the period when a new type of power - disciplinary power – evolved as the personal control and influence of individual sovereigns began to wane. With the reduction in famine and epidemics in Western Europe, he argues that 'power turned from a defensive formation protecting against death to the production, maintenance, and control of life' (Caputo and Yount, 2010: 13). New techniques of power began to be exercised through state institutions, including schools and universities. Educational institutions were designed to shape the young into adaptable, happy subjects through the power of the norm, while those who strayed beyond the bounds would be reformed. For Foucault, institutions were places where power 'becomes embedded in techniques, and equips itself with instruments and eventually even violent means of material intervention' (Caputo and Yount, 2010: 10). The modern research university deserves to be considered as part of this process and as an example of a disciplinary institution.

In the Prussian context, concepts such as academic freedom were encouraged in an atmosphere of close state supervision. The model of the research university spread throughout the Protestant German states before travelling to the German Catholic lands. Over the course of the nineteenth century, it gained influence in Northern, Eastern, and Southern parts of Europe – in Scandinavia, Russia and Greece. Later still, it travelled to the USA, Britain and eventually to France. As William Clark (2006) argues, the German research university became '[t]he vehicle for spreading European science and academics globally' (29). The close links existing between the spread of particular

academic practices and institutional forms and the prosecution of imperialist projects by many European countries, most prominently, Britain and France, has been well studied (e.g. Newton, 1924, Pietsch, 2013). Clark (2006) goes as far as to describe the exporting of the German research university around the world as 'the final and the most insidious phase of European colonialism' (29).

Alternative Higher Education Institutions

While the emergence and global spread of the research university is the central story in the development of modern higher education, it is important to stress that it is not the only one. As William Whyte (2015) has written, '[t]he development of higher education in the early nineteenth century cannot be reduced to a simple story in which the forces of progress…inevitably and irresistibly created a new and modern sort of university.' There were rather, he continues, 'a multitude of competing visions' which could provide the basis for 'an alternative history of higher education' (28).

In Western Europe, the bourgeoisie was large and growing but did not call on their governments to reform universities as they tended to view them as old-fashioned and marginal institutions. In England and France, universities like Oxford and Cambridge were widely condemned as intellectually stagnant and 'monkish'. Intellectual innovation and reform in higher education took place elsewhere. According to the Irish playwright, Oliver Goldsmith (1759), British and French intellectuals thought that 'the true intellectual forum was the city, where the members of this larger university, if I may so call it, catch manners as they rise, study life, not logic, and have the world for correspondents.' The best universities, Goldsmith argued, were those that interacted with urban life most intensely, 'where the pupils are under few restrictions; where all scholastic jargon is banished; where they…live not in the college but city. Such are Edinburgh, Leyden, Gottingen, Geneva' (186). In line with Goldsmith's assessment, proposals for new types of university in England generally were made in the context of the capital city, London. When University College London (called initially London University) was first established in 1826, it was very different from what had gone before. It had no royal charter and instead was founded as a joint stock company by private individuals (Whyte, 2015: 67).

In one key respect, however, University College London was indeed similar to the ancient universities of Oxford and Cambridge. There was no expectation for its teachers to carry out a programme of original research (Jones, 2007). As has been seen, the combination of research and teaching is a relatively recent phenomenon and it appeared much later in Britain compared with other countries such as Germany (Schalenberg, 1998; 2002).

In order to chart the history of research and the training of future researchers in eighteenth and nineteenth-century Britain, it is necessary to look outside the universities. '[W]hat counted', Robert Anderson (2004) writes, 'was the intellectual life of London, the world of literature, the press, the Inns of Court, coffee-houses, scientific societies, and salons' (36). And this holds true outside of London also. The years between 1780 and 1840 saw the establishment of hundreds of smaller learned societies, assuming a variety of names (the most common being 'literary and

philosophical society'), in towns and cities across the country ([Lyell], 1826; Hilton, 2006). The same period saw the spread of very similar institutions in the United States and around the British Empire. Some, like the Literary and Philosophical Society of Manchester, were international in significance, attracting members of considerable fame such as the chemist John Dalton. Many others acted as intellectual centres for local professional and industrial elites. Sometimes dismissed as merely convivial groups, learned societies carried out serious intellectual work, above all, in research, the pursuit of original knowledge. According to William C. Lubenow (2015), they functioned as Britain's chief 'sites for intellectual innovation' throughout the nineteenth century (27).

Those who have acknowledged the role of these societies in promoting research have generally been historians of science. Scholars like Richard S. Westfall have argued that the overt traditionalism of universities in Western Europe inhibited attempts to conceptualize nature and natural knowledge in new ways and led to a profound rift between universities and scientists (Westfall, 1971; Feingold, 1991). In these circumstances, men of science developed alternative institutions and spaces in which to advance scientific knowledge, pursue research and train future researchers. As Jack Morrell (1976) observed, higher-level science teaching in England, in so far as it existed, took place at 'a host of Literary and Scientific Institutions' which 'supplemented the teaching given by private lecturers' (135). This is in sharp contrast, of course, to continental Europe where there was a significant, persistent and close relationship between universities and science. It is important to note that, while the majority of these 'Literary and Scientific Institutions' were learned societies, Morrell (1976) also included Kings College and University College, London, which, in contrast to Oxford and Cambridge, did offer teaching in the natural sciences.[3] In this respect, they were much more akin to the Scottish universities.

Recent work on literary and philosophical societies, however, suggests that they did in fact undertake original research in the full range of academic disciplines, from literature, history and archaeology to the natural sciences (Mee and Wilkes, 2015). Moreover, in many instances, they helped to provide theoretical and practical training for future researchers, more so, arguably, than any other contemporary institution. In this sense, they deserve to be thought of as institutions of higher education. Nor did this end with the 'triumph' of the German research university which is usually seen as reaching Britain in the 1870s and 80s as part of the movement for the endowment of research (Jones, 2007). As Lubenow (2015) has shown, learned societies in nineteenth-century Britain continued to fulfil many of the discursive, research and training functions of higher education in to the end of the century and beyond.

In a British context, many dissenting academies continued to provide a high-quality education in a wide range of literary and scientific subjects long before England's ancient universities could claim this. They enjoyed close ties with research-active learned societies and the Scottish universities where a similar spectrum of subjects was taught. They were open to all men regardless of religious affiliation and formed a significant feature of Britain's educational landscape from the seventeenth through to the nineteenth centuries (Smith, 1954). Throughout much of the nineteenth

[3] For a more positive assessment of the role played by Oxford and Cambridge, see John Gascoigne, 'A Reappraisal of the Role of Universities in the Scientific Revolution' in David C. Lindberg, Robert S. Westman eds., *Reappraisals of the Scientific Revolution* (Cambridge University Press, 1990), pp. 207-260.

century, France too remained aloof from the model of the German research university, continuing to separate research and teaching into distinct institutes.

Peter Burke (2016) has argued that the history of higher education cannot be separated from the wider history of knowledge of which it forms 'a long-established part' (78). In line with this, he suggests that higher education institutions cannot be separated conceptually, materially or spatially from the wider systems and cultures of knowledge-making in which they exist. If, then, the complex history of higher education institutions is to be properly appreciated, universities, which have traditionally formed the focus of historical analysis, need to be examined in relation to many other knowledge-making institutions with which they interacted and overlapped. In Burke's words, '[t]he main forms and institutions of knowledge to be found in a particular culture, together with the values associated with them, form a system: schools, universities, archives, laboratories, museums, newsrooms' and must be considered together (26).

This approach is complemented by an emphasis in more recent literature on the need to focus not on particular institutions, but rather on the material culture and practices of higher education itself which often cut across disciplinary boundaries and institutional forms. This is what William Clark (Clark, 2006; Clark and Becker, 2001) advocates when he urges historians to pay more attention to the 'little tools of knowledge.' Simon Schaffer and Adriana Craciun (2016) make a similar point in their recent edited volume, *The Material Cultures of Enlightenment Arts and Sciences*. A focus on material objects and common practices, they argue, can help avoid reinscribing 'the anachronistic divisions of knowledge of our twenty-first-century academies…[I]t becomes possible to discern the predisciplinary "disorder of things"' (13).

Approaches like these reveal an alternative, messier history of higher education and knowledge-making which does not fit the traditional narrative of the 'triumph' of the research university and the progressive specialization of knowledge into disciplines. In his work on learned societies, Lubenow (2015) highlights just how different the conditions were under which knowledge was made in nineteenth-century Britain. He describes connections between individual scholars as being 'differently and loosely tethered', not tied rigidly to groups representing particular disciplines (as might be expected today), but rather defined by flexible, temporary and overlapping memberships (15).

Conclusions and Future Directions

This state of affairs continued for much longer than many writers on contemporary higher education appear to believe. With university-trained scientists proving their worth in the First and Second World Wars, governments around the world came to recognize universities as the primary sites of research in science and technology as well as in the social sciences and humanities. (e.g. Ellis, 2017; Powell et al., 2017). At the same time, countries across the globe came increasingly to view universities as the best training ground for future leaders. This confidence in the central role of universities has remained largely unshaken since the end of the Second World War.[4] It is

[4] At times, there have been predictions that the university's dominance would fade, particularly when faced with the challenge of freely available information on the internet. See Robert Anderson, 'Organizing Enlightenment:

reinforced in much contemporary literature on higher education, in edited volumes such as *The Century of Science: The Global Triumph of the Research University*. 'Expanding worldwide with public and private funding', the book's editors write, 'research universities' have become 'the most legitimate sites devoted to knowledge production.' They describe the 'isomorphism that has seen the university replicate itself around the world, effectively superseding alternative organizations for research and advanced education.' (Powell et al., 2017: xiii).

It is certainly true that the post-war era has witnessed the expansion and massification of European and North American university sectors as well as unprecedented growth in China, Russia, Australasia, Latin America and parts of Africa. As Justin J.W. Powell et al. (2017) have written, 'increasingly the world's new science is rooted in the exceptional expansion of higher education and the on-going development of research universities' (3). Figures for the early twenty-first century show that (in the fields of STEM+ at least), while the United States remains the single most significant producer of research articles, scholars in Europe and China are increasing their share of global knowledge production. Embracing Germany, France, the United Kingdom, Italy and Spain, Europe, as a region, contains no less than five of the top ten countries globally for the production of scientific research papers. Moreover, in general, these papers are produced by scientists working in large scale, high-capacity, publicly-funded higher education systems (Powell et al., 2017).

It is important to recognize the massive impact which these developments have had on how the history of higher education has been framed. As Paul Grendler (2003) has written, 'Since universities were very important to society in the second half of the twentieth century it was natural to conclude that universities of the past must also have been important and worth studying' (19). Robert Anderson (2009) has been similarly critical of 'the current emphasis on research as the primordial purpose of universities' (39). His own work has shown that the involvement of universities in active research is a relatively recent development.

The neglect of alternative institutions of higher education and knowledge-making is also connected with the historically close relationship between universities and the state and the important role of universities in the construction and maintenance of national and regional identities (Soffer, 1994; Wallace, 2006). This is clearly seen in Walter Rüegg's discussion of the history of the university in Europe, 'The university is a European institution', he declares, 'it is the European institution *par excellence* and the only European institution which has preserved its fundamental patterns and its basic social role and functions over the course of history.' Since the eighteenth century, he argues, it has been 'the intellectual institution which cultivates and transmits the entire corpus of methodically studied intellectual disciplines' (Rüegg, 1992: xix).

While the university has played a central role in the history of higher education, it is vital that historians look beyond it if they are to obtain a fuller picture. This means going further back in time, well before the emergence of the medieval universities; it also means traveling further afield, exploring developments beyond Europe and North America. Yet there is also work to be done in the traditional heartlands of university history – in the history of eighteenth and nineteenth-century Europe. Attention needs to be paid to alternative sites of higher education and knowledge-making

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Information Overload and the Invention of the Modern Research University', *History: Reviews of New Books* 45:4 (2017), 99-100.

which are too frequently left out of the narrative. These include (but are not limited to) private higher education institutions, learned societies and academies, research institutes, medical schools, further education colleges, museums and galleries. However, while calls for an 'alternative history' of higher education focused on these sites are welcome and needed, scholars should heed Peter Burke's call for an integrated history of knowledge which considers how all institutions of knowledge relate to, overlap with, and influence each other as part of a wider, overarching system.

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