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The Shift from Oral to Written Examination: Cambridge and Oxford 1700–1900

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ABSTRACT *The typical modern examination involves the production of written answers to printed questions in a secluded physical location. In 16th century England university examinations were conducted in public, orally and in Latin, with the participation of the academic community. The paper gives an account of the shift from oral to written examinations at Oxford and Cambridge in the 18th and 19th centuries. Cambridge took the lead in this shift, largely because of the domination of its curriculum by Newtonian mathematics. Practice in Oxford began to converge in the 19th century, but oral testing was retained into the 20th century. Four factors are identified as crucial in the oral/written shift: the move from group socio-moral to individual cognitive assessment in the later 18th century; the differential difficulty of oral testing in different subjects; the impact of increased student numbers; the internal politics of Oxford and Cambridge.*

Introduction

This paper deals with the development of examinations in the two ancient English universities from the beginning of the eighteenth century: the period which witnessed the emergence from an oral context of the written forms of assessment which were taken for granted by the late nineteenth century. The main focus is on events at Cambridge, which was the dominant site in the shift from oral to written examination. The embedding of this shift in the history of these two institutions complicates the task of describing it, especially because in the period with which I am concerned they grew to be unlike each other in many ways. Nevertheless, the complication is fruitful, since it enables us to see how traditions of examination are in part the products of specific institutional contexts. By the 1870s the role of the *viva voce* was very limited in Cambridge. Its regular use in university examinations was confined to the 'Little Go', a second year examination, and that only until the regulations were changed in 1882; in college examinations it had already disappeared. Yet oral examination had once been the only mode of assessment used. When, how and why did the shift to written examinations take place?

The 'Viva' and the Heyday of Oral Examination

In medieval Oxford and Cambridge all examinations were public, oral and in Latin. The community of MAs was assumed to be involved and any of them could challenge a candidate for the BA degree. Fixed ritual forms were followed: challenge and defence, often in a sequence which involved several challengers. The award of a degree followed an 'act' in which a student had to debate in public with a senior member. This was preceded during his student career by disputations in which he was expected, on different occasions, to perform both as 'opponent' (advancing an argument) and as 'respondent' (challenging an argument put by another student). These disputations were also public and enabled junior students to gain a sense both of how they were conducted and of the range of disputation tactics which might be employed. This was also true of the final 'acts', from which those who were some way from graduating could learn how to cope when they reached that stage (Leader, 1988, pp. 95–107). Accounts of actual disputations are not common, but it is clear that they typically began with an opponent declaring support for an author and the respondent criticising this [1].

The economy of the oral examination was different from that of the written. Its verbal jousting, which might go on for two hours or more, constituted a public negotiation not just between examiner and examinee, but also between several participants, since students were disputing with one another and with any graduates who might choose to intervene (Latham, 1877, p. 98). Examination and adjudication took place at the same event and, apart from any notes which were taken and such written theses as happened to be preserved, no record survived beyond the memory of participants except for the official record of success or failure (Warwick, 1998, pp. 300–301).

The public involvement of the academic community carried with it an element of risk. Inappropriate speech could not easily be prevented and students who sought to distinguish themselves in other than officially condoned ways sometimes took their acts down informal paths. Where these involved allusive criticism of individuals or institutions there was little that could be done to stop them on the spot. Perhaps to act as a kind of lightning conductor for such undergraduate energies, a licensed fool (at Oxford called *terrae filius*, 'son of the earth') was appointed each year to deliver a comic or satirical speech. The Cambridge equivalent of the *terrae filius* was 'Mr Tripos'. The title came from the role played in degree disputations by a BA who sat on a three-legged stool. As well as engaging a senior member in a disputation, Mr Tripos composed a satirical Latin poem which was circulated during the ceremony. At both universities oral disputations survived into the nineteenth century. In his *Reminiscences of Cambridge*, Henry Gunning gives an account of his own Act, held in 1787, which offers a glimpse of the situational contingencies which might arise. He was alarmed to find that he had been chosen to open the proceedings; but disappointed to discover that since he was not thought to be a very promising student, he had been assigned two obscure undergraduates to debate with. Towards the end of his opening argument his voice began to fail, but he recovered and easily disposed of his opponents' arguments. He was then congratulated by the examiner,

having clearly done better than was expected of him (Gunning, 1855, p. 74). Coming first on such a public occasion brought with it heightened stage fright; those who came later might be able to gauge an examiner's mood. Learning about testing, then, might take place not only in earlier disputations, but also in the early stages of one's own final test. In such interactive assessment the character and ability of those playing the other parts were crucial. Gunning's opponents came from the ranks of the lower achieving students. This was an advantage in that it made it easier for him to show them up during the debate; but he clearly felt it as an insult that he had not been given more able opponents. The ranking of a victory, then, depended in part on the stature of those one defeated.

Most of the few detailed accounts we have of disputations come from the period of Gunning's examination (Ball, 1889, pp. 166–169). From these it is clear that the public argument, when subjects were proposed as theses, might be preceded by private negotiations. Subjects chosen were liable to be refused for a variety of reasons. Doctrines which were seen as self-evident or almost so were not usually allowed, since they made life impossible for the opponent. Thus the moderators would not normally allow statements from Euclid to be advanced; though exceptionally in 1818 a 'questionist' [finalist] was allowed to 'keep' [take part in an act] in the 11th book. Theses regarded as immoral or heretical were also liable to be barred. In 1763 William Paley (later the author of the textbooks of moral philosophy and theology studied by several generations of Cambridge undergraduates) proposed as one of his questions for debate that hell's punishments were not eternal (*Aeternitas poenarum contradicit Divinis attributis?*). Soon afterwards he came to see the senior moderator in alarm. The master of his college, who was also Dean of Ely (a nearby cathedral town), had made it clear that he did not want such a disturbing thesis defended in public. The moderator, Richard Watson, invited him to insert the word 'non' in his title. Hence, on the day Paley advanced the converse of his original thesis, leaving his opponent to defend the theologically risky position (Watson, 1818, p. 30). Hoskin represents this as a tussle between Paley and the university, portrayed as an impersonal body (Hoskin, 1979, pp. 139–140). It was in fact a tussle between liberals and conservatives in which young Paley was, to some extent, a pawn. (A successful pawn, however. He emerged as Senior Wrangler, i.e. top of the first class.)

The Origins of the Written Examination

In his *History of the Study of Mathematics at Cambridge* Rouse Ball wrote that 'We are perhaps apt to think that an examination conducted by written papers is so natural that the custom is of long continuance. But I can find no record of any (in Europe) earlier than those introduced by Bentley at Trinity in 1702' (Ball, 1889, p. 193; followed by Hoskin, 1979; Gascoigne 1984, 1989; Warwick, 2001). Rouse Ball was relying on the life of Richard Bentley written by an earlier fellow of Trinity, J. H. Monk, who wrote:

Hitherto the examinations had taken place in the chapel *viva voce*, before the Master and eight Seniors [senior fellows], who are the Electors: Bentley

being of opinion that this oral test was not satisfactory in an enquiry so extensive and profound, ordered that the candidates should be examined by each of the electors at his own apartments, whereby an opportunity was given for the performance of written exercises, and time allowed to weigh and compare the respective merits of the young men with suitable deliberation. This method of separate examination, although liable to considerable objections, which were felt both in Bentley's time and subsequently, continued to be the practice of Trinity College for ninety years. (Monk, 1833, pp. 159–160; Ball, 1889, p. 81)

Bentley's motive was probably to improve the quality of a fellowship which had been appointed through a mixture of laxness and patronage, but he will also have wanted to make the existing fellows work. In a communal 'act' in the chapel it was all too easy for some of them to be little more than observers. The new arrangement may also have made it easier for Bentley to control the outcome of the examination: not a motive to be discounted in his case. Later in his reign as Master of the college we find him appointing a layman as chaplain, contrary to statute, and even appointing his son as a fellow without examination.

In a later account Rouse Ball wrote that he doubted whether the fellowship examination before Bentley's time was entirely oral: 'Monk seems to have thought that before this time [sc 1702] elections to scholarships and fellowship took place on the result only of an oral examination in the college chapel ... I doubt whether this is correct' (Ball, 1899, p. 114). Ball gives no reasons for his doubt, though he earlier quotes William Lynnet, vice-master in the 1690s, as referring to candidates producing 'a theme ... given them by the Master' and 'each one writing his name his age and his country [i.e. county]'. The candidates sat the examination for three days; on the third day they were brought the theme, and for it were 'excused the 4th [day]' (Ball, 1899, p. 99, no source given). Lynnet's statement is, in fact, simply an expanded translation of Section XII of the college's Elizabethan statutes (1560), which laid down exactly this procedure. It is thus clear that the fellowship examination contained a written element for well over a century before Bentley's arrival in Trinity. If this was indeed the first written examination in Europe, it must be dated to 1560 rather than to 1702.

Newtonianism and Marks: the rise of the Senate House Examination

It was at about the time of Bentley's arrival, in the 1700s, that the beginnings can be detected of what became known as the Senate House Examination, and later the Mathematical Tripos. This was a university degree examination whose history through the eighteenth century is one of increasingly fine differentiation of grading. Since the sixteenth century the highest achieving BAs of each year had been listed in an order of merit, the *Ordo Senioritatis*, to facilitate succession to university posts; the others were listed separately in college groups. In 1710–1711 the higher men were listed in two groups, First Tripos and Second Tripos, and this division into two

classes persisted, though the names changed. From 1747–1748 the list was printed. From 1753 the first class was divided into two, and this was the origin of the distinction between Wranglers and Senior Optimes, the second class consisting of Junior Optimes. Together these classes represented the three classes of honours; the other candidates being known as ‘hoi polloi’ [the mob].

Some of the changes in the examination were prompted by external factors. In 1710 the building in which the disputations were held was commandeered to store part of a large library given to the university by George I. A new Senate House was commissioned, but was not finished until 1730. In the interim, when it was difficult to find accommodation, the moderators (examiners) took to interrogating finalists after the acts as a supplementary test. It was these interrogations which increasingly predominated as a basis for classification. Rouse Ball was confident that the interrogation was conducted in English from the outset, though he acknowledged that John Jebb’s statement in 1772 that ‘This examination has now for some years been conducted in the English language’ suggested otherwise. In fact, it is clear from a letter of Horace Walpole’s, describing the examination, that Latin was being used in 1735 (Ball, 1889, p. 188, no. 2; Jebb, 1787, p. 290; Lewis, 1948, p. 78). The shift probably reflects the increasing impact of Newtonian natural philosophy on the examination in the 1750s and 1760s. The new, heavily mathematicised approach was more easily handled in the vernacular.

Newtonianism and Competition: the Senate House Examination

Isaac Newton’s work forms a crucial element in the development of the Senate House Examination. His influence began to spread in the 1690s. One of his main supporters in Cambridge, Richard Laughton, was proctor (university disciplinary officer) in 1710–1711 and thus in overall control of examinations. Laughton invited a student to defend a Newtonian thesis and promised as a reward to insert his name high on the list, which senior university officers had the right to do. Laughton also drew up a series of Newtonian propositions for use in the oral exercises which preceded the examination. It is probably not a coincidence that it was in 1710–1711 that the beginnings can be seen of the ranking system which was later to become so fine tuned: the division of the honours students into two classes (Gascoigne, 1984, p. 574).

In the later eighteenth century the classifying of finalists took place in several stages. The Senate House Examination was administered to groups of students who had been classed in advance. Each college sent to the moderators a list of its questionists with assessments of their ability and the students were examined in college groups. This must have made comparison difficult, since each group was of mixed ability. From 1763, however, perhaps to ease this difficulty, they were divided into eight classes by ability, though still on the basis of college officers’ opinions. This innovation seems to have been due to Richard Watson, who was moderator in that year. His own account of the change makes it vividly clear why he proposed it.

I was the second wrangler of my year [1759], the leading moderator having made a person of his own college[St John’s], and one of his private pupils,

the first, in direct opposition to the general sense of the examiners in the Senate House, who declared in my favour. The injustice which was done me then was remembered as long as I lived in the University; and the talk about it did me more service than if I had been made senior wrangler. ... There was more room for partiality in the distribution of honours, not only with respect to St John's, but other colleges, *then*, than there is now; and I attribute the change, in a great degree, to an alteration which I introduced the first year I was moderator, and which has been preserved ever since.

At the time of taking their Bachelor of Arts degrees, the young men are examined in classes, and the classes are now formed according to the abilities shown by individuals in the schools [examinations]. By this arrangement, persons of nearly equal abilities are examined in the presence of each other, and flagrant acts of partiality cannot take place. Before I made this alteration, they were examined in classes, but the classes consisted of members of the same College, and the best and worst were often examined together. (Watson, 1818, pp. 29–30).

Of the eight groups into which the questionists were divided after 1763 it was expected that the first two would become wranglers (first class men), the second two senior optimes (second class), the next two junior optimes (third class), the last two the 'poll' ('hoi polloi'). At some point soon after 1763 the classes began to be examined together: the first two, the next four and the last two (Raworth, 1802, pp. xx–xxi). After these preliminary gradings the questionists were interrogated by the moderators in the (mostly mathematical) Senate House Examination. During the second half of the eighteenth century the Examination began to dominate, leaving the Latin exercises as a mere pre-classifying operation. In 1827 the classes were reduced to four and in 1838 were abolished; the moderators for 1839 consequently decided not to hold any disputations. Thus ended, at least in the arts faculty, a tradition of oral examination several hundred years old; they were retained in Divinity, Law and Physic until 1858 (Latham, 1877, p. 121).

Though the chronology cannot be established firmly, the move away from orality can be traced in outline. By 1772 questions were dictated to students for a written answer (Ball, 1921, pp. 170–171). From about 1790 some papers (problem papers, set only to the first two classes) were printed and given to candidates to take away to window seats for solution (Ball, 1918, pp. 272, 281 and 291). The other ('bookwork') papers continued to be dictated until 1828, when new regulations laid down that all papers should be printed and gave examiners only very restricted power to examine orally. At the same time, the involvement of MAs tailed off, their right to intervene in the examination of candidates being apparently not exercised after 1785; while from 1779 the number of examiners was increased from two to four. Similarly, the previous right of the vice-chancellor and proctors to nominate 'honorary senior optimes' who could be inserted into the tripos list fell into disuse, to be formally abolished in 1827 (Tanner, 1917). The examination was taking on its

own existence, separate from that of the university as a whole, and in the process socio-moral criteria were giving way to cognitive evaluation.

The examination was not only separate from the university but also from the colleges. The young MAs allowed to examine after 1763 would often have been the private tutors of the leading candidates and accusations of partiality were common in the next decades. Of Isaac Milner, President of Queens' College and much in demand as an examiner, it was said that he was impartial except in the case of men from his own college and from Emmanuel, the other centre of Evangelicalism in Cambridge. Gunning described Milner as having all the qualities an examiner needed *praeter aequitatem* [except fairness] (Gunning, 1855, p. 85). We have already seen how Richard Watson, at least by his own account, suffered from such partiality.

The mixture of oral and written elements in the Senate House Examination at the end of the eighteenth century can be seen in the detailed account printed in the University Calendar for 1802:

Immediately after the University clock has struck *eight*, the names are called over The classes to be examined are called out, and proceed to their appointed tables, where they find pens, ink, and paper provided in great abundance The young men hear the propositions or Questions delivered by the Examiners; they instantly apply themselves All is silence; nothing heard save the voice of the Examiners; or the gentle request of some one, who may wish a repetition of the enunciation. It requires every person to use the utmost despatch; for as soon as the Examiners perceive that any one has finished his paper, and subscribed his name to it, another Question is immediately given. (Raworth, 1802, p. xx)

The details of the Examination in the 1802 Calendar suggests a newly self-conscious pride. It may be that this was fuelled by comparison with the new Oxford examinations set up by a statute of 1800. Certainly the picture of organised speed and silence in the examination hall presented a striking contrast to the public verbal battles taking place in Oxford. The significance of the examination for the university's self-image is indicated by the elaborate nature of the annual ceremonial at which degrees were conferred. The Senior Wrangler (top of the first class) was awarded his degree first, in a separate ceremony, and was clearly regarded with considerable reverence. What makes the symbolic weight of this apotheosis of competition even clearer is the award of an informal title to the student who came bottom of the honours list (last of the junior optimes). It was at about this time (c. 1800) that he became known as the Wooden Spoon; at the degree ceremony a large spoon was lowered by his fellow students from the gallery of the Senate House as he received his degree. What was being celebrated was not his (comparative) failure, but the competitive system itself, dominated by a ranking procedure of unparalleled intensity and precision.

The Politics of the Examination: college versus university

As the Senate House Examination moved away from the old model of orality and

general participation and as its Newtonian mathematical element came to dominate, a reaction occurred in some of the colleges. When John Jebb of Peterhouse proposed in 1772 that university examinations in non-mathematical subjects should be set up, his fiercest opponent was William Powell, master of the largest college, St John's. Powell denounced the scheme as a 'hasty secret trial based on no knowledge of candidates' (Winstanley, 1935, pp. 327–328). His terminology reveals the defence of collegiate *gemeinschaft* against the threat of an overweening university *gesellschaft*, a test without the college's traditional social context of teaching and learning. Jebb's proposals were in fact probably inspired by Powell's own examination system at St John's, instituted shortly after his election as master in 1765. Those examinations were, however, largely if not entirely oral: they took place publicly in the college hall and it was remembered that Powell was 'always there to hear them' (Baker, 1869, Vol. II, p. 1071; Winstanley, 1935, p. 317).

The St John's examinations are documented in a series of examinations books which vividly convey the fellows' concern to be at once strict and fair (St John's College Archives, 1798 and 1805, C 15 6, 56 and 69; cf Miller, 1961, p. 69). They also convey a determination to avoid premature classification, defending the collegiate ethos against the passion for ranking embodied in the university examination. It is often difficult to tell if an examination is oral or written; the occasional reference to 'answering' is not conclusive. But we are on firm ground when we read that 'Perhaps Atley might also have been thought to deserve [a prize], if he had spoke louder, as much of his answers as could be heard was very good' (St John's College Archives, 1772, C 15 6, 5). We can draw the same conclusion from the remark that 'Bedel and Lord Blantyre construed [gave an oral running analysis of] the Classic well' (St John's College Archives, 1794, C 15 6, 49). Another clear cut case is that of a student who was promoted to a higher class in the Senate House Examination of 1787 'because it was considered his position was owing to extreme deafness' (Gunning, 1855, p. 80).

The Role of the Individual Examiner

The abandonment of disputations by the moderators of 1839 seems to have run counter to the spirit of a Senate report of 1838, which laid down that the disputations should continue, though it also abolished the grouping system, allowing only for distinction between candidates for honours and for ordinary degrees. This illustrates the degree to which the examiners of a year could make policy as they went along; similar cases at Oxford are discussed below. How important was individual initiative in the shift from oral to written assessment? So far several individuals have figured in significant changes in examination practice: Bentley in 1702, Laughton in 1710, Watson in 1763. To these, it has been claimed, we should add William Farish, the first serious student of mechanical engineering in Cambridge, who held the chair of Mechanics from 1811 to his death in 1837. Hilken (1967, p. 40) stated that as moderator in 1792 Farish had introduced the practice of assigning marks to individual questions. Hoskin (1979) emphasised the

importance of such a change, as a significant moment in the development of the fine tuned marking system. In Hoskin's neo-Foucauldian narrative this event becomes a crucial one in the emergence of a modern system of control, of 'normalising individuation'. It was 'a most momentous step, perhaps the major step towards a mathematised model of reality. ... The science of the individual was now feasible. ... The blunt weapon of banding yielded to the precision tool of the mark' (Hoskin, 1979, p. 144).

The source Hoskin himself relied on (Hilken, 1967) was a short history of engineering at Cambridge written by the then secretary to the faculty. Of the sources Hilken gives for his account of William Farish only one makes any reference to marks. This is Farish's obituary in the *Christian Observer*: 'He was the means of introducing into the University of Cambridge the system of classifying the candidates for a degree according to the number of marks obtained at their examination' (Anon, 1837, p. 675; copy, with other sources on Farish in Magdalene College Old Library, M5 29). There is no mention here of individual questions. It is in any case likely that impression marking continued to be used for some time; the senior moderator of 1836 claimed that his year of office was the first in which impression marking was not used at all (Ball, 1889, p. 213).

If the story of the individual mark were true, Farish would certainly be an apt hero. He was well known for his ingenuity and curious inventions. The apparatus at his lectures included a kind of brass Meccano of rods, wheels and so on from which could be assembled a variety of devices. The recombinatory principle this embodies offers, indeed, a perfect parallel to the alleged marking principle. But perhaps this very parallelism should make us cautious: Farish was also the kind of mildly eccentric don about whom myths cluster and, until hard evidence is found, we must assume that the story of the unit mark is one such myth.

The role of the individual depends in part on the room for initiative allowed by the institutional framework. In several cases mentioned above it is clear that the delegated powers of proctors, moderators and examiners could be used freely by a determined office holder. This freedom was finally curtailed in the 1840s in Cambridge, when examination boards were set up to 'stabilise' examinations. Before this, however, extensions of the *de facto* curriculum might be created by the personal preference of an examiner in a single year. At Oxford individual moderators had indulged their preferences for subject matter: 'the importance of Aristotle is said to date from Dr Sheppard, examiner in 1806; of Butler, from Dr Hampden ...' (Royal Commission on Oxford, 1852, p. 63).

The leading Cambridge reformer of the late eighteenth century was John Jebb of Peterhouse, though the campaign he conducted in the 1770s ended in failure. A crucial element in his proposals for annual university examinations, which would have included classics and religion, is that they were to have been taken by all students. This was aimed at the noblemen and fellow commoners [gentlemen students] who paid higher fees and were exempted from many of the restrictions suffered by ordinary undergraduates. In proposing this change Jebb was taking a path also followed by other reformers of the period. His failed reforms have to be

seen in the context of, for example, the campaign to remove subscription to the Thirty-Nine Articles [2] as a matriculation requirement. The influential minority of Cambridge men who supported this belonged to the latitudinarian [3] wing of the Church of England, strong there as it was not in Oxford. Richard Watson, whose initiatives I described above, was one of these men and was in fact a pupil of Jebb. The case of William Paley and his daring thesis on eternal pain belongs to the struggles between this liberal minority and the conservative Anglicans in Cambridge. Several of this group, after the failure of Jebb's reform proposals in the mid 1770s, became Unitarians, as Jebb himself did, joining the group based on the Essex Street congregation in London. In short, these late eighteenth century moves towards a fairer system based on universalised principles of evaluation cannot be seen simply as the work of individuals. They arose from a coherent movement of social and religious reform which enshrined an ideological *concept* of the individual.

The Last Days of the *Viva Voce*

By the end of the eighteenth century many exercises were 'huddled'; carried out in a perfunctory ritual fashion. A common source for ready-made arguments was Thomas Johnson's *Quaestiones Philosophicae* (Johnson, 1735). In addition, manuscript copies of sets of standard arguments were handed down from one undergraduate generation to the next: these were called 'strings' at Oxford and 'arguments' at Cambridge. In some cases these were still in use in the 1830s (Amherst, 1721, p. 104; Paley, 1803, p. 13; Wordsworth, 1877, p. 36, no. 2 and pp. 368–374). William Whewell, later to be Master of Trinity, kept his acts in 1815. Shortly beforehand he wrote to his friend George Morland, 'it consists in a person getting up into a box to defend certain mathematical and moral questions, from the bad arguments and worse Latin of three men who are turned loose into a separate box to bait him with syllogisms' (Todhunter, 1876, Vol. I, p. 5). Four years later Whewell acted as moderator for the exercises and reported to Morland that 'the syllogisms were such as would make Aristotle stare, and the Latin would make every classical hair on your head stand on end' (Todhunter, 1876, Vol. II, p. 35). By the 1830s the disputations were on their last legs, enlivened only by an occasional outburst of playful virtuosity by a student able to manipulate oral Latin. Thus in 1832 the noted classical scholar Richard Shilleto had fun at the expense of his opponent when he stated the well-worn theme 'Is suicide justifiable?'. '*Quid est suicidium*' he asked '*nisi suum caesio?*' (What is suicide but the slaughter of pigs?). Shilleto was at Trinity College and his opponent belonged to its great rival St John's, whose members were commonly nicknamed 'hogs'. The Johnian's Latin was poor, so he opposed Shilleto's argument only with difficulty, and without seeing the joke. The moderator, however, did understand, and happily shared it (Ball, 1889, pp. 173–181).

A comparable example can be found in Oxford a decade later: the young Frederick Temple answered Hanswell, an examiner, using phrases from a book published by his tutor Tait, who was also present as an examiner. Tait recognised his own words and looked at Hanswell, who failed to spot the quotations (Sandford,

1906, Vol. II, p. 433). Temple later followed Tait both as headmaster of Rugby and as Archbishop of Canterbury. In both cases there are layers of complicity and exclusion; what is more, these cut across the institutional boundary between teachers and taught. Such anecdotes reveal the interactional dynamics which were of the essence of oral examination, but which were hardly possible in a written test.

Oxford: a case for comparison

... I once passed a morning in the schools at Oxford and came away with a profound conviction of the intense injustice of using oral trials for the purpose of assigning relative rank for which men have toiled for years, and I do not think this conviction will leave me this side of the grave. (Richard Jones to William Whewell, 16 November 1845. (Todhunter, 1876, Vol. I, p. 161; Trinity College Library, Add Ms c52 105. Manuscripts in the Library are quoted by permission of the Master and Fellows of Trinity College)

As we have seen, the system of disputations at Oxford was very similar to that in Cambridge. The development of degree examinations, however, was rather different. The examination established by a statute of 1800 was to be entirely oral and to be held in public. Ranking by merit ('the Cambridge system') was to be practised, though for the first twelve candidates only. There were, however, never more than four men to rank; apparently candidates were discouraged by the prospect both of a public challenge to the examiners and of public humiliation if the challenge failed (Cox, 1869, p. 49; Ward, 1965, p. 14; Rothblatt, 1975, p. 295). A reform of 1807 created only two classes, each listed in alphabetical order. Later on the number of classes was increased. The maximum reached was five, of which the fifth was not publicly listed to avoid shaming its members. The examiners of 1832 felt that to be placed in the third or fourth class was 'a *degradation* rather than a *distinction*' (De Morgan, 1832, p. 195).

The Oxford degree examination, then, was strikingly different from its Cambridge equivalent. It provided a public spectacle and, occasionally, high drama. In 1810 Sir William Hamilton offered a long list of books for examination and was grilled for twelve hours over two days in front of a large audience; the event concluded with the thanks of his questioners (Curthoys, 1997, p. 346). In the 1820s, when matriculations rose sharply at both Oxford and Cambridge, the oral examination system began to break down. The Oxford moderators were limited in numbers by statute, as was the number of candidates they could examine in a day. They found themselves working for almost half the year clearing the backlog of candidates. As a result, written examinations were introduced in the later 1820s and after 1828 printed papers were used. Nevertheless, Oxford retained a considerable *viva voce* element in its degree examinations. Mark Curthoys has argued that this is related to the powerful local emphasis on religious testing (Curthoys, 1997, pp. 347–348). It is certainly true that questions on divinity loomed large in vivas, which always began with the New Testament: for this part of the examination both examiner and

examinee stood up. On the other hand, it may be that (as Durkheim might have said) it was the social group which was being worshipped, not the god. The oral emphasis, that is, belonged to the tradition of communal academic solidarity preserved by a continuing adherence to debate on logic: the Oxonian version of the medieval curriculum, from which Cambridge had diverged with its emphasis on mathematics (Gascoigne, 1984, pp. 573–577). The *viva voce* examination, then, celebrated the solidarity of a High Anglican academic community whose religious centre of gravity was rather different from that of latitudinarian Cambridge. The viva was dropped from classical moderations in 1884 and from Responsions (the Oxonian equivalent of the Previous Examination) in 1890, but at the beginning of the twentieth century finalists were still routinely being given vivas in every subject except mathematics (Curthoys, 1997, p. 349). The compulsory divinity examination ('divvers', not abolished until 1931) ended with a viva and by the end of the nineteenth century yet again examiners were overwhelmed by rising student numbers. In 1911 they managed to conduct 80 vivas a day and the system was acknowledged to be a 'blasphemous farce' (Curthoys, 1997, p. 358).

The contrast with Cambridge shows up clearly in the marking schemes adopted by each place. The Cambridge system was based on a strict ranking of numerical marks. There were only two departures from this at university level. First, candidates who did not obtain honours were listed in alphabetical order. (This was applied in 1851 to the third class of the Classical Tripos, but abandoned in 1859 on the ground that the feebler students lost incentive to work: Latham, 1877, p. 510.) Second, it was possible to gain more than 100% for a paper. This could be done if a candidate produced a more elegant solution to a problem than the standard example. In Oxford marking was usually by Greek letters rather than numbers. As Hartog and Rhodes commented in 1936, this system, which they described as 'common at Oxford, but not elsewhere', reflected a concern with quality rather than quantity (Hartog & Rhodes, 1936, p. 154). The literal marking system can be related to the Oxonian concern to avoid intensive ranking. A committee of the university's reigning Hebdomadal Board declared in 1829 that the standard for each class should be 'absolute and positive'. Curthoys comments on this that 'Theoretically, all the candidates could be in the first class, and individual classes could be (and sometimes were) empty', and he suggests that this system encouraged the use of Greek letter grades (Curthoys, 1997, pp. 344–345). Alpha, beta and gamma provided broad distinctions, while at the same time celebrating the dominance of classics at Oxford, to which that of mathematics at Cambridge provided a striking contrast.

As a practical system the literal scheme could be, and was, employed to make fine distinctions, usually by adding pluses and minuses. Such schemes were also used in Cambridge outside the degree examination. The few surviving moderators' books for the eighteenth century contain alphabetical marks. In a 1778 book the marks are recorded as A, a, E, e, each with pluses and minuses for finer gradation (Banks, Challis and Hodson papers, Trinity College Library, R 2 82.45). These marks, significantly, are for performance in the disputations. That literal marking was commonly used for these oral performances is suggested by Whewell's statement to

the 1850 Royal Commissioners that the disputations were abandoned because of problems in combining their marks with those for written papers (Royal Commission on Cambridge (1853), p. 272). Surviving mark lists for Trinity College scholarships and fellowships for 1791 have mark ranges of a2, a+, a, a-, x2, x+, x, x-, o and of +aa, +a, +, +-, +o. Clearly there is an element of improvisation here, but the scheme is algebraic rather than literal, and in this case the papers are written. This collection in fact includes a cautionary notice warning that in the past 'candidates have been in a rush and written badly' (Trinity College Library, R 2 80.14,20 and 81.61). The collegiate evidence at Cambridge, then, supports the linkage between oral examination and literal marking which dominated in Oxford. Bearing in mind the tutorial ethos identified at St John's, Cambridge, we can also link both these to a socio-moral concern with students as social beings, as opposed to the severely cognitive obsessions of the Cambridge mathematical examination. The only use of literal marking there at university level may have been in the oral element of the Previous Examination (Kellett, 1911, p. 287).

Different kinds of knowledge, as well as of marking, were at home in oral or in written examinations. The Royal Commission on Oxford, in its historical retrospect, stated that after the 1807 reforms

The principal part of the examination seems to have been oral, and success naturally depended rather on skill and accuracy in construing the classics than on acquaintance with Philosophy and History ... the increase in the number of the Candidates had an effect which not been foreseen. It became necessary that the Examination should be conducted more and more on paper, and therefore knowledge of Philosophy, together with skill in Composition, increased gradually in importance, and perhaps skill in Construing proportionately declined. (Royal Commission on Oxford, 1852, pp. 60–61)

Similar effects were noted in mathematics:

Till the year 1820, the subjects of Examination were chiefly such as admitted of Geometrical treatment; and the Examination was conducted viva voce. As the various branches of Analysis were introduced into the Examinations, the viva voce Examination became of less and less importance, and is now almost a form. (Royal Commission on Oxford, 1852, p. 63)

'Analysis' refers to the continental algebraic tradition which was resisted in Cambridge, loyal to its Newtonian heritage, until the early years of the nineteenth century. Algebraic analysis began to infiltrate degree examinations around 1820 and probably increased pressure on the oral examinations. It may be this development which was referred to by the leading mathematical coach William Hopkins. In his evidence to the 1850 Royal Commission Hopkins averred that 'Viva voce was found to be hard to use to convey complex nuances of meaning in questions' (Royal Commission on Cambridge, 1853, evidence 239–240; Ball, 1889, pp. 117–137;

Warwick, 2001). In his own evidence William Whewell, a former supporter of analysis who had backed away from it as he became more conservative, declared that ‘Viva voce examination catches out the crammer. It measures quality and competency while written papers produce classification’ (Royal Commission on Cambridge, 1853, evidence 251). Whewell wanted a return to oral examining and geometry because he saw them as the twin pillars of a pedagogic system which effectively tested ‘permanent’ rather than ‘progressive’ knowledge; eternal truths rather than research-led knowledge, which he thought was too unstable to form the basis of a liberal education (Whewell, 1845).

By 1850 Whewell was in a minority: the day of the written examination had come and since 1828 printed papers had been used. His nostalgia for oral examination was in part a longing for the return of an academic community in which fairness and mutual trust might, at least in theory, be expected. In such a community moderators were trusted to address different questions to candidates of different abilities and, perhaps because the latter had been roughly pre-classified in the disputations, they would know how to pitch their questions.

From the late eighteenth century a different notion of fairness was developed alongside this by men like Jebb and Watson, one focused on the individual rather than the group. The result was that it came to be felt that the only fair procedure in comparing candidates was to give them all the same questions. It is not coincidental that the emergence of this principle in the Mathematical Tripos, as it was called after 1824, went hand in hand with the decline of the preliminary disputations. In his evidence to the Royal Commission Henry Philpott stated that in the mid 1820s

candidates for honours were divided into 6 divisions before the main examination, divided according to the exercises in the public schools, and different questions were for the most part proposed to the different classes. In 1827 the number of such classes was reduced to four, and the Examiners allowed to propose the same questions to different classes as they should think fit. Accordingly all the questions from books for the first 2 days, and all the Problems were made common to all the candidates. (Royal Commission on Cambridge (1853), evidence, pp. 259–260)

This move, of course, was a major incentive to use printed question papers, which were introduced both in Cambridge and at Oxford in 1828. In both cases the sheer numbers of students in the 1820s forced change: ‘In 1828, the plan of printing the Questions proposed to the Candidates was first introduced. This introduction was necessitated by the increasing numbers of Candidates, and its effect has been beneficial in giving a certain stability to the system of Examinations’ (Royal Commission on Oxford (1852), report, p. 63). Printed papers in turn will have reinforced the standardisation of questions. As Philpott told the Cambridge Royal Commission, ‘[from 1838] the conviction appear[ed] to gain ground by degrees that the relative merits of different candidates can not be fully determined unless they are all tested by the same examination’ (Royal Commission on Oxford (1852), report, p. 63).

Conclusion

Four major factors were at work in the shift from oral to written examinations.

First, there was the general shift in the second half of the eighteenth century away from socio-moral assessments of members of status groups toward purely cognitive assessments of individuals. For most of the eighteenth century it was regarded as normal for honorary optimes to be inserted high in the list at Cambridge. The decline of this practice and its subsequent expunging from the official record in the university calendar in the 1790s indicate a distinct shift in notions of social worth and assessment. This is also evident in the moves of the 1770s to make superior grades of undergraduate (noblemen and fellow commoners) subject to examination discipline. We might link to this the transfer of control of the process of assessment from the community of MAs and their representatives, the proctors, to the moderators. The latter, originally the proctors' deputies, become examiners in sole charge, while the involvement of MAs, who had once been able to join in the interrogation of candidates, gradually disappears. Paradoxically, a similar development affected the moderators, whose own individual freedom of decision on the running of examinations was itself curtailed in favour of examining boards. The power vested in the community of MAs passed to a specialised body of examiners. This shift was entangled with religious and political conflicts which affected Cambridge much more than Oxford, since the forces of reform were much better represented in the former place. The reforming efforts of Jebb and Watson in the 1760s and 1770s belonged to a concerted and consistent campaign which began with the petition against subscription (adherence) to the Thirty-Nine Articles.

Secondly, the content of the knowledge tested played an important part. The precocious emergence of the rigorous marking system of Cambridge took place in the home of Newtonian mechanical materialism and dates from the latter's emergence to dominance there in the first half of the eighteenth century. Subject matter and assessment by precise rank order had an elective affinity. The point is highlighted if we compare Cambridge, dominated by mathematics, with Oxford, where classics held sway. The home of humane letters (*literae humaniores* or 'Greats') used Greek letters for marking. Oxford's association with the public sphere of *élite* culture helps to explain the minimal public ranking; alphabetic order within classes and, indeed, alphabetic marking of examinations. The rhetoric of display was part of the culture of gentlemanly orality, a culture which, as we have seen, persisted longer in Oxford than did its attenuated counterpart in Cambridge. This was a republic of peers (potential equals). The greater emphasis on culture and character at Oxford was paralleled in the combined moral and intellectual status of the tutorial relationship. The Cambridge system, in contrast, separated moral tutors from 'supervisors' and 'directors and studies' (Rothblatt, 1968, pp. 231–235; Stray, 2001). As we have seen, the later shift to continental (algebraic) analysis at Cambridge in the early nineteenth century also affected methods of assessment, working as it did against effective *viva voce* examination.

Thirdly, rising student numbers, first in the 1820s and then at the end of the century, had a significant influence in swamping *viva voce* procedures. The shift

away from general MA involvement meant that large numbers of students had to be examined by small numbers of examiners. It is in the nature of oral examination that an interrogator can only test one examinee at a time. In Oxford in the 1820s the statutory restrictions on numbers examined led to the collapse of the system. Seventy years later another rise in student numbers led to the ‘blasphemous farce’ of hasty and perfunctory divinity vivas.

Fourthly, both oral and written examinations were subject to the politics of the institutional contexts in which they took place. These included conflicts between colleges, and between college and university interests. In this period the universities slowly recovered from their marginalisation by the colleges earlier in their history. Here the interests of larger and smaller colleges were very different, a fact especially noticeable at Cambridge, where St John’s and Trinity were many times larger than their smallest rivals.

The shift from oral to written examination in Cambridge, then, seems to have been impelled first by the influence of Newtonianism in the early eighteenth century and then reinforced later on by reforming agendas of latitudinarian dons who were more numerous there than at Oxford. Finally, in the 1810s the introduction of algebraic analysis and rising student numbers together delivered a decisive blow to *viva voce* examination. Oxford provides a different narrative. This included a brief flirtation with Cambridge competitive marking in the 1800s, and it may well be that the later persistence of oral examination was influenced by a conscious concern to defend a tradition which by then contrasted so sharply with its rival. These issues aside, we might see the Oxonian history as the ‘normal’ progression from the totally oral system of the fifteenth to the seventeenth centuries: the history which might have been at Cambridge, but for the influences listed above.

NOTES

- [1] Opp. Recte statuit X de Y ... [X’s views on Y are correct] Resp. Recte non statuit X de Y... [No they are not] (Wordsworth, 1877, pp. 33–42; Ball, 1889, pp. 174–178; Schneider, 1957, pp. 31–32).
- [2] The doctrinal statements of the Church of England finalised under Elizabeth I.
- [3] Latitudinarians within the Anglican church, from the 18th century onwards, preferred to use reason to underpin doctrine rather than received tradition.

REFERENCES

- AMHERST, T. (1721) *Terrae Filius* no. 20 (Oxford).
- ANON (1837) [Obituary of William Farish] *Christian Observer* pp. 611–13, 674–77, 737–41.
- BAKER, T. (1869) In: J. E. B. MAYOR (Ed.), *History of the College of St John the Evangelist, Cambridge*, 2 Vol. (Cambridge, Cambridge University Press).
- BALL, W. W. R. (1889) *History of the Study of Mathematics at Cambridge* (Cambridge, Cambridge University Press).
- BALL, W. W. R. (1899) *Notes on the History of Trinity College Cambridge* (London, Macmillan).
- BALL, W. W. R. (1918) *Cambridge Papers* (Cambridge, Heffer).
- BALL, W. W. R. (1921) *Cambridge Notes* (Cambridge, Heffer).
- COX, G. V. (1869) *Recollections of Oxford* (London, Macmillan).
- CURTHOYS, M. C. (1997) The examination system, in: M. G. BROCK & M. C. CURTHOYS (Eds),

The History of the University of Oxford, Vol. 6, *Nineteenth-Century Oxford*, Part 1, pp. 339–374 (Oxford, Oxford University Press).

- DE MORGAN, A. (1832) State of the mathematical and physical sciences at the University of Oxford, *Quarterly Journal of Education*, 4, pp. 191–208.
- GASCOIGNE, J. (1984) Mathematics and meritocracy: the emergence of the Cambridge Mathematical Tripos, *Social Studies of Science*, 14, pp. 547–584.
- GASCOIGNE, J. (1989) *Cambridge in the Age of the Enlightenment. Science, religion and politics from the Restoration to the French Revolution* (Cambridge, Cambridge University Press).
- GUNNING, H. (1855) *Reminiscences of the University, Town and County of Cambridge Since the Year 1780*, 2nd Edn (London, Bell).
- HARTOG, P. & RHODES, E. C. (1936) *The Marks of Examiners* (London, Macmillan).
- HILKEN, T. (1967) *Engineering at Cambridge University, 1785–1965* (Cambridge, Department of Engineering, University of Cambridge).
- HOSKIN, K. (1979) The examination, disciplinary power and rational schooling, *History of Education*, 8, pp. 135–146.
- JEBB, J. (1787) *Works of John Jebb* (London, T. Cadell).
- JOHNSON, T. (1735) *Quaestiones Philosophicae*, 2nd Edn. (Cambridge, W. Thurlbourn).
- KELLETT, E. E. (Ed.) (1911) *A Book of Cambridge Verse* (Cambridge, Cambridge University Press).
- LATHAM, H. (1877) *The Action of Examinations* (Cambridge, Deighton Bell).
- LEADER, D. R. (1988) *History of the University of Cambridge*, Vol 1 (Cambridge, Cambridge University Press)
- LEWIS, W. S. (Ed.) (1948) *The Correspondence of Horace Walpole*, Vols 13–14 (New Haven, CT, Yale University Press)
- MILLER, E. (1961) *Portrait of a College. A history of the college of St John the Evangelist*, Cambridge (Cambridge, St John's College).
- MONK, J. H. (1833) *Life of Richard Bentley*, 2nd Edn, 2 Vol. (London, Rivington).
- [PALEY, W.] (1803) *Gradus ad Cantabrigiam* (London, Richardson).
- RAWORTH, B. C. (1802) *Cambridge University Calendar for the Year 1802* (Cambridge, Deighton).
- ROTHBLATT, S. (1968) *The Revolution of the Dons. Cambridge and society in Victorian England* (London, Faber).
- ROTHBLATT, S. (1975) The student sub-culture and the examination system in early nineteenth-century Oxbridge, in: L. STONE (Ed.), *The University in Society*, I: *Oxford and Cambridge from the 14th to the Early 19th Century* (Princeton, NJ, Princeton University Press).
- ROYAL COMMISSION ON CAMBRIDGE (1853) *Parliamentary Papers 1853*, Vol. 44.
- ROYAL COMMISSION ON OXFORD (1852) *Parliamentary Papers 1852*, Vol. 22.
- SANDFORD, E. G. (1906) *Memoirs of Archbishop Temple by Seven Friends*, 2 Vol. (London, Macmillan)
- SCHNEIDER, B. R. (1957) *Wordsworth's Cambridge Education* (Cambridge, Cambridge University Press).
- STRAY, C. A. (2001, forthcoming) Curriculum and style in the collegiate university: classics in Victorian and Edwardian Oxbridge, *History of Universities*, 16(2).
- TANNER, J. R. (1917) *Historical Register of the University of Cambridge* (Cambridge, Cambridge University Press).
- TODHUNTER, I. (1876) *William Whewell DD*, 2 Vol. (London, Macmillan).
- WARD, W. R. (1965) *Victorian Oxford* (London, Frank Cass).
- WARWICK, A. (1998) A mathematical world on paper: written examinations in early nineteenth-century Cambridge, *Studies in the History and Philosophy of Modern Physics*, 29(B3), pp. 295–320.
- WARWICK, A. (2001) *Masters of Theory: mathematics in 19th-century Cambridge* (Chicago, University of Chicago Press).
- WATSON, R. (1818) *Anecdotes of Bishop Watson*, 2nd Edn, 2 Vol. (London, Cadell & Davies).

WHEWELL, W. (1845) *Of a Liberal Education, with Special Reference to the University of Cambridge* (Cambridge, Cambridge University Press).

WINSTANLEY, D. A. (1935) *Unreformed Cambridge* (Cambridge, Cambridge University Press).

WORDSWORTH, C. (1877) *Scholae Academicae* (Cambridge, Cambridge University Press).