

## **NST Part II, History and Philosophy of Science Senior Examiner's Report, 2010**

The HPS Pt II Examination was sat by 39 students this year, a very marked increase on the 22 students who sat the examination in 2009. For a second year a choice was offered between option A and option B (the latter including an extra examination paper, but no dissertation), and 14 students chose option B. 7 further candidates took Paper 7, and 2 took Paper 8, as part of BBS Pt II. One Classics Tripos student took Paper 1. The final results for the HPS Pt II comprised 11 Firsts overall (28%), 26 Upper Seconds (67%) and 2 Lower Seconds (5%). This was also the first year in which the Part II examiners were charged with examining the BBS History and Ethics of Medicine (HEM) paper. 21 students sat this examination, of whom 5 were awarded firsts, 13 upper seconds, and 3 lower seconds.

### **Class and mark distributions**

8 out of 25 HPS Pt II dissertations were awarded firsts, and while there were some very fine performances the overall distribution was not as impressive as in previous years. Only 1 dissertation received a lower second. 17 students were awarded firsts for their combined performance in the primary source essays, indicating particularly strong performance in this element of the course. When lower marks (lower seconds and thirds) were awarded within individual examinations papers, this was typically in virtue of very short answers, or missing answers, to single questions, rather than for uniformly mediocre performance across all questions. Candidates should therefore be encouraged to ensure that they have adequate breadth of coverage over the syllabus, and that they divide their time equally between questions.

### **Examining Practices**

Examination questions were set at the examiners' meeting in Lent Term, following consultation with supervisors, lecturers and paper managers. The External Examiner (John Henry) also provided valuable comments on the draft papers.

As is always the case, all elements of the course (dissertations, primary source essays and examination papers) were blind-double-marked. The External Examiner was asked to resolve the handful of cases where examiners' independent marks diverged considerably, and he was also asked to comment on the general calibration of examiners to each other, and to national standards.

Last year the examiners reported some concerns about the ways in which the reporting of medical and pastoral issues were handled by colleges and by the applications committee: there were no such concerns this year. That said, examiners did express concern about the increasing number of students taking examinations in colleges. This resulted in several scripts being delivered rather late to examiners, and some of these scripts were missing cover sheets.

Examiners made use of revised *Guidelines for Undergraduate Examinations*, following the recommendations of the Senior Examiner last year. Examiners are now strongly encouraged to use the full range of marks, and the mark scheme has been amended to facilitate this.

Several examiners commented on the poor quality of handwriting in some scripts. This made reading the scripts extremely time-consuming. The incoming Senior Examiner should seek to

clarify the policy on handling illegible scripts before the 2011 examinations. In particular, there seems to be no central guidance on how to deal with scripts which contain significant elements that are hard to decipher.

As mentioned above, this was the first year in which the HPS Pt II examiners took charge of examining the History and Ethics of Medicine (HEM) paper in BBS Part II. The new arrangement worked well, and should be repeated in future years. All the examiners—and especially the external examiner—should be thanked for their extremely efficient and diligent work this year.

### **General Comments:**

This was the first year in which a significant number of students chose option B (i.e. chose not to submit a dissertation). There did not seem to be any significant difference in performance between students taking the two options.

Several examiners commented on the mechanical reproduction of lecture material which featured in many answers. This made it difficult to award very high marks in examination papers, and accounted for the high proportion of 2is in the overall classification. Students should be encouraged to read beyond lecture material, and the Department as a whole may wish to think about how students can be helped to engage in more independent learning.

Dissertations largely exhibited an extremely high level of industry by candidates. In many cases this industry was matched by high intelligence. It was pleasing to see that many students had clearly enjoyed researching and writing this component of Pt II.

In the primary source essays, choice of title was central to achieving a high mark: the most successful essays answered tightly-focused questions based on close and direct engagement with the source and with the major secondary literature, and the least successful were general thematic explorations of the field which lacked a solid contextual background. In this sense, finding an original or unexplored aspect of the source was less important than constructing an engaging and original argument around it. A small number of essays sought to use other primary material to illuminate the main primary source: on the whole, these were admirably ambitious but often too wide-ranging to achieve a high mark. The examiners also commented on particularly impressive performance among those who had chosen the Paper 9 primary source (on the ‘Two Cultures’ debate).

### **Comments on Specific Examination Papers**

#### *Paper 1: Classical Traditions in the Sciences*

There were 10 candidates, one of whom took the Paper as part of the Classics Part 2. There were few weak scripts, but also few very good ones. The three Section A questions were all equally popular. In general, ancient topics (Greek, Roman, Assyrian and Babylonian) were favoured over medieval and early modern topics.

#### *Paper 2: Natural Philosophies: Renaissance to Enlightenment*

9 candidates took this paper. 3 received first class marks, 5 received marks in the 2.1 bracket, and 1 received a 2.2. The most popular questions in Section A were 1 (‘Was enlightenment

science an imperial activity?') and 3 ('Who was viewed as revolutionary in early modern natural philosophy, and why?'), with 4 answers each. The least popular was 2 ("From the secrets of nature to public knowledge." Is this a fair characterisation of shifts in early modern natural knowledge?'), with one answer. The most popular questions in Section B were 8b (on collections in early modern Europe), with 8 answers, and 6a (on Bacon) & 7 (on astrologers and alchemists), with 4 answers each. Several questions went unanswered: no candidates attempted questions 5 (on the Jesuit mission to China), 10b ('Is hermeticism the foundation of experimental philosophy?'), 11 (on a 'republic of letters' in early modern Europe) and 12b (on the problem of longitude).

### *Paper 3: Science, Industry and Empire*

There were 23 candidates with a handful of excellent scripts and a couple of notably poor ones. In Section A, Question 1, on historians' continued and exclusive focus on individuals was largely avoided, whilst Question 2, on science and empire, was conversely very popular. This latter question produced some excellent answers but many students used the same standard case-studies, to varying degrees of success. Darwin (Questions 4 and 9) remained popular as ever, and there were some good answers on the novel (Question 5) and Biblical Assyria (Question 6). Question 8, on differing types of accessibility and inaccessibility of science, was answered by 15 candidates, although many seemed to (incorrectly) interpret the question as an "either / or" question. No question was avoided entirely, although only two answered on Humboldtian science (Question 11b).

### *Paper 4: Metaphysics, Epistemology and the Sciences*

15 students chose to sit the examination paper. Performance was mixed, with only a third of candidates getting 2is, and the rest gaining either 2iis or 1<sup>st</sup>s. Most candidates chose either question 1 (on scientific realism) or question 3 (on the benefits to scientists of philosophical knowledge) in section A: question 2 ('Is there a scientific method?') was only chosen by 2 candidates. Question 4 (on induction) was very popular, but several candidates failed to focus directly on issues about circularity in justifying induction, and instead wrote more general essays on induction. Only one candidate chose question 9b (on adaptationism and intelligent design theory), and no one chose question 12 ("The categories of negligence are never closed"... Can the same be said of categories in science?). The lack of interest in question 12 is odd given the good feedback for the related lecture course.

### *Paper 5: Science and Technology Studies*

There were 14 candidates. There were few overall weak scripts, but also few very good ones. No Section A question was significantly avoided, although Question 1, "Who controls science?", was the most popular. Question 12, on the ethics of using genetic information, was popular, and consistently well-answered. Question 10, on science and medicine in the media, was also popular and produced some excellent, spirited, and in one case very witty answers. Question 4 (on the symmetry principle in SSK) was popular and in some cases well answered. The examiners noted that some candidates were significantly disadvantaged when answering this question by not being familiar with very elementary and indeed canonical material on the nature of knowledge, belief, truth and falsity. No question was avoided entirely, although only one candidate answered on gender and science (Question 11a).

### *Paper 6: History and Philosophy of Mind*

Overall, the students seemed to favour either philosophy or history questions, with more answers to philosophical questions overall (24 answers to history questions in Section B, and 42 to philosophical questions).

The Section A questions were roughly equal in popularity, but in Section B clear favourites emerged. The three most popular questions were 4 ('Does survival sometimes matter more than identity?'), 7a ('In what sense, if any, are thoughts relations to what they represent?') and 11b ('Why was psychoanalysis so influential?'). Question 4 tended to elicit a fairly straightforward regurgitation of the lecture materials, while questions 7 and 11 prompted a more diverse set of answers.

Question 8b ('Is there a tenable version of non-reductive physicalism?') and 11a ('"[T]here are no indications of reality in the unconscious, so that one cannot distinguish between truth and fiction that has been cathected with affect" What are the implications of this discovery?') had just one answer each. Question 10 ('From a historical view point, what are the main differences between the concepts of 'delusion' and 'hallucination'?') was not attempted by any student.

In general, students stuck closely to the lecture material. This was particularly obvious in the philosophy questions, where the same examples and thought experiments were recited in virtually every answer (substituting Picard for Spock was one of the more adventurous re-interpretations...). Few students challenged the assumptions of questions (with the exception of 6—'Scepticism about the external world is ridiculous, but scepticism about other minds is reasonable'), and most of those who answered 12a did not properly identify the context of the quotation, i.e. that it is a 'man on the street' view of Freudian analysis in the 1930s. Several students also made very basic historical errors – for example two talking about dates beginning with 1900 as 'in the nineteenth century'.

### *Paper 7: Medicine from Antiquity to the Enlightenment*

14 HPS Part II candidates took this paper. 5 received first class marks, 8 received marks in the 2.1 bracket, and 1 received a 2.2. 7 BBS candidates took the paper. 3 received first class marks, 3 received marks in the 2.1 bracket, and 1 received a 2.2.

For HPS Part II candidates, the most popular section A questions were 2 (on medicine as an experimental science), with 7 answers, and 1 (on natural and supernatural stances on disease), with 6 answers. The least popular was 3 ('How, if at all, did experiences of illness and healing change from Antiquity to the Enlightenment?'), with 1 answer. The most popular questions in Section B were 10 ('Why did printed books have such limited impact on medicine from 1450 to 1640?'), with 11 answers, and 12 (on long and healthy life in early modern Europe), with 7 answers. No candidates attempted questions 5a (on Greek doctors and etiquette), 6a (on the terms 'katharsis' and 'pharmaka') and 8a (on the roles of physician and priest in early modern Europe).

In general, Paper 7 scripts tended to be wide-ranging and imaginative. Most candidates showed a strong grasp of the main themes of the paper (particularly the 'medical marketplace', which frequently came up several times in a single script).

### *Paper 8: Modern Medicine and Biomedical Sciences*

15 HPS Part II candidates took this paper. 1 received a first class mark, 11 received marks in the 2.1 bracket, and 3 received a 2.2. 2 BBS candidates took the paper. 1 received a first class mark, and 1 received a mark in the 2.1 bracket.

For HPS Part II candidates, the most popular Section A question was 3 (How has the power of physicians and of patients to influence a diagnosis changed since 1750?), with 9 answers. The least popular was 2 (“It does not much matter where diagnoses are determined; what matters is that they are correct.” Assess this claim for medicine since 1750’), with 2 answers. The most popular Section B questions were 11 (on hospital birth), with 10 answers, and 4 (on the clinical gaze) and 7 (on innovations in surgical technique), with 9 answers each. No candidates answered questions 6b (on ague and malaria) or 9b (‘Who has benefited most from the regulations controlling the use of human beings in medical experiments that have been introduced since World War II?’).

Paper 8 scripts tended to focus on a small number of questions, and to provide fairly mechanical answers based closely on material from lectures. This problem was particularly visible in Section A answers. Candidates tackling question 10 (on psychiatry) found it difficult to deal with the breadth of the question and the number of themes it raised.

### *Paper 9: Images of the Sciences*

10 candidates sat this paper. There were some very stylish and illuminating responses at the higher end of the mark range, but as usual examiners also noted considerable amounts of superficial or irrelevant material in poorer responses. In section A, question 2 (‘How have practitioners of the sciences used history?’) was the most popular by a considerable margin. In section B questions 4b (‘Does Berkeley succeed in his attempt to refute “skepticism, atheism and irreligion”?’), 6a (‘How did Kant justify induction?’), and 12b (‘Is photography an art or a science?’) were not answered by anyone. Beyond that, there was a good spread of answers across the examination paper.

### *BBS Part II, History and Ethics of Medicine*

21 students sat this examination paper as part of BBS Part II. It was the first year in which the HPS Part II examiners took charge of marking this part of the course. Most of the students (16/21) chose to skew their answers in favour of Section A or B – the vast majority (15/21) choosing to answer three Ethics questions and one History Question.

The distribution of answers is clearly uneven; it is interesting that the two least popular history questions were those which did not directly relate to a single topic or lecture but obviously required the students to synthesise material (‘What was the most important medical discovery made between 1500 and 1700? Justify your answer’ and ‘Has the concept of a “consumer” (or a “sickman”) rather than a “patient” helped give lay groups power over medical professionals?’). Conversely, the most popular history question was one which *was* synthetic, but which the students answered in a very limited way, probably using a supervision topic without realising it was not sufficiently broad (‘Explain why laboratories became part of (a) medical training and (b) medical practice after 1800).

The most popular Ethics question also highlighted problems with the exam tactics chosen by students ('If we can show that foetuses and embryos have a 'right to life', do we thereby show that abortion is unjustified?'); the best answers to these questions took their cue clearly from the assumption in the question, but several students chose to ignore the statement "if we can show...", and instead wasted time discussing abortion ethics, rather than focusing on the question itself.

Few students deviated from the lecture material to any extent – even to use the recommended readings. Overall, it seems clear that these students would benefit from a revision session which could give them hints about tackling exam questions, *reading* the question, synthesising across lectures, and so on.

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