



THE UNIVERSITY *of* EDINBURGH

Edinburgh Research Explorer

## Special Issue: Blood Will Out: Essays on Liquid Transfers and Flows

### Citation for published version:

Carsten, J 2013, *Special Issue: Blood Will Out: Essays on Liquid Transfers and Flows*. Journal of the Royal Anthropological Institute, Journal of the Royal Anthropological Institute.  
<<http://onlinelibrary.wiley.com/doi/10.1111/jrai.2013.19.issue-s1/issuetoc>>

### Link:

[Link to publication record in Edinburgh Research Explorer](#)

### Document Version:

Peer reviewed version

### Publisher Rights Statement:

© Carsten, J. Special Issue: Blood Will Out: Essays on Liquid Transfers and Flows

### General rights

Copyright for the publications made accessible via the Edinburgh Research Explorer is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

### Take down policy

The University of Edinburgh has made every reasonable effort to ensure that Edinburgh Research Explorer content complies with UK legislation. If you believe that the public display of this file breaches copyright please contact [openaccess@ed.ac.uk](mailto:openaccess@ed.ac.uk) providing details, and we will remove access to the work immediately and investigate your claim.



**‘Searching for the truth’: tracing the moral properties of blood in clinical pathology labs in Malaysia**

Janet Carsten, *University of Edinburgh*

**Abstract**

This article begins with a remarkable moment in contemporary Malaysian politics when a contested blood sample of the leader of the opposition was claimed by some as having the capacity to ‘reveal the truth’ about his character. What is it about blood that gives it this iconic status? Drawing on research in hospital clinical pathology labs and blood banks in Penang, the article shows how blood samples, far from being detached from persons, may accrue layers of meaning as they travel round the lab. This occurs partly through the special properties of blood, and partly through the socially embedded interventions of laboratory staff. Tracing the social life of blood also allows us to grasp how the separations between domains of social life, which is fundamental to an ideology of modernity, must be laboriously achieved, and can often be only precariously maintained. In the case of blood, however, the stakes may be unusually high when the boundaries between, for example, biomedicine and politics or kinship become over-permeable or threaten to collapse.

On Friday July 18th 2008 the front-page headline of the *New Straits Times* (Malaysia's foremost pro-government English language newspaper) asked rhetorically, 'WHAT IS HE AFRAID OF?' Above the headline, two red bullet points gave background to the story: 'Anwar refuses to give blood sample for DNA test' and 'Possibility of bringing in foreign medical experts to conduct tests'. Underneath, in large letters, was a quote from Datuk Seri Syed Hamid Albar, Home Minister: 'If he's searching for the truth, he can get it very easily. Just give a blood sample for DNA tests... Under our laws, we cannot force a person to give a blood sample.' On an inside page, the main news story was reported under another headline, also a quotation from the Home Minister: 'Give blood sample for the sake of truth.' Other newspapers in Malaysia ran this story with the same prominence.

These headlines came at a climactic moment in a long-running and increasingly surreal saga in Malaysian politics, in which several stories seemed somehow to converge on a DNA analysis of the blood of Datuk Seri Anwar Ibrahim, the *de facto* leader of the main opposition party, *Parti Keadilan Raayat*, and long-time thorn in the government's side. The many bizarre turns in this sequence of events almost defy summary, but for someone engaged at the time in research on the interface between biomedical understandings of blood and its wider symbolic resonances in Malaysia, the moment seemed almost too extraordinary to be believed. How had Anwar's blood come to be claimed by the government as an icon of truth in a tumultuous political showdown?

In brief, general elections in March 2008 had resulted in very significant gains for the opposition parties. For the first time since 1969, the ruling alliance of government parties (*Barisan Nasional*), headed by UMNO (United Malays National Organisation) had lost its two thirds majority in parliament - but not its overall majority - and the opposition parties had won a number of key states. A background of increasing dissatisfaction among voters, particularly over what was perceived as widespread corruption in government, and stories of scandals implicating leading politicians had led to this result. It seemed possible to imagine that the decades of UMNO rule might be nearing an end. In the weeks and months following the election, Anwar stepped up an increasingly direct attack on a faltering government, and particularly on the reputation of the Deputy Prime Minister, Datuk Seri Najib Tun Razak. This hinged on allegations about the latter's embroilment in the murder of a Mongolian translator, Altantuya Shaariibuu, allegedly committed to cover up a sex and corruption scandal involving prominent government figures by means of C4 explosives. The case was one of several high-profile ones then being tried in the Malaysian courts.

Following the election, Anwar repeatedly boasted that, by the following September, sufficient M.P.s from parties in the ruling *Barisan Nasional* (particularly from the states of East Malaysia, Sabah and Sarawak) would have changed sides for the opposition to achieve a majority, and the government would fall. It was perhaps not surprising to observers familiar with Malaysian politics that the government would respond to such direct provocation. On the 29th June, in a bizarre reprise of events ten years before, under the Mahathir

government, when Anwar had been sacked as Deputy Prime Minister and arrested and jailed for sodomy, the story broke in the Malaysian press that one of Anwar's aides had lodged a report with the police alleging sodomy by the PKR leader. On the same day, amidst claims that he had received death threats, Anwar took refuge in the Turkish embassy. He emerged from there on the 1st July after assurances for his personal safety had been given by the Home Minister and the Deputy Prime Minister. On the same day, the aide in question was exposed in photographs released by *Parti Kedilan Raayat* as having links to the office of the Deputy Prime Minister. According to a report in *The Star*, at a press conference on 3rd July, Anwar 'declared that evidence linking deputy Prime Minister Najib to the murdered Mongolian translator will be released in the coming days'. Describing the Altantuya case as 'like a series in a Bollywood drama', he also accused the police of suppressing evidence, and questioned 'why there was a sudden switching of the judge fixed to hear the case' ('Anwar: Proof on Najib Soon', *The Star*, July 4th 2008).

Following his arrest on July 16th, Anwar was taken to the main hospital in Kuala Lumpur where, according to accounts in the Malaysian media, he was medically examined, but refused to give a blood sample for DNA testing, fearing that it might be tampered with. In a statement alleging that he had been stripped naked during this examination, which was denied by the Director of the hospital, Datuk Dr Zaininah Mohd Zain, Anwar was reported as saying,

‘They measured me and examined me, front and back,’ ... when meeting PKR members at party headquarters in Petaling Jaya later yesterday.

He said the police should not ask for his DNA sample again as they had taken his blood samples many times when he was in prison for six years.

‘I had my blood tested many times for sugar level, cholesterol. But now they say those were old DNA samples,’ he added. (‘‘Anwar was not stripped naked’’ HKL director: His decency was not violated’, *The Star*, 20th July 2008).

In the heightened atmosphere of the time, and amidst increasingly vitriolic accusations levelled in all directions, the role of Anwar’s blood in this story was just one of many remarkable sub-themes. For not only were his previous blood samples presumably available to the police but, as at least some bloggers commented, if DNA was at issue, blood was not required. A simple mouth swab, for example, might have been easier to acquire. So, what was it about blood, as distinct, say, from saliva or hair that had the capacity to reveal the truth? Or was it perhaps not just the blood, but also the idea of ‘the sample’ and its scientific testing, possibly verified by ‘foreign medical experts’, that would supply the desired authenticity for this rather questionable evidence?

I have begun with a vignette from a remarkable moment in contemporary Malaysian politics when a contested blood sample of the leader of the opposition alliance was claimed by some as having the capacity to reveal the

truth about his character. Significantly, perhaps, what exactly the blood sample was supposed to show in this case was not explicitly spelled out in the reports in the Malaysian press. One might surmise that the authorities were hoping either to match samples produced by Anwar's political aide, or perhaps were seeking a positive HIV test (which would not require DNA). This, however, was left implicit, and thus presumably all the more open to different interpretations that might cast aspersions on his character.<sup>1</sup> But how does blood acquire its apparent iconic status to reveal the truth about a politician's moral character? What properties and capacities of blood does this status result from? Drawing on an ethnographic project that focussed on the clinical pathology labs and blood banks of two private hospitals in Penang, which aimed to trace 'the social life of blood' in Malaysia, I attempt to unpick blood's apparently over-determined capacity to accrue layers of meaning. Placing side by side some sketches from this fieldwork, I show how the fields of biomedicine, kinship, ethnicity, and politics may become merged as blood is screened or analysed in the clinical pathology labs.

While the continuities that I trace here are in many ways specific to Malaysia, the broader significance of the discussion has parallels with ethnographic and historical research carried out elsewhere. The contested importance of this particular Malaysian blood sample, for example, can be compared to the ways in which blood-typing confirms or upsets long-held truths about the nature of religious, caste or family ties in India (Copeman 2008: 291), or is co-opted to indicate racial characteristics or marital prospects in twentieth century North America (Lederer this volume; 2008; see also Haraway 1996). Discourses

about 'scientific' blood testing may thus be enfolded into understandings about the ways in which blood has a particular power to reveal the truth about the person that – for all their appearance of scientific and technologically up-to-date modernity - have a very different historicity. As with the bags of sterile isotonic fluid discussed by Mayblin (this volume), new technologies may be incorporated into much older understandings. Here the truth-bearing power of blood shows striking similarities to some of the properties of medieval blood discussed by Bildhauer (see also Bildhauer 2006; Bynum 2007), Indian blood portraits considered by Copeman, and the truths revealed by blood typing in twentieth century North America examined by Lederer in this volume.

But this essay also has another aim, which is to pay close attention to the apparently rather routine, mundane, and everyday work of clinical pathology labs (see also Pfeffer and Laws 2006). One implication of the colourful newspaper reports which I have cited would seem to be that, although such labs in many respects operate in a zone that is insulated and far removed from political or familial concerns, it is possible to find the traces of such interests in laboratory life. My aim in this paper is to show how personal, moral, and familial qualities are implicated in the social relations of the lab, and may also adhere to samples as they make their way through analysers and diagnostic machinery. Thus while the space of the lab and the more theatrical zones of Malaysian politics might seem to be 'worlds apart', we may be able to trace connections between them. Illuminating the mobility and velocity of blood as it flows between different sites and domains, requires us to examine the social processes and relationships layered into such an archaeology of associations

and connotations. Tracing the ‘social life of blood’ not only reveals its particular properties as an object, but also allows us to grasp how the separations between domains of social life, which are fundamental to an ideology of modernity (see Yanagisako and Delaney 1995), must be laboriously achieved, and can often be only precariously maintained. In the case of blood, the stakes may be unusually high when the boundaries between, for example, biomedicine and politics or kinship become over-permeable or threaten to collapse.

### **Lab work**

The perception that a blood sample might have the capacity to reveal the truth about a prominent politician’s character suggests some interesting pathways between the different kinds of knowledge generated inside and outside laboratory spaces. In the sections that follow, I show what actually happens to samples of bodily material as they pass through the labs, and illuminate the traces of personality, character, or social categories that may inhere in the sample, or may be newly attached to samples during the work processes of the lab and through the engagements of staff. How is the transition from bodies to samples, or from social relations to an object of analysis, effected? And what can it tell us about blood as a particular kind of substance or about the social relations initiated here? While Pfeffer and Laws (2006: 3012) argue that ‘blood in a syringe is materially and symbolically quite different to blood circulating round the human body’, my interest is in examining both how this difference is effected, and how stable and complete the separation is between the different qualities and values attached to a blood sample.

Most of the work of the clinical pathology labs is highly technical and takes the form of many small, intricate tasks. There are literally hundreds of diagnostic tests that labs may be equipped to do in their different departments on blood, sputum, urine, stool or other samples. And diagnostic testing is only one part of the work of the labs. The medical lab technologists (MLTs) and lab technicians are also responsible for taking blood from blood donors, the screening of blood, its separation and preparation as components, their storage and refrigeration, the management of blood bank supplies, and cross-matching blood for transfusion with that of patients. The lab staff also take blood from hospital in-patients and out-patients before it is tested, and make sure the results of the diagnostic tests they carry out in the different departments of the lab are accurately recorded and speedily transmitted back to wards and out-patient clinics.

Many of the processes I observed began with the extraction of bodily fluids or tissue from patients or donors. These were then examined or analysed before results were recorded and entered into the information systems of the lab, which were in turn transmitted to doctors or nurses. The processes of extraction, analysis, storage, disposal, and data recording are at the heart of what goes on in the labs. They involve taking what is internal to the human body and transforming it into a detached object of scientific analysis, and then into recorded information. This cannot happen without social engagement, and it is this that concerns me here. I am interested in the forms of social relations that are involved - beginning with the interactions between MLTs and patients,

but also encompassing those between working colleagues, and between the staff of the labs and the samples they analyse as well as with the equipment they use.

The transformation of blood from bodily substance into laboratory object apparently involves divesting it of the social qualities it carries. This might be one effect of the work that goes on in the labs. But for many reasons, as I show below, this divestment is at best unstable; the detachment of the personal or moral attributes of blood remains partial or provisional, and it is possible for such qualities to be reattributed or newly attributed through the engagements of social actors in the labs. In order to understand some the ways in which such reattributions may occur, it is necessary first to understand what kinds of spaces these laboratories constitute.

### **Biomedical spaces**

There are different ways of entering the blood banks and clinical pathology labs. Like many houses, they have more than one point of access - front doors and back doors as it were (see Carsten 1997: 33). And like houses too, which door one uses signifies. This is mainly a matter of distinguishing clearly areas to which members of the public are admitted from those reserved for staff who work in the labs and blood banks. One entrance might be reserved for patients having blood samples taken, another might be for blood donors. A different door (perhaps to the rear of the others) is only for staff. Visitors who belong to none of these categories seem to know which entrance is appropriate for their use. The entrances used by staff were clearly marked 'Staff only', or 'No

entrance, authorised personnel only'. Other working visitors might choose between the various possible entry points, but nurses and other familiar visitors to the lab would usually use the same entrance as the lab staff.

The connections between people, the spaces they inhabit, and the processes they engage in are, in one way or another, the subject of many ethnographic studies (Carsten and Hugh-Jones 1995). While I would not wish to exaggerate the 'house-like' attributes of clinical pathology labs, it is worth noting the resonances with domestic space because of their connotations and implications for social relations between staff, some of which I pursue here. There are of course many ways to approach these sites, just as there are different categories of people who do so. Patients and blood donors may have reasons to visit these locations, but their access is restricted to specific areas, and they are not permitted to wander freely in the labs. Then there are the occasional visitors: nurses from other parts of the hospital collecting bags of blood for transfusion; engineers from medical technology firms engaged in maintenance or repair work to the sophisticated diagnostic machinery; sales reps from such firms; computer support staff from inside the hospital, or from outside, who maintain the complex data information systems of the labs; despatch staff taking or delivering samples between different labs or between departments of the hospital; staff from the hospital stores delivering supplies, and hospital maintenance workers fixing problems with the air conditioning or other routine repairs. Some may pay more 'social' calls or combine a working reason with a more sociable visit. Former colleagues as well as staff from elsewhere in the hospital may also drop by on a friendly basis.

But the main inhabitants of the blood banks and clinical pathology labs are those who actually work there. They include the receptionists and clerical staff, cleaners, despatch staff, the lab manager, and most important of all, those responsible for running the many diagnostic tests in the labs as well as the day to day work of the blood banks - the medical lab technologists and lab technicians. Numerically and structurally, the medical lab technologists are at the centre of what goes on in these spaces.

The clinical pathology labs I observed were divided into departments for different kinds of tests: biochemistry, immunology, haematology, serology, urinalysis, bacteriology (or microbiology). Bigger sets of labs had more departments, for example, cytopathology and histopathology might be included. In most cases, these departments had two or perhaps three people working together in them. Although different departments occupied particular areas and had equipment (including some large pieces of diagnostic machinery) associated with their tests, the most striking feature of the spatial layout of these labs was that most departments were easily accessible to each other. The spaces were free-flowing, so that one could easily walk between them and see what was going on in different part of the labs. Since the same samples or equipment might be used for different tests, and colleagues might need to consult each other over specific results, accessibility was a necessary feature of the different departments. Of course, it also had social correlates. Colleagues could easily walk over to a different part of the lab for a quick chat when there was a lull in the work. They could also help each other out at times of high

pressure. People's work patterns were highly visible to their immediate colleagues and to the lab manager or others who were passing through. On the whole, these were spaces of quiet sociability and both the nature of the work and the layout favoured quite easy social interaction between colleagues working in the same or nearby departments.

While the main departments of the lab flowed into each other, and people worked at their benches, sinks, centrifuges, diagnostic machinery, microscopes, and computers for data entry that were set out in these spaces in quite close proximity, some areas were more self-contained than others. The microbiology (or bacteriology) departments were in separate rooms with their own fume cupboards, sinks, and refrigerators for storing Petri dishes in which bacteriological samples were being grown on agar jelly. The doors to these departments were, for health and safety reasons, supposed to be kept shut (practices were somewhat variable), but those who were working inside were visible from other areas of the lab through glassed windows or doors. The lab managers had their own office that opened onto the main areas of the labs, but the doors to these were normally open and often the lab manager would be elsewhere - taking blood from out-patients, working in one of the other departments of the lab, or sometimes at a management meeting in the hospital.

The blood banks came under the same management as the labs, and formed part of the same spatial units. They were partially self-contained spaces within the larger clinical pathology departments. The blood banks consisted of interconnecting areas - one with seats for the reception of donors, a space for

the screening of donors, and an area with several beds for donors who were giving blood. They had their own centrifuges, refrigerators and freezers for storing blood products, as well as other equipment, and a computer for recording data on donors. Usually, two or three of the lab staff were assigned to work in the blood bank. The blood banks had their own entrances for donors and other visitors leading to a reception area, but in smaller premises this might also be the main access for visitors to the labs. Open doorways (or sometimes closed doors) for staff but not for donors or patients led between the blood bank and the main departments of the lab.

The other large working area of the clinical pathology departments was an out-patients' section where patients referred by doctors from the hospital out-patient clinics for blood tests came to have their blood taken. The location of these varied depending on the availability of space. But like the blood banks, they were to some degree self-contained sections that communicated with the other parts of the labs. Staff could come and go easily between these areas but patients did not enter the main working areas of the lab. They reported to a reception desk where a receptionist would direct them to the rows of seats in the waiting area, and would be called forward by a member of staff. Medical lab technologists and lab technicians trained in phlebotomy took blood from patients in the phlebotomy area.

Apart from the main working areas of the labs, 'backroom' areas were used to house storerooms, cleaning rooms or areas, and toilets. There were also spaces for the use of staff when they were not on duty. These were clearly separated

from the main working areas, screened off at one end of the labs or in a space adjacent to the main labs. They housed tables and chairs for staff to eat and drink, a fridge for food, a kettle for making drinks, perhaps simple cooking facilities, a sink, and cupboard space or shelves where staff could keep their own mugs and plates. The facilities for staff might also include an on-call room with a bed and a small shower room so that staff could stay over night or rest in a lunch hour.

The existence of these zones of non-working space, which were partly necessary because food was not allowed in the workspaces of the lab, encouraged sociability between colleagues. While there were extremely busy periods of work (usually in the mornings), often the afternoons were relatively quiet, and there was time for a pause in work and for conversation between colleagues. The nature of the work of medical lab technologists, their specific training and expertise, the fact that the labs were spatially set off from other areas of the hospital, and had their own managers (who were in turn responsible to the hospital hierarchy) all tended to encourage a spirit of internal cohesion. There was an emphasis on team-work rather than on hierarchy based on seniority. The medical lab technologists took pride in doing their work well, which they articulated in terms of the speed and accuracy of their results, and had a strong sense of loyalty to their colleagues. They often spoke of the hospital management in somewhat wry or cynical terms, and were suspicious of attempts to increase their workloads or change their shift arrangements.

Although the labs were primarily working spaces, the rhythms of activity and the layout encouraged sociable exchange between those who worked there. Many of the lab staff had been employed there for several years or even several decades, and some had known each other from school or student days. Amongst those who knew each other less well, fleeting episodes of sociability, conversations, snacks and meals taken together could over time transform into last ties of friendship or kinship between colleagues. These patterns of sociability (which I do not have space here to describe more fully) had a recognisable Malaysian flavour, and also created a density of ties of kinship and friendship within and between the staff in different hospitals in Penang.

### **Extracting blood**

The ways in which sociability between colleagues left its mark on the work carried out in the labs, or attached itself to bodily samples as they made their way through the labs for analysis was rather less obvious than the evidence of sociability itself. We could begin to consider this matter by looking at the extraction of blood from patients both because this is generally the only contact between patients and lab staff, and because it marks the point when the sample is detached from the person in whom it originates.

Notes from my fieldwork are full of descriptions of 'blood-taking events' - some very brief, others longer and fuller, but none in themselves were quite satisfactory or complete. Each description captured part but not all of what had occurred in the space of just a few minutes. Encounters between patients and MLTs varied, as did the practices of individual MLTs and, since they worked

with different partners, the nature of these working relationships also marked how they carried out these tasks and their engagements with patients. In many cases, the medical lab technologist hardly engaged with patients at all beyond asking their names. And so, the taking of blood was often a ‘barely social’ encounter. From the MLTs’ point of view, it did not seem that chatting to or engaging with patients was required or even expected. One might contrast this with the normal behaviour of nurses towards patients. But levels of social engagement varied - and sometimes depended on the patients as much as or more than the medical lab technologists. Some patients would recognise a medical lab technologist from a previous encounter. The patient might have been in hospital for some time or had perhaps been in before, and would strike up a conversation, or would voice a preference for which medical lab technologist should take their blood (generally opting for the senior one, or the one whom they knew had taken blood before least painfully). It was also striking that some of the MLTs were distinctly more chatty than others, and more likely to engage with patients when they were taking their blood. In a few cases, the medical lab technologists showed that they knew quite a lot about a particular patient, his or her illness, and family life. Sometimes they checked on a patient’s progress - either by asking the nurses on the ward before leaving or by checking the hospital information system later from the lab computers.

Quite often, particular patients whom they had seen on the wards were discussed later among the MLTs in the labs. One morning, an elderly patient whose blood had been taken the previous day died on the wards. I was surprised at how much the two MLTs I spoke to knew about him. They were

able to tell me that the patient was an 88 year old man who they thought was from the UK. One of them explained that she had had to source rhesus negative blood for him on the previous day. He had had a stroke and multiple fractures, and had been living in a hotel for the last 12 years with no family, she said, and had been brought to the hospital by a friend. Another MLT went to find the urine test request form for the same patient, while another who joined the conversation mentioned that the lab would need to ask the hospital to cancel the charges as the test wouldn't now be run. By this time several MLTs were visibly upset, and this was compounded when they noticed a form in the blood bank from another hospital stating that one unit of O negative had been 'borrowed from [X hospital] to return 2 units O type whole blood.' The first MLT explained that this had been used on the previous day: 'I think [he had] internal bleeding.' Because of the nature of their work, as this example shows, more sociable exchanges with patients or knowledge about their backgrounds intermingled with items of medical knowledge.

There were differences too between how the MLTs took blood - for example, in how they observed hygiene procedures. Some always wore latex gloves on both hands when they took blood; others sometimes did, or usually wore gloves on one hand but not both. Some always washed their hands before leaving each ward. Sometimes this was done after taking blood from a particular patient. The variations were partly idiosyncratic, and the MLTs were not necessarily consistent in when and how they applied the standard procedures. Occasionally, it was obvious that they were being particularly careful - disposing of a tourniquet they had tied around a patient's arm as well

as their gloves, and washing their hands after taking blood from a particular patient. Usually, this was a patient whose blood was being tested for HIV. And once again, there might be discussion back in the labs that revealed how social understandings could become entangled with the process of getting lab results: Was the patient Indonesian? Did he have bruising or other marks on his skin? Was he good-looking? Did he seem young? These kinds of questions or comments, which suggested HIV status went together with other attributes, were likely to circulate in the lab together with a blood sample in a vacutainer with a red sticker to indicate that special caution should be observed. If the patient in question was female it seemed to be assumed that she had been infected by her husband. The questions then were more likely to concern her familial status, and comments of staff to indicate that they felt sorry for her.

When I asked different MLTs to talk me through what was involved in taking blood, I was interested to find that there were often quite small differences between them. Some of these were technical matters to do with accessing a vein, or avoiding getting an air bubble into the syringe. MLTs emphasised that competence in this part of their job involved a combination of skill, experience, and luck (see also Pfeffer and Laws 2006: 3015). There were some MLTs who took special pride in being able to take blood without causing the patients pain. It was indicative that when I asked different people in the labs about their techniques for taking blood, not only did variations between them emerge, but also their awareness of these was demonstrated in their frequent references to the preferred techniques of colleagues. And so, personal preferences and idiosyncracies, skill, experience and a little luck, as well as different degrees of

social engagement with patients, entered into this single routine procedure of the lab. We might say then that, in these various ways I have described, the samples that are obtained in these procedures are never fully detached but carry traces of social engagement with them as they make their way through the labs.

### **Samples, testing, and screening**

When I asked one of the lab managers for a list of the tests performed in the lab, he kindly printed one off for me - it covered 31 A4 pages with perhaps an average of 25 tests on each. Some of these came in groups or 'packages' for particular types of patients (those being tested for heart disease or diabetes, for example), or a category of corporate insurance cover which came with standard routine tests. Some were performed for many patients each day; some were requested relatively rarely. Different kinds of tests were automated to different degrees, and this partly depended on the lab size and level of equipment. The standard tests on blood chemistry and immunology were very highly automated with batches of Vacutainers arranged in racks to pass through a sophisticated blood analyser. Several hundred analyses of blood chemistry and immunology, which could test levels of, for example, blood sugar, cholesterol, different hormones, lipids, proteins, or enzymes, the presence or absence of drugs, or of specific cancer markers, as well as the screening of donated blood or that of patients for syphilis, Hepatitis A, B, and C antibodies, and HIV could be performed in a few hours. Other kinds of tests, such as, some immunological and other tests - those for dengue fever, lupus, lactose intolerance, or further confirmatory tests for HIV - were performed individually or in very small numbers by MLTs using kits that required careful

and precise measurement. On a few occasions I followed senior members of staff when they conducted less routine procedures: preparation of a sample for a fertility procedure such as IUI (intra uterine insemination), or genetic testing of tissue for breast cancer.

The blood counts for haemoglobin and different white and red cells, as well as platelets in the blood, and ESR (erythrocyte sedimentation rate) that were performed in the haematology departments were also performed in batches mechanically. But when the analyser showed abnormal results, further examination was conducted by staining and fixing a slide, which was then examined by the MLT under a microscope. Standard operating procedures were subject to change as new machinery or diagnostic tools became available. Blood grouping was done manually in both the labs I observed, but when I visited one lab after an absence of some months, a new machine had been acquired for blood grouping and cross-matching. Tests in the urinalysis and bacteriology departments required more manual intervention, and some of the analysis also involved visual examination - for example to report on the colour or cloudiness of urine, or checking cultures of bacterial growth in petri dishes. Some tests were newly introduced while I was in the labs and this might coincide with the introduction of new equipment or the arrival of a new consultant at the hospital who specialised in a particular branch of medicine.

Several of the older staff in the lab spontaneously spoke of how the work of the labs had altered during their employment through increasing technologisation. Some could remember when almost all tests were done manually and far fewer

tests were carried out in the labs - many were sent out – and this was part of the shared history of relations between colleagues. But it was clear from the work preferences of MLTs, that increasing automation was not necessarily seen as a good thing. Reducing their own intervention also made the work more routine. Several told me that they preferred working in the parts of the lab that were less automated, such as, microbiology, even though one might have expected growing bacterial cultures from stool, sputum, or other samples to be a less favoured work task. It was clear that, for most MLTs, the aspects of the work which gave satisfaction were those that involved making their own judgements based on experience and knowledge, especially when these led to a tricky or unexpected diagnosis.

The day to day maintenance of complex machinery took up a considerable amount of staff time. The more sophisticated and elaborate machines which were heavily used (such as the blood chemistry and immunology analysers) had daily maintenance programmes that were run early each morning.

Depending on how the work rotas of the lab were organised, this could mean staff on duty in that department having to come on duty an hour or more before their colleagues. Machinery was also liable to break down, and thus hold up the work of the lab and the reporting of results. Such events generated stress as doctors and nurses trying to chase results would soon start to phone the labs.

When new diagnostic machines were introduced in the labs, some MLTs were specifically trained in their routine maintenance, but engineers from the medical technology companies were also regular visitors to the labs and part of their extended social relations. On one occasion, when the main blood

chemistry and immunology analyser in one lab had broken down and the two MLTs who were most expert in its operation were absent, there was a certain amount of banter among colleagues, which I recorded in my notes:

Kamariah is trying to get recalcitrant Architect machine to work. She says 'Big brother not there; Mama not there' [referring to the members of staff who were normally responsible]. Shanthi comes to help but clearly it needs lots of coaxing. Kamariah says normally they start running at about 9.15 or 9.30, so by now it's getting a bit late. Later in the morning, Siu Meng also says 'Architect's mother not there'. Later she explains, 'Apparently, they filled the reagent bottles but didn't reset the machine. Now [it] won't work. Lots of tests [are] waiting.'<sup>2</sup>

Such humorous use of kin terms gives a flavour of the working atmosphere of the labs, and of the ways in which machines could be lightheartedly anthropomorphised. The humour turned in very Malaysian fashion on the particular kin relations imagined between the machines and their more senior relatives among the lab staff who operated them - a mother and a big brother. Kinship terms were also sometimes used between colleagues. One older male lab technician was referred to and addressed as 'Uncle' (in English) as a prefix to his name, and two of the MLTs who were married women with children was often addressed by name after a Malay kinship prefix, '*Mak*' or '*Kak*' (auntie or older sister), depending on who was speaking. The terms were partly ways of marking age or other difference when it did not necessarily correlate with seniority of position in the lab. Hierarchical relations could also be

humourously exaggerated by terms of address as a way of marking, but at the same time dissipating, their connotations - another familiar Malaysian device. One of the lab managers who was on good terms with his staff was thus sometimes addressed in a friendly joking way by the latter as 'Boss' (using the English term) or '*Towkay*', a Chinese term with wide resonance in Malaysia, which is usually used for a boss or middleman in more commercial contexts. But such humour also shows how it was possible to draw the inanimate equipment of the lab into the social world of the staff. This of course raises the question of whether something similar could also happen to samples or to the recorded information derived from them.

### **The label as mediating artefact**

Once they reached the lab, blood and other samples were literally disembodied substances. Blood samples were enclosed in sealed test tubes, 'Vacutainers' - a widely-used brand of test tubes with many different coloured stoppers to indicate which additives are present in the tubes for different kinds of laboratory analysis.<sup>3</sup> Urine and stool samples came in small, transparent, lidded plastic pots. All samples would first be labelled in the wards when MLTs took blood or when urine or other samples were given by patients or in the out-patients section. The labelling systems were the basis for recording test results manually or digitally. To outward appearances, the rows of identical-looking test tubes, with their sticky labels affixed, set out on racks on lab benches or arranged ready for the blood chemistry or immunology analyser in batches with the same coloured stoppers to indicate a particular kind of test, seemed more or less indistinguishable – except by looking closely at the labels which

had the patient's name and an individual barcode. A combination of manual and mechanized procedures were in use, but in the end results were recorded in the information system that was accessed from the computers in the lab. In the most obvious way, samples and recorded information could be seen as objects or as objectified information, divorced from the bodies or persons from which they were derived.

The idea of lab work producing masses of objectified data that were recorded in information systems was materialised in several ways. Samples labelled with bar codes going through various analysers in the lab might be one. Another was the lab statistics displayed on notice boards in the form of tables, graphs, or coloured pie charts to demonstrate monthly variation in numbers of tests carried out over the year by different departments, numbers of units of blood collected, numbers of reactive screening results for donors, units of different blood components supplied by the blood bank, or the year on year increases in numbers of tests carried out over a period of several years by the lab. These were important indicators of the productivity of staff, and essential tools in discussions with a hospital management that seemed always anxious to improve efficiency and increase profits derived from the lab.

But things were more complicated since, for obvious reasons, as they left the lab or even before this, test results or items of recorded information were reconnected to patients. And blood products too, stored in their sealed plastic bags and stacked on the shelves of the blood bank reffridgerators, might need to be traced back to their source. Labels can be seen as key to social engagements

because they mediated between detached samples or products as they moved through the lab or blood bank, and their sources of origin in particular people (see also Bowker and Starr 1999).

Just occasionally, a lapse in procedures meant that samples came to the lab unlabeled or wrongly labelled. Because the consequences were potentially very serious, lab staff took great care to avoid such mistakes. When one of the MLTs found a sample tube in a bag with no label on it, she explained to me that there was no way to know whether it was actually from the same patient designated on the request form that accompanied it. She told me they might have to call patient back, and both the doctor and the patient would be angry. On a different day, I observed as one of the MLTs phoned out-patients about blood that had been wrongly labelled. The phlebotomist hadn't checked the identity of the patient, and so would have to take the blood again. The MLT told me that she got very upset about this kind of thing because there was 'no need to make the patient suffer twice'. On another occasion, I found one of the MLTs working in urinalysis trying to sort out a stool sample that had not been bar coded. She told me it was 'probably because some people don't want to handle a stool sample jar'.

It was not just identifying information, or the test required that was indicated by labels. One morning while I accompanied her as she was collecting blood from patients on the wards, one of the MLTs showed me a red sticker on the request form to indicate an infectious disease. Sometimes they forget to put a red label on, she told me. Then, if the MLT needed to use a small needle to

take blood, she might not be wearing gloves. But they haven't had any serious accidents, she added. In this instance then, a label communicated special information about precautions to be observed - although all the lab staff were aware that, potentially, any sample might carry risks for the staff who handled them.

It would be impossible to give an exhaustive account of all the systems of labelling of blood samples and products here, but I want to highlight the quite elaborate procedures in place to ensure that, however disembodied or anonymous samples or blood components might appear, they remained connected to their particular source. This was of course necessary so that test results or screening procedures could eventually be reattached to patients or donors, or for the source of donated blood to be verified at any point from when it has been extracted to after it has been used in transfusion.

Disembodied samples moving through the lab in containers or bags of blood components, with their labels affixed to them, are thus a particular class of object - detached from persons but also indirectly attached or re-attachable. In outward form they might be almost indistinguishable from each other but they remain closely identifiable (unless a mix-up in the labeling procedures or recording of information disrupts these connections) and this opens up a space for the reattribution of personal or moral qualities. This suggests that we might modify or elaborate on Pfeffer and Laws' (2006) argument cited above that sample blood is perceived by medical and lab staff, as well as by patients, as a quite different kind of substance from blood in the body.<sup>4</sup> It also indicates that the world of the lab is not necessarily radically separated from the public

discourse in which Anwar Ibrahim's blood sample could be vaguely imputed to somehow have the power to reveal his moral status.

### **Getting results; pursuing information**

I have mentioned that when results were delayed (or even when they were not), it was usual for doctors or nurses to phone the lab to try to get lab results quickly over the phone. It was a simple matter for MLTs to go into the computer system using either the name of a patient or their hospital number and look up the results. This was part of the routine work that went on in the labs. That it might potentially be problematic was brought home to me one day when I witnessed a trainee pick up a phone that was ringing in the blood bank when no one from the permanent staff was available. When the MLT in charge of the blood bank returned to her post she immediately scolded the trainee. Telling him that he should not under any circumstances answer the phone, she explained that the person phoning would not necessarily realise that he was speaking to a trainee (phones in the lab were usually answered by giving the name of the department rather than the person speaking). If it was a doctor calling, or there was an emergency and instructions were rapidly conveyed without waiting for a response, the fact that a trainee was answering could lead to a misunderstanding with potentially serious consequences.

I have described how MLTs often knew quite a lot of information about patients from whom they had taken blood on the wards. And sometimes they checked on a particular patient's progress or history out of concern or just curiosity. Thus when I was invited to witness surgery, the MLTs in the lab

were able to tell me something about the patient beforehand, and how he progressed after surgery by checking the hospital information system connected to the lab computers. But it was not just in answer to queries from me that such information might be pursued. On one occasion, while I was observing some routine tests in the urinalysis department, the MLT working there expressed surprise as she was recording the negative results of a urine pregnancy test and noticed that the patient was 66 years old. Referring to the patient as 'Auntie, aged 66', she said that no other tests had been requested, and added that this didn't happen very often. This initiated some joking with the two trainees who were working with her. When they asked her what the result of the test was and she told them, one of them suggested perhaps the patient should try again. After scolding him for his levity, the MLT told the trainees that having many children could cause late menopause. I was impressed by the way in which, although none of those involved had actually met the patient, a quite detailed discussion with imagined scenarios had been extrapolated from a urine sample bottle and a request form. On the following day, I asked the MLT whether she had discovered anything further about the patient. She told me she had asked around, but that it had been quite difficult to find someone who knew anything. It had turned out that the patient was part of a new research treatment using heavy radiation. For this reason, she said, they had to do a pregnancy test and pap smear. She had found this out from a nurse on a third class ward, she added. But what was striking to me was the way that this MLT had of her own accord followed up her curiosity and had gone to considerable trouble out of interest derived from what she perceived as an anomaly on the request form.

There were many other instances when I heard lab staff speculate about particular patients or watched as they pursued test results on the lab computers. Tracking information in this way might sometimes be initiated by something unusual that had struck them on the request form or a test result, but it could also be a particular interest in a patient whom they had encountered on the wards or among the out-patients. Sometimes a desire to get to the bottom of something could also be instrumental in achieving a diagnostic result. When I asked MLTs about what gave them most satisfaction in their work, several mentioned cases of illness that had been particularly difficult to diagnose. In one such interview an MLT recounted a case from about two years before:

When I [did] my afternoon shift one time, had [a] child's test. [The] child was transferred from Alor Setar. Don't know [the] cause of high fever. [I] noticed a malarial parasite in blood. [I] checked red cells – haema slide. [I] informed [the] ward nurse. [The] doctor phoned back. [He] was very pleased to know cause. Called me, [to] ask for confirmation, quickly. [I] asked for other test – [can get] haemolysis with drug for malarial parasite. Some doctors [are] very ego[tistical] – [they] don't listen to MLTs. Next day, [he] came to lab. Normally consultants don't come to lab. [She explained that she was worried as to why he had come; she thought she might be in trouble.] [He brought] commendation letter – one for me, one for lab manager.

In this case, it seemed that the fact that the patient was a child who was seriously ill had heightened the MLT's desire to do her work as well as possible to achieve a rapid and accurate result. In this and many other instances, MLTs efforts to rehumanise their work by paying attention to the source of the blood sample contribute to their engagement and satisfaction, and also improve the quality of their work.<sup>5</sup>

Sometimes there was a more direct connection between the results that were being pursued and lab staff. Partly because family members of hospital employees were eligible for treatment at reduced costs, lab staff quite often ran tests on the samples of their relatives. In such cases, and particularly for elderly parents or grandparents, they would try to expedite matters as simply as possible. This could mean an MLT taking the sample at home before coming to work in order to save an elderly parent having to come to the out-patients department, or getting them registered early so that they would not have to spend too long waiting. Because, as I described above, many of the lab staff had worked together for a long time, they were often familiar with each other's family members, and would chat to them when they met them in the hospital or if they came to the labs. It was therefore not just one of the lab staff who might be aware of their own relative's blood or other sample being tested; this knowledge would usually be shared among quite a lot of people. In fact, it was because I was frequently told about somebody's mother or grandmother being unwell or coming for tests that I learned about these connections between colleagues. Staff would also help each other by looking up the results quickly. I became particularly aware of this when my daughter was sent for blood tests at

the hospital and, in order to reassure me that nothing was seriously amiss, the lab staff kindly looked up her results as they became available.

Blood tests and the screening of donated blood, as well as tests on other bodily material, might also be necessary for members of the lab staff themselves if they donated blood, when they were unwell, as a routine health test, or after an accident in the labs. This of course meant that colleagues could easily be in possession of confidential information about each other as well as about each other's family members. In my conversations with staff, I was told several times by MLTs of occasions when they had had an accident in the lab in the past that had required testing for infectious diseases. And there were of course cases of illness that were unrelated to work in the labs that arose while I was there. My sense was that staff accepted this level of shared information among their colleagues as an unavoidable feature of working life and a by-product of the relations they had with each other, and that this further strengthened their sense of loyalty to each other.

### **Qualities of blood**

Although I was intrigued by the question of whether patients or members of their families voiced preferences for receiving blood from particular sources, since I did not conduct research with patients, I did not directly pursue this question. I touch on these matters here only insofar as they affected lab staff. Blood bank staff did tell me about patients who had explicitly requested that they only receive the blood of family members. I was also told by one MLT about a patient who had actually spotted from the label on a blood bag that was

ready to be used for his transfusion that this was not the blood of the family member that had been donated specifically for his use. MLTs, however, were aware that blood from family members was not necessarily likely to be more safe than that of others. As one MLT told me, ‘the only really safe blood is your own’.

There were other accounts too which touched on the idea that specific qualities might be transferred with transfused blood. One MLT told me that patients sometimes commented on their skin getting darker after transfusion. She mentioned the case of a Chinese woman who was transfused after childbirth, and who had said the blood she received must have come from a Malay or Indian because her skin got darker after the transfusion. These ideas bring into play a highly sensitive discourse in Malaysia relating to inter-ethnic transfers of blood (or organs), specifically about whether Muslim patients are happy to receive blood from non-Muslim donors. In other words, it raises questions about the halal status of blood (see also Peletz 2002).

One member of the lab staff told me that some people requested family blood because they knew about the ‘window period’ when HIV infection couldn’t be detected by routine screening procedures. Some people prefer autologous transfusion, she said. She noted that Malays donated mainly to the public hospital, and less to private ones. They request Malay blood, she said, because of the prohibition on eating pork. The same MLT told me about a patient who had a low haemoglobin level. A family member had insisted on the patient getting Malay blood, and the patient had a rare blood group. ‘Very difficult’,

she commented, adding that ‘Chinese people mostly want family blood - fathers want sons’ blood’. As we spoke, I spotted a note above the reception desk in the blood bank concerning a patient for transfusion, which stated ‘to use own family blood’. But she was clearly uneasy discussing these matters: ‘especially about the Malay patient - very sensitive in Malaysia’.

It is indicative that preferences for blood from Malay donors were only ever alluded to in rather hushed tones and in a manner which made clear its sensitivity by staff of the blood banks and labs.<sup>6</sup> But here, as in other operations of the lab, we can perceive the different meanings of blood more or less visibly seeping into each other. And here I return to Anwar Ibrahim’s blood sample with which I began this essay. In that controversial and high profile case, the blood sample was apparently supposed to reveal whether Anwar had or had not had sex with one of his aides - in other words his moral status. The sample’s power resided in its capacity to verify a matter that was ultimately only knowable by the two protagonists. The potential instability of the meanings of this particular blood sample inhered in layers of history - not just a general history of the manner in which Malaysian politics had been conducted over several decades, but also a very particular history relating to Anwar’s previous arrest and imprisonment (and subsequent release) on the very same charge under the Mahathir government. While for the government it might be obvious that Anwar’s moral corruption would emerge in unanswerable terms from the analysis of a sample, for a substantial part of the Malaysian public, the story as presented simply lacked credibility. The blood

sample, in other words, might reveal truths quite unintended by the government.

Rather than clarifying Anwar's moral status, what emerged from this sample was the excess of meanings pertaining to blood, also demonstrated by other contributions to this volume, and the resultant impossibility of containing these within any of the fields of social relations in which they arose. The polyvalent meanings of blood itself, and the resonances between its material, medical, and moral connotations, readily become self-evident as they flow between the multiple fields and discourses in which blood participates.

### **Conclusion**

I began this paper with the iconicity of blood itself. Something about Anwar's blood sample, it was claimed, might encapsulate the truth about his moral character. The truth that would emerge was, however, left remarkably unspecified in these reports – it is not at all clear what could be ascertained through the sample or the tests to which it might be subjected. In the context of widespread incredulity, it seemed that the government sought to lend legitimacy to Anwar's surprising arrest through scientific tests. Or perhaps what was being sought was a vivid reminder to opponents of the government of Anwar's previous imprisonment under the same charge, and the power of the state that could be brought to bear.

The world of the clinical pathology labs where such samples are analysed seems a long way from the heightened rhetoric of Malaysian politics. To gain

some sense of how moral attributes may be attributed to or shed from a sample, and the multiplicity of layered resonances at play, I have paid close attention to the work surrounding blood and other bodily materials in the clinical pathology labs, and to conversations that accompany such work. Although the work of the lab mainly involves tasks that are standardised, mechanised, and routine, we have seen that there is also a space for variation, skill, experience, and luck. Social engagement can intervene in some of the least expected processes. Even the sophisticated medical technology that is used in the labs can sometimes be drawn into the sphere of social relations - vividly materialising Bruno Latour's (1993) notion of hybrids. And test tubes of samples or bags of blood components that seem outwardly indistinguishable necessarily retain connections to their sources in particular patients or donors. Here labels and forms have a special role to play in enabling these connections to be made. When a urine sample can trigger a possible story about an unknown 'sixty-six year old auntie', or when Vacutainers contain the blood of a relative, friend or colleague, we can see how attributes of social relations - along with their 'everyday truths' - permeate the space of the labs. The qualities that adhere to samples, or are newly attached to them, do so through the socially embedded engagements of staff, through the samples themselves and the connections the latter retain (or are perceived to retain) to the persons from whom they derive, and through the mediating objects of forms and labels that are attached to samples.

But why do these processes matter? What can they tell us about the properties of blood itself? The many possibilities that exist for inserting blood or other

tissues into discourses which are politically or morally charged are suggestive of the capacities these bodily materials have for metaphorical extension. Even when it is apparently detached from its source, and contained in sample tubes or blood bags, blood nevertheless retains a symbolic potential. Rather than closing off a field of 'objective' scientific investigation, the interventions of medical science embed samples in further networks of relations, apparently multiplying the capacities of blood for symbolic elaboration (see also Hugh-Jones 2011). Just as Anwar Ibrahim's blood sample was required in order to reveal his moral character, Thai demonstrators in 2010 co-opted the language of the blood donation campaign to express their political disaffection (see Introduction and Weston, this volume), while in India, as Copeman (2008; 2009) has shown, the continuities between blood donation and wider political and sacrificial meanings of blood suffuse the space of the blood donation camp. As the sites of scientific procedures and analysis, the spaces of blood donation or testing are required to be insulated from the kind of interests expressed in electoral politics. This is one import of the clearly marked boundaries of the lab that exclude members of the public. The notices on doors that state 'staff only' indicate that work undertaken within is isolated from possible interference. One might think of such marked boundaries as the material expression of the domaining that underwrites the integrity of scientific procedures.

That 'foreign experts' were invoked by politicians as necessary to uphold the trustworthiness of test results suggests, however, that such boundaries are difficult to safeguard. Anwar Ibrahim's reported resistance to supplying the

required blood sample was equally telling. One might conclude that the purpose of obtaining this sample had deliberately been left unclear to encourage different kinds of speculation about his moral probity. And this relates to the excess of meanings and associations of blood, which render its capacity to encapsulate the truth unstable and contested. Many different truths may be revealed by a blood sample, but these may go beyond the health, identity or moral status of the person from whom it derives. When the objectivity of scientific analysis cannot be guaranteed, or the safety of donated blood for transfusion is compromised, it is not only the health of individual patients that may be at risk. We have seen that the test result that lacks credibility has the potential to expose the vulnerability of the body politic - sometimes with dramatic consequences.

## REFERENCES

Bildhauer, B. 2006. *Medieval blood*. Cardiff: University of Wales Press.

Bowker, G.C. & S.L. Starr 1999. *Sorting things out: classification and its consequences*. Cambridge, Massachusetts: MIT Press.

Bynum, C.W. 2007. *Wonderful blood: theology and practice in Late Medieval Northern Germany and beyond*. Philadelphia, PA: University of Pennsylvania Press.

Carsten, J. 1997. *The heat of the hearth: the process of kinship in a Malay fishing community*. Oxford: Clarendon Press.

Carsten, J. & S. Hugh-Jones 1995. *About the house: Lévi-Strauss and beyond*. Cambridge: Cambridge University Press.

Copeman, J. 2008. Violence, non-violence, and blood donation in India. *Journal of the Royal Anthropological Institute* 14, 278-96.

Copeman, J. 2009. *Veins of devotion: blood donation and religious experience in India*. New Brunswick, NJ/London: Rutgers University Press.

Haraway, D.J. 1996. Universal donors in a vampire culture: it's all in the family: biological kinship categories in the twentieth century United States. In

Uncommon ground: rethinking the human place in nature (ed.) W. Cronon, pp. 321-66. New York/London: W.W. Norton & Co.

Latour, B.1993. We have never been modern. New York: Harvester Wheatsheaf.

Lederer S.E. 2008. Flesh and blood: organ transplantation and blood transfusion in twentieth-century America. Oxford/New York: Oxford University Press.

Peletz, M.G. 2002. Islamic modern: religious courts and cultural politics in Malaysia. Princeton, N.J/Oxford: Princeton University Press.

Pfeffer, N. & S. Laws 2006. 'It's only a blood test': what people know and think they know about venepuncture and blood. *Social Science and Medicine* 62, 3011-23.

Yanagisako, S. & C. Delaney 1995. Naturalizing power. In *Naturalizing power: essays in feminist cultural analysis* (eds.) S. Yanagisako & C. Delaney, pp. 1-22. New York and London: Routledge.

## NOTES

The research on which this paper is based was funded by a Leverhulme Major Research Fellowship and a British Academy Small Research Grant. I am very grateful to the Leverhulme Trust and to the British Academy for making this work possible, to the staff of the hospitals in Penang where this research was carried out, and to the participants at the workshop where this material was first presented, especially to Jacob Copeman and Sophie Day and to the anonymous readers for *JRAI* for their helpful comments on previous drafts. The names of all research participants and some identifying information have been changed to protect the confidentiality of participants.

---

<sup>1</sup> What was at stake here seems somewhat different from the use of DNA in paternity testing, which in France, India, and elsewhere has also jeopardized the moral standing of politicians.

<sup>2</sup> Direct quotations were noted down at the time. English was the *lingua franca* in the hospitals, and was spoken fluently by most members of the lab staff. I have tried to retain the characteristic rhythms and diction of Malaysian English, which tends to be somewhat staccato with articles often omitted and preponderant use of the present tense.

<sup>3</sup> For example, lavender capped tubes contain EDTA, a strong anticoagulant used in full blood counts; red topped tubes contain no additives and are used in antibody and drug tests.

<sup>4</sup> The difference between these studies may partly have to do with methodological differences. Pfeffer and Laws (2006: 3012-14) explain that they worked through interviews and focus groups as well as observation.

---

Whereas the data discussed in their article is mainly drawn from the interviews and focus group discussions, the data I collected in Malaysia relied heavily on the observation of staff in laboratory settings. However, Pfeffer and Laws also note how blood tests ‘can also provide incriminating information about people as moral agents’ (2006: 3015).

<sup>5</sup> I am grateful to Ian Harper for underlining this point, and suggesting the term ‘rehumanising’.

<sup>6</sup> The relevant Muslim authorities had made clear that, from an Islamic standpoint, there was no problem with such transfers.

#### **Note on Contributor**

Janet Carsten is Professor of Social and Cultural Anthropology at the University of Edinburgh. She is the author of *The Heat of the Hearth: Kinship and Community in a Malay Fishing Village* (Clarendon Press, 1997), *After Kinship* (Cambridge University Press, 2004); and editor of *Cultures of Relatedness: New Approaches to the Study of Kinship* (Cambridge University Press, 2000) and *Ghosts of Memory: Essays on Remembrance and Relatedness* (Blackwell, 2007).

Social Anthropology, School of Social and Political Science, University of Edinburgh, Chrystal Macmillan Building, 15a George Square, Edinburgh EH8 9LD, UK

J.Carsten@ed.ac.uk