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Research Ethics in Japanese Higher Education: Faculty Attitudes and Cultural Mediation

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Abstract Principles of research ethics, derived largely from Western philosophical thought, are spreading across the world of higher education. Since 2006 the Japanese Ministry of Education has required universities in Japan to establish codes of ethical conduct and ensure that procedures are in place to punish research misconduct. Drawing on semi-structured interviews with 13 academics in a research-intensive university in Japan, this paper considers how research ethics is interpreted in relation to their own practice. Interviewees articulated a range of ethical issues connected with data gathering and interpretation, applying for and using research funds, relationships with peers and research subjects, and the dissemination of results. The paper also explores the effect of personal values and cultural norms on the Japanese interpretation of research ethics identifying the impact in terms of the treatment of graduate research students and decision-making processes.

Keywords Research ethics, Personal values, Cultural mediation · Japan

Introduction

The history of modern research ethics may be traced back to the Nuremberg trials following the end of the Second World War. At the so called 'Doctor's trial', seven Nazi doctors were sentenced to death for the crimes they had committed in human experimentation on concentration camp inmates. Members of the German medical profession were also heavily involved in the implementation of Nazi race-based policies including forced sterilization of the disabled and involuntary euthanasia of people, such as those with Down's syndrome,

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deemed 'unworthy of living' (Ernst 2001). However, crimes against humanity in the name of medical research were not confined to the Nazis. Similar abuses were carried out by the Japanese imperial army both in occupied China and on some allied prisoners of war (McNeil 1993; Powell 2006). The 1948 Nuremberg Code, which resulted from the Doctor's trial, contained a set of ten ethical principles for future medical research experimentation including, *inter alia*, voluntary consent and the right of research subjects to withdraw permission, an assessment of humanitarian benefit, and adequate safety arrangements (Katz 1972). The Nuremberg code laid the groundwork for *The Declaration of Helsinki* which was adopted by the World Medical Council in 1964.

Despite the evolution of an international accord this did not end ethical abuses in research experimentation. The Tuskegee syphilis scandal was probably the most influential post-war scandal in the United States. This longitudinal study of syphilis among poor black males involved misleading participants as to the purpose of the study and subsequent denial of treatment decades after effective antibiotics had become available. The scandal which broke in 1972 led directly to US federal legislation for the protection of human subjects in research and to a National Commission which identified respect for persons, beneficence and justice as key principles for the ethical conduct of research (Reverby 2000).

Today, many universities in North America and Europe, as well as parts of Africa and Asia, have adopted the principles contained in the Belmont report and subsequently popularized through the work of Beauchamp and Childress (1979). These bioethical principles are now also evident in the requirements of research funding councils and other research sponsoring organizations. All academic researchers, regardless of their discipline, are now commonly required to demonstrate their adherence to university or other codes of research ethics that contain the principles of beneficence, non-malefecence, respect for persons (or autonomy) and justice (Beauchamp and Childress 1979). Collectively, these principles provide a strong emphasis on respecting the rights of the individual research subject. These principles have been shaped largely by Western philosophical thought, notably Kantian and utilitarian ethical theory emphasizing both the autonomy of the individual and the need to weigh up the risks and benefits of conducting research. The work of John Rawls (1971) has also been influential in the incorporation of notions of justice.

The Emergence of Research Ethics in Japan

Japan has one of the largest university systems in the world with over a 1,000 universities and colleges serving in excess of 2.5 million students. It has one of the highest participation rates in higher education in the world having expanded rapidly since the 1960s (Yamamoto 1995). Around three quarters are private universities some of which are among the most prestigious and well established in Japan. The oldest private institution, Keio university, dates back to 1858 (Amano and Poole 2005). Among the public universities, the most prestigious are the seven former imperial universities, all of which were founded before the outbreak of the Second World War. They are research-intensive institutions and also the most highly selective. Levels of government funding for science and technology research in Japanese national universities has increased in recent years and there is a strong bias in favour of research over teaching among Japanese academics. In an international survey, for example, almost 70% of Japanese professors indicated that they felt research was more important than teaching (Amano and Poole 2005). While the Ministry of Education has recently sought to encourage more autonomy in the higher education sector, it has traditionally played a strict supervisory role especially over Japanese national universities.

Pressure on Japanese universities to adopt policies on research ethics has been building in recent years. During the 1980s and 1990s, in common with the West, there was a growth in interest in biomedical ethics. As a result, according to Akabayashi and Slingsby (2003) there has been 'an importation of Western bioethical ethics' in Japan (p. 261). One of the key drivers for the development of research ethics in Japan has been a number of recent high profile scandals involving the fabrication of results and misuse of research funds. Three well known cases of scientific misconduct occurred in Japan in 2005 and 2006 (Rovner 2007). A University of Tokyo investigation into the work of a biochemistry professor which was published in leading international journals concluded that there was a lack of evidence that the experiments were conducted as claimed. A similar case at Osaka University led a school ethics committee to conclude that a bioscience professor had falsified research data against the wishes of co-authors. Finally, a chemistry professor at the private Waseda University was found to have used research funds for purposes other than those defined in the research contract. The incident at the University of Tokyo led to the dismissal of the professor leading the research team (although not the principal author of the publication). In 2006, the Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT) produced its own set of 'basic principles concerning research misconduct'. These principles were published during the period when some of these cases were coming to light. In addition to defining research misconduct, this document also indicates that 'further progress' needs to be made by Japanese universities in adopting regulations and responding appropriately to allegations of wrongdoing (MEXT 2006). Shortly after the MEXT guidelines were issued the Science Council of Japan (SCJ) produced a much awaited code of conduct for 'scientists'. The code is intended though to apply to academics working across all academic research fields (SCJ 2006). As well as outlining eight ethical principles the code also refers to 'the recent spate of misconduct by scientists taking place in Japan' (SCJ 2006, 1) and the dangers this poses to the integrity of science.

Japanese Culture

It has been suggested that there might be a disparity between behavioural norms in Japanese society and the general principles, imported from the West, which may now be found in codes of research ethics (Akabayashi and Slingsby 2003). While policies on research ethics have now been adopted in many Japanese universities over the last few years it is important to consider how these policies are mediated by Japanese culture and societal norms. Much has been written about Japanese culture. This literature often emphasizes the collectivist nature of Japanese society where, in contrast with Western cultural norms, the needs of the group are elevated above those of the individual. Human relations where status and rank must be carefully respected are derived from Confucianism, a moral tradition that is deeply ingrained in Japanese society (Klaus Luhner 1990). The impact of other Asian values connected with Confucianism include filial piety, avoiding loss of 'face', the use of shame as a means of discipline and control of 'correct' behaviour, individual self-control, and the avoidance of conflict.

This complex set of values may play a role in 'mediating' the way that Japanese academics approach ethical issues in research. Akabayashi and Slingsby (2003) give an example of the impact of Japanese culture in respect to organ donation. In the West, donor cards provide evidence of an individual's consent to donate their organs for human transplantation on their death. The importance of the family in Japanese society led to the

creation of donor cards that allowed the donor's family to withdraw permission. The importance of the family in Japanese society also affects the disclosure practices of doctors when treating patients with serious illnesses. The withholding of information from individuals about their medical condition is a well-established practice among Japanese doctors especially when patients have a poor prognosis or have a psychiatric illness (Powell 2006). The motivation behind non-disclosure again lies in what Fetters (1998) terms 'family autonomy'. Here, a patient's family may be informed of their condition rather than the individual respecting the role of the family in shielding a loved one from hurtful information.

These examples demonstrate that there is a difference between Western attitudes to the primacy of individual autonomy and Japanese norms which give a higher standing to the concerns of the family. This means that some form of cultural mediation is likely to be found in the recent importation of principles of research ethics derived from Western culture.

Methodological Considerations

The research took place during a 3 month visiting fellowship by the first author to a research-intensive Japanese former imperial university during 2008. The project was conducted in collaboration with the second author, a native Japanese speaker and University faculty member. In-depth, semi-structured interviews were carried out with 13 academics at a national research-intensive university. The interviewees represented a range of disciplines, ages and both male and female academics. Each interviewee was representative of a different cognate area with one each drawn from a wide range of different disciplines. They were mainly experienced full professors as well as some more junior ranking associate professors (equivalent to senior lecturers in a UK context). Reflecting the gender balance of the Japanese professoriate just two interviewees were women, one natural scientist and one social scientist. As the interviews were conducted in a single institution, reporting in this paper quotes interviewees by discipline group to ensure that their identity is fully protected (see Table 1).

The interviews were conducted in English although interviewees were provided with a schedule of 10 questions in advance including a Japanese translation of each question. Both authors were present at the interviews and, where necessary, the second author clarified key questions and terms with interviewees in Japanese.

Given the use of English as the interview medium and the presence of an English researcher in a Japanese university context particular attention was paid to the potential for cultural miscommunication. Some key words, such as 'integrity' or 'values', are difficult to translate from English into Japanese, for example. Moreover, seeking personal views on research ethics is a sensitive topic in any context and particularly in Japan where there is a culture of remaining silent before expressing a personal opinion that might contradict those

Table 1 Interviewees by discipline group ($n=13$)

	Discipline
Agriculture, chemistry, biology, mathematics, physics, medicine, environmental science (7)	Natural sciences
Philosophy, archaeology, literature (3)	Humanities
Psychology, education, economics (3)	Social sciences

of others present (Naotsuka and Sakamoto 1981). Studies have shown that the Japanese, along with the Chinese, tend to be more likely than many other cultural groups to avoid speaking about topics associated with familial relations (McHugh 1999). We encountered difficulty at times with a number of interviewees tending to 'talk around' rather than directly address the topic of research ethics. Hence, a lot of 'prompts' were used in the interviews to seek deeper and more personal clarification. Pilot interviews led to the refinement of the initial interview questions and the incorporation of a Japanese translation. It was also found necessary to extend the length of the 'warm up' period of the interview to ensure that interviewees were put at their ease.

While formal approval procedures were not required in undertaking the project, in accordance with standard research protocol, interviewees were provided with a written assurance with respect to confidentiality and anonymity. In analysis this was ensured through placing individuals in discipline groups as detailed above. Permission was also sought to digitally record each interview. Interviews were chosen as the best means of understanding the experiential accounts of academic researchers (Kvale 1996).The interview data were analysed through a careful reading of interview transcripts to identify common patterns and themes. It was necessary for the transcriptions to be read by more than one individual to ensure accuracy. While oral transcripts are often disjointed and inarticulate (Patton 1990) there were added challenges associated with the fact that interviewees were speaking in their second language.

Results and Analysis

Understanding of 'Research Ethics'

Many interviewees commented that research ethics is a relatively new concept in Japan and that for many of them this was the first occasion they had been asked to think about and reflect on such matters. There were just one or two exceptions to this attitude, such as a social scientist who was accustomed to approval procedures as a result of the code of practice operated by her discipline's professional association. Several interviewees made reference to well-known misconduct cases involving some of Japan's leading universities as having brought the issue of research ethics to their attention. Despite referring to these cases, few considered that such issues were currently treated as particularly important or were widely understood in the academic community.

It was also felt that research ethics was becoming more important in Japanese universities because of the 'changing climate' of the national universities which are increasingly being expected to take responsibility for their own activities by the Ministry of Education. Several interviewees referred to the increasingly competitive higher education environment in Japan. These comments correspond with the increasing de-regulation (known as *kisei kanwa*) of Japanese universities since the 1990s (Amano and Poole 2005).

> Basic science now is very competitive and so everybody needs a good paper to make a success and to obtain the academic position, so they are not patient, they are in a hurry to get a good result so some show the boss the fake result.
>
> (Natural Sciences professor 12)

Interviewees were asked to explain their own definition or understanding of research ethics. This question proved very difficult for interviewees. Responses emphasised the

central value of intellectual honesty, and forming relationships with others based on mutual respect:

> (you should)...try to be honest, try to be fair and respect the other people, other works which was done before and to be honest to your data
>
> (Natural Sciences professor 3)
>
> (being) honest to our own researches and honest to the teaching of students. No privileges, no discrimination, judging in a very right fashion..
>
> (Social Sciences professor 5)
>
> to respect the natural process and the natural phenomena and to respect the data
>
> (Natural Sciences professor 11)

These attitudes are explored in greater depth in relation to the interviewees own experiences as a researcher and in relation to their personal and cultural values.

Ethical Issues

Interviewees found it challenging to articulate ethical issues in their own research practice and often asked for clarification of this phrase. To help them do so they were encouraged to talk about their own personal experiences rather than recounting high profile cases of research fraud and misconduct in their discipline. Interviewees also tended to talk about the behaviour and misbehaviour of others rather than themselves. In articulating their own concerns they referred to a range of issues connected with data gathering and analysis, research grants, relationships with others such as human research subjects and graduate students in particular, and the dissemination of research results. These issues are collated in Table 2.

It is only possible to explore some of the issues raised in Table 2 within the length of this academic paper. A key concern was ensuring accuracy in data gathering and analysis. The reputation of a scientist stands or falls on whether their research is reproducible. If it is not they can be accused of academic fraud. It can be practically very demanding for a research leader to check every experiment but, according to most of our interviewees in the natural sciences, he or she must take responsibility for the veracity of the published data. Often interviewees referred to checking data produced by graduate students but this also sometimes extended to the work of junior colleagues. At the same time interviewees from a broad range of disciplines emphasised the importance of trusting the results of other researchers in their field.

> usually we trust other people working in the field, that is a premise for our discipline.. we must start from mutual respect
>
> (Humanities professor 4)

Sometimes, though, trusting a colleague had proven a mistake. One natural sciences professor (5) referred to an incident involving a grant application where one of the contributors had claimed, incorrectly, to have had a significant paper reporting a ‘major result’ accepted for publication in a ‘leading journal’. News reporters found out that, in fact, the paper had been rejected 7 years before the grant application. As the leader of the grant application, the interviewee had taken it on trust that his colleague had had the paper accepted. The case became ‘front page’ news and an ensuing university investigation followed. While the colleague had not lost his job as a result of the deception, the interviewee had had to deal with the resulting ‘mess’.

Table 2 Collated ethical issues

	Unethical behaviour	Ethical behaviour
Data gathering and analysis	Faking of results by others	Ensuring results are reproducible
	Obtaining samples without permission	
	Data trimming	
	Ignoring data outside of specialist interests	
Research funds	Making a fraudulent claim in a research grant application	
	Misuse of research funds	
Relationships with others	Mistreatment of graduate research students	Maintaining the anonymity of respondents
	Receiving gifts from research students	Maintaining an adequate 'distance' from human research subjects
		Trusting in theorems generated by others
		Trusting and/or checking data gathered and analysed by co-researchers and research students
		Distinguishing between one's own ideas and those of others
Dissemination of results	Publishing precipitately without making adequate checks on the accuracy of data	Determining authorship credit and priority
	Failing to publish data for the benefit of other scholars	Balancing the desire to publish with the need for secrecy in sponsored research

One of the other dangers and temptations of data analysis involved trimming or omitting data when conducting research. Several interviewees reflected on their personal experiences in this regard:

> ....some data might be against your expected result or by omitting some data you can have the significant statistical result and if you don't have any reason to omit this data it is falsification but you can come up with some reason if you think hard. That is where the borderline starts
>
> (Humanities professor 1)

> When one is recording microscopic images one can let's say change the contrast or rotate it, separate it or cut it but, ah…cutting to hide to cut the unimportant part which is not consistent to the theory. (Interviewer: 'But doesn't everyone trim the data? So when is it wrong?)…if the trimmed part is inconsistent to the theory. That's my point. I try to be honest (Interviewer: Would anyone know if you trimmed the data except you?) No, but maybe if other people do the same experiment they will find it so I think I should be honest.
>
> (Natural Sciences professor 3)

An issue for interviewees from a number of disciplines was the treatment of human research subjects. A social scientist (5) was particularly concerned about anonymity. Here, a questionnaire had not produced a sufficiently detailed level of information about the financial health of an organization. The researcher, wanted to follow up the questionnaires by asking the organization for more detailed financial information. However, on the advice of a respected member of the research team, it was decided that this would be a breach of

anonymity promised as part of the protocol of the original questionnaire. Another social scientist (8) highlighted a concern about research where a degree of 'deception' is used in an experiment in order to ensure that participants are not influenced by their own biases or presuppositions about a topic. While the true intention of such research will later be revealed, participants can sometimes react negatively to this information.

> So of course after (the experiment) we say 'sorry that's the true purpose' some participants feel really bad or feel really depressed....Of course we try to examine people's biases and some not very nice aspects of people's judgement. When our participants know they are making judgement...as very stereotypical or prejudicial. And they think of themselves they are not very nice as well. That's a really bad effect I think.
>
> (Social Sciences professor 8)

A more direct form of deception was a matter of concern for a natural scientist (11) who needed to access private land in order to take samples to test for its environmental condition. Sometimes the professor found it was necessary to take samples without permission and felt this was justified given that the location might be contaminated and could pollute water supplies raising an overriding public interest for such a deceptive practice. The interviewee wanted to make information about the contaminated site known but had been put under pressure by the government not to reveal this information. This person had ruled out informing the media partly because they felt they could not trust journalists in representing complex information. Another interviewee from the humanities (4) also spoke of the difficulties and dangers of communicating complex academic knowledge to the public who want an over-simplified version of the facts.

A number of interviewees reflected on their own, sometimes negative, experiences of being a research student and some of the things which had happened to them during this period of their life. One interviewee talked about being used by research professors when he was a research student as a siphon to recycle research funds through his bank account. This involved claiming money for work as a research assistant which he had not done and then returning most of the money to the professor in charge.

> Actually professors would want to hire me as a research assistant so that I had to work with him all the day long or some days in a week like typing or data processing. However, some professors didn't require me to do such things but they required me to just write down your name and the duration of your work even though I didn't work at all....based on the declaration they could get money from the company...firstly I could have the money from such institutions or companies to my bank account but after that professors would require me to draw the money and give it to them....
>
> (Social sciences professor 5)

Another interviewee from the Humanities (1) spoke of a practice of using money for research on conference attendance rather than the stated purpose of research. These types of actions appeared to be motivated by a need for more flexibility in the use of research funds rather than any actual attempt to defraud. The giving of gifts by research students to professors was also mentioned by a social scientist as a Japanese 'custom':

> Some students, maybe including me, believe that if they do not give the gift (i.e. to the professor) they would be discriminated against by us or some professors will give them the privileges. (Interviewer: Is it normal for graduate students to give their

professors gifts?) I think so, yes, in my experience. When I was in the graduate school I gave my supervisors gifts every summer and winter.

(Social sciences professor 5)

Despite this personal practice, the interviewees' own attitude was to reject all gifts from research students in order to avoid any implication that he might give these students particular privileges.

The harassment of graduate students by professors was mentioned by an interviewee from the social sciences (8) who stated that a small number 'treat students as slaves' as part of a 'culture that they can use students as their own labour'. She did add, nonetheless, that more attention was now paid to the harassment issue than 10 years ago but that once tenured Japanese professors are in a strong position to avoid censure.

And even when students have complained about the attitude of their professors, you know, we usually don't for instance say to that professor "OK you have to change your attitude to student" etc. We just keep quiet.

(Social Sciences professor 8)

The reporting of research findings raised a number of issues, in particular, the issue of academic credit for ideas. This related both to researching and writing up research and working as a research grants reviewer.

Sometimes professor name (comes first) as the first author but in practice the professor did not make any contribution in research but they are the manager of the team and they collect money for research activities and so they have right to register their name as the first author.....I read (research grant) proposals.... from time to time they may be very stimulating because sometimes they have new ideas, good ideas for research. Of course, I don't steal that but it is difficult for me to distinguish what I think and what I read.

(Social Sciences professor 2)

To some extent, issues connected with co-authorship credit need to be understood in the context of the discipline with practices varying between humanities and the natural sciences where larger research teams are often included in publication credits.

Several interviewees, mainly in the natural sciences, were concerned about publication of the results of research before adequate checks on the accuracy of findings had been carried out. By contrast, in the humanities field, a professor concerned with research into ancient civilisations considered that there was a duty for a researcher to publish their data rather than hoard the material for too long, effectively denying other researchers access to it in the process.

The duty is to publish the materials as fast as possible but sometimes people want to keep the relevant data for themselves and do not wish to be open.

(Humanities professor 4)

Some of the ethical issues are possibly too complex to be fully captured in Table 2. For one humanities professor (7), a conflict had arisen when researching an artistic movement. The members of the movement had co-operated with his requests for interviews and documents but had felt subsequently offended when his analysis included criticism of their movement. This was essentially a conflict between the desire to be respectful to human

research subjects and the importance of 'being critical' in telling the truth. The interviewee reflected that he had learnt a personal lesson from the episode and has subsequently sought to keep a 'good and adequate distance' from informants.

Finally, there were tensions, expressed by one natural scientist, between the interests of private sponsors of research concerned to exploit the commercial potential of science and the importance of publication to the academic.

> You have to keep the results secret until you take the permission from the company to report any results. (Q: In case they want to patent it?)Yes. Usually 6 months or 1 year. And sometimes the research is very competitive and then the other researchers publish like same results. (Q: So you've lost a publication?). Yes
>
> (Natural Sciences professor 10)

Personal and Cultural Values

Interviewees were asked what personal values they held which were important in relation to research ethics. The importance of intellectual honesty, truthfulness or 'faithfulness to science' was highlighted quite frequently and normally was explained as referring to correct and accurate citation practice or only publishing accurate data. When asked to give a brief summary of their own values or principles typical responses included the following:

> Pride, honesty and social responsibility
>
> (Humanities professor 1)
>
> Simply justice and fairness and free discussion
>
> (Humanities professor 5)
>
> I think the research ethics is based on the human relationship, that if you have a good human relationship there's no problem.....Good ethical behaviour? I think it's very simple—don't tell a lie....Never have any shame in front of the God. And then if you replace the God with science you'd say the same. Like, in front of science you have to have faithfulness....Yeah, it's not related to the religion actually but when you die, OK, when I die I would like to feel that I am a faithful person, a faithful scientist
>
> (Natural Sciences professor 10)

The overwhelming emphasis of responses was on honesty or truthfulness and the importance of good communication between researchers. A summary of the values expressed may be found in Fig. 1 (below)

In explaining their personal values and how these had an impact on their attitudes to research ethics, a number of interviewees referred to the importance of serving the 'community' or the notion of 'social responsibility'.

> ..if we don't put emphasis on research ethics we betray society...the very fact that this kind of trust and societal relationship comes first seems to be some kind of cultural difference...the basis of morality is to some extent in relationship to society and that is to some extent a non-Western way of thinking
>
> (Humanities professor 1)

Honesty/Truthfulness/Intellectual honesty
Good communication (with co-researchers)
Faithfulness to your discipline
Fairness
Justice
Respecting human research subjects and indigenous communities
Being intellectually critical
Freedom of expression
Trusting others
Social responsibility/serving the community
Pride
Working hard

Fig. 1 Personal values

> Every person has duties, obligations. We think the elder person should have much responsibility, much obligation. The other side, the younger person does not have much responsibilities compared to elder person, not much obligation. So they are very free so they should obey what elder person say.
>
> (Social Science professor 2)

The impact of *seken tei* may be defined as social appearances. The importance of maintaining good appearances in one's immediate community (*seken*) is very important in Japanese society as is the corresponding fear of 'losing face' or appearances (*tei*) of being a good person. Researchers should work hard and ensure that their actions demonstrate a proper respect for others they are working with. One interviewee mentioned, for example, the importance of punctuality in co-researchers (4). There was also an emphasis on trusting others and minding one's own business about the research (and integrity) of others.

> We like to have harmony in the group
>
> (Natural Sciences professor 9)

The importance of group harmony and trust has special resonance for professors from the pure and natural sciences where large research teams are the norm. Moreover, in this discipline context, graduate students tend to work more closely with professorial staff as co-researchers than in the social sciences or humanities. The social elements of group harmony were emphasised by one professor who spoke of going for beer and pizza and having organised skiing trips and other social activities for members of his research team. Another professor compared the more individualistic approach of researchers from his experience working in the UK to the greater emphasis on group and co-operative working in a Japanese research context.

> In your country, or in United States, I think you rely on the written contract, yeah, more rely on the written contract than in our country. I was surprised with looking at the document in Edinburgh. There were several projects there. I was working in the research unit of XXX Research Council and then there are many projects in that

institute and in each topic there was the percentage of the effort for each scientist. Like for this project you have 20% and I have 10% and the other person 5%.

(Natural Sciences professor 10)

While a similar requirement for the percentage of time and effort by each researcher was now required by the Japanese Ministry, the interviewee made it clear that these matters were still determined informally through discussion in the research group.

after the Ministry started that kind of percentage.....nothing change among the scientists, we all went discuss and then the order of the authors we decide by discussion.

(Natural Sciences professor 10)

Being able to trust that a co-researcher or graduate student has carried out an experiment accurately is all important in science research groups as highlighted in respect to ethical issues in general. One professor, in particular, emphasised that the professor can become too 'pushy' in demanding exciting results and graduate students can falsify data in an attempt to 'please' their professor as a result of this pressure. Other interviewees in the natural sciences stressed the importance of doing experiments several times to ensure that the results are not a fluke.

I....try to get one more and two more and if I cannot confirm the phenomena again I will give up to show the data. Only once is very dangerous to show

(Natural Sciences professor 11)

When we discuss research progress with lab. member I always request them to show the actual data, I mean the raw data such as the gels and the specimen, so I can see the actual data, we can avoid the misinterpretation or the fake data.

(Natural Sciences professor 12)

Another interviewee illustrated the problem of graduate students trying to prove that there is a relationship between two variables through a picture of a graph with a scatter of data points. Students, according to this interviewee, often seek to prove a simple linear relationship between variables when in fact there is a lot of scattered data. Sometimes this involves deleting data that does not fit a particular pattern.

A further issue with large research teams is who gets publication credit. In order to gain a PhD in several subject areas a student must have first authorship credit. Moreover, first authored publications are also key if a newly qualified PhD is to stand a chance of a post-doctoral fellowship, the conventional starting point for an academic career. One professor talked about how publication credit is determined in his research group in the following terms:

There are so many factors you have to think about like the future of the student, the way each student will take....this student will get a job in the pharmaceutical company or the university faculty staff....some student will get the job in the area of research. So for the PhD student the publication is extremely important for their future but the student who gets the job in the company it's not very, very important.

(Natural Sciences professor 10)

Avoiding 'losing face' may have other implications for research and research ethics in a Japanese context in respect to the academic value of 'criticism'. Here, one interviewee in

particular, made reference to the way that criticism is not part of one's normal filial relations and that this has a knock-on effect in the research arena

> Japanese people hate to criticise other people, this is Japanese traditional habit I think and in the academic field this is also the tendency....And especially the pupil cannot criticise their teacher or the colleague.
>
> (Humanities professor 7)

Reluctance to criticise may have implications in relation to research ethics especially where researchers are working as part of a team. It may act as a block on academic criticism in some contexts especially where researchers are working, as is common practice, in teams with varying levels of seniority. A different humanities professor (4) spoke about the passive nature of Japanese graduate students compared to their Western counterparts.

> When graduate students from other countries join our team (on a field trip) they always make us questions like "How should I do it? What is this?" but such kind of questions we seldom have from Japanese students. They keep silent until we explain them to them.....they are passive in doing their research.... They are always waiting for the instruction from the professors
>
> (Humanities professor 4)

Comments on the culture pervading the supervision of graduate research students indicate that the relationship is possibly more akin to a 'master–pupil' relationship than might be expected or (accepted) in a Western context. It was also suggested that professors in a Western context expect students to take more individual responsibility for themselves. One natural scientist gave an example of a research trip to the Antarctic from December to January and how the professors from New Zealand went home for Christmas leaving their graduate students to cope alone. When she asked them who would have responsibility for their students whilst they were gone she was surprised by their response.

> Antarctica is a special place, and sometimes dangerous but they go...who has responsibility for the student during their absence?.....they said "oh each student has responsibility because they are adults" In Japan if I go with my student to some dangerous place I think I have a responsibility for them but they don't think so, I was so surprised.
>
> (Natural Sciences professor 11)

Learning About and Teaching Research Ethics

The final section of the interviews was devoted to establishing how interviewees had themselves learnt about research ethics and in their attitudes to teaching their own research students. Research supervisors were regarded by most interviewees as their main source for informal learning about research ethics and many referred to the way that they had been influenced, normally for the 'good', by their own doctoral supervisor. One interviewee also spoke about how he had learnt from the 'bad' example of his professor when he was working as a young researcher and ensured that he always checked data from graduate students.

> I experienced serious ethical issues when I was studying in the United States about 20 years ago. My boss in the United States was criticised by the competitors when he faked it, the data. So the competitor sent a letter to the editor of the major journals such as *Nature*, *Science*, *Cell* and *PNS* not to accept the submitted paper from my boss's lab. because he always faked the data....(the) Institute organise(d) a fact finding committee and investigated experiment and committee member came to lab. and repeated the experiment independently....His career was seriously damaged so finally he had to leave the XXX School and move to XXX University. So I learned a lot of things from that experience. He did not check the raw data.
>
> (Natural Sciences professor 12)

While none of the interviewees had experienced any formal research ethics training, supervisors had been important role models in shaping attitudes. Research ethics was not part of the formal curriculum for graduate students although one professor from the natural sciences referred to a seminar series offered by the department which included guest lectures on the theme. A different natural sciences professor expressed the view that he did not feel qualified to teach students about research ethics as it was not his specialist area suggesting that someone from a background in law might be more appropriate.

> Recently there are many big news about fabrication at (names of universities mentioned) so maybe research training is, er, getting important.
>
> (Natural Sciences professor 3)

Most interviewees felt that research ethics would be a useful addition to the development of graduate research students partly in response to the greater attention such matters are now receiving. There are barriers though to such aspirations. The general consensus among interviewees was that they did not either have the time or the expertise to contribute to such a programme themselves.

Conclusion

Research ethics is still a comparatively new topic for Japanese universities which has risen up the political agenda in recent years following a series of scandals. While the theory and policy implications of research ethics may be new, the interview data illustrates that research professors in Japan face difficult ethical issues as a day-to-day reality. Few of these issues are unique to a Japanese context but there are indications that Japanese cultural norms do influence the handling of some of these scenarios. This paper provides some empirical evidence of differences in the behavioural norms suggested by Akabayashi and Slingsby (2003) although it is acknowledged that this paper reports the outcomes of a small set of interviews in a single institution. The importance of duty and respect in Japanese society mean that professors are treated with greater deference and there is also a more paternalistic relationship with graduate research students than in a Western context. There is an emphasis on collective responsibility in research teams and on resolving issues for the benefit of the group rather than the individual. While it is likely that Western style codes of research conduct will be more widely introduced over the next few years this will not alter the mediation of these principles in practice.

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