Editorial: In memory of Sahin Aksoy and Asian Bioethics

We were very sad to miss our dear friend, and a founding member of the Asian Bioethics Association Board as the first Vice President for West Asia, Dr. Sahin Aksoy, who passed away with his family around him of pancreatic cancer this year. The first paper in this issue is an obituary to Sahin written by the former EJAIB associated editor, Dr. Yeruham Leavitt. We welcome Yeruham back to the pages of EJAIB and to the Eubios community. In the September issue, which is the abstracts of the 13th Asian Bioethics Conference, is the full memorial lecture that is being delivered by Prof. Umar Jenie, of Indonesia. We all have expressed our deepest condolences to Dr. Nurten Aksoy, his wife, and also a founding member of the Asian Bioethics Association, and their twins.

Readers who are not aware of the work of Sahin, can google his work, or search www.eubios.info for some of his numerous papers and book chapters.

Sahin first came to Japan in 1997 to the Asian Bioethics Conference in Kobe, and that Tsukuba International Bioethics Roundtable that I organized. He came to a number of the Tsukuba Roundtables, always willing to help as well as share his views on bioethics in depth. He would have approved of the first paper by Kouy Bunrong, who presented data exploring the views on abortion and sex selection in Cambodia. Sahin explored such difficult issues as the status of the human embryo and abortion, offering insights that have influenced not only Islamic bioethics but Asian and International reflection on these issues.

Other papers in this issue include medical ethics of prognostication, information ethics in Cloud computing, and environmental ethics. Verma offers a commentary of Iftime’s paper in the May 2012 issue.

For those who have access to iTunes store you can download for free a new iBook, “Bioethics across cultures”, which is free to download as an iBook from iTunes in all countries which Apple has launched iBooks. This opens up an audience of over one billion persons, and this is rapidly expanding. The days of printed books are rapidly disappearing. The book features photos, videos, interactive activities and other features that can make bioethics open to all those who have the tablet computer (currently designed for iPad). A pdf file version without the interactive features is 40Mb and is available. The earlier version of this book is Cross Cultural Introduction to Bioethics, still online.

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I was shocked to hear, a few weeks ago, from Darryl, that Sahin was in his final illness. When Darryl wrote me again to tell me that Sahin had passed away, I was of course not surprised but it was no less of a shock. Sahin and I had not got along in recent years. Our friendship was quite good until our (Israel’s) war in Gaza. We argued quite harshly over the war. In my humble opinion, with which some will perhaps disagree, this does not mean that one of us was a good guy, and the other a bad guy. Indeed I think that part of being a good person is being loyal to one’s country and religion. Sahin believed in the Koran and I believe in the Torah of Israel. I cannot blame Sahin for believing in the Koran. I of course cannot speak for him and have no way any more to ask his opinion, but I trust he does not blame me for believing in the Torah. Each of us did what he had to do. We argued. This lead to our breaking off our friendship. Too bad. But these things happen.

There were better times. At my first bioethics conference, in Fukui and Tsukuba in 1993, someone, I believe it was Michael Yesley, asked me: “What would you do if there were a Palestinian at this conference?” I replied that we would go off together to search for edible food.

Michael’s question turned out to be prophetic, except for the fact that Sahin was Turkish. If my memory does not deceive me, I met Sahin for the first time, in 1997, at the Asian Bioethics Conference in Kobe. We immediately paired up and went out looking for edible food. The dietary laws of the Torah and of the Koran are not identical. The Koran does not forbid rabbit and camel, for example, while the Torah forbids them. But there is a large variety of foods which we both can eat. And more importantly, we understand each other’s needs. Although Hindus and Buddhists understand dietary restrictions, people from religions, which have no dietary restrictions, can find us both a bit peculiar. So Sahin and I went out food hunting in Kobe. If I remember correctly, we found bread, bananas and hard-boiled eggs and we sat on the kerbstone to enjoy our feast. All fruits and vegetables are all right for both of us (with a few exceptions for Jews, such as produce grown in the Land of Israel during a year when the Torah requires us to give the Land a rest.) Chicken eggs are also all right for both of us unless they are fried or cooked with the meat or fat of a forbidden animal. Hard-boiled eggs present no such problem for either of us.

I have been discussing religious dietary rules because they symbolize for me the sorts of things, which bring followers of the Torah, and followers of the Koran together in spite of hundreds of years of violence between us. Maimonides explained that the Torah gave us dietary restrictions in order to teach us to control our appetites. I never managed to ask Sahin what explicators of the Koran say about this matter. But I think he would have agreed with me that there is beauty in simplicity. I think we both enjoyed our feast of bread, bananas and hard boiled eggs as much or more than we would have enjoyed stuffing ourselves on overpriced food in some fancy restaurant.

It was at the same Kobe conference that we founded the Asian Bioethics Association. It seems on the face of it a crazy idea that with all our wars, terror, and whatever, all of us from Israel and Turkey to Japan and everything in between should have enough in common, that we can engage in a unique and fruitful bioethical dialogue. I still believe this and I think Sahin did as well.

Sahin and I were the most active members from West Asia. When Sahin and Nurten were in Israel for a religious conference in Haifa, he and Nurten came to our place in Kiriat Arba, Hebron, from whence we could walk to some of the holiest places in Israel, like the Cave of the Fathers and Mothers. I was delighted to invite him to the university in Beer Sheva to speak on bioethics according to the Koran. For years I had tried to find an Arab or a Bedouin in Israel who could speak knowledgeably about bioethics according to their religion. I never succeeded in finding anyone really learned. This is too bad. Our teaching hospital, Soroka Medical Centre, the second largest hospital in Israel, has a large Bedouin patient population. The majority of patients in the obstetrics and the infants’ wards are Bedouin.

Good medicine requires communication. This means that the staff should have a reasonable understanding of the cultural needs of the patients. But I never found anyone who knew enough to help our future physicians, nurses, etc. to gain something of this understanding with respect to our Bedouin patients. I have tried to encourage Bedouin and Arab students to take a deep interest in this matter. Perhaps it is early to see results. Sahin was the first bioethicist I ever met who had a deep, scholarly understanding of bioethics according to the Koran. His lecture in Beer Sheva was enlightening not only for me but for quite a number of physicians and nurses who work with Bedouin patients. Too bad I couldn’t get him to stay and teach bioethics in Israel. I also miss the Turkish coffee, which he and Nurten prepared in our kitchen.

Some years later Sahin invited me to a conference in his home town of Sanliurfa, in Eastern Turkey. Sahin kindly explained to me that the name “Sanliurfa” is composed of two roots, “Sanli” meaning “respected” and “Urfa”, which many Turks believe refers to Abraham’s original home, Ur, which is called in Hebrew, Ur Kasdim, and which people in the West call, Ur of the Chaldeans. Sahin kindly arranged a tour to the archaeological dig at Haran, which many people believe to be the place, mentioned in the Torah, where Abraham stayed after leaving Ur and before coming to the Land of Israel. Sahin’s conference was one of the most graciously hosted conferences I have ever attended. Sahin and Nurten were among the most gracious hosts I have met. Not only did Sahin arrange these important tours, he made sure that my dietary needs were met by sumptuous vegetarian dishes. Sahin was a deeply religious believer in the Koran. But unlike many, perhaps the majority of, deeply religious people, Sahin equally deeply respected other religions. I think this is the main point: believe in your own religion and respect others. His depth and toleration should be examples for all bioethicists.

I would like to draw a few more lessons for bioethics from the difficult experience of Sahin’s death. It is easy to
carry on bioethical discussions about the abstract and nameless “terminal patient”. It is harder but not extremely difficult to carry on such a discussion when one, unlike me, is a clinical doctor or nurse. The doctors have their “detached concern”, which can make things easier. But when one knows the patient, not as a patient or as an example in a professional article, but personally, and perhaps especially when one has had mixed feelings about the patient – I respected him but we argued and ended our friendship – the detachment does not come.

This experience has lead me to think more seriously about death than I had in the past. I have often taught doctors and nurses and their students that the most important thing in caring for the patient who is about to die is humility. In deciding whether to continue or to stop life-sustaining care, we need the humility to accept that if we let them die, we haven't the slightest idea where and to what we are sending them. We have no end of theories about oblivion or heaven or hell or rebirth. But we have no way whatever to know which, if any, of these theories is correct. The truth might lie so far from our current understanding that we wouldn't recognize it if we saw it. But in teaching that we need this humility to care for the patient who is about to die, I do not know whether I ever really had this humility myself, or whether my discussions have been facile logical argumentation. If I haven't been really humble I hope I can learn how.

A misunderstanding suggested that the people in Sanlurfa had started to prepare Sahin’s grave while he was still alive. I had never heard of such a thing, I don't think it could possibly happen in Israel. When someone is still alive, no matter how bad the situation, we don’t give up hope. Of course we do have doctors who will give various forms of euthanasia. A high dose of morphine is perhaps the easiest and the most legally defensible way. But I cannot imagine relatives treating a patient as dead while he is still alive. I know about the “Pittsburgh Protocol” but I don’t like it. As for the rumour, I was relieved when I learned in the end that it was not true from Nurten. The fact that I, usually a sceptical person, had accepted it at face value and mentioned it in the first draft of this obituary, has taught me, I hope, to be doubly careful in accepting and quoting things which I read or hear. We were all so upset to hear of Sahin’s passing.

Not only had I been out of contact with Sahin for some years, I was also out of contact with Darryl. We had also quarrelled. It was therefore a great surprise for me to see an email from him, when he wrote to tell me the sad news. I highly respect Darryl for rising above our differences at this sad time. Some people believe that the deaths of certain people can have mysterious effects on our lives. Perhaps Sahin had something active to do with initiating the renewal of contact between Darryl and me. But this is only a guess. We cannot really know anything about what, if anything goes on in other worlds. Only the revealed things are for us. The secret things are for God (Deuteronomy XXIX, 28).

Goodbye, Sahin. I forgive you for everything you said which offended me. I ask you to forgive me as well.

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Views on Abortion and Sex Selection in Phnom Penh, Cambodia

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Abstract

This present paper sought to discover the ethical perspectives of Cambodian urban population and medical practitioners on sex selection issue. The aims are to discover whether there is sex selective abortion ever practiced in the country and to inspect the reasons hidden behind the decision of abortion practice in the country. This study employs the use of questionnaire for seventy-nine people from eight districts in Phnom Penh, the capital city of Cambodia. Moreover, two health professionals were interviewed to explore a clearer aspect in term of sex selection notion in the hospital. The finding demonstrates that Cambodia did not have tendency towards the practice of sex selection yet. Nevertheless, sex-selective abortion was indicated to happen if parents already have one or more children on particular gender. Public opinions on gender preference and other medical, historical, religious and socio-economical parameters are discussed.

1. Introduction

“It is a girl!” This sentence could be a positive or a negative acclamation. According to reports from All Girls Allowed Organization,1 this is a provocative gender biased sentence linked to deaths of uncountable baby girls across the world. The desire to have a child of particular sex can be traced back through centuries. Kings were desperate to have a son to be heir to his throne. Peasants desire sons to help them with agricultural work. All of these apparent preferences can compound to create stereotypes of gender discrimination. With the advancement of technology such as Assisted Reproduction Technologies (ART), sex selection at embryo or fetal stage is possible through preimplantation diagnosis or abortion. Many persons in China and India practice female infanticide (a type of gendericide) as well as abuse or neglect of female babies.

This paper will focus on selection of the gender of the fetus according to parents’ desires, so-called sex selection. Sex selection embraces attempts to choose or influence the sex of a child before and during pregnancy and after birth (Toebes, 2008). Sex selection could be considered as one form of gender-based violence since it deprives the rights to live and other requisites to the life of females compared to males.

Sex selective abortions have been classically performed in prenatal diagnosis for medical reasons. For instance, when a mother who carries a sex-liked disease like hemophilia conceives a fetus, then sex selection followed by selective abortion may be legally granted in

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1 Retrieved on May 1, 2012 from http://www.allgirlsallowed.org/gendercide-video-2-minutes
countries which permit abortion (Aghajanova & Valdes, 2012). On the other hand, there are two situations for an individual to consider choices of sex selection regardless of sex-linked genetic disease (Macer, 2000, p.113). The first situation is when a family has a preference for the sex of the next child, for example, if the sex is different to the sex of already born children. The other reason might be linked to social and cultural reasons, which leads to gender inequality and feminicide is tolerated.

There has been research conducted on sex selection from different domains. The ethics of sex selection are still being debated after decades of controversy. The underlying difficulties concerned with the status of embryo and the possible social consequences of sex selection (Grant, 2006, p.1659). Issues such as the extent to which an embryo should be considered as human, or the likelihood of a social imbalanced sex ratio between the two genders, male and female, at the time of reproductive maturity arose and there are widely different viewpoints. Some research studies sought to legalize sex selection (McCarthy, 2001). Some examined the case of sex selection under the international human rights laws and various national legal schemes (Toebes, 2008). Most research studied the ethical concerns and manners towards sex selection in various countries (Dickens, 2002; McDougall, 2004; Akchurin & Kartzke, n.d; Liao, 2005).

This paper studied the sex selection issue in Cambodia. It aims to understand the perceptions of parents (and potential parents-to-be) regarding their ethics toward the practice of sex selection which leads to the gender-driven abortion or female (and male) infanticide by cross checking with the perspectives of experts in the medical field. More importantly, this study intends to explore reasons associated with feminicide in Cambodian society (if any), specifically in the eight districts of the city, Phnom Penh, by examining people’s attitudes to these issues, the biological and social aspects of gender, methods of sex selection, and socio-economical parameters.

2. History, Tradition and Myths about Sex Selection

Sex selection is not a recent concept; it emerged and developed a long time ago with deep historical roots. As early as 330B.C, there was a practice held by Aristotle. He had a formula that making love in the north wind would conceive a male child and in the south wind, a girl. Likewise, Hippocrates had his own prescription. It is said to tie a string around the right testicle to stimulate the production of male seed, or on the left, if a daughter is sought. The Greeks believed that the male determining sperm were derived from the right testicle (Liao, 2005). In similar sense, medieval alchemists had an even more exotic recipe for a son: a precoital drink of lion’s blood is prescribed (Wallis & Pelton, 1984). 4000 years ago, the Egyptians believed that women of a “greenish” cast of complexion were “certain to have boys” (Markle, 1971). Likewise, Dickens (2002, p.335) introduced a Jewish text, “The Babylonian Talmud” which was completed towards the end of the fifth century A.D. It advises couples on means to favour the birth of either a male or female child. The Jewish people further held a belief that women has to emit her semen before the man if one wants the child to be a boy or else it will be girl. Some others said that food with high sodium and potassium such as bananas, cherries, grapes, oranges, peaches, melons, broad beans, sprouts, tomatoes, or sweet corn are diets to increase the chances of a male fetus (Liao, 2005, p.116).

It is universally known that Chinese are famous for eagerly longing for a baby boy to continue the family line. In the 13th century, the Chinese used a “conception chart” or “gender chart” to predict the fetus gender by cross-referencing the age of the mother at the time of conception with the month the baby was conceived. For example, if the mother was 22 years old at the time of conception and the baby was conceived in April, the chart predicts the baby will be a baby girl (See Table in the Appendix 1). This chart was discovered in a royal tomb over 700 years ago (Chinese Birth Chart Organization, n.d). Over the course of human history, the gender of a newborn baby has mostly been a surprise and despite the beliefs discussed above, mostly is an uncontrollable aspect of the life cycle. Nevertheless, there are beliefs attached with meanings of a baby boy or a baby girl. In Neo-Confucian inspired sayings, there are plenty of mottos posting the burden on women’s reproduction such as “women’s greatest duty is to produce a son”, and “There are three non filial acts: the greatest of these is the failure to produce sons.”

In “The Good Earth”, an English novel written by Pearl S. Buck (1931), the author portrays how Chinese couples would anxiously look forward to the arrival of the new baby. Meanwhile, Pearl reveals how the superstitious belief of giving birth to a male or female baby affected the family living conditions and reaction from the whole village. She described the situation as: “[...] Wang Lung (the male protagonist) and O-lan (the female protagonist) cultivate a bountiful and profitable harvest from their land, O-lan becomes pregnant, and Wang Lung is overjoyed when O-lan’s first child is a son. [...] After O-lan gives birth to a daughter, a terrible famine settles on the land. In the midst of this crisis, O-lan gives birth to another daughter. [...]” (SparkNotes Editors, 2003)

In pre-Islamic Arabia, sex selection was an emotive subject in the Qur’an. One belief is that the father will become despondent when a daughter was born to him (Haleem, 1993, p.9). There is a practice that some daughters were buried alive by their father. Some Bedouin women wrote poems, lamenting their treatment by such husbands.

A symposium of Muslim scholars discussed the questions of choosing the sex of the child whether Muslim parents could take advantage from the advancement of modern technology and whether this goes against the will the God. The conclusion is that everything done by modern medicine is in the power and will of God and within the framework of laws and causes that God created in nature.

For Islam, the vital date of 120 days has been seen as the beginning of obvious life being breathed into the fetus. Therefore, abortion from that time onwards is...
prohibited for two reasons. Firstly, it is an aggression against a “living being”. Secondly, it entails the “obligation of payment of compensation” to the full recognized extent in Islamic law if the fetus is aborted alive. If the fetus is aborted dead, the compensation is less. Nonetheless, if the continuation of pregnancy beyond 120 days would inevitably lead to the death of a mother, then abortion becomes an “obligation”. Theoretically, mother is considered as more important because she is the “originator of the fetus” (p.12). Her life is already well established with social rights and obligations.

Not to mention that a fetus in Islam has a legal identity, which is separate from that of its mother. Therefore, if the pregnancy causes no threat to the life of a mother, neither the parents nor a third person, from 120 days onwards, has the right to bring about abortion (p.13). If these individuals insist to do, they ought to face the religious responsibility as well as financial responsibility for the compensation according to Islamic norms as well as the social legal liability.

As shown, sex selection existed in pre-Islamic Arabia. As time goes by, the Islamic teaching, norms, and legal liability in the current state encourage no gender discrimination, at least at the point of birth.

In Cambodia, there has been a traditional practice and belief during childbearing to predict the gender of the fetus. There are sayings passing from generation to generation that during the conceiving period, if a mother tends to be fresh, joyful and beautiful, then she is highly likely to conceive a baby girl. In contrast, if the mother easily turns upset, then the fetus is a baby boy. There is another longstanding belief. If people long to know the gender of the fetus, it is advisable to call the woman while she is walking. If she turns her face on the right, then the fetus is a girl. In contrast, a baby boy is predicted if the woman turns her face on the right. Besides these practices, there seems to have no mention about how to conceive a son or a daughter.

The phenomenon of sex-selective abortion could be discussed through case studies in many countries particularly China and India, the two most populous states. These patriarchal-based counties share a brutal fact on abortion practice and female infanticide. These countries place more value on sons to promote socio-economic values in the society. More discussion will be made later in the attitudes towards sex selection section.

3. Modern Technologies for sex selection

Building upon these traditional beliefs, there are a number of new technologies that have been employed recently. The simple and economical way is through ultrasound, which could determine the sex of the fetus during the second trimester (Rochman, 2011). There are other procedures to detect the fetus such as Chorionic Villus Sampling (CVS) or amniocentesis. The development of amniocentesis alerted the public in the mid-1970s to the scientific potential for prenatal determination of fetal sex (Dickens, 2002, p.335), and progressive decriminalization of abortion afforded more parental choices about continuation of pregnancy in many countries.

However, these procedures carry a small risk of miscarriage. Non-invasive tests such as maternal blood sampling can also detect the sex of the embryo within 6 weeks of gestation (Macer, 2009). Another method is known as Pre-implantation Genetic Diagnosis (PGD). It is a reproductive technology that enables potential parents to learn the genetic makeup of their early embryos conceived through in vitro fertilization (IVF), in order to avoid implanting an embryo into the mother that carried the DNA for a particular disease or disorder such as hemophilia (Malek & Daar, 2012, p.3; Liao, 2005, p.116). In a typical PGD cycle, only two embryos which are free from disease-causing mutation or abnormality are selected to be transferred into a women's uterus. In the use of PGD for sex selection, the embryo is implanted only after its sex is determined. Thus parents might pick a certain sex of the embryos for non-medical purposes by taking the advantage of PGD.

For instance, in 2006, research published in the journal Fertility and Sterility found that 42% of clinics that offer PGD for genetic purposes also offer sex selection (Rochman, 2011). Grant (2006) wrote in his opinionated article, “at present the most reliable method of sex selection is by means of PGD” (p.1659). In addition, IVF has also led out ways for the egg-sharing scheme, which was first introduced in United Kingdom in 1998 (Gürtin, 2012). Egg-sharing scheme was designed specifically for infertile couples who seek the chance to become parents or couples who particularly long for a child of opposite sex from the current children through another woman’s egg donation. The intention could be both empathic and morally questionable. IVF for such a process is expensive, depending on the country (Gürtin, 2012). How about the poor? Undoubtedly, two methods are commonly excelled during and after pregnancy: abortion and infanticide. These points will be illustrated through cases in different countries especially China and India in the following part.

Liao (2005) introduced a future example of the use of genetic engineering, by inserting the “gendered” genes of the desired sex in a virus-like organism and use germline engineering to alter the sex of an embryo. It should be noted that no one has said that they succeeded to use genetic engineering for sex selection yet.

4. Attitudes Towards Sex Selection

Recent research conducted at Queen’s University in Ontario, Canada reported that, “women want daughters and men crave sons” (Rochman, 2012). The researchers surveyed more than 2,000 students and staff at the college about their gender preference for offspring. In contrast to their assumption that the participants would show no or little preference on gender, they found out that there is a significant preference for gender of their offspring regardless of how the researchers worded the questions. The respondents answered three questions including, “what gender would you prefer your firstborn child to be (or did you hope for if you already have a child)?” “If you were to have (or do have) more than one child, would you prefer the majority to be male or female?” And “if you were to have only one child, what gender would you prefer it to be?” Thus the sex-selection notion does not exist only in Asia as some stereotypes would portray. As mentioned in a Gallup Poll in the USA, it was said that the notion has existed for at least 70 years as indicated through the comparisons of the first poll result in 1940 and that of 2012, for the
question “if you could have only one child, which gender would you prefer?” The result for 2012 was 40% prefer boys and 28% girls amongst 1,020 American adults (Kim, 2011). This is not much different from the first poll results in 1941, which were 38% has son preference and 24% went for daughters. The finding was analyzed based on age group, educational level and political orientation.

Although it is found globally, sex selection has been most widely reported across Asia. A report published by the United Nations Population Fund (UNFPA) estimated that 95 million expected female babies in Asia were reported as “disappeared” in 2000, 85% of them were in China and India (Johnson, 2007). Within the approximate 12 years, Mara Hvistendahl, a journalist and an author of a new released book, entitled Unnatural Selection: Choosing Boys Over Girls and the Consequences of a World Full of Men, documents a new estimate for the number of missing female babies. She wrote, “Asia alone has seen the elimination of 160 million future women, which is more than the entire female population of the United States” (Gammage, 2011).

The decreasing girl baby ratio in India remains high for the last decade. UNICEF conducted comprehensive studies in Indian society, which reveals an organized pattern of discrimination against women. The sex ratio declined from 972 female compared to 1000 males in 1901, and to 935 in 1981 (Venkatramani, 1992, p.125). In 2001, the case reported sex ratio was 108:100 nationwide, but as high as 120 in some areas. According to a U.N. Children’s Fund report in 2006, 7,000 girls go unborn in India each day (Johnson, 2007). The situation seems never to get better. The result of 2011 census reveals that far fewer girls than boys are born in the country each year. This indicates a rapid decline in child gender ratio that reflects persistent sex-selection practices. The number declined from 927 to 1,000 in 2001 to 914 females to every 1,000 males in 2011 for children 6 years old and younger (Wilson, 2011). The Economist reported that there were 600,000 Indians girls that go missing every year by comparing the number of girls actually born to the number that would have been born under a normal ratio which, in sum, resulted in an elimination of ten millions female lives lost to abortion and sex selection.

In China, the strong Confucian belief has affected the children born by the one child policy, the main reason causing sex-selective abortion and widespread use of female infanticide. The policy was enacted in 1979 by the Communist Party to curtail the rapid population expansion. The Economist published an article “Gendercide, the worldwide war on baby girls” on the 4th of March 2010 reporting that the sex ratio for the generation born between 1985 and 1989 was 108:100, which is outside the natural range. For the generation born in 2000-2004, there were 124 boys for every 100 girls. The Chinese Academy of Social Sciences in 2010 shows that the ratio is 123 boys per 100 girls, which is biologically impossible without human intervention.

Nevertheless, the gender imbalance ratio keeps growing wider year after year. In an analysis of Chinese household data carried out in late 2005, “only one region, Tibet, has a sex ratio within the bounds of nature. Fourteen provinces, mostly in the east and south, have sex ration at birth of 120 and above and three have unprecedented levels of more than 130.” The sex ratio varies between different places in China according to the criterion determined by local officials. For instance, in coastal provinces, 40% of couples could have a second child if the first one is girl whereas in central and southern provinces, everyone is permitted to a second child either if the first is girl or if the parents suffer hardship. In the far west and Inner Mongolia, the provinces do not really operate one-child policy. More cases were reported about the death toll of female babies. To illustrate, the ratio in Guangdong is 120:100; In Anhui is 227:100; In Beijing municipality, the same source lists the sex ratio as 275:100. The death toll of female babies keeps rising to the figure that there are almost three baby boys for each baby girl.

A broad figure of the number of missing girls was published in an article in British Medical Bulletin that “30-40 millions of females are missing from Chinese society due to the direct consequence of the widely practice of sex-selective abortion and the culture of son preference” (Nie, 2011, p.18).

Sharing the same notion as China, Vietnam, in her Confucian-based society, prizes male heirs to carry on the family line and care for parents at their old age. For Vietnam has a history of strict population control, couples were forbidden to have more than two children. As a result, families went to great lengths to ensure that at least one was a son including aborting girl babies, especially if they already had one daughter. In 2006, the United Nations Population Fund reported that some 25,000 expected baby girls went “missing”. This statistic came from observing that some expectant parents abort “unwanted” girls once they learn the sex of the fetus through ultrasound technology. The ratio of newborns was at 110 boys to every 100 girls, which was higher than the natural rate of 105 to 107 boys for every 100 girls (Johnson, 2007). A census conducted in Vietnam in 2009 indicates that the sex ratio imbalance was 110.5. The census also reveals that sex selection is practiced most in the northern Red River Delta provinces and amongst wealthy families. The ratio is as high as 130.7:100 (Lacono, 2012).

In Thailand, research on gender-preferences was conducted in June-July 2010 among the Thai public and health professionals in Bangkok. The result found that out of 65 respondents, 35 persons preferred boys, 18 girls and 12 expressed no preference (Chaipraditkul, 2010, p.10). The researcher also interviewed three doctors regarding gender selection in Thailand. The answers varied from one doctor to another. The first doctor said that there was no preference with the explanation that “we [the Thai] don’t have that kind of tension to pick the gender of the baby”. The second doctor said there was boy preference in the circumstances that the family already had a very talented woman. The last doctor drew a point for girl preference in case that the girls are talented. In all, the case remains ambiguous whereas the public fact shows a strong preference to baby boys.

In Cambodia, the abortion law was passed in 1997. Nonetheless, Cambodian people are still uncertain if abortion is legal due to the fact that abortion is not a “free topic” to mention in Cambodian society (Popular Magazine, 2011, p.24). According to the report which summarizes the findings of the 2010, Cambodia Demographic and Health Survey (CDHS) conducted by
the Directorate General for Health (DGH) of the Ministry of Health and the National Institute of Statistics of the Ministry of Planning, five percent of women aged 15-49 years in Cambodia report having had an abortion in the five years before the survey, which was a slight decrease from 8% reported in 2005. The result points out that abortion is not common. Nevertheless, is sex-selective abortion an issue in Cambodia despite the low reported incidence of abortions?

5. Research Methods
The research questions for the study were:
1. Is sex selection widely practiced in Cambodia or is it just a myth?
2. Can sex selection be ethically tolerated? If so, in what context?
3. What are the perceptions of parents and medical expertise towards sex selection?
4. How do parents from different socio-economic family think of sex selection?
5. Why do parents abort fetuses?

Participants
The targeted participants were people above the age of marriage from eight districts in Phnom Penh, the capital city of Cambodia. A total number of the participants for this research were 79 people, 25 males and 54 females, who were randomly selected from different genders and socio-economical status to provide diverse perspectives towards the sex selection issue. The exact number at each respective districts was as follows: 13 from Chamkar Mon district, 5 from Duon Penh district, 7 from Prampir Meakara district, 12 from Tuol Kork district, 4 from Dang Kuo district, 12 from Sen Sok district, 14 from Meanchey district and finally 12 from Russei Kaev district. The average age of the participant was 37 years old. The median was 33 years old. One participant did not specify her age. Each participant was asked to fill out the questionnaires containing 22 questions individually. The two major ethnic groups dominated the replies. The first group was indigenous Khmer, which accounted for 32 respondents. Another group was the 47 Sino-Khmer respondents.

Also interviews were conducted with two midwives from the National Maternal and Child Health Center, the biggest maternal hospital located in Phnom Penh, Cambodia. The first midwife has twenty-six years experiences in conducting abortions. The second midwife has been working in the delivery department for ten years.

Public sample
A convenient sampling strategy was adopted in the eight districts in Phnom Penh. To achieve this, I went to the eight districts and asked the participants who were willing to join this research. Maximal Variation Sampling was applied for data collection, to discover the different perspectives of individuals from diversity circumstances and characteristics. In the quantitative research questionnaires, the objective was to obtain spontaneous, responsive answers from the participants who filled the questionnaires in a comfortable and non-offensive mood, as abortion is a private issue.

Professional interviews
To discover professional ideas to answer the research questions, in-depth interviews with two medical professionals were made, with four others refusing to be interviewed, mainly saying that they were too busy. Rich information was obtained from the interviews.

Two types of interview were employed: one-on-one interview and telephone interview in order for seeking perspectives on sex-selective abortion in Cambodia based on the midwives’ experience. The one-on-one interview was conducted with the first midwife, and the second midwife was telephone interviewed. Both interviews were conducted in a free and relaxing manner, to allow the interviewees to share their ideas liberally, spontaneously and expressively. Basically, a series of questions were designed to ask the interviewee to respond to the five major research questions. Moreover, unstructured interview questions were prepared to probe extra information to help explore reflection on this issue.

An audio record from a health program aired on television was also used. It was about medical abortion using a pill, which illustrated more details on how abortion is done in Cambodia.

Procedures
The questionnaires were distributed to the eight districts during 14 February until 31 March 2012. There were two versions: one in English and another one in Khmer language in order to reach respondents from different families and different educational backgrounds. A total of 80 Khmer questionnaires and 20 English questionnaires were distributed. However, 69 Khmer questionnaires and 10 English questionnaires were returned. Most importantly, the participants had full right and freedom in filling the answers because all the instructions on how to fill in the questionnaires were precisely explained on the first page of the questionnaires itself (see the Appendix 3). Nevertheless, the participants were recapped about the purpose of the research prior to their answering to carefully read the instructions. Participants could also ask inquiries in case they did not fully understand the questions. Some participants brought the questionnaires home and returned after they finished. Moreover, the participants were encouraged to write down the spontaneous answers that popped up in their mind. It is a belief that the first-appeared answers were rather truthful.

I contacted three public hospitals and two international organizations working on health promoting issue in Cambodia. Two public hospitals and one international organization working on reproductive health rejected the interview, giving the reason they were too busy. Another international organization asked to wait for their reply, yet no response was given.

Both interviews were conducted in different ways because of the busy schedules of medical staff. The one-on-one interview with the first midwife was conducted at her house. The second midwife was interviewed through a telephone. Consent was obtained in both cases for tape recording to ensure no data loss. Open ended and opportunistic questions had been used to probe as many details as possible. The main language of the interview was Khmer. The interview was transcribed and translated into English later.
Data collection

There were several challenges in the process of data collection. First of all, abortion is a private issue in Cambodia. Thus, fifty percent of people asked rejected to take part in the research. Nevertheless, efforts to explain about the purpose and the benefits of this research study was carried out. Secondly, Phnom Penh is quite big, covering an area of 678.46 km² according to Phnom Penh Capital Hall. ³ There are eight districts. The research required travel to different districts asking volunteers to answer the questionnaires. Thirdly, the questionnaires were supposed to be returned immediately after the participants finished answering. However, the participants had to also work and had a limited time. Therefore, to ensure that the answers filled in the questionnaires were not “forcefully” given, the participants were allowed to bring the questionnaire home and filled in when they were in a relaxing mood after work.

Regarding the interview with medical professionals, bureaucracy and complex papers, and refusal to pay incentives after the interview, were the main challenges.

Category development

The data in the questionnaire was coded. However, there were some questions (e.g. questions 14, 21) that require the respondents to write down their comments. Therefore, the answers were grouped manually using an open-coded approach in order to divide data into segments and then scrutinize them for commonalities. For question 14, nine categories were developed. The categories include: they are our children, so we love them, people have same value, equal Human Rights, function is different; self-realization/education is important, same ability/capacity, as long as they are healthy, should not control nature and last, not stated (see Appendix 2).

For the interviews, an inductive approach was used to code the main concepts. Transcripts were translated into English and later they were analyzed. Since there were no initial codes set, research questions were relied upon largely on to develop the codes. Eight themes were developed. They were Concepts of Sex Selection and Legal Conditions for Abortion in Phnom Penh; Is Sex Selection a Myth?; Gender Preference amongst Cambodia, and Sino-Cambodia; Abortion Methods, Abortion Safety and Its Drawbacks; Pluses and Minuses on Abortion and Its Service in Cambodian Society; Ethical views on Sex-selective Abortion from Midwives’ Perspective; and finally Additional Comments.

6. Findings

Socio-economical status and family situation of Phnom Penh residents

Socio-economical status

There might be a connection between a family’s financial situation, position in society as well as the current numbers of sons and daughters. Therefore, many demographic questions were investigated. Figure 1 shows a pie chart indicating the percentage of monthly income of the participants compared to the general data for residents.

Correspondingly, when asking about the numbers of children in the family, the result indicated that Cambodian urban couples tend not to have many children. Table 1 showed about the percentage of numbers of children, sons and daughters of total respondents. Thirty one percent stated that they had only one child. The percentage slightly increased to 34% for two children. However, the percentage dropped remarkably to 12% for three children. Only 9% answered they had four children. Those who had more than four children accounted for merely 5%. By comparing the ratio between sons and daughters, we could see that there is no much gap between the percentage in term of numbers of sons and daughters in the family. The figure was pretty well balanced.

Gender preference on the sex of the children in Phnom Penh

As Figure 2 illustrates, most parents who live in Phnom Penh city seem not to have a preference regarding the sex of their children. The results for both

son and daughter preference were similar, with 19% of the participants preferring to have a son(s) while 20% of participants preferred a daughter(s). 1% of the participants did not respond to the question.

![Percentage of preference on sex of the children](image)

**Figure 2: Percentage of Preference on Sex of the children of the respondents**

Son preference

There were various reasons given by those 15 participants who desired a son. We could consider that the reasons cover three domains: self and family preference, the nature of the sons, and hope for the future. To begin with, 11 out of 15 participants said that the preference was to meet the desire of their husband/wife or their family (e.g. grandparents). This links to the dominant views on the nature of the sons usually portrayed in the minds of people in the society. It is believed that sons are more obedient, helpful and can take care of the rest of the siblings because they are strong in term of both physical body and emotion. Sons will also have to sustain the family line. This ideology is rooted in term of both physical body and emotion. Sons will also have to sustain the family line. This ideology is rooted and partially held by Sino-Cambodia descendants in Phnom Penh.

Moreover, 9 out of 15 participants said sons are easier to be brought up than daughters. There is an old saying widely known for the praise on males that, “males are gold, females are white cloth. Even though gold falls into the mud, it remains clean after washing with water. In turn, white cloth will be left with a stain even if it is washed.” Due to this ideology, sons are offered with more freedom. They are allowed to go freely far away from home and earn money to support the family’s living. With economic capability and expectation to be the breadwinner of the family, sons become the invested hope of the family directing to prosperity.

Daughter preference

Similar reasons are shared amongst the participants who voted for daughter preference. In the minds of this group of respondents, to get a daughter means to satisfy the needs of oneself, and the husband/wife’s desire as well as that bigger family. 9 out of 16 respondents mentioned motivations including daughters are easier to bring up due to the fact that daughters listen to parents’ advice more than sons. In addition, 11 out of 16 respondents mentioned that daughters could help with household chores and nursing younger siblings. Parents also tend to hold hope that that they could live with their daughters’ care in their old age. Less socially expected than sons, daughters have nothing to do with sustaining the family line. Rather, daughters are usually wanted in case that the couples have only sons. Last, fashions and lovely girly stuffs are displayed and sold at markets also affect parents’ decision for daughter preference as responded by one respondent.

No preference

The 47 respondents who stated no preference for the sex of their children offered comments why they have no gender preference. Interestingly, many parents seem to have very instinctive mindsets. The answers were very interrelated and common.

For instance, for the most commonly mentioned idea, “they are our children, we love them”, almost all the respondents wrote down exactly the same answer. Only six participants (#22, 24, 32, 43, 62, 70) did not mention about this theme. For instance, participant number 5 wrote, “The gender of my baby, either boys or girls, is not crucial for me. They are all my children and have the same capacity and value in the society.” This partially refers to the second code “people have the same value” (see also #2, 8, 24).

Participant number 27 had similar ideas, “It is us who gave birth to the children, either boys or girls. We have to take good care of them both physically and emotionally especially giving equal education to them. Both sons and daughters could help do housework. They could sustain the family line, go to work abroad in order to feed the family and look after parents.”

Other categories included, “Equal Human Rights” (#28, 56, 59, 63), “Function is different” (#22, 24, 62, 63, 70), “Self-realization/ Education is important” (#3, 8, 27, 64, 75), “Same ability/ capacity” (#3, 27, 40), “As long as they are healthy” (#4, 30, 42, 43) and “We should not control nature” (#5, 11, 30, 43).

Here are some original comments on several codes. Participant number 63 made the point on equal rights of human being that, “I love both sons and daughters. Both want to live. I can’t practice infanticide. There needs to be balance gender ratio between sons and daughters, so that they could build and develop the country for the better happiness in the future.”

What is more, some participants shared their views that both genders have different working domains. For example, participant number 22 wrote, “Sons and daughters are all having flesh and brain. They could study and work on different tasks.”

All comments are in the Appendix 2.

**Abortion practice in Phnom Penh**

Among the 54 female participants, 14 reported having had an abortion, which would equal a 26% abortion rate. The reasons behind abortion varied amongst respondents, but did not indicate any sex selection related reasons. Surprisingly, no respondent answered that they used it to specifically abort a baby girl. In contrast, one participant reported having aborted a baby boy. Five participants explained that they did not have enough financial support to bring the baby up at the time of conceiving. There were two participants who said that neither their couple nor themselves were ready to have the baby. They had their own jobs to focus on. In addition, family planning was also one of the reasons that two participants mentioned. One participant indicated that abortion was done following the failure of contraception. Some other reasons were also offered. For instance, the fetus died in the uterus; the family fell into crisis during
the time of pregnancy and the pregnancy affected the health of mother and child.

Methods, places for abortion and stakeholders in aborting decision

From the findings, the majority of the respondents who chose to have an abortion went for medical surgery. The percentage indicated that 8 amongst 14 pregnant women have had surgical abortion services before. Two persons answered they bought abortion medicines from the pharmacy while one person said she received the abortion medicine from a doctor she went to consult with. Three persons did not respond to the question. On the top of that, none of the Cambodian women in Phnom Penh admitted to having drunk any traditional Khmer medicine to abort the fetus. This choice corresponds to the question of where the abortion took place. Amongst the three choices, private hospitals ranked number one with 10 persons having had the service there compared to the other two locations, public hospital and illegal abortion house. Only one participant went to have the service at public hospital. There was an extreme case of this participant that she practiced abortion at home by purchasing the abortion medicine. Since abortion at home was not successful, she went to a private hospital to do the followed-up procedure to ensure that abortion was properly completed at last.

Do Cambodian urban women make their own decisions on abortion matter if women are said to have the full rights on her own body including the rights to abort the fetus while at the same time considering it as a moral act? The question being asked was, “whom do you consult with to make the decision to abort the embryo/fetus?” and five choices were offered including husband, parents/parents-in-law, friends, midwives/doctors, and self-made decision. The result presented an independent figure that women had the discussion with their husband (9/14 persons). 3 women out of 14 also sought discussion with their parents or parents-in-law. Midwives and doctors were met and discussed by 5 pregnant women before abortion was carried out.

Figure 3: Percentage of feeling towards abortion in general among the respondents

![Percentage of feeling towards abortion](image)

Figure 3 shows the percentage of how the respondents felt toward the practice of abortion in general. The result was concluded from both male and female perspectives of over all samples. More than half of the respondents regarded that abortion was strongly unethical, which accounted for 53%. Eighteen percent of the respondents viewed abortion as moderately unethical. Nevertheless, about 14% could accept abortion or thought it is ok to carry abortion. On the other hand, 3% said it was strongly unethical, and 1% moderately unethical. 12% of the respondents did not answer this question.

Moral circumstances and views on abortion

As the findings showed, the conditions in which abortion could be morally acceptable from the total respondents were asked. The result illustrated that 14% of the respondents conveyed their views on the abortion matter as “morally acceptable if parents do not want the baby regardless of whatever reasons.” However, the percentage that considered abortion is acceptable went as high as 50% if it affects the health of mother and the fetus is disabled. With quite a significant figure, 22% of the respondents protested that abortion is unacceptable and should not be practiced regardless of whatever reasons. The rest of the percentages shared 8% to no comments and 6% to other reasons such as being raped, having insufficient ability to bring up the children, poor family situation and having too many children. Likewise, in case that pregnant woman is in emergency case where abortion is necessarily required, abortion could be “morally accepted”.

Additionally, participants were asked to use one word or a phrase to describe abortion. The word could be an adjective, noun or any part of speech. The vast majority of the words offered are negative adjectives including: unethical (15 persons), immoral (5 persons), irresponsible (4 persons), bad (3 persons), cruel (3 persons), frightening (2 persons), selfish (2 persons), suffering (2 persons), inappropriate (1 person), and strongly unethical (1 person). There are several positive adjectives used to describe abortion such as: appropriate (1 person), logical (1 person), ethical [based on living factor] (1 person). Some more negative noun and phrase were killing (4 persons), circumstance (3 persons), sin (3 persons), health affected (2 persons), breaking the law (1 person), complicated situation (1 person), crime (1 person), dangerous act (1 person), fault (1 person), and serious mistake (1). 26 participants did not make comments. (The number in the brackets is the number of persons who mentioned each term).

**Sex-selective abortion aspect from medical personals**

Concept of sex selection and legal conditions for abortion in Phnom Penh

Both midwives consistently said that there is no mention about sex selection in the medical field from a [Cambodian] national stance. The first midwife addressed, “In a national stance, abortion is not done for couple’s desire on certain sex on their baby.”

Addressing about sex selection abortion, both midwives expressed their views on the issue. Neither of them supported the idea in a broad sense except the critical case that the fetus is growing abnormally. “Abortion is not stated to fulfill the desire on the gender of your baby”, the first midwife claimed. On the contrary, the notion of sex-selective abortion is asserted to exist in distinctive conditions from the experiences of the two midwives. Surprisingly, the first midwife revealed that there are sophisticated individuals who would come to seek the [sex-selective abortion] service from doctors. A
different view from the second midwives is sex selective abortion normally took place when couples already had one or several children of one particular sex and wished to have the opposite.

In both interviews, the midwives mentioned that the abortion law was promulgated in 1997 and the Prakas (announcement) on abortion was passed in 2002. There were particular conditions in which abortion is allowed.

Three conditions were captured into discussion. The first one was in the case that the woman was victimized from rape and it is a shame to conceive because Cambodia is a conservative country and has strict traditional rules. The second case was that the fetus was diagnosed to be physically insufficient; therefore, the Ministry of Health and Science, in the case, would approve the woman to perform abortion with her consent. The last case was the worsening health situation of the mother if she kept the fetus. If the examinations were found out to be unfavorable to a woman or threatened her life, then abortion would be highly likely to be adopted. In addition to the conditions, termination is allowed of the first trimester intrauterine pregnancy (up to 3 months). According to article 8 of the Kram on abortion, “abortion may only be carried out for those fetus that are under 12 weeks old.” However, there were cases that abortion could be still performed until 20 weeks (5 months) if the reasons fell among the reasons specified earlier. The medical personal would remind and explain about the risks as well as confirmed about the aborting decision before abortion really took place.

Is sex selection a myth?

Surprisingly, the first midwife said she has never heard about “sex selection”. When mentioning about gender-driven abortion, the first midwife reactively said, “Abortion is not used for sex selection purpose; it is a necessity for couples to understand this point”. Sex selection is a “rumor” in Phnom Penh according to the first midwife. She addressed two main sources of the rumor. Firstly, it is based on scientific arguments. “It says nothing about how to get the baby as you want; No one could assign the gene and chromosomes in our bodies. Girls have X and boys have XY. And when they have sexual intercourse, it depends on chromosomes only for which spermatoid is stronger. This is the way it works.” Secondly, she drew the attention to the sayings mentioned in Chinese books and traditions. Some sayings such as the practice of sleeping on the left or right to get a baby girl or a baby boy as well as sleeping according to hot and cold weather were addressed. “All of these beliefs come from China”, believed the midwife. In addition, there had been no concrete records or methods to conceive the baby with the gender that we want. Nevertheless, she pointed that there were people who sought advices on fetus gender matter with doctors although the doctors also had no ideas.

However, the second midwife claimed that she used to know about a table that could predict gender of the offspring depending on several parameters such as the age of parents and the month and date of intercourse (This refers to the Chinese table discussed in the introduction).

Gender preference amongst Cambodia and Sino-Cambodia

The first midwife said that there were “no cases” of gender preference in Phnom Penh or Cambodia. Comments were made on the so-called “son preference to sustain family line and property division after passing away being divided to sons only, not daughters”, in the Chinese case. Conversely, in Cambodia, it was said to “have no such [son] preference”, claimed the mid-wife. She said, “Cambodia is completely opposite to China. Indigenous Cambodian do not care about family line”, as mentioned, “we have never talked about family line”. Indigenous Cambodian would rather be concerned about living with comfort than the gender. Moreover, if the first child was a daughter, then she could help with household chores, as she grew big faster. She reported that she had heard cases where Sino-Cambodian was said to have a wish for sons to sustain the family line. “They will try whatever means to have one [son]”, said the midwife.

The second midwife tended to believe that either sons or daughters are naturally life itself. She addressed no comments on the point.

Abortion methods, abortion safety and its drawbacks

From the interview, there are many types of abortion methods being used in Phnom Penh according to the first midwife. However, the two main types are medical abortion using pills and surgical abortion using instruments. There are different types of surgical abortion either by electric means, hands, rubber syringes and metal instruments. Surgical abortion refers to “cleaning the blood (fetus)”. Regarding abortion safety, abortion is not 100% “sure”. In other words, risks shall be still carried. However, those who sought for proper abortion service from medical practitioners under authorization of Ministry of Health carried smaller risky chance compared to women who sought the service from “secret places”.

According to a voice recording from a health program on women health called “Beauty and Women's Health” at South East Asia Television, Cambodia on 12 June 2012, Dr. Kong Phannary, the deputy chief of the department of Obstetrics introduced about the disadvantages of abortion using instruments and medical abortion using pills. In her presentation, she pinpointed that abortion using instruments causes three main problems: bleeding, causing reproductive illness and womb winding.

She further discussed in details about the two major disadvantages of medical abortion using pills. “The first disadvantage is that when there is excessive umbilical cord left after using the pills, constant bleeding occurs”, said Dr. Kong. She continued, “The second disadvantage is based on scientific conditions on abortion pills that if the fetus is not aborted after the mother takes the pills, then thorough cleaning [on the blood] is needed or the fetus will grow abnormally which results in physically insufficient or brain damage.”

Dr. Kong emphasized repeatedly to encourage women to seek abortion service from medical professionals who received proper training on the field in order to minimize the risks. “Admittedly, there were a lot of scientific conditions in women’s body that is unpredictable. Cambodia did not have enough researches as well as medical equipment yet”, she presented. It is advisable and essential for women that
they will receive a thorough explanation on how to use the pills and that they will be counseled on her abortion choice. “Abortion is safe if women seek the service from medical personals who receive proper training. Women face very least drawback”, said Dr. Kong. Notwithstanding, women prefer buying pills because “it is private and can be done secretly to hide from neighbors and friends.”

The second midwife demonstrated a very consistent point regarding the counseling service offered to abortion-intended women. She added that, “Women are required to rest at the hospital after she decided to abort the fetus that is or more than 12 weeks.”

Pluses and minuses over abortion and its service in Cambodian society

Abortion is not always attached to a negative impression. There are pluses associated to abortion brought to those who underwent the service. Three advantages were reviewed during the interview with the first midwife. To begin with, the midwife said, “Abortion avoids shame and confrontation of conceiving a child out of wedlock.” This is also linked to the case of being raped. Cambodian people possess a very strict norm on marital status and marriage life. Women are subject to strict social criticisms, which sometimes cause suicide. Moreover, such infant termination functions as “keeping the pot boils” – ensuring the social status of those living, the family and mother. For instance, some women were so-called “beer girls” or sex workers. In order to maintain the job, she has only the choice of carrying out an abortion to avoid being dismissed from current job. Lastly, abortion could be a means to fulfill the couple’s desire at the moment that they do not want the baby, which falls out of their family planning. To an extreme, it might be an alternative for those who care about gender of the baby to meet up with their desire. “These advantages should not be overlooked”, proposed the midwife.

On the other hand, every plus has a minus. There are several disadvantages that normally would be magnified by the society. Obviously, these minuses should not be unheeded. To illustrate, the midwife complained, “Limited transparency of abortion service could be one of the minuses”. Cambodian people addressed “abortion as killing life” or in a technical term called “infanticide”. Therefore, even the hospital could not promote the advertisement of abortion service offered legally and protectively by the National Maternal and Children Health center.

“The ads for proper abortion service were finished ages ago, but it has never been broadcasted as it is strongly against the social image of the Khmer”, the midwife pointed out the operations on promoting abortion service. This resulted in many women seeking for abortion service secretly in private clinics or illegal abortioning houses, causing substantial reproductive health issues such as getting chronic disease on reproductive organs, which triggered later infertility. In a serious case, abortion caused death. Additionally, abortion is against local religious and well-preserved beliefs. Sin is attached with a person whether in the present life or to next life if one kills a living being in Buddhism. Abortion kills life. Therefore, abortion is sin. This argument caused women who used to abort to carry guilt throughout her entire life. Women are typically considered as a “murderer”.

The second midwife criticized the abortion service offered by private clinics due to privacy concerns for the women themselves. “Abortion is loosely practiced in private clinics for money reason”, answered the second midwife from the telephone.

Ethical views on sex-selective abortion

“It is unreasonable for those who think so [sex-selective abortion], It is a ‘one-head’ decision of oneself. This is inappropriate, cruel, and very stereotyping”, proposed the first midwife when asking about her own ethical views toward sex-selective abortion. She rationalized as followed. This reflected the same thought as participants who responded to the questionnaire, the answer was “They are our children, either boys or girls, we already conceive them.” She advised couples that long for determining the gender of their children by seeking for real and reliable information. Meanwhile, they have to seek enough evidences that the information is practical. On the top of this, she warned the potential problems abortion would cause. She ironically compared a women’s womb to “coconut shield”. “It [womb] is not as hard as coconut shield which you could perform many abortion as you want just to get the fetus of the gender you want.” In this regard, women were put and/or put themselves at risks and threats over their own health.

The second midwife shared similar views. Concurrently, she is working for the delivery department. When asking the reason why she does not want to work for the abortion department, she said, “I was asked to receive further training on the abortion, yet I decided not to go as I am doing merits (in Buddhism).”

Additional comments

Some additional comments were offered between the “ethical abortion case” and “purposeful killing” by the first midwife. To elaborate, if the fetus came accidentally out of family planning, the couples decided to abort the fetus since it was very small, then abortion is acceptable. However, if the abortion is done after realizing the gender of the fetus, then the act became “purposeful killing”. To avoid abortion, the midwife talked about the importance of contraception. “I don't encourage conceiving and then aborting later”, she said. Contraception shall be a very crucial component of family planning. If couples eager for either a son or a daughter, then they should seek for proper consultancy service even if abroad. When made aware of sperm sorting, the midwife saw some advantages. Sperm sorting could be an alternative to achieve the need although it costs an arm and a leg. The midwife supported the sperm sorting method, “I support sperm sorting as it meets with the expectation of those who eagerly want sons. It is good; no problem. Only that the current financial situation of Cambodian population still finds it hard to afford.”

On behalf of a health profession and as an elder Buddhist, the second midwife discouraged sex selective abortion. She stated, “we should know that if we do not ant the child, we had better use contraception at once. […] Naturally, life already started when we conceived, either boys or girls, they are all our children.”

Sharing the same ethical principle, Dr. Kong, after explaining in details about the disadvantages of various
abortion methods, advised women to apply the family planning methods by using contraception if the couples opt not to have any children. Furthermore, if abortion was considered one should terminate as early as possible to avoid risks.

7. Discussion

As can be seen from the above findings, sex selection has not become a concern yet in Cambodian society although there might be small proportion of the population expressing son preference. The case does not happen out of the expectations, as Cambodia is a matriarchal society in theory and patriarchal-based one in reality. This consistently corresponds to the result of the need for a balanced gender amongst male and female infants. Nevertheless, we are going to examine sex selection issue from distinctive grounds mirrored from biological, socio-economical and religious aspects. We shall also examine the feminine and masculine notion, as well as matriarchal and patriarchal pattern.

Biologically, reproduction continues the human species through its biological process by which new offspring individual organisms are produced from their parents. No human intervention interferes in the process of reproducing procedures. It is sex chromosomes, X and Y that determine the gender of the offspring. This is called natural selection in reproduction; it is random that a particular sperm makes it to an egg before the others. This primary form of natural selection shows no gender discrimination at all. Instead, it is a matter of “dice”. More or less, “the rolling dice” phenomenon allowed a roughly fair chance of the sex ratio. In other word, the sex ratio is 50:50 which means about as many girls as boys. One might argue that people whose children are all of one sex are playing with “loaded dice”. A different view is the bioethical value of autonomy. Humans have autonomy. Both male or female are human. Thus, either male or female beings can have equivalent autonomy. This argument displays no gender segregation at all. It is true that sex selection interferes in nature and autonomy of an individual. As reflected from the findings in urban districts in Cambodia, sons and daughters shall be equally loved, as it is “nature” and nature shall not be controlled.

Socially constructed gender roles wash away the supreme idea of the natural equality between the two sexes. When the fetus arrives to the earth, they will be automatically tied to specific roles and certain social expectations. Just as the completed finding shows, sons and daughters shine different hopes to the family. This consistently corresponds to the result of the need for a balanced gender amongst male and female infants. Nevertheless, we are going to examine sex selection issue from distinctive grounds mirrored from biological, socio-economical and religious aspects. We shall also examine the feminine and masculine notion, as well as matriarchal and patriarchal pattern.

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the reality of present Cambodia contrarily pictures a patriarchal based society.

There rises a situation that there are only few women who hold top positions in the government, NGO, as well as private sector. In current state of affairs, there are three important female figures. One is deputy prime minister, Men Sam An, the second one is Minister of Women's Affair, Ing Kantha Phavi and the opposition party member Mu Sochea. Rewardingly, economic independency would play a significant role in determining women's status and the positivity of people on conceiving a baby girl. Strong financial capability might be able to alter the perception of the social norm on son preference although it takes time. At the challenging end, the desire to benefit from economic benefits offered by the advancement that is available in today's world seem to put more growing pains and pressure in women to pursue ultimate success. Women still face countless barriers in order to access the top stratum of power brokers in a country regardless of the merit of their wisdom. It is crucial to understand that these contrasting realms helplessly influence, more or less, on the perceptions of parents to picking up particular sex. In other words, if sons and daughters show the same capability in economic independency, then it might not be a concern anymore for either having a son or a daughter. This sort of argument resembles to the notion of the Cambodian mindset in term of "living with comfort".

Is sex a disease? Macer (2000), wrote "sex is not a disease anymore than life itself, but a phenotype, it continues to be a reason used in practice for prenatal diagnosis and selective abortion?" (p.113). Can the society allow the individual to have free choice on sex selective method with non-medical reasons? In the utilitarian approach, the view is generally held to be one that morally right action is the action that produces the most good. The approach rooted in the idea that ethical actions are judged based on the consequences, not the intentions. Hence, it could be argued that sex selection is not utilitarian. To justify, sex selective methods for non-medical reasons enable sex-selected oriented parents to fulfill their hope and be happier. This first argument can be traced back to self-interest at the expense of humanity's long-term interest, at the worst, the mention of imbalance sex ratio. The second argument is that sex selection involves the justification on family balancing. Families that already have one or more children of one sex may want to select the gender of their next child to "balance" the gender ratio of "offspring". Bio-ethically, the presence of autonomy is absent from this type of argument. According to rights-based approach, every human has dignity that is based on their human nature. They should not be treated as an end, and not merely as means to other ends. Each child, either boys or girls, has their own dignity to be preserved. In this respect, using another child as the fulfillment of parents' intention is a violation of the primary dignity of the child. On a whole, should certain types of sex selection method being practiced? The answer could be varying among individual.

According to data in figure 3, the overall impression of the respondents indicates that three fourths of the participants think that sex selective abortion is unethical. The indicating figure depicts a clear mindset of the Cambodians toward ethical concerns towards sex selection. Abortion is acceptable merely in the case that the fetus is disabled and they affect the mother's health; this circumstance passed fifty percent of the majority vote. Concurrently, the midwife expressed supports to any methods that minimize the harms on women and the offspring compared abortion. As a whole, careful discussion on ethical issue shall be thoroughly raised the related potential concerns towards sex selective practice.

Unlike Cambodia that there is no concrete indication about sex selection orientation, countries like China, Vietnam, and India have encountered severe cases of sex selective abortion. This is due to the cultural imbalanced values between the two sexes. In the aforementioned countries where boys are highly prized for economic, hereditary, religious and cultural reasons, apparently, it is more than impossible to reconstruct the gender value. As a Hindu saying puts, "raising a daughter is like watering your neighbors' garden" since a girl is deemed to have joined her husband's family on marriage. Indian parents are scared of paying the abundant dowry to the groom's family that they have to abandon the thought of having a daughter. Chinese parents are under the pressure of the one-child policy and the notion of sustaining the family line. Vietnamese parents have son preference due to similar conditions as in China. At the worst, there are stories abounding of Vietnamese bride abduction, the trafficking of women, rape as well as prostitution. Are women commodities? What could be an alternative to "brainwash" the deep-rooted stereotyping notions associated to sex? Could modernization empower changes?

8. Conclusion

To sum up, sex selection is a complex topic. In patriarchal based societies where the cultural and economical value of sons is at a premium, daughters are distorted to even face extreme cruel acts of female infanticide. Some parents attempt to terminate the existence or presence of the girl fetus from using the advanced technology to pick the gender prior to conceiving, carrying-out abortion during pregnancy and lastly gendercide after a baby girl is born. As the findings revealed, although sex selection is a major ethical concern in many countries, there is no clear-cut indication shadowing sex selective orientation in the urban arena in Cambodia in the present time although the rank of the fetus itself matters respectively.

The population of Sino-Cambodian also showed no gender preference except that indigenous Cambodian expressed labeled views on Sino-Cambodians that they have gender preference. The cultural values associated with each sex have taught the importance of sons and daughters presence in a family although there is plenty bias toward females in lady code of conduct. This core value is well preserved by passing through generations. The result in this research study signifies positive cultural, moral and ethical values of the Cambodian people reflecting from biological, socio-economical and religious points of view. However, since the result of this first research conducted on sex selection issue in Cambodia was grounded on very limited sample sizes, interviewees, as well as limited resources, it is advisable to have future research conducted fundamentally on this research.
Appendix 1: The Chinese Conception Chart / The Chinese Gender Chart

This chart is used by matching the woman’s age with the month of the baby’s conception or using it to tell which month will be a good month to try for a boy or a girl. MOC stands for Month of Conception. The number in the horizontal signifies the age of women. F stands for Female and M stands for male.


CHINESE CONCEPTION CHART

Match the woman’s age with the month of the baby’s conception . . . or use it to tell which month will be a good month to try for a boy or a girl, as you desire. If you are already pregnant, use the chart to find out what the sex of the baby will be. If you are looking to get pregnant and desire a particular gender (boy or girl), use the chart to find the month that you (the woman) are most likely to conceive the gender you desire. All this chart does is indicate the tendencies of pH in a woman, which is what actually regulates whether she has a boy or girl. It’s all about the local pH at the time of conception. Each month has a lunar phase, the same magnetic pull that creates the tides in the ocean combine with the magnetic tendencies in each person depending on their time of birth and the month of the lunar phase they are currently in.

Qualitative research is highly recommended to comprehensively explore the perception of those who have performed sex selective abortion (if any).

Appendix 2: Full Comments for Question 14 (No preferences)

Note: Those responses without a comment are omitted from the Table.

The Coding Scheme
1: They are my children; we love them.
2: People have same value.
3: Equal Human Rights
4: Function is different
5: Self-realization/ Education is important
6: Same ability/ capacity
7: As long as they are healthy
8: Should not control nature
9: Not stated

<table>
<thead>
<tr>
<th>ID</th>
<th>Comment</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>They are our children, either male or female.</td>
<td>1, 2</td>
</tr>
<tr>
<td>3</td>
<td>They are our children. The daughters today are not less capable than sons. It doesn’t matter with gender, but the children themselves, which make them a good child.</td>
<td>1, 5, 6</td>
</tr>
<tr>
<td>4</td>
<td>I can’t decide on gender of my child. It does not matter with gender as long as they are healthy and good children.</td>
<td>1, 7</td>
</tr>
<tr>
<td>5</td>
<td>They come naturally. Both sons and daughters are socially accepted. It is a matter of healthiness and being obedient.</td>
<td>2, 7, 8, 9</td>
</tr>
<tr>
<td>6</td>
<td>They are all my children.</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>I love both of my children equally.</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>It is not crucial for me with the gender of my baby, either boys or girls. They are all my children and have the same capacity and value in the society. They would become good persons as long as they receive proper education.</td>
<td>1, 2, 5</td>
</tr>
<tr>
<td>9</td>
<td>They are all my children. I don’t mind having either boys or girls.</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>It is natural.</td>
<td>1, 8</td>
</tr>
<tr>
<td>12</td>
<td>Boys are my children. Girls are also my children.</td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>Either boys or girls are our children, which represents love and happiness in the family.</td>
<td>1</td>
</tr>
<tr>
<td>17</td>
<td>They are all my children.</td>
<td>1</td>
</tr>
<tr>
<td>18</td>
<td>It doesn’t matter either they are girls or boys.</td>
<td>1</td>
</tr>
<tr>
<td>20</td>
<td>They are all my children.</td>
<td>1</td>
</tr>
<tr>
<td>22</td>
<td>I love both gender. I want both sons and daughters. My husband has the same thought as me.</td>
<td>1</td>
</tr>
<tr>
<td>24</td>
<td>Sons and daughters are all having flesh and brain. They could study and work on different tasks.</td>
<td>2, 4</td>
</tr>
<tr>
<td>26</td>
<td>Gender doesn’t matter much in the family.</td>
<td>1</td>
</tr>
<tr>
<td>27</td>
<td>It is us who gave birth to the children, either boys or girls. We have to take good care of them both physically and emotionally especially giving equal education to them. Both sons and daughters could help do housework. They could sustain the family line, go to work abroad in order to feed the family and look after parents.</td>
<td>1, 5, 6</td>
</tr>
<tr>
<td>28</td>
<td>They are all my children and they deserved equal treatment.</td>
<td>1, 3</td>
</tr>
<tr>
<td>30</td>
<td>It is difficult to have the child as our desired wish. As long as they are healthy and clever, it doesn’t matter with gender at all.</td>
<td>1, 7, 8</td>
</tr>
<tr>
<td>31</td>
<td>Because they are our children.</td>
<td>1</td>
</tr>
<tr>
<td>32</td>
<td>I have no child yet.</td>
<td>9</td>
</tr>
<tr>
<td>33</td>
<td>Girls or boys are all our children. I gave birth to them, so I love them.</td>
<td>1</td>
</tr>
<tr>
<td>34</td>
<td>They are all my children.</td>
<td>1</td>
</tr>
<tr>
<td>35</td>
<td>I love my children.</td>
<td>1</td>
</tr>
<tr>
<td>36</td>
<td>I equally love my children.</td>
<td>1</td>
</tr>
<tr>
<td>38</td>
<td>They are all my children.</td>
<td>1</td>
</tr>
<tr>
<td>39</td>
<td>Since they are my children, I love them all regardless of their gender.</td>
<td>1</td>
</tr>
<tr>
<td>40</td>
<td>They are all my children. Both boys and girls could help parents’ tasks.</td>
<td>1, 6</td>
</tr>
<tr>
<td>41</td>
<td>They are all my children.</td>
<td>1</td>
</tr>
<tr>
<td>42</td>
<td>[Gender is not important] as long as they are healthy and are not handicapped. I don’t care about gender, but I get 2 children only.</td>
<td>1, 7</td>
</tr>
<tr>
<td>43</td>
<td>Natural. As long as they are healthy.</td>
<td>7, 8</td>
</tr>
<tr>
<td>49</td>
<td>They are all my children.</td>
<td>1</td>
</tr>
<tr>
<td>50</td>
<td>I love my children regardless of their gender.</td>
<td>1</td>
</tr>
<tr>
<td>53</td>
<td>They are all my children, either boys or girls.</td>
<td>1</td>
</tr>
<tr>
<td>55</td>
<td>They are all my children.</td>
<td>1</td>
</tr>
<tr>
<td>56</td>
<td>It is all the same, either boys or girls. They have the same rights.</td>
<td>1, 3</td>
</tr>
<tr>
<td>59</td>
<td>They are all human. They are my children.</td>
<td>1, 3</td>
</tr>
<tr>
<td>62</td>
<td>Daughters could help do housework and other</td>
<td>4</td>
</tr>
</tbody>
</table>
tasks as well as doing small business. They are more obedience but they can’t handle hard work and go further from house. Also, girls received more pressure and being shameful than boys when they are problem. However, they won’t give up parents. On the other hand, sons could go further from home, work on hard labour work instead of parents. Still, they don’t listen to parents’ advice much. The most important point is son is the one who sustain the family line. Even if they are spoiled or commit wrongly, boys are viewed as “gold”.

Anyway, it is better to have both sons and daughters. I love both sons and daughters. Both wants to live. I can’t practice infanticide. There needs to be a balance between sons and daughters, so that they could build and develop the country for the better happiness in the future.

63 They are all my children. It depends on how we educate them. 1, 3, 4, 9

64 I love both sons and daughters. Both wants to live. I can’t practice infanticide. There needs to be a balance between sons and daughters, so that they could build and develop the country for the better happiness in the future. 1, 3, 4, 9

66 They are all my children. It depends on how we educate them. 1, 3, 4, 9

67 I love children. 1, 3, 4, 9

68 Since I already gave birth to them, I love them. I know that it will never abort the fetus. 1, 3, 4, 9

69 As a Cambodian, I think there is no gender preference. It is a simple matter and it should not be chosen as long as the child is grateful. 1, 3, 4, 9

70 Only the rich who are busy with their business that they want to have boys but girls, so that they could sustain their family line. 1, 3, 4, 9

71 I equally love them. 1

72 I love both sons and daughters. Both wants to live. I can’t practice infanticide. There needs to be a balance between sons and daughters, so that they could build and develop the country for the better happiness in the future. 1, 3, 4, 9

73 It doesn’t matter with gender at all. Whatever matters is whether children are grateful and they walk on the right path. 1, 3, 4, 9

74 They are all my children. 1, 3, 4, 9

75 We should have only daughters. It depends on how we educate them. 1, 3, 4, 9

76 They are all my children. 1, 3, 4, 9

Additional Comments at the End of Questionnaire

Note: Those responses without a comment are omitted from the Table.

ID | Comments
---|---
8 | On behalf of being parents, we should be fully responsible for bringing up children. We should have proper family planning in term of conceiving baby and educating them. If we want to abort fetus, we should consult with medical expertise in order to avoid harmful effect on our health and cause danger to life.

13 | Abortion is a very crucial issue within family. Careful consideration is needed before aborting decision. If the reasons are not crucial enough (e.g. affecting mother and children), abortion shall not be practiced. Contraception shall be effectively used if having no desire for children.

14 | Please take measurement to stop studying female teens who break Khmer tradition and customs. It can be observed that abortion is widely practiced amongst female high school and university students nowadays. The number keeps increasing which affects the health of mother. More importantly, the act devalues Khmer society ethics

16 | To be high responsible parents, we need to have clear consideration before we decide to do something. Abortion is an action that we don’t response to what we have done. If we don’t want the child, why don’t we use condom to protect unexpected child? The tiger never eats its child, but if you have decided to abort your baby, this means you are very bad than tiger that is a wild animal living in the forest.

21 | Abortion equals to killing life. According to religion, it is very sinful.

25 | In my opinion, abortion is acceptable only in case that the fetus is diagnosed to be disabled.
Instructions:
1. Please read these instructions carefully. In case you do not know how to read, there will be someone from our surveyors who helps you read out the questions.
2. Please complete the questionnaires individually without discussion with anyone. There are 21 questions in total.
3. Please circle, tick or write down the answers according to the questions.
4. Read the statement carefully and decide how you feel about it.
5. There are no “right” or “wrong” answers. Therefore, do NOT try to guess the answers.
6. Do not spend too much time on any single question. Your immediate and honest reaction response is highly appreciated.
7. If you feel uncomfortable with any questions, feel free to leave it blank. Do NOT try to give any misleading answers, as this would affect the result of the study.
8. If you choose the wrong answer and wish to make correction, clearly cross out the mistaken one. Then circle/tick the new one.
9. There are some questions which you can provide two or more answers. Therefore, read the questions carefully.
10. There are some technical words. Please ask the surveyor if you are not sure.
11. There is space provided at the end for any additional comments you would like to make about these questions.

If you have any questions regarding the research study or require greater details on how this information will be used, please do not hesitate to ask the surveyors, or contact me directly at HP: 012 606 456 or by email at bunrong.k@gmail.com / rong_cpc@yahoo.com

I. General Information
1. Please indicate your district.
   a. Chamkar Mon
   b. Duon Penh
   c. Prampor Meakkara
   d. Tuol Kork
   e. Dang Kuo
   f. Sen Sok
   g. Meanchey
2. Please indicate your gender.
   a. Male
   b. Female
3. Please indicate your age. Please write the number on the line provided.

4. Which one of the answers below indicates you?
   a. Indigenous Khmer
   b. Sino-Khmer
   c. Muslim-Khmer
   d. Others
5. Where is your hometown? Please write on the line provided.
6. What is your job? Please write on the line provided.
7. How much is your monthly income?
   a. below US$250
   b. US$250-US$500
   c. US$500-US$750
   d. US$750-US$1,000
   e. more than US$1,000
8. How many years have you got married? Please write the answer on the line provided.
9. How many children do you have?
   a. 1
   b. 2
   c. 3
   d. 4
   e. More than 4
10. How many boys and how many girls? Please write the number on the line provided. If the answer is zero, write 0.
    a. Boy(s)
    b. Girl(s)

II. Perceptions on sex selection
11. Do you prefer sons or daughters? Please tick (✓) in the box. If you tick a, go to questions number 12. If you tick b, go to question number 13. If your tick c, go to question 14.
    a. Sons
    b. Daughters
    c. No preference

12. Why do you prefer sons than daughters? (Tick all that apply)
    a. Your husband/wife and family want a son(s).
    b. Boys are easier to bring up.
    c. To keep the family line.
    d. Sons could go far from home to earn money.
    e. Other reasons.

13. Why do you prefer daughters than sons? (Tick all that apply)
    a. Your husband/wife and family want a daughter(s).
    b. Girls are easier to bring up.
    c. Girls can help household tasks.
    d. Girls would care the parents at their old age.
    e. Other reasons.

14. Why do you have no preference between sons and daughters? Please write down your answers. The reasons can be more than one.
    Reason 1:
    Reason 2:
    Reason 3:

III. Abortion
15. Have you ever aborted any fetus? If no, go to question 20.
    a. Yes
    b. No
16. Why did you decide to abort the fetus? You can choose more than one answer.
    a. Because it is a baby girl.
    b. Because it is a baby boy.
    c. Because I do not have enough financial support to bring it up.
    d. Because my husband/wife and I are not ready to have baby. We have our own jobs.
    e. It is part of our family planning.
    f. Contraception failed.
    g. Others.
17. What methods do you use to abort the fetus?
    a. Drink traditional Khmer medicine
    b. Surgery
    c. Buy abortion medicines from pharmacy
    d. Others.
18. Who do you consult with to make the decision to abort the embryo/fetus? You can choose more than one answer.
    a. Husband/ wife
    b. Parents/ Parents-in-law
    c. Friends
    d. Midwives/ Doctors
    e. Self-made decision
    f. Others.
19. Where do you have abortion done?
    a. Public hospital
    b. Private hospital
    c. Illegal abortion house
    d. Others.
20. How do you feel towards abortion in general? Please circle only one box for this question
    a. Strongly ethical
    b. Moderately ethical
    c. OK/ it is acceptable
    d. Moderately unethical
    e. Strongly unethical

IV. Views on abortion
21. Use one word to describe to abortion. The word can be adjective or noun. Please write the word on the line provided.
   "DIY"
22. Under what conditions is abortion acceptable? You can circle for more than one answer.
    a. Abortion is morally acceptable if parents do NOT want the baby regardless of whatever reasons.
    b. Abortion is unacceptable and should not be practiced regardless of whatever reasons.
    c. Abortion is acceptable in case of disable baby and it affects a mother’s health conditions.
    d. Others.

Additional comments:

Bibliography
The process of prognostication amongst the terminally ill occupies a pivotal role in providing an estimation of when death is likely (1,2,3). It also considers the rate of disease progression, the level and extent of morbidity that the disease and any interventions may cause and approximates the morbidity and mortality of drug toxicity that may result from any intervention (3). Additionally it estimates the cost of both of therapies and any interventions that might cause and approximates the morbidity and mortality of disease and any interventions that might cause. Furthermore, it attempts to be prophetic in ascertaining the potential of disease and any interventions that might cause.

However despite these uncertainties, it has been suggested that there exists an expectation of Health Care Professionals (HCPs) to balance the various psychosocial, clinical, spiritual, cultural, ethical and religious relevant to each respective clinical scenario with their duty to prognosticate. This paper considers if there is a valid rationale for this posits of a duty to prognosticate under the ambit of the duty of care and proceeds to investigate its effects upon the triumvirate of parties.
involved; patients, their families and those who must carry out this duty within the nuanced area of end of life care in Singapore.

Is there a Duty to Prognosticate?

On the surface there does appear to be a presumptive duty to prognosticate over issues from accepted practice guidelines such as those set out by the standard of good medical practice produced by the Singapore Medical Council (28). This ideal is said to emanate from a physician’s duty to provide care, information and support to the family unit in addition to a duty to determine the ability of patients and their families, to prepare themselves for the course of events that are about to unfold and to face the inevitable. Indeed the manner family units address the social, financial, psychological, spiritual and cultural aspects of impending loss and bereavement is determined by the forewarning that prognostication provides. Future care planning for instance is particularly pertinent within the specific financial and healthcare provisions in Singapore’s health care system.

This duty to prognosticate also appears to nestle within the physician’s obligation to protect the rights and individuality of the patient and their family. Such an approach thus necessitates the introduction and balancing of various social, cultural, religious and local mores along with the impact of the influences of familialism and familial determination upon this deliberation and serves to elevate considerations to a wider plane of cogitation. I will defer discussion of these matters to a later juncture but will stress the position of this paper to consider the effects of prognostication beyond the simple deliverance of estimation of life expectancy to a holistic contemplation of care provision.

In the meantime, the determination of informed consent, future care planning, determination of futility and the resulting decisions upon treatments that will be offered need to be weighed up too against psychosocial, cultural, religious, financial and local beliefs, if patient centred care is to remain more than merely an illusion (9). Thus physicians are required as part of their duty of care to balance their own fears and reticence with the need to fulfill their obligation to play an active role in a patient’s care. The veil of therapeutic privilege can no longer be relied upon as patients, their families as well other HCPs involved in the patients care are in effect left ignorant, misinformed and unable to make valid decisions about a wide array of issues.

For the reasons discussed the answer to the question of whether there is a duty to prognosticate, must certainly be affirmative and resoundingly so within the sphere of end of life care, where this obligation appears further reinforced by the working guidelines and definitions of palliative and patient centred care. Thus the pertinent question ought not to be if there is a duty to prognosticate but how this duty is balanced against competing obligations that arise within a holistic appraisal of the 3 parties involved. The duties and expectations expected by and of the patient, their family and carers and the HCPs involved in the patient and family’s care can sometimes be in conflict particularly given the complex psychosocial, cultural, religious, financial, ethical and local beliefs and values that imbue each individual perspective and obligation. This paper will therefore consider some of these issues from a Singaporean healthcare context.

The effect of prognostication upon the family unit

The implications of a determination of prognosis has significant impact upon the patient, not simply upon the approach and avenues of treatments that stand before them but also in terms of how they will confront the immense psychosocial, spiritual, financial and care issues that such a determination would entail. Indeed while social, spiritual, financial and legal preparations are mooted from a patient centric stance, these issues ought to involve the family particularly within a pragmatic society steeped in familial centric views and one in which a vast majority of observed patients still chose to either delegate decision making to the family or chose to work with the family during any decision making processes. This complex interlinking and interrelated relationships and interests between family and patient leads to the employment of the term ‘family unit’ to encapsulate this connection between the two parties owing to the apparent harmony of interests and aligned goals.

Such a precept and indeed the rendering of primacy of concern upon the family unit within decision making process rather than solely upon the individual, appears to have garnered significant support amongst Singaporeans irrespective of race, creed or religion and appears to be reinforced by prevailing sociocultural practices (5,44-57).

Such a stance is not surprising given that local families play a number of roles in the care of patients. These include the role of a surrogate in any decision-making process, an executor of post-mortem wishes, a psychologist, the main provider of physical care, a minister to spiritual needs and a provider in financial matters (67-91). Additionally prevailing psychosocial, cultural and local practices place specific obligations upon families on how they carry out their duties, which in turn reflect upon the social standing of the family. This refers to the issue of ‘face’ or personal honour, which is especially amongst Singaporeans. This family unit’s ‘face’ that is determined by the wider family and community is dependent upon how well they carry out their social obligations and in particular how well the patient is cared for (marc).

Protecting the patient from distress, maintaining their hope and ensuring that they are continuously being supported throughout their illness and after is key to maintaining ‘face’. Such an appraisal of duty appears to underlie the frequent observation that decisions pertaining to care stances remain the express domain of families rather than patients themselves. It is also not uncommon for the patient not to be in receipt of the full facts of his or her condition as a result of familial collusion within the local setting. Fundamental to such a concept is the local credo that a harmonious and calm lifestyle, free of distress and consternations enhances life expectancy, which in turn inspires families to go to great lengths to ‘protect’ patients (marc). Such conduct then affirms the practice of collusion and nondisclosure that sometimes adjudges the act of misleading the patient, to be acceptable (11) (1,2,32,35-38,16-22,24-26,35-37, BIP NE). Thus poor prognosis are frequently tampered, intentionally miscommunicated or simply not provided at all.
The effect of prognostication upon Health Care Professionals

It might on first light seem odd that there ought to be consideration of this final member of this triumvirate given that it is clear that the duty to prognosticate nestles within their professional duty and is in fact an integral part of their work practice. To be clear prognostication is an inherent element of clinical practice be it from deciding upon the best means of providing dressing for a weeping wound to estimating the various care formulations and provisions that would be expected for a patient with chronic progressive diseases such as Rheumatoid Disease, however the place prognostication plays in end of life decision making sets it apart from these more ‘routine’ of estimations particularly within the local setting.

For one this process of prognostication at the end of life in the face of multiple comorbidities and confounding factors is frequently inaccurate and fraught with many evidential and operator related uncertainties. The lack of accuracy and reproducibility of prognostic indices and tools merely heighten such reservations in participating in this process. Thus for evidence based practice instructed and inspired physicians, the process of prognostication appears detached from mainstream medical practice that relies upon accountability, reproducibility, efficacy and accuracy. At best prognostication at the end of life represents an act of ‘guess-timation’ or ‘best guess’ of clinical outcome (3,4,18,19). Concurrently this situation is further clouded by the finding that physicians are poorly equipped and poorly trained for this undertaking despite its fundamental nature within basic medical care (Christakis). Unsupported and poorly versed in the etiquette, communication skills and rudiments of counselling techniques, physicians tend to be vague and over optimistic in their judgment, particularly when dealing with patients and families who would see optimism as a sign of hope (1,2,3,4,17,25). It is thus unsurprising that many physicians opt to collude with families with regards to issues of diagnosis, treatment options and outlook.

Collusion to maintain hope too appears to be mutually beneficial for both parties especially given the inherent societal prescription to not to be seen to be ‘giving up’ on the patient irrespective of their outlook and a corresponding expectation to be seen to be constantly striving to provide alternatives in the face of insurmountable odds (Tan,Toh). Indeed there is an almost compulsive need, partly as a result of these prevailing social and cultural norms within Singapore, to provide some disease altering treatments at apparently any stage of the illness in order to propagate this ideal of non-abandonment (11). Incidentally it would seem some hold that such a posture also dissipates the need to prognosticate altogether, further highlighting the depth of inherent resistance to prognosticate amongst HCPs (11). Indeed it is said, “physicians are socialized to avoid prognostication”, particularly given that within this situation, prognostication pertains to death and the insinuation of failure to forestall the inevitable and meet professional duties (1,2).

Yet an over optimistic attitude may highlight the rarely considered emotional aspects of this estimation both upon the family unit and its effect on the ensuing care of the patient and the family. Increasingly some physicians see such action as being a part of their beneficent duties to the family unit as well as a means of acknowledging the cultural and societal mores and expectations stated earlier. Some physicians report that the motivation behind their actions is fed by a fear of actualizing a ‘negative self fulfilling prophesy’. This ‘negative self fulfilling prophesy’ forewarns of a spiral of deterioration in the patient’s condition that is precipitated by the physician’s estimation and spurred on in part by the patient’s feelings of despair, abandonment and loss of hope as a result (10,18,1940,41). It is believed that this turn of events subsequently leads to the patient ‘giving up’, accelerating a downward spiral of further worsening of their condition and affirming the connotate cultural, social and local beliefs (10,18,1940,41). Many local physicians feel that by predicting such outcomes, they are complicit to a patient’s early demise and culpable to failing in their duties to the family unit. Some physicians would thus asportion this resistance to be accurate and indeed negative in their estimations, to their duty to be beneficent and non-maleficient. They argue that by remaining positive and maintaining hope, the cycle of the “negative self fulfilling prophesy” will not arise (11,16,34-37,Tan).

Other physicians attempt to circumvent this problem altogether by employing clinical inertia. Rather than alter treatment approaches despite less than favourable results and change the goals of care in the face of corresponding poor outcome estimations, some physicians choose to ‘hold their course’, persist in their treatment posture albeit using alternative treatment modalities and combinations which maybe of variable efficacy that may hold nothing more than a minimal chance of response and at best a placebo effect (3,4). However justification for such actions may simply lie in expounding the idea of hope with the alternative amounting to abandonment and giving up to some.

Concurrently it would appear that there exists an inverse relationship between clinical interventions and prognostication, where the need to prognosticate fades in the presence of surviving clinical options. This creates the illusion that the very availability of treatment options becomes the surrogate for prognosis and reinforces the clinical inertia approach (9). In the meantime, the availability of clinical options it would seem, determines the manner that care is instituted will be steadfastly adhered to. The presence of alternatives apparently negates all other considerations and the burdens of the treatment simply disperse, lost on the cogitations that, whilst other treatment options exist, death may be postponed or at least in some cases discussions about this fact, deferred. The alternative would appear to justify the means given that it would simply signal an acceptance of the inevitable which runs in the face of the prevailing medical ethics and social expectations of cure at all costs.

To some these uncertainties and concerns merit setting aside of the recognized short falls and complications of prognostication. Veritably the process of prognostication seems to have waned in importance in the eyes of many clinicians (9). However in reality, the presence of second, third and even fourth line treatment alternatives rarely return patients to a state of health that they were prior to the deterioration, much less to a state of health that they enjoyed prior to the illness (29). Prolongation of life at the cost of increased health...
burdens, impairment to Quality of Life (QoL) and side effects may to some be too much to bear. Merely the presence of other options thus becomes poor surrogates of prognosis or at best not one that would be universally accepted.

However there are some who would view the presence of such alternatives as a means of realizing their own interests (9,17). In an era of medical tourism, insurance funded medical care and private medical services, some physicians find themselves with a vested interest to continue to proffer sometimes not fully evidenced, sometimes not clearly effective treatment options. These vested interests may cloud judgment and bias treatment approaches and propagate clinical inertia if only for self-serving pursuits. However before proceeding down this road, balance needs to be brought to bear, private medical centres do also possess treatment options and clinical experience not easily available to clinicians in the public sector let alone to others in the country. The presence of such specialized and personalized care and interventions underpins the growing market in medical tourism for which nations such as Singapore continue to benefit from. Thus the venture of continued treatments along a particular treatment strategy that others might deem hopeless would appear warranting of consideration upon their own merits.

Persistence in a treatment stance may also stem from a fear of a breakdown in the therapeutic relationship and a disruption of the aura of clinical competence and effectiveness enjoyed by many physicians. Many physicians are desirous of this for a number of reasons. Some as a means of maintaining their status and with that control as it were upon proceedings. Others, fed by their general inability, lack of confidence and training hope to circumvent the need to delve into areas of care they are ill at ease to confront as a result of such a disclosure and consequent changes in treatment approaches (17). For some physicians, the effects of such augurs upon themselves, is reason enough to maintain status quo. Indeed the emotional and physical costs upon physicians are rarely considered. The emotional ‘disconnect’ often relied upon by physicians is hardly impenetrable and great personal resolve and strength is required to maintain this veneer (28). The toll is hardly inconsequential with studies showing a burn out rate with associated psychological morbidity of 19-47% amongst physicians (28,42-50 burnout).

However the ill effects of such resistance to forewarning patients and their families of the waning chances of cure and indeed of prolonging survival are clear. Wills are not written, affairs not put to rest and last words not said, sometimes under the guise of maintaining hope.

The effect upon decision makers

The division between the members of triumvirate are not fixed but can be rather fluid. A pivotal example relates to the determination of futility and impending demise. Here there is frequently an understanding between patient’s families and their HCPs to collude upon poor outlooks. Whilst the belief in maintaining an element of hope when prognosticating even in this stage of a disease process does have some cultural bearing in the Singapore context and represents the premier reason for such an alliance, this position does open itself up to withering criticism of paternalism (1,2,10). Here paternalism is not solely medical but familial too. The argument follows that through such premeditated prognostication as deemed by the decision makers, goals of care become ‘way laid’ and patients are reduced to mere passengers. Patients have little option but to rely upon their physicians and family given the little if any alternative sources of information available to them (25). Furthermore many patients at this stage of life may be incapable of making significant decisions and rely upon the advice and help of the physicians and family (25).

CASE: Consider the case of Rafidah, a senior lecturer in legal studies who is of Chinese parentage but adopted by a Muslim family. She was 42 years old when she was diagnosed with lung cancer. This came as quite a shock to her husband Najib and their three girls aged 13, 7 and 3 respectively, given that she had never smoked and lived a ‘healthy lifestyle’ yet such a diagnosis is not altogether uncommon amongst ladies of Chinese extraction. Despite multiple lines of treatment, Rafidah’s condition continued to progress. It was at this point that her private oncologist suggested that she continue with an experimental drug in an attempt to control the disease. Whilst Rafidah was clear that she did not favour this option and would choose instead to pursue comfort measures, her husband seeing this as a ray of hope chose to pursue this treatment option. Interestingly, Najib did so despite advice to the contrary from second and third opinions from other oncologists.

Here it was later suggested that the impetus for offering a fourth line treatment may have been as a result of self-serving financial interests as well as a need to maintain the status of the physician as a renowned healer and a purveyor of hope. In the meantime Najib’s rationale might have been to seek solace in the knowledge that all avenues were being explored as every effort was being sought to prolong his wife’s life and that he was meeting his societal expectation of non-abandonment and the maintenance of hope. Neither of these rationales appeared to have considered the patient’s opinion much less what she considered to be in her best interests. Autonomy, it could be argued is subverted given that the apparent options open to the patient are those prearranged by her husband and their physician and cultural demands would have seen Rafidah acquiesce to her husband’s request. Here the asymmetry of power that exists between patient and physician is also perpetuated.

It is thus unsurprising that the prognostication of futility falls prey to concerns of paternalistic tendencies especially given that for the most part, it is the physician and the family that are the architects of the fate of the patient. The illusion of choice appears to be maintained by steering patients to a small section of treatments that the decision makers themselves formulate and deem acceptable, as was the case in Rafidah’s context.

Physicians abetted by the family preside over decisions to cease and desist any provision life altering treatments. This would include options that range from the invasive, such as ventilator support, to those that are significantly less so, such as blood transfusions and antibiotic treatments. Importantly within this remit cessation of life support and the viability of terminal sedation also become possible, once again upon the
determination of the decision makers. However it is argued that physicians by virtue of their training, knowledge and experience are still best placed to decide on viable options and steer patients onto only viable treatment options whilst the family decision makers are best placed to venture options that are clearly viable.

**CASE:** Consider the case of Deborah, who was a 56 year old lady with endometrial cancer who exhausted all her treatment options in the face of a rapidly progressive disease process. Whilst there was the option of stem cell treatment that was being offered in China, the family were clearly not financially able to meet this request so the option was never mooted.

Meanwhile the determination of futility runs parallel and feeds into the ‘negative self fulfilling prophecy’, given that upon a verdict of futility; options to investigate and correct any reversible causes for deterioration are ceased. Such a decision would also negate any option for the escalation of treatments such as intravenous antibiotics. This then prevents any opportunity of stemming the deterioration and inevitable demise of the patient. Thus the determination of futility could be then viewed as ushering the fulfilment of the ‘negative self-fulfilling prophecy’ (1,2,10). The end result troubles many physicians despite support from the family decision makers, feeling that their act of determination has a significant part to play in the demise of the patient, leading many to opt for the softer more positive stance.

It is also here in considering the issue of futility that an example of the need to include appropriate consideration of a patient’s circumstances arises. It is well known that there is a variance between what is readily available in Singapore may not be so easily accessible in other nations. Likewise, treatment options in one part of a developing nation, say a city, may not be the same as that in the rural areas. Awareness of the family unit’s financial and social circumstances as well as their ability to secure treatment at other sites is imperative. A recent example was a 24-year-old patient who developed multi-organ failure from a newly diagnosed hematological malignancy. Physicians in his country pronounced his condition terminal and further interventions futile and prescribed comfort measures only. However, the family unit was not without means and secured transfer to a Singaporean unit where he was treated with good effect. Thus prognostication ought to consider such matters both in foreseeing as well as foretelling a determination. Indeed like most other clinical considerations, prognostication is a context dependent activity.

**A possible solution**

The proposal offered here is by no means meant to be a solution to what ails the duty of prognostication but merely proposes a means of confronting some of these issues. This is especially so given that some require a generalised approach whilst others require a particular and personalised approach.

Many of the issues that have been highlighted provoke the need to reconceptualise the process of prognostication and reformulate attendant attitudes towards this facet of the duty of care whilst balancing considerations with competing obligations. Clearly the balancing of factors cannot simply be the express remit of physicians any more than they are the families. Instead prognostication ought to be a wider more inclusive process where proclivities and motivations can be tempered. The employment of existing prognostication indices along with second opinions and the aid of MDTs, will undoubtedly improve prognostication as would redressing the undoubted shortfalls in training, communication skills and the attendant deficits in clinical experience to prognosticate effectively, there arises the need to consider the first step of prognostication as one that is focused upon improving the ability of physicians to determine the disease course and effectively convey their findings. The second step of this progressive process is the effective elucidation of prognosis through the combination of available techniques whilst the third step involves gaining a holistic appreciation of the family unit’s social, psychological, cultural, financial and religious circumstances in order to garner as accurate an estimation as possible and determine the impact imparting this information will have on the family unit. Once more these facets maybe helped by the presence of an MDT.

The fourth step involves the use of appropriate means, training and personal skills to impart this information to the family unit as a whole. The fifth step is the provision of effective support for the family unit, be it from a psychological, social, financial or religious perspective. This would also entail confronting any collusion that may occur and treating this appropriately and with sensitivity. Education of both family and staff upon this matter is already on the way in Singapore, albeit at an early stage.

**Conclusion**

The duty to prognosticate remains defined and sits within the remit of the duty of care. However there are a number of reasons for the problems that are attached to the failure of physicians to appropriately determine prognosis, some sociocultural whilst others hinge on professional and personal factors. Similarly the effects upon the family unit too require discemment. This paper has shown this process to be fluid and case specific requiring a holistic interpretation of conditions rather than a simplicistic reflection of delivering an estimation. Clearly there are also times when the duty to prognosticate will upon the discernment by the MDT led by a holistic appraisal of the specific contexts of the patient’s situation, be trumped by other competing duties.

Whilst the antidote to what ails the duty of prognostication is some time away, present practices of procrastination, collusion and misleading patients clearly cannot continue if patient centred care is not to become a simple catch phrase or an illusion of modern medicine. Instead this duty needs to confront and balance the competing duties that arise and be carried out in a contextually sensitive, accurate, honest and individualised manner.

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Cloud Computing and its ethical issues

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Abstract
Knowledge and information have always been responsible for the advancement of humankind. They have helped to organize societies, build peace and sometimes were the reason for conflicts. Both of them if vested in the hands of a few can enslave the whole society. But if used wisely they can help to liberate people from their clutches. Popularly, cloud computing is “stuff’s not on your computer” and it refers to offsite storage of client data. The applications of cloud computing are practically limitless. The benefits of cloud computing include reduced infrastructure and management, cost effectiveness, improved work production, fast and efficient communication, constant service, ease of use, mobility, immediate access to updates and enhanced security. Many of the emerging technologies often create new and unsuspected technical problems as well as new and unanticipated ethical challenges. Though the benefits of cloud computing seem convincing, there are many potential problems associated with it. The most important are privacy and security. There are several ethical issues with reference to cloud computing involving loss of control, unauthorized access, data corruption, infrastructure failure, accountability, ownership, function creep, monopoly and lock in, privacy and cultural imperialism and these issues are discussed.

Introduction
Cloud computing is considered to be one of the fastest growing technologies in the computing industry and the one which has the capability to affect almost all aspects of computing. Experts opine that it saves time, money and offers large amount of storage, applications. Though cloud computing has become the current industry’s buzz word, it is still an emerging technology. Users, cloud service providers and industrial experts are still unaware of the ethical and legal consequences of this technology. It is also useless to wait till these risks and consequences reveal themselves. It is advisable to study and recognize such ethical issues at the earliest in order to save time and money to be spent later in dealing with them.

History
Cloud computing can be defined as virtualization of resources, maintained and managed by a cloud service provider. It is nothing but providing hosted services over the Internet. The history of cloud computing can be dated back to the 1960s. It was then the concept that would deliver computing resources to different locations through a global network was originally introduced. An idea of ‘intergalactic computer network’ which is quite similar to the present cloud computing technology was proposed by J.C.R Licklider. Another expert John McCarthy envisioned that computation may someday be organized as a public utility like water or electricity (Timmermans et al., 2010).

The evolution of cloud computing involves many phrases like grid computing, utility computing and distributed computing. It is enough for the user to know the endpoint to access the application. The user does not care much about what goes on in the cloud. Behind the service interface, there is a grid of computers to provide the resources and the grid is usually hosted by a company. Thus grid computing plays a role in cloud computing. Users pay only for the amount of resources utilized by them and this pay-for-what-you-use is similar to utility computing. The resources used in an application or the resources used to provide a service are generally widely distributed thus making distributed computing to play its role in cloud computing.

Users can gain access to their files and data from a web browser, via the Internet. It is not necessary to download and install expensive software for using an application (Mohammed, 2009). Users can easily access the application through the cloud as it is already installed online remotely and cloud offers many applications free of charge. We use many applications from the cloud without realizing that they are from the cloud. Gmail, Hotmail, Yahoo, Google, Twitter are all examples of cloud computing applications. To use them we need not have an email management server. The cloud service providers take care of the software and hardware needed to make use of these applications. The services provided by cloud computing are generally of three types. They are infrastructure, platform and software: Infrastructure as a Service (IaaS) It mainly provides infrastructure like virtual servers. Users are given the privilege to start, stop and access them as they wish and these virtual servers are used for storage purposes also. Amazon web service is the best example for this type. Platform as a Service (PaaS) Platform as a Service provides software and product development tools using which developers can create applications on the provider’s platform over the internet. Software as a Service (SaaS) This service provides software and products. If the user knows the endpoint to access the services, the Software as a service can be used from anywhere.

The cloud may be a private cloud or public cloud. The public cloud covers a vast area or a large number of users and it can distribute service to any user on the internet. Amazon is the largest public cloud provider. A private cloud, like a data center provides service to a...
limited number of users. Sometimes public cloud resources are used to create private cloud (Rouse, 2010).

Nature of the technology

The main trait of cloud computing is virtualization of resources and storage. All the information and tools are stored or preserved in the resource cloud by the cloud service provider and are delivered to the user on demand. The resources are also added or removed based on the changes in needs. These resources are used with maximum efficiency and they serve multiple needs of several users simultaneously. People or organizations are ignorant about where the data is stored and they assume that all the data and services are available in the internet (Hartig, 2009). This emphasizes the nature of ease of use of cloud computing. The resources and information are shared, delivered to the users and are controlled by the cloud providers in a quick and efficient manner. This makes accessibility to information as simple as possible.

Advantages

Buying, downloading or installing an expensive software is no more necessary as software are used directly from the cloud through internet access and a huge range of applications are provided by the cloud of which some are free of charge. Storage costs are reduced for the users as cloud provides large amount of space for storage. Users can store their files and information in the cloud and retrieve them from any remote place whenever needed by getting connected to the internet. They can make use of other resources available in the cloud also in the same way. Payment can be made only for the amount of resources utilized and this makes cloud computing cheaper. This technology is also less labour intensive as businesses do not have to appoint special IT staff for maintaining or updating the software and for fixing the bugs. The cloud service provider maintains and manages the cloud (Arno, 2011).

Cloud computing promotes Green computing. Microsoft claims that cloud computing reduces a business’ carbon emissions by 30%, as it is not needed to power an entire server and payment is made only for what is used online. Thus in this way cloud computing promotes a greener environment.

Risks of Cloud Computing

Privacy

As users do not physically possess storage of their data, their personal information, files and data are stored in the cloud which is in turn managed by the cloud service provider. In this circumstance, risk of inappropriate access of data arises and data can be mishandled by anybody who gains access to it. Hence users have to demand assurance of privacy and security from the cloud providers (Arno, 2011).

Dependency

Since most of the information and files of the user are managed by the cloud provider, the user becomes more dependent on the cloud providing party. Risks like the cloud provider going out of service may occur. It becomes hard for the user to retrieve back all the data from the cloud provider. Then such data has to be migrated to another cloud which is equally tiresome and technically difficult.

Cost problems

Cloud offers are highly expensive initially and data centers have to buy or develop the software that runs the cloud. Not only that, the customers who arrive are charged a higher price and they face a lot more issues than who come late.

Knowledge and Integration

Much knowledge is needed for implementing cloud technology and to address the issues that arise out of this technology. So businesses must take steps to promote the cloud computing knowledge of their staff before they implement the technology. Integration of processes, resources and technologies is also required before implementing this technology and it seems to be a complex process.

Ethical issues

Security and privacy

The topmost concern in using cloud computing resources is security of confidential information. There is a risk that employees of cloud vendors may access confidential information and use it to the detriment of a client. Because of the nature of cloud computing services, there is a risk that client information will be subject to destruction or disclosure by unauthorized access.

Privacy is another major issue which businesses cite as a matter of concern when it comes to cloud computing. The cloud service providers collect voluminous amount of data about users and their businesses, and much of it is stored in data centers around the world. Any sensitive information could be leaked out or even destroyed by any disgruntled employee of the cloud provider or any competitor. Unauthorized access of client information is the biggest threat posed by cloud computing. All the advantages and merits of this technology go waste if proper privacy and security are not assured by the cloud provider (Timmermans et al., 2010).

Loss of direct control

In businesses which implement cloud computing, any information that is to be stored locally is stored in the cloud. The user thus places his data on machines he cannot have control. This shifts the control of data from users to third parties who provide the cloud. This loss of control over data can in turn lead to many problems. There is a risk that any employee of cloud provider or any competitor will gain unauthorized access to data. Since data is not directly controlled by the user, data may sometimes be corrupted. The infrastructure provided by the cloud vendor is prone to failure. When some failure occurs, it may be difficult to trace out the cause of the failure or who is responsible for the failure. There is very little chance of availability of solid evidence to find the responsible person when a failure occurs (Grimes, 2009).

Involvement of many people

Data is stored in multiple physical locations, across many servers around the world, possibly owned and managed by many different organizations. So many people have share in any action that takes place within a cloud. Moreover, responsibilities are divided between customer and provider of the service. So neither of them could be held responsible for problems that arise in the
cloud and neither of them is in a good position to address the problem also. This is ethically known as ‘problem of many hands’. This occurs as a result of the complex structure of the cloud services and it is difficult to determine who is responsible, in case something undesirable happens (Haeberlen, 2010).

**Self-determination and Accountability**

Information self-determination is the right or ability of individuals to exercise personal control over the collection, use and disclosure of their personal data by others. The cloud providers must be open and accountable with reference to their data management practices. They should seek informed consent from individuals (Cavoukian, 2008).

Accountability empowers users to ensure that personal data, stored in the cloud is managed properly. Users are allowed to check whether the cloud providers are performing as they agreed. It guarantees accountability—transparency, but this creates a light tension between privacy and accountability (Haeberlen, 2010).

**Ignorance of Ownership**

The users are generally ignorant about what data are stored in the cloud, how the data is stored, who has access to the data and what the cloud providers can do with the information. Thus the user may lose his freedom of ownership over the data. This induces dependency problems as the user becomes solely dependent on the cloud provider. Moreover, the information is located in multiple physical locations in the cloud, thus making it impossible for the user to determine how this data is accessed. Identification of fraud and theft is also much difficult. It is also agreed that information stored with a third party like cloud computing provider has weaker privacy protection than when the information remains only in the possession of the user (Murley, 2009; Grimes, 2009).

**Deperimeterisation**

Deperimeterisation involves the disappearing of boundaries between systems and organizations, which are becoming connected and fragmented at the same time. It blurs the border between what lies within one’s own IT infrastructure and what lies outside of it. Not only this, but also the border of the organization’s accountability becomes vague and this can lead to a confusion and misunderstanding between the user and cloud service provider (Pieters, 2009).

**Function creep**

It involves a serious danger in which a data collected for a specific purpose is used for some other purpose without the knowledge of the owner. It is in fact a threat to the privacy of the owner. For example, a database with biometric data of citizens may be designed to be used for authentication purposes. But it is not fair to use it for crime investigations (Pieters, 2009). This function creep occurs because of user’s loss of control on the data. As time passes, users become unaware of what data is being used for what purpose. This could lead to unanticipated consequences.

**Monopoly**

It is the tendency of power being invested in the hands of only a handful of companies (Nelson, 2009). Only those companies, in the future will acquire a domineering position in the market of cloud computing services. This might be harmful to the users since they might be robbed off their autonomy to make use of their data in the cloud. The usage of their own resources may be dictated by powerful cloud corporations.

**Lock-in**

The height of dependency problem leads to lock-in. It is a situation in which users are too much dependent on the cloud provider that they are unable to move or migrate their data from one provider to another provider or back to their in-house IT environment. The users are more or less locked-in by the cloud provider and they have to be at the mercy of the cloud provider (Timmermans et al., 2010).

**Service Failure**

Sometimes the cloud user may not be able to use the services efficiently due to certain reasons. There is always the risk of losing Internet connectivity and the works within a company may be considerably disrupted due to Internet downtime. Reduced Internet speed may pose a danger in the industry.

**Measures to address certain ethical issues of cloud computing**

Many unwanted issues of cloud computing have not yet been identified. But it is now essential to deal with those issues which are foreseeable and this may prevent undesirable consequences (Pieters, 2009). According to TLIE (2011), some of the precautionary principles include:

**Confidentiality**

Users can assure that the cloud vendors agree to keep all personal and sensitive information private. A sufficient assurance might be provided if the vendor publishes a privacy policy, and contractual provisions are always needed to assure confidentiality.

**Physical Security**

Security monitoring has to be provided round the clock by the cloud providers and physical access to computers can be limited to only authorized persons in charge of servers.

**Network Security**

Cloud vendors can have firewalls blocking unauthorized connections and this has to be audited by third parties periodically.

**Software Security**

The cloud providers need to conduct independent audits of software security periodically and software updates have also to be carried out within thirty days of publication.

**Data Security**

Some additional data security measures proposed by Newton involve encryption, server security, client security and password security.

**Encryption**

All transmission of sensitive data such as passwords and client information must use the Secure Socket Layer (SSL). SSL is generally the standard encryption technology and it can completely secure communications over public and also untrusted networks. If the URL for secure information begins with https, then it can be confirmed that SSL is being used.

**Server Security**

In addition to SSL, a third party audit can be conducted on the cloud provider’s services since it is difficult to determine or assess their security by the client.
himself. Such third party audit services are provided by companies like McAfee.

Client Security

Data which is stored in the client’s laptop or desktop can be secured with a firewall or antivirus protection. For windows users, Google Pack offers free antivirus and antispyware.

Password Security

The password chosen has to be secure and strong as weak passwords would undo all the efforts of SSL, Server and client security. For this purpose, free password generators and managers could be used like the “password Safe”.

Performance Efficiency

The amount of downtime, permissible or acceptable should be negotiated clearly. It can be guaranteed by service level agreements, which provide a minimum level of uptime, with penalties for failure to meet the agreed level.

Data Availability

Data should be readily available whenever clients need them. The possible ways to attain an efficient level of data availability include storing them in multiple physical locations and taking periodical back-ups of data.

Geographic Redundancy

If data is stored just in one center, then a failure at that point would lead to the unavailability of data. Hence data must be made available in multiple data centers. Multiple Internet service providers and power grids should be available in a network of data locations.

SAAS provider back-ups

Data centers can have multiple back-ups during the day. At least one back-up location should be a considerable distance away from the data center. Back-ups can be taken multiple times per day and stored in multiple secure offsite locations.

User Back-ups

To avoid risks, regular back-ups of data from SAAS provider can be taken and stored. For this purpose, the SAAS provider must allow a full export of data from their system.

Data portability

Cloud providers have to ensure users that they will be able to use and download all data in a commonly used format and this will make data migration simpler to an extent.

Conclusion

As an emerging technology, cloud computing involves virtualization of resources and has certain advantages like access to expensive software and a huge range of applications. But at the same time it has some ethical issues pertaining to security and privacy. Hence it is necessary to solve these issues so that the fruits of this technology will be of use without any untoward consequences.

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References


Indian Marine Turtles in Soup

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Introduction

Turtles evolved about two million years ago, and have remained as an archaic group virtually unchanged in their basic characters. They are highly diverse within the group exhibiting world wide distribution and all the six zoogeographical realms have their representatives. Turtles belong to the order Chelonia which includes thirteen families comprising the marine turtles, the pond turtles, the tortoises and the soft shell turtles. They are poikilothermous and occur with great diversity in the equator. Indian turtle fauna is formed of about 31 species and subspecies belonging to five families and is found in the deserts of Rajasthan, the tropical rain forests of Kerala, the hill streams of Assam, the estuary of the river Ganges and the seas surrounding the Andaman and Nicobar islands(Das, 1985).

India provides the habitat for a remarkably diverse and important assemblage of turtles. Acting as an integral part of Indian ecology, they inhabit the rivers, canals, tanks and surrounding oceans; still others more terrestrially inclined occupy plains, mountains, forests and even deserts. Turtles play a major role in maintaining a natural balance. The herbivorous forms keep an effective check over the growth of aquatic weeds thus helping to maintain open–water. Some of them act as scavengers by rendering dead bodies. By eating injured or diseased fish, they help in maintaining healthy fish populations.
Marine turtles

Turtles are classified based on the method by which the head is withdrawn into the shell. They are classified in to vertical necked and side necked turtles. The marine turtles are vertical necked and their heads are almost non retractable. They are powerful swimmers and frequently undertake long nesting migration.

Marine turtles popularly called as fossil turtles are air-breathing reptiles living in the oceans for over 200 million years. The seven species of marine turtles include flat back, green sea turtle, Hawksbill, Kemp’s Ridley, Leatherback, Loggerhead and Olive ridley. Marine turtles are found in all oceans except the Arctic Ocean. India has major nesting sites for five endangered species of marine turtles. According to the IUCN Red List of Threatened Species, *Eretmochelys imbricata* (Hawksbill) and *Dermochelys coriacea* (Leatherback) are critically endangered and *Chelonia mydas* (Green turtle) and *Caretta caretta* (Loggerhead) are endangered while *Lepidochelys olivacea* (Olive Ridley) is vulnerable. India, marine turtles are severely affected by incidental catch in capture fisheries, coastal development, predation of eggs and habitat loss.

Indian turtles

Little is known about the taxonomy, behaviour, distribution and nesting of Indian turtles. Compared to other reptiles, the turtles are virtually defenseless and have an array of enemies which congregate at nesting sites to eat the eggs and hatchlings. Turtles lay their eggs and leave them to the mercy of nature. The predators mainly include crabs, ants, beetles, barnacles, lizards, boas, sharks, rats, mongooses, foxes, jackals, pigs and birds. Turtle populations of India are dwindling at a faster rate and the main reason that can be attributed is the demand for turtle meat in Bengal. But if this turtle trade is not properly managed, as in Bengal, the turtle resources of other regions would vanish beyond their capacity to regenerate.

Turtle flesh and eggs are used as medicine and aphrodisiac. Turtles are consumed as a source of protein or as a luxury food. The neck and tail bones and the viscera are used in soup. The fat is used for soaps and creams while the neck skins are used in leather articles. The skull is used in jewellery and ornaments and the animals are sold as stuffed specimens to tourists. Turtles of India exhibit a decline as they are heavily exploited for their flesh, shell, skin and eggs. In India turtle flesh is used to treat tuberculosis, indigestion and weakness of body and mind. Turtles also suffer due to the effects of pollution, deforestation, incidental capture and alteration or destruction of habitat brought about by wrong land use patterns.

Opening of new shacks (temporary shops) and lighting along the beaches along with other excessive tourist activities may be a reason for the decline in the number of nests. The declining trends of nesting may also be due to the unfavourable weather, the directions and velocity of the wind and water currents. Plundering of marine turtle eggs is a serious threat. Eggs can be easily consumed than the flesh with much acceptance. Turtle meat is cheap as they can be easily caught and stored. They can be kept alive and immobile for weeks by turning on to their backs. They are transported and killed by inhumane methods. Crammed into small baskets, with their flippers stitched or wired together, turtles are sent to the market. The sellers used to cut the live turtles in front of the customers and slice off the animal when the heart continues to beat.

Olive Ridley Turtles

Olive Ridleys are distributed in Africa, America, Asia and Australia and in India they are found in Andaman and Nicobar Islands, Andhra Pradesh, Goa, Gujarat, Kerala, Lakshadweep, Maharashtra, Orissa and west Bengal. Olive Ridley is an annual nester laying about 80-180 eggs. They normally feed on molluscs, crustaceans, fishes and jellyfishes. They are capable of foraging in deep waters. The Olive Ridley turtles nest together in numbers reaching up to several thousands. This spectacular congregation event is called as ‘arribada’ meaning ‘arrival’ in Spanish. The Gahirmatha beach in Orissa is the world’s largest nesting ground of marine turtles, with about two hundred thousand female ridleys coming to nest.

The Olive Ridleys nest sporadically along the east and west coasts of India while mass nesting was observed only along the Orissa Coast. They are well known for their synchronous nesting behaviour. The females come to the shore crawling above the high water mark mostly at night to dig a nest with their hind flippers. After laying about 100 to 150 eggs they return to the sea and the eggs hatch after 50 to 60 days. In India, in the Orissa coast at Gahirmatha, Devi and Rushikulya the female ridleys nest *en masse* (Tripathy, 2002). The marine turtles have stopped nesting at the Devi river mouth now (Das, 2012). Gahirmatha has been recorded as the world’s largest sea turtle rookery (Bustard, 1976). It is located in the river mouth of Maipura between Dhrurma and Paradeep port (21° N - 87°E) (Tripathy, 2002). The mass nesting of Olive Ridleys in Gahirmatha beach was first reported by Bustard (1976). The number of turtles undergoing mass nesting ranged between 1,00,000 and 8,00,000 (Pattanaik *et al.*, 2001). Normally the first *arribada* is followed by a second one of lower intensity after about 45-60 days (Dash and Kar, 1990; Panday *et al.*, 1994). Olive Ridleys are vulnerable due to predation of eggs, loss of nesting sites and capture of nesting adults for their flesh, skin and oil. The increased human intervention in the coast of Goa known as a popular tourist destination has affected the nesting activity of the Olive Ridleys over the years (Das, 2004). In the past, these turtles nested on nearly all the beaches in Goa. But due to tourism activities in many beaches like Calangute and Golva, turtles find it difficult to nest (Goyal and Pathak, 2003). In 2012, hundreds of hatchlings were predated by hovering crows and kites in the Rushikulya river mouth in spite of the efforts taken by locals and tourists. Many hatchlings were found dead in the nearby beaches having got entangled in rejected fishing nets (Das, 2012).

There is also a controversy brewing off the Orissa coast over oil exploration near the mass nesting sites of the Olive Ridley turtles. It was planned to carry out exploratory drilling near the Gahirmatha Sanctuary and Rushikulya river mouth. Lovers of wildlife fear that the oil exploration would cross the migratory path of the endangered Olive Ridleys. They are apprehensive that the leakage or blow outs from the drilling well may have disastrous effect on the turtles.
During the past ten years, more than 100,000 Olive Ridleys have been killed by illegal fishing along the coast of Orissa which is one of the three mass nesting sites in the world hosting as much as 50 percent of the world’s population (Das, 2004). The scientists and environmentalists must urge the Indian authorities to take immediate steps to protect the mass nesting sites of the Olive Ridleys along the Orissa coast. To save the endangered sea turtles, action must be taken against mechanized fishing along the Orissa coast.

Conservative measures

Conservation and development have to be integrated to ensure a sustainable future. In addition to the protection offered by the Wildlife Protection Act of 1972 for a number of turtle species, Orissa’s campaign against poachers of Olive Ridleys, Tamil Nadu’s extensive hatchery programme in the Bay of Bengal, research and publications on turtle conservation by the CMFRI (Central Marine Fisheries Research Institute) and the appointment of a sea turtle specialist group by the Department of Environment to advise the Government of India helped India to achieve progress in sea turtle conservation.

Large land areas acquired as community reserves near the beaches can provide safe nesting areas. Moreover interpretation centres have to be established to provide details about the life cycle of the turtles to local people. In these reserves, human/ animal movement must be prohibited during the nesting season, October- May as the turtles require total privacy during reproduction (Sastry, 2004). Nesting is affected by rainfall as the Ridleys prefer a warm climate to lay eggs. Predators have to be prevented from disturbing the eggs, hatchlings and adults on the nesting beach for achieving conservation. During fishing, by catch reduction devices like Turtle Excluder Devices have to be used. Conservation of green turtle nesting sites can be initiated in Gujarat, Laccadives and Andaman and Nicobar islands. Awareness programmes can be organized on turtle conservation to make people aware of this endangered species (Kabi, 2009). Awareness about the significance of marine resources especially turtles and the consequences of their destruction have to be created among the public and fishing community. Studies related to the identification, lifecycle, behavior, distribution, nesting, feeding and reproduction of turtles may pave way to take effective conservative measures.

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References


Bio-Ethics and Sustainable Development: The Need for Proper Policy Making

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In the twentieth century, the discipline of philosophy has witnessed many philosophical turns. Some of them are: the linguistic turn, hermeneutical turn, the ecological turn, feminist turn and phenomenological turn. Philosophers began to look at philosophical problems from different perspective. Thus there is a paradigm shift from “arm-chair philosophy” to social oriented philosophy”. Especially the hermeneutical turn and the ecological turn gave a new methodology of upstanding human problems and both these turns are interrelated.

The ecological turn may be defined as follows: “The ecological turn, is not a single or univocal issue; on the contrary, it stretches all the way from issues of pollution of our rivers to the question of the relationships of humans, the world and God. Every discipline and every ideology, every system of morality and every form of religion has to rethink their fundamentals in the light of the ecological question, on pain of otherwise turning themselves into engines of oppression”. This definition clearly shows that there is a need for protecting the environment and man cannot have an isolated life. His life is interrelated with the nature and other living beings.

Similarly the hermeneutical turn explains the need for rethinking and reunderstanding the philosophical concepts. If we extend this scope, one can understand the need to revisit our way of approach towards nature and other living beings. Two aspects of hermeneutics are: (1) the interrelation between the whole and the parts and (2) the interrelation of the past and the present with that of the future. Our attitude towards nature should be such that that we must develop a holistic perspective wherein one cannot have a compartmentalized understanding of life. This means that in order to understand the totality of life, we must know the validity and the significance of parts, which include, nature as well as other living and non-living things on earth. Similarly we are always shaped by the past. Our
traditional values and ethos play a significant role in shaping the present; not only the present but also the future. Thus we see the interrelation between the ecological turn and the hermeneutical turn. If we use this methodology, a new way of understanding the sustainable development will emerge.

The “bio-philia” conception that there is an innate emotional affiliation of human beings to other living beings is important in this context. A respect for life is emphasized by many contemporary thinkers. One good example is Leopold (1948). He argues in favour of a land ethic, which includes soils, waters, plants and animals or collectively, the land. “A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise”. In Leopold, we see a need for a shift from human to nature. Thus, we see in the contemporary approach an extension of environmental aesthetics to plants and animals and to nature. The animal rights philosopher like Peter Singer and the Deep ecologists like Arne Naess and Warwick Fox are representatives of this.

Peter Singer (2003) asks the question, whether a non-human animal is a person and answers positively. He explains how animals are used in experiment for the sake of man. He narrates one such experiment in the U.S. Armed Forces Radiobiology Institute at Maryland. Here the rhesus monkeys are trained to run inside large wheel. If they slow down too much, the wheel also slows down and as a result, the monkeys get electric shock. Once they are trained in this for some time, they are given lethal doses of radiation. Then while sick and vomiting, they are forced to continue to run until they drop. This is supposed to provide information on the capacities of soldiers to continue to fight after a nuclear attack. Such experiments take away the rights of animals. This is due to the wrong assumption that both plants and animals exist for the sake of man. This is nothing but exploitation.

Hans Jonas (1984) says that this would result in the dehumanization of man. He explains how the future of man lies in the future of nature. Similarly, Deep ecologists like Naess raise deep questions about one’s assumptions regarding ecological relationship. Naess gives seven principles, which must be taken seriously in the context of environmental aesthetics. These principles are: rejection of the man-in-the-environment image in favour of the relational, total field image, biospherical egalitarianism-in principle, principles of diversity an of symbiosis, anti-class posture, fight against pollution and resource depletion, complexity, not complication, and local autonomy and decentralization. Naess’ deep ecology, otherwise known as “Ecosophy T” is explained as follows: “I call my philosophy ‘Ecosophy T’; using the character T just to emphasize that other people in the movement would, if motivate to formulate their world view and general value priorities, arrive at different ecosophies: Ecosophy ‘A’, ‘B’, .... T’, .... Z’. By an ‘ecosophy’ I here mean a philosophy inspired by the deep ecological movement.” (Naess, 1985).

Philosophy teaches how to live with our environment with peace and free from conflict. But sufficient care has not been taken to understand the traditional methods of preserving nature. This has led to innumerable environmental problems. The degradation of the environment is leading to vast areas of the world and as a consequence of this, the world, which we live in, is becoming more and more unsuitable for human habitation. A clean and hygienic environment is a basic necessity for healthy living. Industrialization, unplanned development and mechanism have spoiled the environment considerably. The solution to the problem is possible only through global understanding. If sustainable development is to succeed as a new way of life, its moral content should be well justified. The need of the society is to transform the behaviour of the societies towards the biosphere. A new ethic of embracing plants and animals is required so as to live in harmony with nature. Eminent environmental thinkers like R.C. Clark, R. Elliot and P. Singer have emphasized the need to protect the living beings on earth. It is the duty of humans to take care of non-human beings also and hence humankind has more moral responsibilities towards earth. In the contemporary period in the West, the two great thinkers, namely, Heidegger and Habermas have attempted for an ethics, through their principle of deep ecology and Discourse ethics respectively.

We live in a civilization that is threatened by the uncontrolled growth of technology, deriving from the empirical sciences, which have nothing to say about human values. Modern civilization is radically rotten, and only a complete transformation in theory and practice could cure it. The environmental crisis facing industrial society is so grave that humankind has to do something to save the human society, as well as nature and other living beings. In the present society, there is a public demand for particular ethics for single profession of vocation, a demand that is as unwarranted as if one were to demand specific civic rights and laws for different groups, communities within the same political entity called State. The different professions and communal groups of people may have different mores, but there should only be one underlying set of ethical maxims, principles as obligatory for all human beings, irrespective of race, religion, nationality or other secondary qualities. Thus the contemporary Western thinkers have been contemplating the concept of “global ethics”.

In our present scientific technological civilization, there is a need for protecting humans as well as the environment. Every individual and every creature has intrinsic dignity and inalienable rights, and each one of them has an inescapable responsibility for what he does. The role of bio-ethics, bio-safety, the ethical implications of genetic engineering are important in the contemporary society. Theoretical discussion of these issues will not solve the problem. The solution to the problem lies in application of the theories that are formulated to the issues and this is possible only through the help of philosophers. It deals with problems connected with humankind and nature.

In the context of contemporary society, we are talking about “Universal ethics” or “Global ethics”. By these terms we mean that certain ethical concerns apply globally, not just within the borders of one country or even to on culture. There are certain issues, which are discussed globally and they are not restricted to one region alone. In 1992, the important Conference held in Rio de Janeiro, otherwise known as the “Earth Summit” in which most of the nations participated. The basic idea behind this Conference is to protect the earth. It is because the earth, which we live in, faces a common
crisis and it is in the interests of all, we must join together in combating it. Universal ethics is the synthesis of different traditions and aspects of biological, social and spiritual heritage that we have.

How to make this ideal a realistic one? A new move in the ethical philosophy has sprung up under the name environmental ethics, or environmental philosophy which will give us a lead. It is true that what we discuss under this topic is not totally new. Our ancient thinkers conceived this idea and have spoken elaborately on it. But the issue is more significant in this millennium because of the fact that the problem we face today is to be tackled immediately if humanity is to survive in the future. It is not only concerned about the living of human beings. Human beings must protect the plant and animal kingdom. They should not think that the nature exists for his use alone. They have to take care of every aspect of nature. The rights and wrongs of our treatment of animals are discussed at length in ethics. The ethics of population growth and the use of natural resources have an important part to play in the discussion of social or distributive justice between nations. Now philosophers understand their responsibility to consider questions of moral responsibility and political organization in a global context. The sense of a need to think afresh about questions of ethics in international relations gains importance from the belief that ecology has altered our understanding of life. This means till now we have been talking about issues connected with national boundaries like, self-determination of peoples, implications of war, nuclear deterrence etc. But now, environmental disaster is a common threat to the whole humanity and hence must be tackled immediately for the future survival of man. This explains that there is a demand for a radical re-thinking of moral parameters.

The increasing awareness that Western culture may be breaking down has made us to search for causes and examine facets of modern society, which we have hitherto ignored, neglected and overlooked. In technology, there is a focal point, in which conceptual and ideological paths meet. To understand these converging paths is to understand the main configurations of the network within which our civilization operates. For example, notions like progress, nature, invention, rationality, efficiency etc., have a link with culture. To put in simple terms, the philosophy of culture is the philosophy of society, a philosophy of humankind in a civilization which has found itself at an impasse, which is threatened by excessive specialization, fragmentation and atomization and which is becoming aware that it has chosen a mistaken idiom for its interaction with nature. All these problems to some extent are due to our wrong approach to science and technology.

In the contemporary period, the need for such ethics has been felt very much. Albert Schweitzer defines ethics as human’s unlimited responsibility towards every living being. Philosophers like Immanuel Kant, Max Weber, Hans Jonas, Jung Habermas, Richard Hare, John Rawls, and others have stressed this. Kant developed the moral philosophy or philosophy of practical reason during 1785 and 1797 and published three important books namely, Foundation of the Metaphysic of Morals, Critique of Practical Reason and Metaphysics of Morals. The philosophy of practical reason or ethics is concerned with that only which ought to be done, i.e., what should be enacted by man’s action grounded in a free will, whereas the philosophy theoretical reason or nature is concerned merely with everything that is. Max Weber’s ethics is known as “responsibility ethics”. He was guided in his historical-sociological research by an idea which was decisive in his construction of concepts and his formation of theories; the idea of the rationalization of all social fields. Max Weber rejected the dogmatic interpretation of history and society, whether idealistic or materialistic and has pointed out that in every investigation of historical and social events one must ask a basic question namely, whether such an inquiry is strictly, factual. His study on Protestant Ethics and the Spirit of Capitalism is a typical example of his approach to the socio-historical phenomena. Similarly, Hans Jonas’ The Imperative of Responsibility in Search of an Ethics for the Technological Age is an investigation with a reconsideration of the ethical key-concept freedom and like Kant he takes man’s free will as the metaphysical condition of morality. According to him, in so far as technical science has extended man’s educative power up to the point where it becomes sensitively dangerous to world as such, it also extends man’s responsibility for future life on earth. Thus human responsibility becomes for the first time cosmic. It needed the obvious endangering of the whole system, the factual beginnings of its destruction, to make us discover or rediscover our solidarity with the whole world. Habermas’ Discourse ethics or theory of communication attempts to serve the purpose of critically analyzing various possibilities of morally responsible acting, thus aiming at guidelines for a morality justifiable life in our technological world. The main objective of his Discourse Ethics is to re-formulate and re-assess Kant’s formalistic moral theory, in particular the justification of ethical norms and principles by employing the means of communication by saying that moral questions can be by rational reflection and discourse.

In Indian tradition importance is given to animals and plants and it considered them as sentient beings, and even inanimate phenomena of nature like mountains and rivers, the sun and the moon--all endowed with life. The Vedic deities are personification of natural phenomena--the fire and the wind, the sun and the moon, the river and mountains, the day and the night. It is not a kind of poetic personification alone. The mystic seers of the Vedic hymns could realize the divine presence in every phenomena of nature and also understand that it is the same reality that appeared in different ways. This tendency is found even in later classical Sanskrit literature. In the Kumarasambhava, Kalidasa describes the Himalayas as Devatatma, the heroine, Parvati is the daughter of Himavan. Ganga and Sarasvati are rivers as well as deities.

In the context of contemporary problems of environmental destruction and pollution, we have to look all the harmony which existed between man and nature in ancient India, especially in the hermitage of Kanva and Marica in the Abhijhana Sakuntala and Vasistha in the Raghuvamsa. This is in contrast to the Western concept of dominance and exploitation and environmental destruction. Even in classical Sanskrit literature we often come across the contrast between the calm and serene atmosphere of peace and harmony found in the hermitages and the suffocating activities of the crowd in
the cities expressed by the young sage accompanying Sakuntala to the court of Dusyanta.

The theory of Samsara emphasizing karma and rebirth applied not only to human beings. The ten incarnations of Visnu as fish, tortoise, boar etc. are well known. The Ramayana refers to the story of Ahalya being cursed to become a stone for long until Lord Rama resurrected her by the touch of his foot. The Bhagavata refers to Kubera's sons Nalakubara ad Manigriva being cursed to lead the life of two trees, until Krishna rescued them from the curse. The story of King Nrga who had to suffer as chameleon till Krishna saved him is also known. If cutting of trees and clearing part of a forest become necessary as for the construction of a temple, the deities or spirits presiding over the trees had to be requested with elaborate mantras to move out without making trouble, since a temple of God is to be constructed there. The concept of Vanadevatis or deities presiding over the forests is suggestive of the importance given to the planets and trees. The unsophisticated village man and women treated nature as part of their household. Sri Aurobindo believed that evolution is not always straightforward and that it often entailed involution also. Human and semi divine beings born as animals after death are quite frequent in our Puranas. The story of Gajendramoksa and Jadabharata being born as a deer exemplify this. The Hindu gods and goddesses were closely associated with their favorite animals and plants or trees. Thus Indian tradition always responded sympathetically to nature with human behaviour. Personification of sentient nature was often considered as a defect in western literature and philosophical methods, but Indian writers considered it as quite appropriate.

There is an inseparable relation between eco conservation and sustainable development. They are like two sides of the same coin. The eco system is not a mere collection of living and non-living things but an intricate connection between these various elements. It is because of this reason that the living things receive energy and matter from the environment and convert these into living matter. Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs.

What is important at present is environmental auditing. It is a mechanism for assessing the impact of an existing industrial or commercial operations on the environment. It needs collection, evaluation and documentation of sufficient evidence to establish that the operation is in accordance with the standards. The eco system has its own limits to the amount of disturbance it can sustain. The balanced equilibrium of the eco conservation as a whole, works to the mutual benefit of living and non-living things. Eco philosophy culminates in transpersonal ethics, which transcends the individualistic and egotic aspects.

How far this is acceptable? How far this transpersonal approach to ethics is acceptable in the context of globalization? Environmental management systems (EMS) are now growing in importance as a voluntary body for corporation to institutionalize environmental responsibility operations. Two main initiatives for certifying EMS are: the Eco Management and Audit Scheme (EMAS) and the International Organization for Standardization (ISO). There is a demand for getting ISO certificate, which shows the environmental awareness among the people of India.

The need for re-thinking and re-ordering the contextual relation between nature and history is studied in the contemporary society. According to many, the "ecological repentance" is needed to understand the real relation between man and nature. Eco-humanism talks about the uniqueness or special status of humans precisely in their relationship to nature. Here one can make a distinction between: (1) separative humanism and (2) participatory humanism. The first one is autocentric whereas the second is allocentric, which allows openness. Marjorie Grene, for example talks about participatory humanism to explain the need to reinterpret the human in terms of nature. The participatory humanism attempts to interpret the attributes of human. The human is special not in transcending nature, we may say but in being specially related to it, not transcendence, but a special and unique mode of participation is what characterizes the human.

Thus it can be argued that only an interpretational understanding of the term “sustainable development” is the need of the hour. We have to take care of everything, i.e., both beings and non-being which alone will help us to preserve the nature for the future generations.

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Human cloning: Comments on Iftime (2012)
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Iftime (2012), writing on human cloning, has pointed out that there has been a lot of debate and discussion on philosophy and theology of cloning, but to a much lesser extent on its scientific and biological aspect. The biological objections to human cloning definitely need more attention. These objections have been discussed at some length by Verma and Saxena (1999).

Iftime (loc. cit.) has correctly said that in cloning gene function is affected. Verma and Saxena (loc. cit.) have drawn attention to the fact that the following two steps of normal sexual reproduction are missing in cloning, and that this in main is responsible for malfunctioning of genes.

Parental imprinting
In sexual reproduction a haploid set of maternal chromosomes and a similar set of paternal chromosomes
come to lie together in the fertilized egg. In the resulting diploid set the genes in the corresponding or homologous chromosomes behave differently due to parental imprinting. In cloning, however all the chromosomes are either maternally imprinted (gynogenote) or paternally imprinted (androgenote), depending upon of which sex the nucleus donor is. In either case the resulting embryo has been observed to show various developmental anomalies.

Nucleocytoplasmic interaction

This interaction also affects gene function. It has been experimentally shown that, if the egg and the sperm nucleus, coming together in fertilization are from different strains of mice, the following development is abnormal. It may be recalled that during fertilization the sperm transfers to the egg only its nucleus, and almost no cytoplasm.

Due to such anomalies in gene function the resulting clone is with abnormalities. Researchers in USA attempted cloning of Indian bison, but the resulting clone (named as Noah) died just 48 hours after its birth (Meek, 2001). If I remember correctly, the first cloned sheep, Dolly, cloned in 1993, suffered from severe premature arthritis. Certainly we would not like to add to our population cloned individuals, suffering from various abnormalities.

Human cloning, also due to following social reasons, is undesirable:

(a) This will disturb the family structure.

(b) A human clone is likely to suffer from being singled out, and may even face social hostility.

If and when we plan to produce a human clone, it may not be just producing a clone; we may be tempted to produce a clone of an individual, who has made a landmark contribution in a certain area of human activity, say a clone of Einstein. But we have to remember that, in shaping the personality and aptitude of a human individual, his/her cultural inheritance is almost as important as his/her genetic inheritance. The cultural effects on a growing human becomes very significant because of an extra long period of psychological immaturity, a long post-natal association with parents and other elders in the society, and institutional learning. In order to get another Einstein through cloning we have recreate for the clone the cultural environs, in which the original Einstein grew up, and that would be extremely difficult, if not impossible.

In view of the biological and sociological objections to human cloning, outlined above, it is very appropriate that UNESCO in their “Report of IBC on human cloning and international governance”, published on 9th June 2009, have described human cloning as “contrary to human dignity”.

References


Conferences

For a list of some ethics meetings in Asia and Pacific:
http://eubios.info/conferences

Sixth UNU-University of Kumamoto Bioethics Roundtable: Bioethics from Theory to Practice, 8-10 December 2012, Kumamoto, Japan. Email: Kimiko Tashima <ktashima@kumamoto-u.ac.jp>

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