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Bioethics in Asia: **An Overview**

Editorial Introduction

Leonardo D. de Castro*

Advances in biotechnology provide new opportunities for development, but also new challenges to established values and traditions. In many cases, the advances give rise to dangers that need to be carefully monitored so that harm and risks could be minimized, if not entirely avoided. The harm and risks, as well as the benefits against which they need to be weighed, are a primary concern for bioethics. Bioethics thus strives to protect human beings from the dangers that are inevitably linked to scientific discovery. The process draws attention to the double-edged character of new technology and tries to find ways to achieve the benefits of development with the least harm to all concerned.

This role for bioethics is soundly illustrated in Frank Leavitt's contribution to this issue of the *Asian Biotechnology and Development Review*, entitled "Genetically modified food seeds: health, socio-economic, environmental and religious aspects, an Israeli perspective." While acknowledging that ethical problems concerning genetically modified organisms are not entirely unique, Leavitt points out that these problems are special cases involving new varieties or breeds of food crops and other organisms. Without genetic modification, these new varieties could have been the result of traditional methods of selective breeding or interbreeding, undertaken to bring about flora or fauna that is tastier, better looking, or more useful than other breeds. Some varieties may also be regarded as new only in the sense that they were only recently introduced into a specific eco-system, although they have already existed elsewhere for a long time.

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* Project Director, University of the Philippines, Social Science & Philosophy Research Foundation, Bioethics Training Project, Philippines.
Email: decastro@kssp.upd.edu.ph

Given the cost (monetary and otherwise) involved in GM research and development, Leavitt wants us to consider how much more we could achieve if all the research funds currently devoted to fashionable GM techniques were applied to improving methods of agriculture that have stood the test of time. More importantly, he raises not only the question of cost – or the issue of balancing risks against benefits – but also the concern regarding the beneficiaries of development. He aptly reminds us that the methods of agriculture need to "serve the majority of the needy people in the world." Concerning the impact of GMOs on the environment, Leavitt gives the example of The Kitchen Garden Scheme as one of the many potential ways to improve traditional agriculture as an alternative, as he asserts that priority needs to be given to returning the mountains, jungles, deserts and forests to their traditional inhabitants.

It is not a mere coincidence that much space is given in this issue to embryonic stem cell research. Important initiatives have been taken around the world in this area and Asian laboratories have been a busy hunting ground for those in search of badly needed cures for diseases that have tormented many human beings. Whereas many European and American countries have chosen to thread slowly, Asian countries have chosen to pick up the slack in what has been perceived by some as a race against the clock, but by others as a race among scientists eager to prove their mettle against their kind.

The latter kind of race is what the world appeared to have witnessed in the case of the Korean veterinarian, Hwang Woo-suk, who initially won not only the adulation of his countrymen, but the political and financial support of his government. Having acquired an enviable reputation for cloning a dog, Hwang easily attracted support for further research. It was later discovered that this folk hero had illegally acquired eggs from women and lied about the origin of cells that his team had allegedly produced by cloning. The result has been a loss of face for the Korean government as well as for the others who had invested their faith in Hwang. Sang-yong Song reminds us that the misconduct in acquiring eggs was no less serious than the fraud committed in the cloning research and that it is vital for Koreans to restore public respect for life in order to bring closure to the issues in a decisive way. Observing that Korea has suffered from its failure to liquidate the past properly

(e.g. in the case of the Japanese colonial rule, the Korean War, two military dictatorships, and the Kwangju massacre), Song argues that the Hwang scandal should be finished neatly, or Koreans can expect to face a similar experience in the future.

The Hwang experience illustrates the need to provide a structure for political-administrative responsibility and transparent decision processes. It also highlights the importance of scientific criticism and of accountability for setting up a system of mentorship that values scientific integrity. Most importantly, Song reminds fellow Koreans, we have come to rethink what science really is and where science should go. In this case, we engage in what may be labeled as "bioethics as forethought," as opposed to bioethics as mere afterthought. Quite simply, we engage in bioethics as mere afterthought when our concern is limited to the harm that may follow from the use of specific biotechnology. On the other hand, we engage in bioethics as forethought when we actively examine what we seek to achieve with scientific research and development.

Yanguang Wang's article deals with the question of life in a very specific context. Reacting to the release of the "Ethical Guidelines for Research on Human Embryonic Stem Cells'' in January 2004 by the Ministry of Science and Technology and the Ministry of Health in Beijing, China, she attempts a clarification of the moral status of the human embryo. She highlights Article 5 of the Guidelines, which provides that human embryonic stem cells used for research can be derived from spare gametes or blastula remaining after in vitro fertilization (IVF); fetal cells after natural or voluntarily selective abortion; blastula or monosexual split blastula by somatic cell nuclear transfer technique; and germ cells voluntarily donated. Thus there is a very big leeway given to scientists in deriving embryonic material for research. The limit is set at 14 days, which applies to both in vitro and in vivo research. Article 6 provides that any blastula obtained by IVF, somatic cell nuclear transfer technique, mono-sexual reproduction technique or genetic modification cannot be cultured in ex vivo for longer than 14 days from fertilization or nucleus transfer.

Wang endorses the support given in the guidelines for embryo research using somatic cell nuclear transfer technique, as well as the

support for human embryonic stem cell research within 14 days, notwithstanding objections expressed both in China and in some foreign countries. She argues that an embryo within 14 days is not a person, but merely a human biological life. While she accepts that the human embryo has a value and deserves due to respect, it can be used for research if there are enough reasons for its use. In other words, the respect deserved by a human embryo before 14 days is not the same as respect deserved by a person. She cites the utilitarian position that very early embryos do not have even a rudimentary nervous system, have no sentience, cannot feel pain, or be hurt, and cannot suffer as a result of the research. She also says that because an embryo is not a person and does not have regard for itself as a end, it does not suffer from what others do to it. (Presumably, she excludes those situations when an embryo survives harmful research and thus survives until it is capable of suffering that harm.)

Wang holds that although the embryo within 14 days warrants serious moral consideration as a developing form of human life it does not have the same moral status as infants or children. To support her position, she cites the absence of developmental individuation, the lack of even the possibility of sentience and most other qualities considered relevant to the moral status of persons, personhood, and the very high rate of nature mortality at the particular stage. Nevertheless, the embryo merits respect as a developing form of human life. Hence, it should be used in research only for the most serious and compelling reasons. Research should be limited to the shortest time period, without being permitted beyond the time of the usual appearance of the primitive streak (14 days) in vivo. Moreover, the number of embryos required for the research must be kept to the minimum consistent with scientific criteria for validity.

Michael Cheng-tek Tai deals with biotechnical development that has been integrated with economic intent. He describes the economic context within which biotechnological advances have been crafted in Taiwan. Noting that the rapid growth propelled through the Taiwanese economic miracle has gradually slowed down in the last several years due to the relocation of many factories to China and the competition provided by newly raising developing nations, he echoes the need for a new direction to ensure continuity in economic development. This new

direction is now being sought through biotechnological advancement. Fortification of biomedical research and the establishment of a biobank are thought indispensable to achieve this goal and projects to upgrade Taiwan's industries have been underway.

As may be expected, the establishment of a biobank has worried human rights groups. The latter have called attention to the need to safeguard the privacy of donors. They have also raised questions concerning the disposal of leftover superfluous tissues from experiments. Tai discusses the issues in his article, taking note of the measures that have been proposed by government to deal with the various concerns. Research institutes have indicated their awareness of the importance of the first issue and have promised to try everything they can to respect the privacy of stakeholders. The second concern is more complicated and controversial. Critics have not been assuaged by assurances that the consent of donors will be ensured. A major disagreement focuses on the clause in the Consent Form that asks donors to grant researchers the right to use leftover tissues for "future unknown" experiments. Once again, what surfaces here is the idea that bioethics ought to be regarded as forethought rather than as a mere afterthought regarding ethical issues after the events have taken place. The critics appear to have refused a formulation that leaves so much of the "future unknown" to chance. Indeed, the ability to chart direction for scientific discovery is minimized when things are left to chance.

Soraj Hongladarom's article describes the emerging ethics of bioinformatics as an amalgam of the two major strands of applied ethics. This is no doubt an apt description, but perhaps the interaction between bioethics and computer ethics requires a more dynamic analogy. In many emerging areas, one could say that bioethics is nourished by computer ethics but also that computer ethics derives substance from bioethics. As Soraj says, it remains to be seen how the new field actually turns out. It is likely to employ the tools and techniques that are already developed in both computer ethics and bioethics and, in the process, enhance those tools. This inevitable process of enhancement is part of the reason why boundaries between disciplines such as applied ethics, bioethics, computer ethics and so on are not set objectively. These fields of inquiry are defined through their subject matter and the tools that they use. As

the subject matter and the tools change, they gradually pick up more and more of one another's characteristics and thus resemble one another more – not only in their subject matter, or their tools, but also in the goals that the practitioners set for their disciplines.

Significance for this last observation lies in the enhancement that the ethics of bioinformatics provides in order to realize the target of bioethics as forethought. One of the reasons why information is valuable is that it enables people to anticipate better – to predict outcomes and thus, possible ethical consequences. As information enhances the power of anticipation, it also helps to promote bioethics as forethought.

It is useful also to reiterate Soraj's observation that not too long ago, philosophers did not see applied ethics as a mainstream enterprise. Until the advent of bioethics, ethics was more concerned with ethical theory and with 'metaethical' analysis. To many traditional philosophers, ethicists had no business to pronounce judgment on the contemporary issues of the day. Perhaps it is the concern with bioethics as forethought that has convinced ethicists to pay more attention to bioethics. With bioethics as forethought, one is able to bring applied issues closer to timeless issues that had been the preoccupation of the Greeks and the ancient Eastern philosophers. In this collection of articles, one would do well to see how the idea of bioethics as forethought surfaces in various ways.