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Editorial: Our worldviews

This issue of the journal commences with a survey of the attitudes of medical ethics teachers across Japanese medical and nursing schools towards a case of decision making for life-sustaining treatment. While the findings show diversity, an interesting question is whether personal attitudes towards bioethics dilemmas will lead to differing styles of ethics education. Will the attitudes of medical professionals taught by a teacher favouring withdrawal of life-sustaining treatment be different to those taught by a teacher who does not? Should they? According to the UNESCO Regional Action Plan for Bioethics Education in Asia and the Pacific (Now available in multiple languages on www.unescobkk.org/rushsap), the views of the teacher should not especially influence the diversity of views of the students. However, one could expect some effects if different reference materials were included and cited.

Further papers in this issue examine the perspectives of monotheistic religions on embryo status and use of ES cell lines for research if created by embryo sacrifice. Saniotis makes a detailed analysis of the biocosmology papers of Konstantin S. Khroutski, who has often published in *EJAIB* in the past. We look forward to the response. The arguments discuss a world view that could be said to encompass different religious viewpoints, and make a different approach. The final paper in this issue is a critique of libertarian bioethics, to discuss a further view that could be taken as a basis for bioethics. Garvey and Boyd described how global health concerns for public good have shaped our concern about AIDS, no matter what our religious world view. All of these different viewpoints should be part of the theoretical background of ethics education.

Pinto examines the debates on how ethics should affect ethical codes, especially in the Portuguese context. Patel and Rajput describe some issues of genetic screening in South Asia with the advent of growing rates of use of genetic diagnosis. Comments are welcome on all these papers. -D.M.

Attitudes of Japanese bioethical educators towards life-sustaining treatment in the Wendland case. A descriptive study

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Abstract

The Wendland case where the patient did not suffer from coma but was not competent is a typical example of the difficulty inherent in decision-making regarding life-sustaining treatment. In Japan, no clear policy has yet been set forth as to the grounds on which life-support should be continued or withdrawn in complicated circumstances like this. Therefore, we conducted a cross-sectional survey on bioethics educators at all Japanese medical (80) and nursing (103) universities and examined ethical judgments regarding life-sustaining treatment in a similar situation to that of the Wendland case. The results showed that 9% of the respondents were in favour of withdrawal, 49% in favour of continuation, and 38% did not answer either way, providing diverse reasons. Younger respondents tended to support the withdrawal of life-support. We also discuss the implications of Japanese bioethics educators' views and a need for guidelines to promote patient autonomy and her or his best interests.

Keywords: Wendland case, life-sustaining treatment, Japan, bioethics educators, attitudes

1. Introduction

Modern medicine emphasizes patient autonomy and self-determination over physician paternalism, and the concept of quality-of-life (QOL) over vitalism. To put this into practice, the withdrawal of medical care has come to exist as a viable option in cases of life and death. A common consensus has yet to be obtained with respect to the overall propriety of the withdrawal of medical care, but a variety of past cases shows the presence of a certain level of guidelines. In the Quinlan case, which was fought over the withdrawal of medical care for a young woman who had lapsed into a persistent vegetative state allegedly due to acute drug poisoning, and in the Cruzan case, which was fought over the withdrawal of medical care for a young woman who had lapsed into a similar persistent vegetative state as a result of a traffic accident, termination of life was granted through the families' substituted judgment and attestation of the patients' advance wishes.[1, 2]

In addition, in the Bouvia case, in which it was disputed that a woman who, although she experienced no impaired awareness whatsoever, was in a state of complete paralysis aside from a few muscles of the face and right arm and who consciously sought to die of starvation. This case showed that the patient's intent to refuse medical care ultimately served as the grounds for the withdrawal of life-sustaining treatment.[3] However, there are many issues surrounding instances where the patient himself or herself does not leave a directive (hereafter denoted as advance directive) while still being of normal competence with regard to what kind of medical care he or she would receive or refuse, or who she would request to serve as proxy to provide against future incidence of a loss of competence. There are also instances where there is difficulty in ascertaining the credibility of an advance directive or intra-familial disagreement with regard to the withdrawal of medical care, and so forth.

In the 2003 Schiavo case in the United States, the husband and parents of the patient fought over the withdrawal of medical care of a woman who had lapsed into a vegetative state from a coma due to myocardial infarction. At one point, despite that the withdrawal of medical care had been granted, the judicial determination was overturned due to protests by her parents and citizens groups and tube feeding was resumed some days later.[4] In 2005, during the period until medical care was withdrawn, the dispute continued over life-sustaining treatment of a patient that had been in a persistent vegetative state for over 10 years.

Above all, the Wendland case, which has sparked controversy recently in the United States, is a typical example of the difficulty inherent in decision-making pertaining to life-sustaining treatment. In 1993, Wendland, a then 42-year old man, lapsed into a state of comatose due to a traffic accident. When he regained consciousness 14 months later, he was paralyzed on one side of his body, was unable to orally ingest food on his own, and was in a state in which sustained communication was impossible. At his best, he could draw simple shapes and follow simple instructions or respond to simple yes-no questions. He was given the

prognosis that he would continue to live for years but neurological recovery of any kind was beyond hope. His wife, siblings, and daughter, citing that he had previously told them he "did not want them to force him to continue living in a vegetative state" and that "he did not want to go on living if he could not provide for his family or could no longer talk or connect with them," judged that he probably would not want to receive life-sustaining treatment and therefore requested to withdraw medical care, but his mother prevented this and filed a lawsuit to continue life-sustaining treatment. In 1997, the attending physician asked him if he wanted to die, the physician did not receive a response. In 2001, during the period until the patient died of pneumonia, the issue continued to be disputed in the California Supreme Court.[5, 6, 7]

In this case, the patient does not suffer from persistent coma but is no longer competent. He also lacked the capacity to feel pleasure and suffering in any way. Therefore, one cannot judge whether life-sustaining treatment is completely futile, and compared to a patient who suffers a total lack of consciousness, it is complicated for another person to judge a patient's QOL. In addition, a situation in which one cannot say whether the patient is in the terminal stages, or if the opinions of family members with regard to life-sustaining treatment run counter to one another further complicates deciding the propriety of medical care.

In Japan, initiatives such as 6 requirements for active euthanasia by physicians have been proposed as a result of the Yamauchi case in 1962 where, in response to a request from a patient who continued to report pain after collapsing from cerebral apoplexy, the patient's son killed him by administering organophosphorous insecticide. Four requirements for active euthanasia and 3 requirements for the withdrawal of life-sustaining treatment have also been put forward in consequence of the famous Tokai University Hospital case in 1991 where, a physician on call killed a comatose patient in the terminal stages of multiple myeloma by administering potassium chloride. [8, 9]

However, the present situation is not that clear and no consistent policy has yet been set forth according to current guidelines as to the grounds on which life-sustaining treatment should be continued or withdrawn concerning complicated circumstances such as that exemplified by the Wendland case. Furthermore, while research has been conducted on Japanese views of life and death and the issue of self-determination with respect to death, it remains unclear as to what ethical views the Japanese have towards life-sustaining treatment in situations like the Wendland case. In Japan, where values are diversifying and there is an increasing possibility that decision-making directly relating to life and death is needed as a result of the development of life-saving medical technology, it is necessary to consider judgment in complicated cases such as that of the Wendland case. In this study, therefore, we conducted a questionnaire survey on bioethics educators at Japanese medical and nursing universities and examined ethical judgments with regard to life-sustaining treatment of patients in a similar situation as that of the Wendland case.

2. Methods

Our sample consisted of faculty in charge of the bioethics curriculum for healthcare students (i.e. nursing, medicine, pharmacology, public health, social work, etc.) in both medical schools and nursing schools in Japan. Bioethical education at medical and nursing universities can serve as a basis for thinking for medical practitioners in future ethical decisions. We decided on this sample given the importance of examining the ethical thought of those engaged in this education.

A cross-sectional survey was conducted using a self-administered questionnaire sent by regular mail. At the time of this study, in 2003, there were a total of 80 medical schools and 103 nursing schools in Japan. Questionnaires were mailed to each school's dean or department chair accompanied by a letter explaining the details of our research. Each school dean or department chair was asked to forward the questionnaire to the faculty in charge of the university's bioethics curriculum. A book coupon of 1500 yen was also included as a token of our gratitude for those who responded to our questionnaire. One month later, we followed up by mailing a reminder. This study was approved by the Research Ethics Committee at University of Miyazaki, Faculty of Medicine.

We developed an original questionnaire in Japanese and conducted a pilot study on a sample of nurses and graduate students in the field of bioethics at two universities (University of Miyazaki, 10 participants; Kyoto University 3 participants). The questionnaire was edited and revised according to participants' comments regarding case content and questions. The questionnaire was written in Japanese and divided into four sections. The questionnaire consisted of 4 sections and, in this paper, we will present the results of the section 1 and section 4: In section 1 we asked for participants' individual and social background. Section 4 consisted of the Robert Wendland case: Assuming that hospital ethics committees handle cases identical to that of Mr. Robert Wendland, this vignette asked how one would handle the issues of life-sustaining treatment and the disagreement among the family members. Participants responded in free hand. The results of Section 2 and 3, which included questions concerning how to deal with healthcare student's disagreement in the case discussions in the classroom, have been presented in a separate report. [10]

Using Mayring's method on the contents of the responses pertaining to the propriety of life-sustaining treatment, we conducted summarizing content analysis (a procedure by which content is organized onto a high-order abstract level by the deletion and integration of

the restated and overlapping portions of the data) and explicative content analysis (a procedure, contrary to summarizing content analysis, by which contradictory text and ambiguous text lacking in explanation is clarified and organized based on context) [11]. We extracted descriptive text regarding the propriety of life-sustaining treatment pertaining to cases identical to the Wendland case, categorized it into 3 categories of "withdraw," "continue," and "other," and then segmentalized as much as possible the descriptive portions pertaining to the reasons supporting each opinion. When categorizing, we placed top priority on respondents' individual ethical judgment.

In the event a description of "what one should do" as a medical practitioner, as an ethics committee, or according to what is customary, coexists with a description that could possibly express a personal opinion or judgment within one particular response but shows a discrepancy between opinions, we categorized such based on what could be seen as personal opinion. We carried out this work respectively among 3 authors (S.O, K.I, and A.A.) and worked to improve the validity of the analysis content by regularly comparing results. We performed a χ^2-square test on any significant difference less than P = 0.05 (cross-tabulation) and Analysis of Variance in order to see the relationship between the respondents' backgrounds and responses.

3. Results

Number of respondents and response rate

Questionnaires were sent to the school dean or department chair at 183 Japanese universities (80 medical schools and 103 4-year nursing schools). A total of nine questionnaires were returned unanswered from seven institutions because of "the absence of an applicable faculty member in charge of the bioethics curriculum," from one institution because "all surveys are returned at the administration level because faculty have little time to spare" and from one institution that did not provide a reason. The remaining 174 questionnaires were delivered to faculty in charge of the university's bioethics curriculum. A total of 110 institutions returned questionnaires, but three institutions provided from two to eight anonymous responses and we could not determine which questionnaire was turned from those who were in charge of the university's bioethics curriculum. Therefore, a total of 107 (110-3=107) questionnaires were used for statistical analysis – the response rate was 62% (107/174).

Respondents' background

Respondents' individual and social backgrounds are shown in Table 1. Fields of other specialty included religious studies, law, psychology, cultural anthropology, literature, and physiotherapy. More respondents in healthcare (nursing, medicine, physiotherapy) than in non-healthcare (philosophy and ethics, bioethics, religious studies, law, psychology, cultural anthropology, literature) were older than 50 years-of-age (82%: 50.0%, p= 0.001) and female (38%: 16%, p= 0.027). Non-healthcare respondents tended to support a specific ethics theory more often than respondents in healthcare (54%: 20.0%, p= 0.001) and years of teaching were longer as well (9.9 years: 7.0 years, p= 0.045). More respondents older than 50 years-of-age tended to participate in hospital ethics committees than younger ones (31%: 9.4%, p=0.024). No statistically significant associations existed between religion and any other characteristics.

Table 1: Characteristics and background of respondents (numbers, N=107) (%)

Age Distribution	20-29	0 (0)
	30-39	3 (2.8)
	40-49	29 (27.1)
	50-59	40 (37.4)
	60-69	30 (28.0)
	70-79	1 (0.9)
	No response	4 (3.7)
Sex	Female	30 (28.0)
	Male	74 (69.2)
	No response	3 (2.8)
Faith/Religion	No	79 (73.8)
	Yes	22 (20.6)
	No response	6 (5.6)
Primary Field of Specialty		
	Philosophy/Ethics	24 (22.4)
	Bioethics	9 (8.4)
	Nursing	23 (21.5)
	Medicine	38 (35.5)
	Other	10 (9.3)
	No response	3 (2.8)
Period of involvement with bioethics education for students in healthcare		
	Mean	8.3 yrs.
	Range 1-33 yrs.	(S.D. 7.0)
	No response	4 (3.7)
Ethics Committee Member (Research)		
	Yes	60 (56.1)
	No	43 (40.2)
	No response	4 (3.7)
Ethics Committee Member (Hospital)		
	Yes	26 (24.3)
	No	78 (72.9)
	No response	3 (2.8)
Ethical theory/position		
	Yes	34 (31.8)
	No	67 (62.6)
	No response	6 (5.6)

With regard to the relationship between respondents' ethical attitudes on life-sustaining treatment in the Wendland case and respondents' backgrounds obtained from qualitative content analysis, age difference (comparing those under 50 years of age and those 50 or older) showed that more respondents

less than 50 years of age supported the withdrawal of life-sustaining treatment when compared to those 50 or older (less than 50: 7 people support withdrawal, 10 people support continuation, 15 people with other opinions; 50 or older: 3 people support withdrawal, 38 people support continuation, 26 people with other opinions) (P = 0.008). There were no significant statistical relationships between responses and other respondent backgrounds.

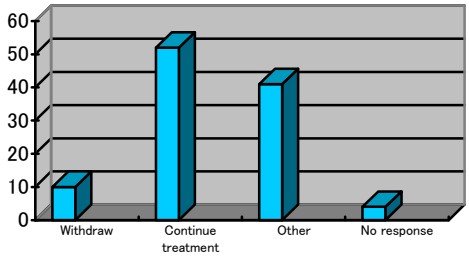


Figure 1: Yes-no responses to life-sustaining treatment

Table 2 Withdraw life-sustaining treatment (n = 10)

Withdraw treatment as a means of respecting the patient's will:	
The patient's will is clearly that he "wants to die"	4
After some time, reaffirm the patient's will and, if no response, withdraw	1
Withdraw treatment at the behest of the family:	
Give priority to the wishes of a family member who lived with the patient until the accident occurred	1
Give priority to the opinion of the wife as legal proxy	1
Give priority to spousal relations over parental relations, thereby giving priority to the wife's opinion	1
Withdraw treatment for other reasons:	
Overall, withdrawal would provide the greatest welfare to the patient and family	1
Withdraw for personal reasons (no clear indication of a reason)	1

Table 3 Continue life-sustaining treatment (n = 52)

Continue treatment to maintain the status quo:	
As there is still need for debate, continue until a decision is reached	13
Continue until a decision is reached in court	3
Continue if a consensus cannot be obtained	1
The patient's will:	
The patient's will to "want to die" is unascertainable	21
There is an indication of the patient's will to "not want to die"	4
Continue treatment due to family objections to withdrawing treatment:	
Give priority to the mother's opinion	4
Continue treatment for other reasons:	
What is necessary is not the withdrawal of treatment but the improvement of care	2
Continue treatment as a means of respecting the sanctity of life	1
Continue treatment from a clinical perspective	1
Continue treatment because it does not fit Japan's requirements for the withdrawing treatment	1
Continue treatment for personal reasons (no clear indication of a reason)	1

Table 4 Other (no indication of the will to withdraw or continue) (n = 41)

There is no need for physicians, hospitals, or ethics committees to make a decision	8
Impossible to respond to this question	5
Comply with court decisions	2
Give priority to the patient's most immediate family member	2
No clear response	24

Attitudes towards life-sustaining treatment

Respondents' opinions for and against life-sustaining treatment are shown in Figure 1. As we could not determine yes-no responses towards life-sustaining treatment from the text of responses from 41 people, we categorized them as other. The detailed results of each item appear in Tables 2, 3, and 4.

4. Discussion

With regard to the views of bioethical educators in our country towards the propriety of life-sustaining treatment in cases similar to the Wendland case, 10 people were in favor of withdrawal (9%) and 52 people (49%), nearly half of the total number, were in favor of continuation. In contrast to how most opinions among those responses in support of withdrawal were based on clear reasons for support, there were many in favor of interim continuation until an ultimate conclusion could be drawn among opinions that support continuation. That the ethicality of withdrawal of tube feeding was not directly mentioned suggests that there were many who do not actively approve of life-sustaining treatment under such circumstances. In terms of opinions that actively support the continuation of treatment, one stated that it would "give priority to the mother's opinion," one that listed as a reason the "sanctity of life," and one that stated that there is an indication of the will of the patient himself to "not want to die."

First, asked about the possibility of withdrawing life-sustaining treatment if there is an objection from the family, there were overwhelming few opinions in favor of continuing life-sustaining treatment. No respondents supported life-prolongation on the grounds that "a person does not simply exist as an individual but exists simultaneously as a member of a family, community, and society", that (even if it were my own life) the individual cannot have the right to artificially terminate life, and that a family's objections are sufficient reason to prohibit the withdrawal of life-sustaining treatment. It is conceivable that many of Japanese bioethical educators recognize that the ultimate discretion in determining life and death lies with the individual in question and they seem to find

"communitarian thought" just mentioned above untenable.

Next, we consider the position for the continuation of life-sustaining treatment as a reason for the "sanctity of life." There is sanctity in the fact that life exists and, with regard to the opinion that no one can have the right to deprive someone of that, this likely stems largely from a religious and cultural background. Although we will avoid expounding in detail from the perspective of religion, while there is not much within holy scriptures that can be interpreted as pertaining to the propriety of the withdrawal of life-sustaining treatment, [8], the main influence on objections against the withdrawal of life-sustaining treatment as a means of justifying the sanctity of present life likely stems from Christian Catholicism and Buddhism. It is not the case, however, that both religions clearly preach the supremacy of sustaining life. Interpretive problems in Buddhism are particularly pronounced.[12, 13] Although respondents who support the continuation of life-sustaining treatment as a means of justifying the sanctity of life were adherents of Buddhism, there was no significant correlation between attitudes towards life-sustaining treatment and religion among respondents who were Catholic and Buddhist. In the very least, there were few objections among Japanese bioethical educators on the withdrawal of life-sustaining treatment from a religious perspective.

Additionally, with regard to the attitudes of patients in identical cases (the patient not answering the question "do you want to die?"), it is extremely interesting to note the completely contradictory modes of interpretation exhibited by those in favour of withdrawing life-sustaining treatment because "the patient's will is clear that they want to die" and those in favour of continuing life-sustaining treatment for "there is an indication of the patient's will to "not want to die." Although one opinion interpreted not answering the question "do you want to die?" as an indication of the patient's will to not want to die, another opinion supported the validity of an advance directive by interpreting not answering this question as the patient's continued preference to not to administer life-sustaining treatment, which the patient had talked to the family before the accident. Different from the circumstances of a patient in a persistent vegetative state, in addition to there being little in the way of existing guidelines or precedent in Japan, it is likely that the ambiguity of oral advance directives is a contributing factor to this extent of division in judgment even among bioethical educators.

Furthermore, a majority of respondents, 41, could not answer either way in regard to this case (those categorized as other). Several respondents would not make a decision on the propriety of life-sustaining treatment in this case based on reasons such as "it is not an issue of the qualifications of physicians, hospitals, or the ethics committee to make a determination" and "the ethics committee is not a decision-making body but merely an advisory body." Given that the authority of ethics committees in Japan is not something established by the judiciary system, this suggests that there is a perceptional discrepancy among respondents with regard to the functions and responsibilities of such bodies. Although there were also those that would "comply with court decisions," this suggests that there exists some overlap with reasons listed above stating that the ethics committee is not a decision-making body but an advisory body. Also, there were those that stated the impossibility of responding with regard to the propriety of life-sustaining treatment in this case due to insufficient information.

In addition, we found that young respondents tended to support the withdrawal of life-sustaining medical care, which represents a unique relationship between responses and backgrounds. As for likely reasons for this, one can hypothesize that older respondents are influenced in no small part by vitalism, which dates to before the emergence of the concept of QOL, and that they have a strong resistance to artificially terminating life through medical interference, that group consciousness of family and society is stronger than individual-oriented consciousness, and that they place great importance on the age-old parent-child relationship with regard to the Wendland case.

We would now like to discuss, in a broader sense than the Wendland case alone, the debate on the propriety of life-sustaining treatment considering the overall difficulty of clearly ascertaining the will of the patient himself or herself. The first issue is the ascertainment and evaluation of the patient's competence. Up until now the criteria for competence have not been legally clarified in Japan, but it has been shown a certain degree of principles and guidelines for competence from the perspective of clinical criteria.[14, 15, 16] in the US. There is a need to ascertain and evaluate as long as possible the patient's capacity to grasp his or her own medical condition and prognosis, along with his or her ability to understand the meaning, advantages, and risk of medical care.

If the patient is deemed incompetent, the next issue is the existence of an advance directive. Just because there is an advance directive, however, does not mean the issue is resolved. There is a limit to advance directives, as it is likely impossible for a patient to precisely envision in advance one's actual clinical condition. However, the patient's choice in his or her advance directive should be considered as one valid criterion for when the decision is actually made. Also, in order to resolve the issue of ambiguity in orally communicated advance directives, which was controversial in the Wendland case, it would probably be necessary to draw up an advance directive in writing.

Currently, oral advance directives are virtually unrecognized in the states of New York and Missouri in the United States. [17] In Japan as well there is an overall conservative mentality towards advance directives. In ethical guidelines presented by the Japan Medical Association in 2004, it was stated that "an advance directive should be thought of as one significant clue to knowing more about the patient's prior will rather than the patient's will at that time. Presuming through this that policy with regard to terminal care has been resolved in all respects demands discretion…This is not a final determination and, unless one does not repeatedly ascertain this through changes in the patient's condition, the existence of an advance directive could instead be harmful, threatening noncompliance with the patient's wishes at the time of the actual administration of terminal care." The guidelines also state that "the physician should thoroughly consult with the family and exercise careful judgment in considering what is best for the patient."[18, 19] The association thus assumes an extremely cautious attitude, taking into consideration actual operational issues and the interest of the patient in respecting the patient's self-determination. If no advance directive exists either orally or in writing, the only method for deciding whether to withdraw or continue, or administer or forego life-sustaining treatment is by substituted judgment.

The two issues here are "on what premise" and "who" makes such a substituted judgment. As is also indicated by our results, based on the importance of respecting patient self-determination, it would be appropriate to give top priority to the intent of the patient himself or herself with respect to life-sustaining treatment as understood from the patient's statements and way of life during normal times as sufficient grounds for making a final decision on life-sustaining treatment. However, it is possible that the putative intent of the patient and "best interest" as seen from a medical perspective may conflict and are not necessarily consistent with each other. In our opinion, the family and medical practitioners of the patient must deliberate carefully as to why the patient thought the way he or she did and, even if medical practitioners' judgment as to how they themselves would do it was out of touch with the patient, we think that they must make the best of efforts to respect the patient's intent through a process that strives to share and understand the patient's values.

If the proxy is completely unable to know the will of the patient himself or herself, they should decide with an aim of fulfilling the patient's best interest while trying to predict to their best ability the option that the patient would have wanted. Consequently, the answer to the issue of "who" exercises substituted judgment inevitably falls to the individual with the highest potential to best understand and fulfill the patient's best interests. After all, as long as the individual understands the patient's thinking and principles and hopes to fulfill the patient's best interest, he or she does not necessarily have to be a blood relative.

Results on substituted judgment in our study generally indicated that "one should give priority to the opinion of the patient's closest relative or the family member who spent the most time with the patient", while there were also those that said "spousal relations take precedent over parent-child relations." Nothing was indicated as to reasons for these positions, but as seen from the perspective that much of the parent-child relationship (as seen from the standpoint of the child) is established regardless of one's will and that this is not the case with spousal relationships, one could argue that it would be easier for a spouse than a parent to reflect the patient's will. Therefore, in the Wendland case, it may have been permissible to determine a future treatment plan in accordance with his wife's intent.

As for the limitations to this study, firstly, with a response rate of 62% it does not express the opinions of the entire body of bioethical educators and there is a possibility that the views and perspectives of the educators that did not respond are different from those of the respondents. In addition, although we compared the 3 authors' results and verified that there were no major discrepancies to avoid response biases due to subjective judgment at the stage of qualitative content analysis where we sorted and restated responses, there is some potential for arbitrary interpretation.

In conclusion, similar to the propriety of life-sustaining treatment, there is much debate not only from the medical perspective but from ethical, religious, social, and cultural perspectives on medical care directly pertaining to life, and it will likely be impossible to obtain a complete consensus. However, as we mentioned in our introduction, it is to be expected that not only physicians but also everyone will be faced with future opportunity to make ethical decisions on life. As individual background and ideas play a large part in bioethical judgment towards life-sustaining treatment overall, it is impossible to establish the kind of guidelines that uniformly integrate views. However, for families and medical practitioners who must exercise substituted judgment, there exists a need for guidelines based on a certain level of judgmental criteria.

It would, in principle, be reasonable to think that top discretionary priority with respect to life and death lies with the individual in question. It is not that the family's opinion is not important, but as long as the opinion of the patient himself or herself is demonstrated in some form, the family's opinion should be treated as secondary. Therefore, formulating ethical thought that provides the basis of autonomy and self-determination is essential to providing medical care based on such and to achieving each patient's best interests. There will be a continuing need for the further pursuit of bioethics that can potentially serve as this basis.

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Global Health Concerns and Public Health for the Common Good

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In January 1976, the United Nations' (UN) International Covenant on Economic, Social and Cultural Rights (ICESCR) officially recognized "…the right of everyone to the enjoyment of the highest attainable standard of physical and mental health"[1]. Article 12 section 2 of ICESCR detailed the steps necessary to ensure these rights including, "The prevention, treatment, and control of epidemic, endemic, occupational and other diseases," and "The creation of conditions which would assure to all medical services and medical attention in the event of sickness"[1]. It has been thirty years and although there has been a lot of progress towards this goal, we have fallen far short of attaining the goals. This paper will discuss some plausible reasons we have been diverted from the noble and ethical path that was set out before us in Article 12 and offer suggestions about how we might resume progress toward the stated goals.

Examining the current status of public health thirty years after ICESCR illuminates some concerns and suggests that corrective actions are necessary. The triad of human immunodeficiency virus (HIV), tuberculosis (TB) and malaria are primary threats to global public health today even as new emerging infections, e.g. SARS and avian influenza join their ranks. The World Health Organization (WHO) has been collecting data on the prevalence of these diseases throughout the world and provides public access to the data on their website[2]. We have chosen to illustrate disparities by geographical location by creating graphs representing WHO data.

HIV has become a global problem reaching into every country and every socio-economic stratum. As we discovered how the disease spreads and what can be done to treat and prevent infection, a dichotomy has evolved exposing a gap between countries with advanced technology from those without it. The prevalence of HIV/AIDS in selected countries for adults (per 100,000 population) is illustrated in Figure 1[2].

Figure 1:

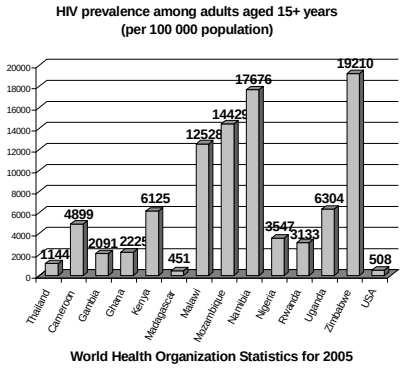


Figure 2: (UNAIDS, December 2006[3])



The overall distribution of HIV in Figure 2 was published by UNAIDS[3]. It is clear from these two figures that Sub-Saharan Africa and Southeast Asia have the largest number of HIV cases. Prevalence also varies by country, for example in Sub-Saharan Africa the prevalence is 5.9% whereas in North America it is 0.8% in 2006 [3]. The data also shows that while the number of new infections per year in North America has remained the same from 2004 to 2006, the number has increased in Sub-Saharan Africa by 0.2 million people per year.

It is often argued that treating those infected is less cost effective than preventing infection, but it is clear that as the number and percentage of persons with the virus increase so too does the risk of the uninfected becoming infected. Missing from such perspectives is the cost to a community incurred when a significant portion of the population is unable to contribute to the economy due to illness or care giving. Treating HIV infection prior to the onset of immune compromise (CD4 < 200/ml blood) enables infected persons to return to work, raise their children, and contribute to community, and reduces the viral load thereby reducing risk of transmission.

The percentage of people with HIV that are receiving antiretroviral combination therapy is shown in Figure 3 (the standard of care in the U.S.)[2]. While there is no current data on the WHO website for the number of people in the US and North America that are receiving antiretroviral therapy, it is clear that there is insufficient coverage in many regions of the world where the prevalence of HIV infection is greatest. Is it not an amazing fact that the number of persons being treated with proven effective therapy is so low in these countries. It the US, "Provision of antiretroviral therapy has resulted in a decline in AIDS death rates of 80% between 1990 and 2003"[3]. The major barrier to the universal availability of this treatment is the cost of the drugs. An argument can be made that HIV is a social disease in that infection can be prevented merely by the behavioral choices of the individual. This viewpoint leads people to claim that sharing effective treatment for HIV is not mandated by a concern for world health. To state the obvious, tuberculosis is a treatable disease. In reality, treatment of TB is variable within the global community primarily due to cost and availability of appropriate antibiotics and the lack of testing for antibiotic resistance. Testing for resistance requires expensive technology, electricity, and skill, often in short supply in countries where TB is a serious and growing problem. Having first line antibiotics is less expensive and often is the only option available in areas where technology and money are scarce. Unfortunately, if first line antibiotics are used on resistant organisms it only feeds the resistance and does little to cure the infection. The second and third generation antibiotics are more expensive, due to patent protection, making them unavailable to many countries in need.

Figure 3:

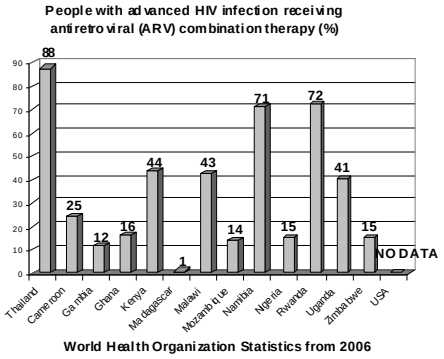
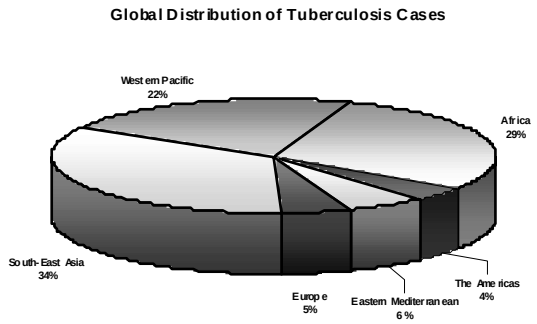


Figure 4 shows the global distribution of TB cases based on data from 2005[4]. The majority of the cases are in developing areas and regions where the economic and political support networks are unable to provide current effective intervention. Correspondingly, the lack of cases in the US and Europe reduces interest in treating a disease that is historically significant but no longer a major threat in these developed nations. Figure 5 shows the number of deaths due to TB in different regions of the world[4]. Do we need to repeat the fact that TB is a treatable disease? Brewer and Heymann note that the "TB mortality rates for patients

have dropped from 50% at 5 years to <5% with the availability of effective treatment, even for those with multiple-drug-resistant disease"[5]. The World Health Organization has a directly observed therapy (DOTS), short-course plan for tracking and treatment of TB, but it has not reached as far as it needs to. Sadly, TB is not the only treatable disease that has been neglected in the global community.

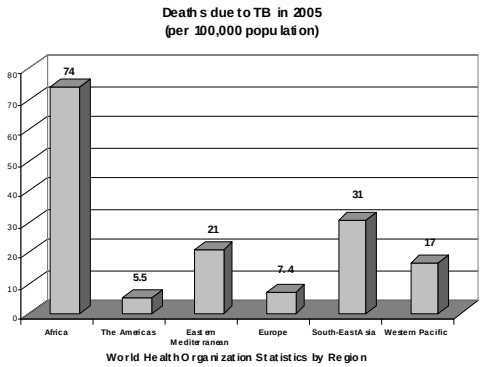
Figure 4:



Historically, malaria was a significant disease all over the world during temperate seasons of the year. While TB and malaria are now of little importance to residents of Europe and North America, the recent case of a person from the US with extensively drug-resistant TB exposed persons in Europe and on airlines to TB reveals that neglect of RB anywhere in the world has negative consequences everywhere. Malaria is treatable, but children and adults die of malaria every day in our world. Figure 7 depicts the number of children under the age of 5 that died due to malaria in the year 2000 in certain African countries[2]. Note that these numbers are the percent of children that died not simply the number of children. This means that in Ghana 33% of children who died before the age of 5 were killed by malaria! The WHO website does not have statistics for more recent years, but the fact remains that malaria is a treatable disease and there are still people dying from it. An article published in 2006 in Current Molecular Medicine states that there are an estimated 350-500 million cases of malaria each year and 1 to 3 million of these cases result in death[7]. The authors note that the numbers from Sub-Saharan Africa are likely to be incomplete simply due to the lack of healthcare in the rural areas that allows many cases to go unreported or unrecognized depending on the education of healthcare providers and availability of tests for malaria detection. They estimate the number of deaths to be closer to 3 million in Africa alone[7].

Why haven't we reached the goal of providing basic healthcare to the global population as the UN tasked us with in 1976? One answer lies in the economic realm of free societies. In these societies, all persons are born free and entitled to human dignity and the pursuit of happiness, yet those who enjoy such freedom fail to use their power and economic resources to benefit other persons. "Out of sight, out of mind" is too simple an excuse. The root of the problem is more insidious than a denial of the need. The problem is privilege devoid of responsibility and compassion. Expecting a tax deduction for acts of charity does little to remove or correct injustice. Justice is more than charity, because justice removes the root cause of injustice. The majority of people in the US have become so locally focused that they can't see past their half-cap-non-fat-double-mocha-chinos! In populist democracies, if the people do not insist their elected officials act on behalf of the poor, then government lacks the motivation to do so. Rhetorical suasion focused on a defense strategy against terrorism is used to justify aggressive acts of war in distant lands. There can be no peace without justice, but the foreign policies of nations with the needed resources for better intervention in global health have dedicated those resources to other ends.

Figure 5:



In the private sector such as with large international drug companies, profit reigns supreme. There are no limits on profit. There may be statistics related to poverty but no caps on wealth. How often are we challenged to defend a free society that praises wealth without concomitant expectation of generosity? Profits promote progress in science and technology to greater heights while simultaneously putting essential, life saving curative drugs beyond the reach of the populations that need them most. A paper published in the May 2007 edition of Globalization and Health states: "…about one-third of the world's population does not have access to essential medicines. Currently, 80 percent of the world's population lives in developing countries, but consumes less than 20 percent of all pharmaceuticals.[8]"

Figure 6: From the WHO DOTS report for 2007[6]

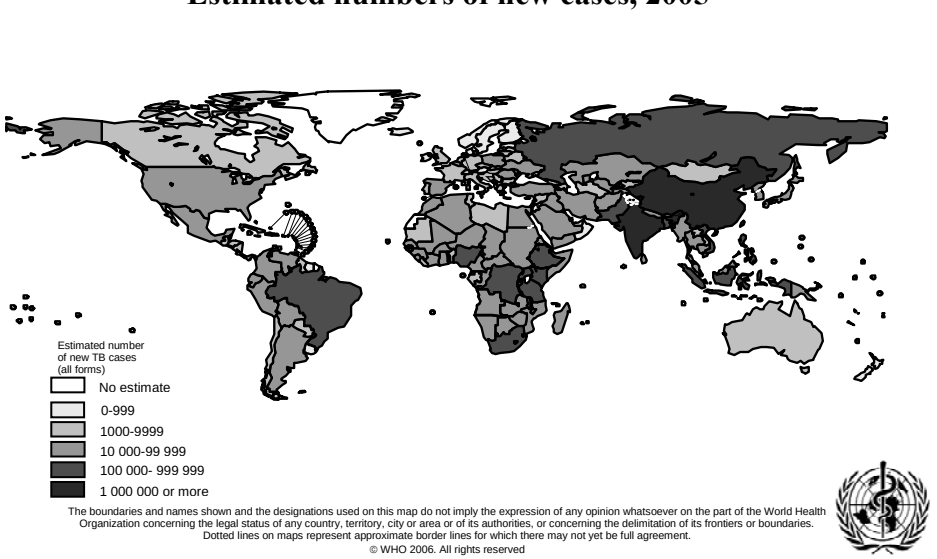
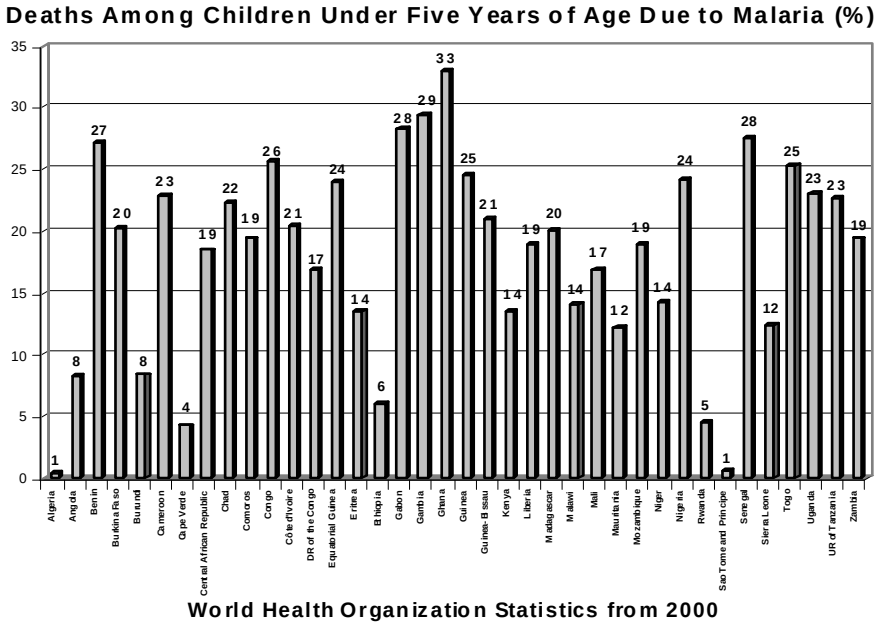


Figure 7:



The World Trade Organization's Trade-Related Aspects of Intellectual Property Rights (TRIPS) agreement was designed to protect the patent rights of industrialized nations on the international stage. Ethical justification for intellectual property rights not withstanding, the TRIPS agreement limits the ability of poor countries to purchase drugs to treat persons infected by HIV, TB, and malaria. Although meant to insure recovery of cost of development for the pharma-industry, the agreement actually imposes drug prices beyond the access of the very people in need.

An alternative is to evoke the compulsory licensing provisions in the agreement meant to address the issue of access to essential medicines in developing countries. Unfortunately, the requirements of these provisions were designed in an impractical way that requires the country in need of the compulsory license to manufacture the drug themselves for use within their own borders. It seems fair on the surface, but the problem arises when the countries that need the license don't have the facilities to manufacture the drugs and are unable to utilize the license! In August of 2003 this situation was "rectified" via a waiver that allows countries with manufacturing capabilities to obtain a compulsory license to manufacture essential medicines under patent protection for export to countries that meet the "need" category[8]. While this was an attempt to increase accessibility to essential medicines, there is still a gap in application along with conflicts and constraints that have been imposed as TRIPS-plus

legislation[9]. These gaps and constraints leave the global health situation no better off than it was before the 2003 waiver.

Another solution to the severe discrepancies in global health was posited by ICESCR[1] and is more clearly and strongly laid out in the language of the follow-up document "The right to the highest attainable standard of health" [10]. ICESCR defines what each country must do within their own borders to protect each person's right to health, but did not clearly define the responsibility to the global community. In light of this and other issues, the UN Committee on Economic, Social and Cultural Rights drafted "The right to the highest attainable standard of health: 11/08/2000" (General Comment No 14)[10]. General Comment 14 (GC14) discusses "Substantive issues arising in the implementation of the International Covenant on Economic, Social and Cultural Rights". The document offers more detail as to what the "highest attainable standard of health" means and specifically addresses the issues of availability, accessibility, acceptability, and quality of healthcare. Included in the availability description is a direct reference to "essential drugs" as defined by the WHO Action Programme on Essential Drugs. In addition, the document makes frequent mention of the need for individual and joint efforts to accomplish these goals and calls on all state parties to "…prevent third parties from violating the right in other countries…" if they have legal power to do so.

The opening line in GC14 is the key to outlining the necessary shift in global priorities: "Health is a fundamental human right indispensable for the exercise of other human rights"[10]. Knowing what is right and doing it is an ancient philosophical paradox. Sadly, patent law has trumped the recognition that a right to health is a humanitarian fundamental norm. Simple greed and the freedom to exercise business on a for-profit basis are far removed from the principle of recovery of investment costs. It is rhetorically easy to assert a right to health within one's own democracy but to grant inclusion of all persons equally requires a more generous nature; one that seems to be missing in the most developed nations.

A potential improvement may be to equate the imperatives and enforcement of ICESCR on parity with TRIPS. Herein lies the test case: will the international agreement inherent in the human rights of all persons articulated in ICESCR be recognized as morally compelling in equity with a national plan, e.g. TRIPS that requires all countries to abide by the standards including developing countries (by 2006) and least-developed countries (by 2016)[8]. There is language in the GC14 that implies that the task is too great and leniency must be inherent in the enforcement because governments may not have the funds to comply. They may not have the funds or desire to comply with TRIPS yet they are still expected to do so by 2016! Somehow it is easier to hold other countries accountable when there is an income interest for the developed nations involved instead of expenditure.

It may seem intuitively obvious that persons regardless of location, culture, and economic status share identity as one species. The mentality with which we treat disease – preventable and treatable illnesses – around the globe reveals how far we are from recognizing our common humanity. What can we do to stimulate greater healthcare for the common good? One avenue is through education and media awareness. So-called western music and dress make it into the recesses of the global family – so why not medicine? Public media can be instrumental in making us all more aware of the need, the common humanity we share, and the challenge we face in global health. Populations with wealth, freedom to share, and lack of awareness can be inspired to give generously as happens in response to natural disasters: tsunami, hurricanes, earthquakes, floods, etc. In privileged populations, more education is needed about infectious disease and how isolated pockets of drug-resistant TB have a way of traveling in a mobile society, putting less differentiation between "us" and "them." People must be convinced that what happens elsewhere in the world affects them and their children. The challenge is large and individuals may feel unable to meet the demand, so education about ways to make a difference is imperative. We know how to treat HIV, TB, and malaria – the challenge is finding the will to do what we know we can do.

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Monotheistic Religions' Perspectives on Embryonic Stem Cell Research

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Abstract

The controversy about research on human embryonic stem cells raises many fundamental ethical and religious questions, especially about the sanctity of life and the Divine mandate of human dominion over nature. This paper reviews the different perspectives of three monotheistic religions on the use of embryo for stem cell research. Looking at the religious perspectives, it shows us that Islam and Judaism support most forms of stem cell research. Both of them express their beliefs on when life begins or what the role of scientists in stem cell research is by interpreting specific religious texts. Although Christianity has put the issue of stem cell research on the forefront of its agenda, they do not point to any specific biblical text that supports their concept of when life begins. While science cannot answer the question of when life begins, Christianity, Judaism and Islam have answered the question in some ways.

Key Words: Judaism, Christianity, Islam, embryonic stem cell research, moral status, playing God.

Introduction

Human embryonic stem cell research is said to promise new life changing treatments and possible cures for many debilitating diseases and injuries, including Parkinson's disease, diabetes, heart disease, multiple sclerosis, burns and spinal cord injuries (Leslie, 2006). A stem cell has the ability to divide or multiply indefinitely in vitro and can become any one of more than 200 different types of tissue cells in the body, such as muscle cells, blood cells, nerve cells and even new teeth. Scientists hope to use these cells to develop new tissues, treatments and potentially even organs for transplanting into a patient (Rao, 2006; Aksoy, 2005). Because they can become any type of tissue cell in the body, but the dreams of scientists have been confronted by the reality of religious beliefs. According to most scientific literature the most useful stem cells are obtained from embryos. A fertilised egg forms a blastocyst 5-7 days after conception. In order to harvest these cells, they are removed from the blastocyst, a process that destroys the embryo (Brehany, 2005; Landry & Zucker, 2004).

Human stem cells can be obtained from a number of sources, not all of which one embryonic. The first is IVF (In vitro fertilisation) treatment, where surplus embryos (and unfertilised eggs for creating embryos) are donated for research with the consent of the donor rather than being destroyed following treatment. The second source is aborted tissue where stem cells are taken from the aborted fetus. Another is umbilical cord blood, rich in stem cells. These cells are harvested following the baby's birth. This is done by removing the nucleus of an egg and fusing this egg with any enucleated cell from the donor. This will create an embryo genetically identical to the donor. Cells can then be harvested from this embryo for treatment (Gilbert, 2004). Being an exact replica, there is potentially less chance of rejection following transplantation. There has been talk of taking stem cells, rather than an egg, and using the same process to create genetically identical stem cells. Finally stem cells can be created from adult cells (Moore, Mills & Thornton, 2006), and in 2007 significant advances were made.

Indeed, the use of human embryos for research and therapy raises numerous ethical objections: Do we consider a fertilized egg or embryo to have full human status? And perhaps more fundamentally, are scientists "playing God" by doing stem cell research and cloning?

Representatives of the three monotheistic religions, Judaism, Christianity and Islam, have concentrated on the two fundamental questions raised by stem cell research. Although the religious leaders were able to reach consensus on several significant issues related to embryonic stem cell research, disagreements remain among and between the religious traditions (National Bioethics Advisory Commission, 1999).

Religion and Embryonic Stem Cell Research

For more than twenty-five years, religious thinkers have discussed the prospect of human cloning in the context of their traditions which influences and guides public response to new technologies. Religious positions on stem cell research and the cloning required for many therapeutic uses of stem cells, are valued, but

share major themes. These themes include responsible human dominion over stewardship of nature, human dignity and destiny, procreation, and family life. In general, the quest for scientific knowledge is not theologically problematic or threatening to Christian, Jewish, and Islamic traditions. With regard to stem cell research, religious thinkers from theses traditions carefully consider whether or not stem cell research's potential to do good work in the world (healing the sick) comes at the price of a violation of the sanctity of creation (Bourzac, 2001). Islamic scholars, for example, emphasize that all scientific discovery is ultimately a revelation of the divinely ordained creation. Scientific knowledge is thereby a symbol or sign of God's creation (Hathout, 1997). Abdulaziz Sachedina (2000), an Islamic scholar, observed that cloning may be a divinely given opportunity for human moral training and maturation. Positive assessments of general scientific inquiry also appear in Protestant, Catholic, and Jewish traditions.

Religious Perspectives and "Playing God"

The debate over whether scientists are "playing God" has probably never been more real than now. The search for clear ethical wisdom on embryonic stem cell research is completed by the fact that the world's spiritual leaders do not speak with one voice and it should come as no surprise that different interpretations of creation carry different implications for human cloning: understanding creation in different ways will lead to different ideas about how human cloning affects our beliefs about the worth of a human life, about God's role as Creator and Sovereign, and about the meaning of human life (Campbell, 1997; Cohen, 1999).

Religious traditions variously interpret the Divine mandate of human dominion over nature. Three different interpretations are particularly significant in debates about cloning humans. One common model is an ethic of stewardship, which holds that humans are entrusted with administrative responsibility for creation. Human stewardship involves caring for and cultivating creation after the manner of a gardener (Campbell, 1997; Hansen & Schotsmans, 2004). This stewardship ethic, one version of which is prominent in Roman Catholicism, accepts nature as a good to be maintained and preserved. In the Catholic tradition, God is actively present in the world, and human persons are called to discern the sacredness of creation and their own responsibility. An important tradition in Catholicism is the 'natural law' tradition where the book of nature provides Guidelines for human how we are to listen to nature, not alter it. In the Catholic tradition that human persons are responsible for their offspring in ways particular to humans and that future generations matter both in this world and in a hoped-for unlimited future. This implies that for those in the Roman Catholic tradition, a goal of longer and longer life spans is not an unqualified or in itself absolute good. This has some relevance for arguments for stem cell research that suggest a major goal of a greatly expanded human life span (Farley, 2000).

A second model suggests a "partnership" between human beings and God in caring for and improving upon creation. Rabbi Dorff (2000) notes that "we are God's 'partners in the ongoing act of creation' when we improve the human lot in life." The Jewish tradition emphasizes that God has given humans a "positive commandment" to "master the world" (Tendler, 1997), and some Jewish thinkers understand human mastery over nature with reference to the two directions given to Adam and Eve in the Garden: They were commanded "to work it [the garden] and to preserve it" (Genesis 2:15). To "work" nature is to improve it to meet human needs, and this activity is both right and obligatory "as long as we preserve nature". It also includes efforts to heal. Human responsibility, in the final analysis, involves "balancing" human and divine actions in this partnership (Dorff, 2000). As partners of God, humans are the appropriate actors in the completion of creation. Accordingly, even Orthodox Jewish leaders have endorsed therapeutic cloning as a means of obtaining stem cells for research and medical therapy (Cooperman, 2002). This second model also appears in some Islamic thought. Sachedina stresses that "as participants in the act of creating with God, human beings can actively engage in furthering the overall well-being of humanity by intervening in the works of nature, including the early stages of embryonic development, to improve human health" (Sachedina, 2000). According to the Islamic perspective, the creator of the universe has established the system of cause-and-effect in the world; all creation takes place solely through His will (Nawash, 2007) and cloning would be only manipulating God's creation, therefore scientists would not become God or replace God (Siddiqi, 1997). In this view, natural world is seen as inherently malleable; it can be shaped in several different ways in service of valuable human and divine goals. Proponents of this model view cloning research and perhaps even, in some circumstances, the cloning of humans as using human creative potential for good.

A third perspective, which some Protestants defend, is potentially even more receptive to the prospect of cloning humans. It understands human beings as "created co-creators." On the one hand, human beings are created, dependent on God and finite and fallible. On the other hand, they assume the role of co-creator to acquire and implement knowledge to improve humanity and the world. Human beings are called on, not to "play God" but to "play human" (Peters, 1997) through their freedom and responsibility in creating an essentially open human future. Reproductive and genetic technologies, along with technologies to create a child through cloning, can express responsible created co-creatorship (Cole-Turner, 2000).

Religious Perspectives and a Moral Status of Embryos

Many people - bioethicists, theologians, scientists, and laymen alike - have qualms about the way embryonic stem cells are harvested or even about using them at all in scientific research. Few question the morality of a consenting adult donating tissue. However, taking embryonic stem cells from pre-implantation blastocysts and embryonic germ cells from aborted fetuses is highly controversial because it raises questions about the definition of human life and the potential to become human (Bourzac, 2001).

One of the most heated ethical issues surrounding embryonic stem cell research is independent of the research goals or outcome possibilities. This ethical issue involves the status of the human embryo. The discussion about the status of the embryo has been in the forefront for many years in most countries. Since the ethical issue regarding the status of the embryo has never been resolved, it continues to be contentious and rises to the surface whenever people discuss stem cell research. In general, people adopt one of three stances towards using human embryos for stem cell research:

1: Embryos are human individuals and should not be used or destroyed for research purposes. According to this position, *embryos are human individuals* or *potential person*s (Hug, 2006) and therefore deserve the same respect and protection as all human beings. From this perspective, a human embryo ought to enjoy all the rights and protections given to any other human being. This position considers the destruction of a human embryo to be immoral and often equates it with other types of murder (Rickard, 2002; Sandel, 2004). However, few hold this view that pre-implantation stage embryos deserve the same level of respect and protection as human beings just because they are human (Hug, 2006).

2: Embryos should not be created for research, but can be used if they are left over from in vitro fertilization (IVF) procedures. This position is referred to as the "*nothing is lost*" principle. The "*nothing is lost*" principle means if an embryo is not going to be used for its original purpose of reproduction and would be discarded in the future, then science should be allowed to make use of the embryo prior to its destruction for research that might benefit people who are alive and suffering from a disability or illness (Outka, 2002).

3: Embryos are clusters of cells no different from other cells and can be created specifically for use in research. According to this final viewpoint, the human embryo can be derived, created, and used in any way people see fit. Supporters argue that even if the embryo deserved special deference because it has the information inside of it to create a human life, that it is this very property which makes the embryo so valuable for research. Embryos created for research are either produced by *in vitro* fertilization or somatic cell nuclear transfer procedures. They also present the argument that if it is ethical to use human embryos in research, then it should be considered ethical to create embryos for that purpose, the intent of the original creation of the embryo is effectively irrelevant (Gomez-Lobo, 2004; Sowle Cahill, 2000).

The question of the ethics of human embryonic stem cell research can be addressed in a variety of different traditions. Among religious believers the arguments have also included issues of theology and the interpretation of sacred texts, whether the Torah, the Bible or the Qur'an. Each of the three monotheistic traditions has a point of view for moral status of human embryo and these viewpoints have influence over many decisions on stem cell research. However, both biology and religion seek to understand and define the origin and definition of human life, which informs opinions on issues such as stem-cell research. And indeed, religious voices have been very prominent in the recent debates that have taken place around the world.

The Jewish View

During the first 40 days of gestation, the fetus, according to the Talmud, is "as if it were simply water," and from the 41st day until birth it is "like the thigh of its mother." Stem cells for research purposes, though, can also be procured from donated sperm and eggs mixed together in a petri dish and cultured there. Since genetic materials outside the uterus have no chance of developing into a human being, they have even less legal status in Jewish law than zygotes and embryos in the first stages of gestation, when the Talmud classifies them "as if it were simply water" (Dorff, 2001). Still, while religion should have respect for gametes and embryos, they may be discarded if they are not going to be used for some good purpose. Since they cannot become a human being outside a woman's uterus, their status is even less than that of an embryo in the first 40 days of gestation, and thus they do not prohibit simply discarding them (Zoloth, 2002a). Moreover, when a couple agrees to donate such embryos for purposes of medical research, our respect for such pre-embryos and embryos outside the womb should be superseded by our duty to seek to cure diseases (Zoloth, 2002b). According to Eisenberg (2001), "Jewish law consists of biblical and rabbinic legislation. A good deal of rabbinic law consists of erecting fences to protect biblical law. (…) But a fence that prevents the cure of fatal diseases must not be erected, because the loss would be greater than the benefit. Mastery of nature for the benefit of those suffering from vital organ failure is a religious and moral obligation. Human embryonic stem cell research is considered as holding that promise, and therefore is encouraged by Jewish law".

The moral imperative to pursue stem cell research is clear: it is an embodiment of the mitzvah of healing. Shulchan Aruch, Yorei De'ah 336:1: "Our tradition requires that we use all available knowledge to heal the

ill, and when one delays in doing so, it is as if he has shed blood" (European Organisation for Rare Diseases, 2006). However, the potential of embryonic stem cell research for creating organs for transplant and cures for diseases is, at least in theory, both awesome and hopeful from a Jewish perspective. The Divine mandate to seek to maintain life and health created a duty to proceed with this research (Dorff, 2000).

The Christian View

A basic belief of the Christian church is in the sanctity of human life. The question of the status of the human embryo is related to the mystery of creation (Bruce, 2000). So many of the Christian views and arguments surrounding embryonic stem cell research will be the same as that for abortion, as the life of an embryo and fetus are the main ethical focal point surrounding human embryonic stem cell research (Walters, 2004).

Roman Catholic teaching does not allow an embryo to be destroyed in order to obtain stem cells. The Pontifical Academy for Life stated that obtaining stem cells supplied by other researchers or available on the market is not morally permissible (Prieur et al, 2006). In their testimony before National Bioethics Advisory Commission (NBAC), three representatives of the Catholic tradition reached differing conclusions. Edmund Pellegrino (2000), a physician, reiterated the official teaching that "human life is a continuum from the one-cell stage until death". And, a Catholic moral theologian, Margaret Farley (2000), and a Catholic moral philosopher, Kevin Wildes (2000), accented the pluralism of opinion about human embryonic status within the Catholic tradition. Professor Farley (2000) expressly dissented from current official Church teaching and argued that the moral case for human embryonic stem cell research is quite powerful, both within the Catholic tradition and in the public forum. From the perspective of this tradition, to allow human embryos to be used for scientific research in the process of which they would be destroyed, is to forget who it is that forms us in the womb and who it is that is at work in the embryo, whether or not He has yet given the embryo its soul (Jones 2005). Nevertheless, while there is a strong strand of Christian thought which regards the soul as present in the embryo from the moment of conception; a growing number of Catholic moral theologians do not consider the human embryo in its earliest stages (prior to the development of the "primitive streak" or to implantation) to constitute an individualized human entity with the settled inherent potential to become a human person. The moral status of the embryo is, therefore (in this view), not that of a person, and its use for certain kinds of research can be justified (Walters, 2004).

Protestant Churches believe that the embryo has a potential human status, but officially, they have never declared that they regard embryos as persons. The Committee on Genetics of the United Church of Christ does not object categorically to human pre-embryo research, including research that produces and studies cloned human pre-embryos through the 14th day of fetal life. But all such research should be subject to broad public comment and that it should only proceed within a context of public understanding and general public support (Cole-Turner, 2000). However, they consider that already existing stem cell lines could be used for therapeutic purposes, since they had already been created and cannot be undone (Walters, 2004).

Orthodox Christians affirm the sanctity of human life at all stages of development. Unborn human life is entitled to the same protection and the same opportunity to grow in the image and likeness of God as are those already born. In Orthodox Christian view, the establishment of embryonic stem cell lines was done at the cost of human lives. Even though not yet a human person, an embryo should not be used for or sacrificed in experimentation, no matter how noble the goal may seem. For them, then, the derivation of embryonic stem cell lines is immoral because it sacrificed human embryos, which were committed to becoming human persons (Demopulos, 2000).

The Muslim View

The ethical-religious assessment of research uses of pluripotent stem cells derived from human embryos in Islam can be inferentially deduced from the rulings of the Shari`a, Islamic law, that deal with fetal viability and the sanctity of the embryo in the classical and modern juristic decisions. The moral consideration and concern in Islam have been connected, however, with the fetus and its development to a particular point when it attains human personhood with full moral and legal status. Based on theological and ethical considerations derived from the Koranic passages that describe the embryonic journey to personhood developmentally and the rulings that treat ensoulment (when the embryo acquired a spiritual soul) and personhood as occurring over time almost synonymously, it is correct to suggest that Shi`ite and a majority of the Sunni jurists will have little problem in endorsing ethically regulated research on the stem cells that promises potential therapeutic value, provided that the expected therapeutic benefits are not simply speculative (Sachedina, 2000;The Islamic Institute, 2001). The inception of embryonic life is an important moral and social question in the Muslim community like Jewish and Christian traditions. Accordingly, each period of Islamic jurisprudence has come up with its ruling (fatwa), consistent with the findings of science and technology available at that time. The search for a satisfactory answer regarding when an embryo attains legal rights has continued to this day (Sachedina, 2000).

The life of a fetus, according to the Koran, goes through several stages. In the chapter entitled *"The Believers"* (Holy Koran, 23:12-14), we read the

following verses: "We created (khalaqna) man of an extraction of clay, then We set him, a drop in a safe lodging, then We created of the drop a clot, then We created of the clot a tissue, then We created of the tissue bones, then we covered the bones in flesh; thereafter We produced it as another creature. So blessed be God, the Best of creators (khaliqin)".

Additionally, the Koran speaks about "breathing His own spirit" after God forms human beings: "Human progeny He creates from a drop of sperm; He fashions his limbs and organs in perfect proportion and breathes into him from His own Spirit (ruh). And He gives you ears, eyes, and a heart. These bounties warrant your sincere gratitude, but little do you give thanks" (Holy Koran, 41:9–10).

And your Lord said to the angels: "I am going to create human from clay. And when I have given him form and breathed into him of My life force (ruh), you must all show respect by bowing down before him" (Holy Koran, 38:72–73).

The commentators of the Koran, who were in most cases legal scholars, drew some important conclusions from this and other passages that describe the development of an embryo to a full human person. First, human creation is part of the divine will. Second, it suggests that moral personhood is a process and achievement at the later stage in biological development of the embryo when God says: "thereafter We produced him as another creature." Third, it raises questions in Islamic law of inheritance as well as punitive justice, where the rights and indemnity of the fetus are recognized as a person, whether the fetus should be accorded the status of a legal-moral person once it lodges in the uterus in the earlier stage. Fourth, as the subsequent juridical extrapolations bear out, the Koranic embryonic development allows for a possible distinction between a biological and moral person because of its silence over a particular point when the ensoulment occurs (Sachedina, 2000).

Shi`ite and a majority of the Sunni scholars make a distinction between two stages in pregnancy divided by the end of the fourth month (120 days) when the ensoulment takes place, however, most of them have exercised caution in making such a distinction because they regard the embryo in the pre-ensoulment stages as alive and its eradication as a sin. That is why Sunni jurists in general allow justifiable abortion within that period, while all schools agree that the sanctity of fetal life must be acknowledged after the fourth month (Aksoy, 2005; Ahmed, 2000).

Finally, the Koran takes into account the problem of human arrogance, which takes the form of rejection of God's frequent reminders to humanity that God's immutable laws are dominant in nature and that human beings cannot willfully interfere to cause damage to others. "The will of God" in the Koran has often been interpreted as the processes of nature uninterfered with by human action. Hence, in Islam, research on stem cells made possible by biotechnical intervention in the early stages of life is regarded as an act of faith in the ultimate will of God as the Giver of all life, as long as such an intervention is undertaken with the purpose of improving human health (Sachedina, 2000; Al-Aqeel, 2005).

Conclusion

As mentioned above, embryonic stem cell research raises fundamental questions regarding the moral status of embryo and incipient human life, and answers to which vary widely and depend largely on one's metaphysical presuppositions. For many people, such beliefs are rooted in the teachings of particular theological traditions. Looking at the monotheistic religions' perspectives, it is interesting to note that the religions, namely Judaism and Islam, support most forms of stem cell research. These two religions also support their beliefs on when life begins and stem cell research by interpreting specific religious texts. While the Catholic Church has put the issue of stem cell research on the forefront of its agenda, does not point to any specific biblical text that supports the Catholic Church's concept of when life begins.

Several elements of these traditions should be of interest to scholars. Judaism seems to imply that the ensoulment occurs sometime during pregnancy, as is widely believed in the Islam. The Christian moral tradition also attempts to clarify moral principles for dealing with the embryo both after and before ensoulment which were compatible with respect for life and for the Creator and which were also sensitive to medical circumstances. Moreover, monotheistic traditions have clear perspectives, which they offer within the public arena. They seek clear, reliable, and logical propositions to guide behavior, and yet their conclusions, prohibitions and sanctions differ dramatically. With regard to embryo experimentation, the question with which we started, the Christian moral tradition gives no precedent for any practice that would treat the embryo as disposable, or as a resource to be used for the general public good of the progress of biomedical science. While both the Jewish and Islamic religions undertake to research on embryos with the purpose of improving human health.

These three monotheistic religions with their roots in the ancient faith hold in common the belief that human life is sacred by virtue of its creator; and God is creator of all things. The Muslim's Holy Book has many references to the sanctity of human life, based on the fact that every member of the human species without exception is made in God's image. Taken together, the three major monotheistic religions provide a powerful witness to the inherent sanctity and dignity of human life. However, some religious thinkers hold that more reflection is needed, given new scientific and technological developments, to determine exactly how to interpret and evaluate the prospect of human cloning

in light of fundamental religious convictions and norms.

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A Reconnaissance of the Cosmos: A Critical Response to Konstantin S. Khroutski's *BioCosmology – Science of the Universal Future*

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Abstract

In the last four centuries there have been a number of cosmological and evolutionary insights which have informed our understanding of the architecture of the universe and life on earth. Nineteenth and twentieth century theories of evolution continued this speculative trend in relation to human evolution and emergence. Konstantin Khroutski's bio-cosmology paradigm offers a new insight into understanding biological and social processes. This paper provides a critical response of some areas of Khroutski's theory as well as will proposing new ways in which bio-cosmology can further contribute to evolutionary science.

Introduction

Konstantin Khroutski's thesis on bio-cosmology and the science of the universal future provides some insight into the Russian cosmist tradition to a western audience. Khroutski's thesis is philosophically engaging and medically interesting as it concerns itself with the human health design. It is an important philosophical project since it seeks to develop new insights into evolution with an onus on universality. Khroutski's articulation of the cosmist tradition has been processual over many years. Its philosophical underpinnings proffer a valuable critique to the present materialist scientific paradigms. My critical response to Khroutski utlilises anthropology, philosophy, neuroscience and futures studies. My interdisciplinary response is needed in order to sufficiently tackle the breadth of Khroutski's ideas. I locate Khroutski's theory in five sections. My aim is to provide both a critical reading of bio-cosmology and to contribute to possible areas for future discussion.

Microcosm/Macrocosm

Khroutski's cosmist theory accords with the ancient idea of humankind as microcosm (Greek: microcosmos = "small universe"). Similarly Khroutski avers that human biological and social aspects are integrated with the macrocosm. Within his notion of the microcosm Khroutski articulates his universal function model – basic cosmist functionality. "This means that all subjects are intrinsically and basically dedicated for the realization and execution ultimately of its (her) his definite function (Khroutski 2006:13). In other words the subject integrates with the environment in a symbiotic manner. For Maturana and Varela (1988) the execution of a subject's function includes the coherences between its structural coupling with other living systems. This is a basic law of autopoiesis. By virtue of their structural coupling living systems know how to live in their specific niches. As Maturana points out: "Further, the organism is not a whole by itself, rather it results as a whole in the relational space in which it is conserved as an autopoietic system through its interactions in its niche."

The relationship between microcosm/macrocosm hints at the mystery of the human mind. While the human brain has evolved for developing survival skills (i.e. hunting, avoiding predators) how is it that

"cognitive processes" tuned themselves to understanding the place of Homo in the universe (Davies 1992:151). For Khroutski this cognitive ingenuity is part of the human movement towards higher consciousness. Khroutski realises the significance of holism in his evolutionary paradigm. Separation is an unnatural artifice which leads to a pathology down the line. Integration is kernel to the cosmic evolutionary process. This is what Bateson alludes to in the following: "But when you separate mind from the structure in which it is immanent, such as human relationship, the human society, of the ecosystem, you thereby embark, I believe, on fundamental error, which in the end will surely hurt you" (1973:461).

For thinkers such as Nasr (1995, 1968) humanity's separation from nature was expedited four centuries ago with the emergence of a scientific model which reduced the sacred character of the cosmos. This eventuated in the de-mystification and de-sacralisation of the universe and the creation of a sharp division between religion and science which has remained ever since. The scientific tendency to quantify nature is for Nasr a misguided endeavour which merely perpetuates ecological destruction and dominator ideologies (Kalin 2001). Nasr endorses the promulgation of *scientia sacra* or sacred knowledge which dwells at the heart of the world's religious traditions (Kalin 2001:447). Important here is Khroutski's notion of the subject as forever integrating "autonomously and hierarchically other subjects" from the molecular to the EvoProcess (2006:13). This idea coincides with Nasr's belief of the correspondence of "hierarchy between the absolute and the relative," since hierarchy intimates multi-layered existence (Kalin 2001:448).

BCF and Self Disclosure

According to Khroutski the BCF is based on two principles:

1. It is a property inherent to an organism.
2. "BCF is an ideal towards which the organism aims" (Modell 2006:3). This second principle is characterized by an inherent health design, incorporating human physiological and social systems (Khroutski 2006:13). These systems are crucial in the self actualization and self unfolding of the BCF. I am reminded here of the metaphysical theory of the medieval Sufi thinker Moiyuddin ibn Arabi. In ibn Arabi's theory the human being is viewed as a synthetic threshold (*barzakh*) which both separates and unites elements. The human species contains the cosmic principle of creative disclosure – that is, the unfoldment of Divine creativity within the multiple forms of human mentation (Afifi 1964:84). Cosmic creation undergoes constant transformation including the "world of thought and the world of imagination" (Izutsu 1983). Based on this principle, freedom, may constitute a form of cosmic disclosure. As Saniotis (2006) declares, "Ibn 'Arabi's universe is poised within a dualism between possibility and reality; a dynamic evolution of new orders, new life worlds, new knowledge, and new kinds of consciousness — a quantum universe."

The essence of the cosmic evolutionary process of life on Earth consists in the increase of a degree of freedom of personal intentional ontongenetic activity of humans (Khroutski 2006:14).

The drive towards greater freedom seems to reaffirm the predilection of natural processes towards greater complexity. Freedom, in this sense, is akin with Whitehead's belief that entities and societies seek their fulfillment or *telos*, which constitutes an emergent process (Langdon 1999:113). This *telos* is embodied in the third phase of human evolution in which individuals are capable of generating transcendental knowledge – the level of self realisation (Khroutski 2006:14). I would go further. The ultimate health design of each human is cognate to a process towards greater self awareness, an evolution which coincides with ibn Arabi's metaphysics.

In anthropology, knowledge of self and myth are often generated in the creative field of ritual. Turner identifies ritual as a storehouse of symbolic meanings which foreground the key concerns of human life. During the middle of limen (Latin: meaning 'threshold') phase of rituals, ritual participants enter a symbolic zone which is betwixt and between social categories. Turner calls this phase liminality because of the considerable amount of ambiguity which is generated during this ritual phase (Turner 1969, 1974). During liminality, symbols are often inverted or distorted from their familiar meanings, where they can embody ludic representations. These representations compel ritual participants to reflect upon the social and cosmological order of things. A feature of liminality is that it may create a generic bond between ritual participants based on "a community or comity of comrades and not a structure of hierarchically arrayed positions" (Turner 1967:100). He coins this non-structured relationship *communitas*. Here, new found freedom within the ritual environment is crucial for provoking new kinds of knowledge or even transcendental understanding which is carried into society (Myerhoff 1974).

Onus on Existential Control

Khroutski's thesis discusses the human health design as being constituted by a symbiotic process between human and environment. The ontogenetic makeup of human beings is informed by freedom which is emergent in independent beings. Importantly, apart from the need for ontological security human beings are also confronted by varying degrees ambiguity which impinge upon their internal state. A large part of ambiguity derives from the fact that the human world is surrounded by a world which has no subjectivity – "the world of things" (Jackson 2005:111). Devereux (1967)

has earlier suggested that human beings may respond with trauma from the unresponsiveness of matter. For Devereux a "denial of response" by the world of things may prompt various psychological and cultural strategies for alleviating "peoples' panic reactions (Jackson 2005:116). The non-human world is often incorporated in ritual and social life in order to resemble the human world (Jackson 2005:111). It seems that human consciousness needs to incorporate the non-human world as a means of mitigating the indeterminacy of nature. This is the existential dilemma which Heidegger alludes to by his concept *gewerfornheit* (thrownness). That is, human beings are thrown into the world without their choosing, a world which had existed prior to their emergence, and which remains after they transpire; a world which is by and large indifferent to their existence. This leads to a "crisis of agency" (Jackson 2005:112).

Such a crisis is evident in the new genetic technologies where there is a lack of scientific consensus about their safety of ability to predict their repercussions (Jackson 2005:112). What is becoming evident is that the human health design is becoming more under the control of new bio-technologies. These technologies are seeking to control life's blueprint via human *techne*. How do we as humans come to terms with the encroachment of the non-human world via new technologies and their potential to transform the human design? The point here is that an understanding of human ontogenesis must include its relationship with the non-human world.

An implicit element of human encounters (I would also include here encounters between humans and non-human others), as Jackson explains, is a need to establish a sense of personal authorship over one's life, to be given voice during interactions with others, without countermanding one's feeling of propriety. The key element here is that human beings need to believe that they are masters of their own lives, and to be allowed to exercise various strategies — ways of maintaining "self-determination and self-identity" while adjusting to the Other (Jackson 1998:19). "We are "the authors of ourselves," writes Myerhoff (cited in Bruner 1986:12). Bruner calls for an anthropology of experience in which human beings are viewed as "active agents in the historical process who construct their own world" (1986:12). Dilthey further explains that those cultural manifestations that are contiguous with inter-subjective life are the domain "in which the subject discovers himself" (1976:203). This idea corresponds with Khroutski's BCF as a continual process of self discovery.

Brain, Novelty and Metapatterns

In this section I would like to discuss the role of the brain, novelty and metapatterns which may provide an insight to understanding emergence. Human consciousness provides us with some insight how imagination and categorization works (Laszlo 1996:151). Of course, Levi-Strauss (1972) some decades earlier contended that human oppositional categories reflect the binary structure of the brain. My understanding of human intelligence concurs with Calvin who notes that it should provide us some insight into the intelligence of other creatures (Calvin 1996:152). In reality it is still a difficult scientific exercise in pondering how high intelligence evolved on earth, or how it might develop on other planets (Calvin 1996:153). Any examination of human intelligence must eventually explain the link between novelty and meta-patterns. In Bateson's terms (1973), metapatterns are patterns which describe other patterns. Another description of metapatterns are common patterns which occur across biological, cultural and mental systems such as spheres, tubes, webs, cycles, sheets etc. The human brain depicts various metapatterns:

1. The brain is sphere like in shape, which is composed of binary cerebral spheres. This coincides with Levi-Strauss's structuralist idea that the oppositional categories which humans impose on the world reflect the binary structure of the mind (1966).
2. The neo-cortex is a membranous sheet; its structure accommodates for great surface area for carrying neuronal information throughout the cerebrum.
3. The brain is composed of a matrix of tubes in the form of dendrical neurons and micro columns.
4. The brain is connected by a web like configuration between different Brodman's areas.
5. The brain is multi-layered – a tripartite structure composed of brain stem, limbic and neocortex.
6. Brain cells are membranous.

The brain is connected to the rest of the body which co-ordinates an intricate bio-feedback system regulating bodily systems.

Metapatterns are an important tool of analysis of the mind since it is constantly evolving in evolutionary time and during a person's lifetime (Volk & Bloom 2007:32). Culture mimics its rudimentary form from nature and has elaborated on it in the ways of natural cycles and systems patterns.

In relation to novelty, metapatterns are linked to symbolic thought in the forms of myths, narratives, and cultural information which elaborates on natural metapatterns. Coining Bateson novelty is a "difference which makes a difference" since it can change cultural evolution. For example, science as a form of novel thought has been able to expedite cultural evolution via military, food, and medical technology. In other words, novelty is a "metasystem transition" in Turchin's words since it leads to a higher organisation of thought (1981). Novelty uses metapatterns for generating new modes of thought and for inducing self reflexivity. For example, rituals invariably use various core collective symbols which are multi-valent. As I suggested earlier, such symbols enable participants to ponder over key life

issues and find novel ways for understanding such issues and the participant's place in the social sphere (Turner 1969, 1974). The degree in which metapatterns are interrelated is expressed in the following equation:

f [x1…xn] = dx1/dt t… dxn/dt

Thought novelty is a confusion of patterns. Inter-connectivity demands a complex neuronal network. New thought is created when an error through an established pattern of nerve cells occurs (Henneberg 2007). If stochastic flow of information is compatible with other patterns already functioning it will be "noticed" i.e. incorporated into one of the patterns. When a new thought is created and accommodated into a metapattern it is likely that it will be accepted (Henneberg 2007).

As an organic system the brain consists of a dynamic flow of interactions between it many levels and parts. The brain is based on patterns of organisation which create patterns. These patterns "both envelop and are enveloped by other patterns." The brain is in a constant process of exchange of information and transformation.

As a feedback structure, the brain's mechanism is circular in which input and output interacts. "This complex interaction between perception and action evident in explaining and learning behaviors, is the means by which a system…" has the capacity to adapt and increase its complexity (Bale p. 35).

An ecological view of the brain, thus, considers it as consisting of integrated neural subsystems and micro-hierarchies which are regulated via the osmotic flow of energy, matter and information into novel patterns (Bale). One of the areas of investigation is how the brain learns to be an interactive element in a community of brains (Churchland & Churchland 1995:74). In other words, how does the brain come to represent the social, moral and political features of the world in which it lives as well as the "character of other cognitive creatures with which it interacts" (Churchland & Churchland 1995:74). These two areas have yet to be explained convincingly by neuroscience or evolutionary science. This is one domain in which bio-cosmology may contribute. How do meta-patterns fit in the cosmist tradition and the human health design?

Conclusion: Cosmism and New Evolution

The evolutionary model purported by Khroutski foregrounds the concept of emergence from the molecular to social levels. This is a universalistic insight which merges the best of the Russian cosmist tradition. At this point, any discussion of evolutionary emergence must take into account the advent of new technologies which may contour future human evolution. Laszlo's ideas are influential here. Laszlo et al (1996) endorse a universal change in human cognitive maps (mental representations) in order to prompt a necessary global change in consciousness. At present, many societies worldwide are governed by dominator principles, based on competition, accumulation, and fragmentation (Laszlo et al 1996:106). Consequently, these societies are undergoing a systemic pathology. Bateson refers to this entropic process as being autocatalytic: the larger the population the more technology is used which gives human beings an illusion of power over the 'other' (Bateson 1973:466). This process is mathematically presented in the following:

A = ∑ (ps . t)

Ps = population size

t = the rate of technology

The pre-eminence of classical economic theory which objectifies nature to the whims of human pursuits has distorted the human psyche. The present global cognitive map is impeding the potential of human consciousness towards the kind of realization fostered by Khroutski's bio-cosmological paradigm. While humans have become conscious of their evolution, "we must now make evolution itself conscious (Laszlo et al 1996:116).

Future cognitive maps will have to undergo a transformation which begins at the learning level. What kind of pedagogy is suitable for this task? Possibly, an ecology of evolutionary learning as purported by Bateson. Bateson contends that a major problem in present day human learning is its persistence with habituated ways of thinking that are regressive, rigid and lack internal rigour (Bateson 1973). Evolutionary learning is largely based on nature's principles of co-operation and integration (Montuori 1993). Whereas science privileges precision and empiricism, evolutionary learning emphasises the importance in integrating human experience. As Russell affirms (1994): "Through the continuous integration of narrative into the experience-explanation-experience relationship, the discussion of ethics becomes an inevitable ingredient of the learning process." Similarly, David Polkinghorne provides the tie between human stories and social ecology when he says that: "Through the action of emplotment, the narrative form constitutes human reality into wholes, manifests human values, and bestows meaning on life" (Polkinghorne 1988:159). Evolutionary learning is symptomatic of an emerging "evolutionary cognitive map" (Laszlo et al 1996:117) that identifies the positive possibilities of meta-patterns.

Another crucial step in evolutionary learning refers to Bateson's notion of flexibility. Flexibility can be defined as "uncommitted potentiality for change (Bateson 1973:473). Human society contains many variables. Each variable consists of upper and lower limits within which the variable can move (Bateson 1973:472). Thus, the greater degree of flexibility between inter-linking variables, the greater potential for flexibility to be spread throughout a system (Bateson 1973:472). This process encapsulates Bateson's term *mind*. Mind is the integration of meta-patterns within a

flexible system; this system acts as an osmotic membrane whose interface integrates "diverse elements" (Laszlo 2001:144). In this sense mind embraces a "holos consciousness" (Laszlo 2001:126). Holos consciousness is posited on a marked level of communication between people who make use of the "strands of connection that bind them to each other and to nature" (Laszlo 2001:113). Awareness of this level of connectedness plays a vital part in human evolution (Laszlo 2001:113).

I would like now to comment on the development of nano-biotechnologies in relation to future human evolutionary cognitive and body design. A number of theorists claim that the combination of nanotechnology and genetic engineering will advance human cognitive and somatic evolution (Roco & Bainbridge 2003). The convergence of these technologies infer new ways for examining the architecture of DNA and cellular sub-systems at the molecular level. The futurist Ray Kurzweil (2000) goes further. He claims that nanotechnology will eventually supplant parts of the body, even entire organs, which will be rebuilt according to nanotech principles. The redesigning of the human body will force humans to rethink on what constitutes corporeality. Moreover, Harraway (1991) postulates that humans have already become hybrids; an interface between biology and machine, since many people spend a large part of their lives with cyber systems. Additionally, global cyber space networks are enabling people to create multiple cyber identities, thereby, being freed from the evolutionary bounded body. One question which may be asked is whether the virtual body can be viewed as a self-evolving subject? Kurzweil (2000), Bostrum (2000, 2001), and Greenfield (2003) also propose that in the future mind could be downloaded into virtual bodies via neural implants. The transhumanist Bostrum claims that downloading mind simulations into cyberspace will endow the recipient with immortality. If such technology proves to be feasible in the future it will radically change our understanding of the body and consciousness.

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Considerations about Medical Ethics, Education, Medical Portuguese Code of Ethics and AIDS

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Introduction

The medical evolution in the last decades has been extraordinary. The knowledge of diseases, its diagnosis and therapy has fascinated the medical and scientific community. Compared to the beginning of the 20th century with the significant medical improvements in the last 50 years new ethical considerations have been considered such as criteria for initiation of life-sustaining treatment which developed with proper ethical considerations, as well as criteria for withholding life-sustaining treatment. Clinical situations in which selective non treatment take place may encompass the conditions where death is considered to be inevitable no matter what treatment is provided or even with the risk of severe physical and mental disability occurring, thus triggering ethical issues that must be approached with extreme sensitivity and a very high sense of responsibility .

However, human mentality has not generally accompanied this evolution. Although there is more credibility in the acceptance of new resources regarding diagnosis and therapy, lay people in most countries have a limited knowledge regarding the risks associated with the availability of higher technology.

The Molecular Era

With the concept of a molecular pathology a great evolution in medicine emerged with the decithering of the genetic code and the fundamental laws that preside to Life. The destiny of humankind was altered by all genetic engineered factors and the attitudes of people towards disease and death were profoundly shattered, thus modifying the existing moral and deontological rules which were the pillars of humankind's relationship towards disease, quality of life and death. Things were much simpler when the Hippocratic Oath was generally followed and accepted governing the relationship between the physician and the patient. With the challenges of modern medicine, behaviour laws and codes are quickly bypassed by the impact of medical science. People, society and governments have to be in constant alert regarding the for mentioned Evolution! Alas this is not the present state of art thus the gathering of huge problems that have inevitably emerged.

Medical Education and Iatrogeny

Iatrogenic behaviour refers to disturbances that may be caused to a patient influenced by a clinical exam, along with the ways of tackling or discouraging a patient's problem from the medical point of view. The relative degree of iatrogenic medicine is usually not fully weighed and is often totally disregarded in medical education. In medical practice the iatrogenic caveat is usually associated with a therapeutic mistake when in most cases this mistake may be a small semiotic failure leading to a diagnostic disaster, or careless psychological support to the patient specially

when there are great challenges posed to the patient's life or their attitudes towards a possible death. A broad range of options to be faced during the recovery period or a sequence of life when changes of habits, values and decisions are imposed. Iatrogenic behaviour in medical education is fundamentally the outcome of wrongful planning, inadequate strategy and often an absurd organization. It is curious that some of the major events in our lives are not preceded by any preparation or careful planning. In most cases, decisions involved in important events are the reflex of emotional bursts in an evolution of facts, habits, traditions owing very little to an elaborate or rational thinking. Education is viewed as a soft science in many Medical Schools. The truth is that the mission to educate is no more a mere amateur part time prone to compromise generations after generations not only of future physicians but also of future potential educators.

The Edinburgh Declaration proclaims ten fundamental issues that may be considered as potential iatrogenic examples in Medical Education. There is a need for health indicators which if not appropriately evaluated and correctly faced will no doubt compromise a whole educational program. This evaluation should include the universal realities in association with those pertaining to a certain country. Disobeying such principles in medicine may twist the concept of iatrogenic behaviour in the health horizon of a world nullifying a profound and realistic analysis of the priorities, prevention and health intervention. The establishment of goals and purposes when planning a Health Program is mandatory. These principles as it is well known are not assumed, thus meaning that in a global context all strategy and circular planning has to be identified and subordinated to the needs of a Health Program.

The respect for the character and personality of the patient and also for the cultural characteristics of a population and the ecological and social development of a certain community has to be apprehended with methodologies similar to the techniques followed by the learning apprentice. In fact although it is known that psychological and behaviour factors may influence health or its evolution, the physicians have traditionally faced these subjects as less scientific and even bestowed its research and connected problems to other professionals less prepared to face the clinics of an individuals not only as a biological being but also as an affective and social entity.

Portuguese Courts of Law, AIDS and Abortion

On November 2007 Portuguese were confronted with the case of a cook (a Chef in the real French perspective) working in a rather fancy Lisbon restaurant who was dismissed from his job based on the fact that he was a HIV carrier. According to the Newspapers and the Media the case of this chef was presented in Court where the judge and the public prosecutor sentenced the banishment form that particular Restaurant or any other catering activity. The Chef decided to appeal to the Supreme Court, notwithstanding the opinion of a group of board certified physicians that no risk of AIDS transmission to others were implied by the Chef's activity in the restaurant, the statement issued by the Medical Boards was disregarded and thus the Supreme Court ended the carrier of a brilliant Chef.

On October 2007 the Health Minister exacted that the Portuguese Medical Boards should alter the Deontological Code in a one month period subsequent to a dispatch of the Attorney General regarding the newly voted Law about abortion (this Law followed the referendum addressed to all Portuguese on 2006 who pronounced themselves in favour of pregnancy interruption or first trimester abortion). The new Law exempted from criminal responsibility a pregnancy interruption up to ten months of gestation as long as it met with the woman's will and consent. The Portuguese Deontological Code expressly prohibits Abortion. In fact according to the nº.2 of article 47 of this Code "the physicians should respect human life from the very beginning" and the nº.3 of the same article states that "the practise of abortion or euthanasia are specifically condemned by the deontological code".

From the practical point of view physicians are obliged to perform an abortion according to the criteria established by the new Law except when the physician claims a "conscience objection".

Will the Portuguese Medical Boards' Code be Revised?

Portuguese ethicists oppose that the Health Ministry cannot oblige the Portuguese Medical Boards to revise the deontological code warning that "being legal does not necessary mean that a decision is ethically correct". The ethicists also argue that the Deontological Code is an internal or private Board Document, the same as a "gentleman's agreement" regarding the connection of physicians among themselves and their relationship with patients, and "that the State should not interfere". According to the Boards some aspects of the Deontological Code have to be revised but these changes may not be imposed by Governments. The necessary changes should be duly submitted to the Council Board with a posterior referendum by all Portuguese physicians to reach a consensus.

In response the Attorney General emphasised that notwithstanding the autonomy of the Portuguese Medical Boards in terms of its status being "the disciplinary power that prevails over all medical activities", the Portuguese Medical Boards and other Medical Boards are subject to a strict bondage to Law and may not invade areas that are governed solely by the Legislation of a Country.

Closing Remarks

The moral reasoning among medical staff, patients and families have been approached by a number of surveys and commentaries viewing the attitudes that should prevail in the medical code of ethics. A rather abundant resource material has been published and is available through publications, books and now at the immediate internet resource for detailed studies and reference. However with the advance in medical technology the need to ongoing revisions of the medico-legal codes as well as for new ethical guidelines will be imposed on physicians, governments and Countries.

Nevertheless the principles subjacent to decision-making on selective treatments or other delicate issues will remain interpersonal and private respectful to the patient's lives, families and may not disregard the emotional concerns of all parties involved. Physicians and other medical staff have to be prepared to live with doubts regarding the righteousness of the decisions that they have made. Therefore a major concern of postgraduate education and physicians training should be the teaching and evaluation of interpersonal skills with patients and their families. Any clinical management should be able to provide care and assess the results of the treatment followed, to alleviate the suffering and to aim the cure if possible of if not to allow death with dignity. This concept in endorsed on the definition of the art of medicine in the Hippocratic Corpus. In general terms it has to deal with the suffering of the patients, lessen the stress of the disease and to be able to interrupt treatment on those who are overmastered by the disease and escaping the power of medicine. The Deontological Codes cannot pertain to one country. They should be made universal tying every human soul to one cosmic bondage. Whether the Governments should or not intervene in Medical Codes is by far a matter of study to world-wide organizations dealing with such subjects. I hope that ethical dilemmas should be dealt with both humility and compassion but also with sensitivity and courage.

Prenatal and preimplantation genetic screening: emerging ethical and cultural dilemmas in South Asia

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Abstract

There is increasing use of genetic screening tests and pre-implantation genetic diagnosis techniques in all parts of the world. These new technologies have raised ethical issues that need closer attention. Sometimes these issues can scramble conventional notions into left or right. Prenatal or preimplantation genetic diagnosis brings a moral and ethical conundrum to South Asian society surrounding the rights of an embryo, disability rights and parental attitudes. There is debate whether testing will give control to parents or will result in policing of pregnancy by the family. There is also the potential to screen an embryo for gender, a perfect child or other parental need dependent on societal norms. Some if the ethical and cultural issues this new technology brings to South Asia are discussed.

Introduction

On both sides of the Atlantic, various claims have been made about the ultimate impact of genetics on clinical medicine. The excitement in the field has shifted to the elucidation of the genetic basis for common diseases in the western world and is now gaining momentum in the developing eastern world as well. In a country where it is culturally acceptable to marry one's relative (1) and where the population is so large as to produce rare genetic disorders, wide use of early genetic diagnoses in India can yield a big impact on its society (2). "PGD [preimplantation genetic diagnosis] refers to the removal of a single cell from an embryo generated in vitro for genetic testing to diagnose a recurrent, serious, heritable condition and thereby to avoid the implantation of affected embryos" (3). The three main reasons for prenatal diagnosis are to inform and prepare parents for the birth of an affected baby, allow for in-utero treatment if required, and to indicate termination of an affected fetus. In developing countries, the termination of a fetus is dominant.

An article in the *New York Times* echoed the assertion of proponents of the genetic revolution: "Health care will shift from a focus on detection and treatment to a process of prediction and prevention" (4). India's first devoted genetic diagnostic center was established in Mumbai, India 20 years ago to provide cytogenetic testing and genetic counseling to those who could afford it. Since then, many genetic testing labs have been established, mostly in metropolitan areas (2). Currently, tests for Down's syndrome, hypothyroidism, congenital adrenal hyperplasia, galactosmia and G-6-PD deficiency are available at most of the clinics. Although, there is no structured research for identification of a single gene disorder in India. Preimplantation genetic diagnosis (PGD) is a new technique, which is now available in many private genetic diagnostic clinics in India. PGD highlights the

advances in molecular genetics and assisted reproductive technology.

Does an embryo have its own interest in the developing world?

The advent of PGD testing or prenatal genetic screening raises the possibility of a re-definition of 'early' testing. The Human Genome Project guarantees identification of all inherited genetic abnormalities prior to birth. Use of prenatal testing might work against the interest of fetuses or embryos while they are developing, if we presume embryos have any interest at all. As the practice acquires the characteristic of quality control and we demand *perfect* offspring, the potential for fetal therapy or invasive testing may also work against the interest of the mother who may be subjected to invasive procedures. It is estimated that unsafe abortions constitute 20% of maternal deaths in India (5). 'Early information is power' becomes something of a truism in contemporary western culture. Information is often used to empower some people or to justify some interest at the expense of others. In India, there is an abundance of abuse of genetic screening for sex selection (6). Early screening or prenatal screening raise questions about the status of the fetus, the rights of parents with respect to their children, and our understanding of normal vs. abnormal human traits. It also brings to light the question of whose interests are really being served through the advent of preimplantation genetic testing, and brings forth the difference between treatment of illness and altering that which is already healthy.

The majority of India's population that follows Hinduism, Jainism, Buddhism and Sikhism strongly believes in the theory of reincarnation which teaches that the soul repeats the cycle of birth and death (7). One is reborn on account of desire implying that human embryos have moral status akin to that of a fetus or a fully developed human. This also implies that the embryo has an interest to be part of the cycle, hence, to develop into a fetus and eventually be birthed. Justification for not implanting the embryo can be thought of as sending this one soul onto the next cycle in which it may have a better host. This begs the questions: what constitutes a disadvantaged life, and under what circumstances, if any, can an individual be harmed by being brought into existence (8)?

The Disability Rights Critique

If one thinks about the history of Indian society's treatment of people with disabilities, it is not difficult to recognize why people who identify with the disability rights movement might regard such testing as insulting. Persistent and pervasive discrimination constitutes the major problem in having a disability for those affected and for their families and communities. Prenatal diagnosis reinforces the medical model which argues that disability itself, not societal discrimination against those afflicted. By rejecting an otherwise desirable child because they believe the child's disability will diminish the parental experience; parents may be unwilling to accept anything short of their idea of the perfect child. When prospective parents opt against a fetus because of predicted disability, they are making an unfortunate, often misinformed decision that a disabled child will not fulfill what most people seek in child rearing (9). This is further propagated by the fact that from its educational system to its long term care facilities, India has no affordable adequate facilities for special needs children or support for families (10).

The disability critique holds that selective abortion after prenatal diagnosis is morally problematic for two reasons. First, selective abortion expresses negative or discriminatory attitudes not merely about a disabling trait, but about those who carry it. Second, it signals an intolerance of diversity not merely in society, but within the family, which ultimately could harm parental attitudes toward children. Knowledge of the single trait is enough to warrant the abortion of another fetus, which sends a hurtful message that people are reducible to a single, undesirable trait. However individual women and families have a multitude of motives and reasons for seeking out genetic information. Parents do not choose genetic testing to hurt existing disabled people, but do so to implement their own familial goals. A second criticism presumes that we can distinguish between aborting "any" fetus and a "particular" fetus that has a disability. In other words, does a particular trait/defect in any embryo render all embryos with this peculiarity un-implantable, or does a particular trait/defect in a particular embryo render the specific embryo un-implantable when the parents, family, and/or community is taken into account? It is not clear whether this distinction is adequate. Sometimes the decision about the fetus can be recast as a decision to abort a "particular" fetus, or selective abortion.

Parental Attitude Argument

Prenatal and PGD tests to select against some traits indicate a problematic concept and attitude toward parenthood. Prenatal testing leads us toward the modification of children, toward thinking about them and treating them as products rather than as "gifts." In fact, India's large population can be seen as the result of the strongly held belief that children are a gift of God. This concept of children as gifts will fade in the era of PGD, where potential parents will be able to customize their offspring. The activity of appreciating and nurturing the particular child one has, is what the critics of selection view as the essence of good parenting. What bothers those wary of prenatal diagnosis is what might be called "the selective mentality". The attention to particular traits indicates a morally troubling concept of parenthood, a preoccupation with what is trivial and ignorance to the profound. When Indian society is confronted with, for

example, gender selection or with the possibility of selecting non-health related traits like sexual orientation, selective mental capability quickly comes to mind. The future in the era of PGD is troubled with the cumulative effects of individual choices, about the technologization of reproduction, and about a decreasing cultural ability or willingness to accept reality.

Illness and Abnormality

The idea of whether disability is actually a form of 'neutral' human variation or whether it is different from the variation usually thought of in non-disabling traits, such as eye color, skin color or intellectual capabilities, is an important one to probe. For instance, fair skin, thick dark hair, and superior intelligence in mathematics and science are preferred traits in India, while polydactyly and certain types of birthmarks are considered auspicious traits. After all, Hindu deities have ample appendages and heads while Buddha was born with thirty-two birthmarks, all of which were thought to be auspicious. Hence, the spectrum of variation from auspicious traits→ preferred traits→ neutral traits→ non-preferred traits→ disability. There is no absolute cut-off here, hence in India's case where does one draw a line since cases like polydactyly which would be considered an abnormality in the western world is a sought after trait. Even though there is a spectrum it is not morally necessary to prevent implantation of an embryo whose non vital traits lie in this spectrum.

It is also vital to understand that there are differences in opinion of normality If we thought that abnormalities were "neutral" then we could tell women who smoke or drink during pregnancy to relax, because developmental delay, low birth weight, and fetal alcohol syndrome would all be just "neutral variations," with no consequences to the future child (11). On the other hand, many find that the terms "neutral" and "normal" are either inaccurate characterizations of disability or are too confusing. Some worry that these terms are sometimes used only to describe or evaluate traits and at other times to describe or evaluate people.

The social control of pregnant women

One of the paradoxical aspects about prenatal testing and other reproductive technologies is that their existence has created a situation where choice *must* be made. Parents are burdened with their own as well as other's expectations that they make "right" choices. The paradox of empowering parents with choice is that the choices themselves are, in a sense, forced. Also, the privacy and autonomy of pregnant women may be threatened overtly, through direct pressures and explicit social sanctions regarding their choices. Women's prenatal decisions have a very public component. Socially dependent influence of women's procreative choices may come into play when information about health prevention and risks are well known and medical and social conventions are well established, even in India. Often when a married woman becomes pregnant in India, she is burdened more with the expectations of her family and community than her own. She is often held responsible for the outcome of the pregnancy, and is often blamed for bearing an infant that does not meet family expectations. For instance, giving birth to a baby girl is still considered a failure on the part of the mother in this patriarchal society.

When women's basic rights and fetal rights conflict, advocates of fetal rights assume that women need to be constrained from harming the fetus and that the fetus needs protection from someone other than the mother. The social control that results is legitimate in the name of fetal protection. As prenatal testing and other medical intervention become more routine, medical and social expectation about pregnant women's behavior will be expanded and may become even more institutionalized. Prenatal testing and genetic technology will bring greater social pressure and social control, blame and sanction for women's actions (or inaction), their choices before and during pregnancy, in the name of fetal health or protection. In order to regulate an oversee such a new technology, a government must strike the balance between advocating for women's rights, protecting the embryo, and respecting parents' autonomy. Scholars, activists and the public must engage in open discussion and critical analysis of the implication of pregnancy in a high tech age, for women and society. We must work to dull the "double edged sword" in order to make sure that enabling women's choices, not the social control of women, is the goal as well as the outcome for further developments in procreative technologies like prenatal and genetic testing. Finally, if we understand that there can be different motives for ending pregnancy, there can be different reasons for starting pregnancy. We should also understand that circumstances could change and that there is a difference between what happens in conception and nine months later.

There are many emerging ethical issues surrounding reproduction, genetics and abortion that go largely unexplored in our society. The new genetic testing whether prenatal or antenatal will be able to give odds and likelihood for an array of conditions. Before too long, Dr. Kaplan said, one of the most contentious debates might be, "How much do we allow people to select the traits of their children?"(12)

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The Irrelevance of Libertarian Bioethics

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I persist in thinking that the political and moral ideas of most men are adopted by them inasmuch as they satisfy their emotions, nor their reasons; that they are only popular inasmuch as they satisfy pride; that ideas which satisfy pride are as barbarous as they are necessary - Julien Benda

Even a casual observer would not fail to notice the pervasiveness of bioethics in contemporary society. How did bioethics come to take on such significance in Western societies? This is a rather puzzling phenomenon given that, in a pluralist society, philosophy cannot deliver incontrovertible moral verdicts and the philosophers' views are no more binding than those of the man in the street (Maclean, 1993). As logician Charles S. Peirce noted long ago, absolute certainty, absolute exactitude and absolute universality cannot be attained by reasoning and, in a world in which human reason and knowledge are socially, culturally, and historically embedded, it would be misguided to expect bioethicists to provide objective and rigorously codified precepts and indications. Their speculations can only tell us what they believe is right and fair, and their logical demonstrations must be first evaluated against the empirical evidence. Thus far, libertarian bioethicists do not appear to be willing to concede this point, and yet their resolve does not make their arguments any more compelling.

The libertarian bias

The cultural climate of a country exerts a powerful pressure on the judiciary and the legislative power. In the United States, as elsewhere, the doctrine that human beings are driven by their instincts and self-interest fed a cynical distrust in human nature which infiltrated the debate on the Constitution, because it was generally assumed that the masses were ignorant, selfish and did not possess the natural virtues required by a vital democracy. James Madison's illuminating passage in *Federalist* No. 10, 1787, which encapsulates the inherent tension between liberty and equality and the fundamental class-bias of the American Constitution, clarified that the first object of government would be "the protection of different and unequal faculties of acquiring property" and the securing of this property. It followed that in the newly independent states only white male property owners, namely those who could be trusted as basically virtuous, were allowed to cast their vote and make their voice heard on crucial issues. Thomas Jefferson and John Adams maintained that the rise of a natural aristocracy of men, an aristocracy of virtue and talent that would select the best political leadership, was hindered by the existence of an artificial aristocracy of men. This line of reasoning was later employed to sanction an elitist understanding of human nature and human affairs. An entrenched sense of pre-eminence would translate into the propensity to turn a blind eye to social, occupational and economic disparities which undermined those very same fundamental rights that the Founding Fathers themselves so forcefully advocated.

If one interprets the term "equality" rather narrowly, as equality before the law, and regards the principles and laws of market economy as the guiding hand of social and economic growth, the resulting social contract will define the promotion of equal opportunities and the reality of wide disparities as

compatible. As German-British sociologist Ralf Dahrendorf discerningly put it, "all men are equal before the law but they are no longer equal after it." The notable omission of political equality and social justice in the drafting of the Constitution cannot be explained simply in terms of class relations. The notion of cosmic retribution was another factor at play. It was held that a correlation existed, between virtue and happiness, vice and misery and that, because there were no insurmountable barriers to hinder upward social mobility, individuals could rose just as far as their skills and determination would enable them to. In other words, wealth was always earned and, with few exceptions, the poor deserved their station in life, owing to chronic, and possibly inheritable, flaws in their character, leading them to moral failing and economic destitution. Thus, following Locke, citizens without property were not as fully entitled to constitutional rights because it was doubtful that they would live up to the moral and rational demands of modern society. I contend that this outlook is common, if at an unconscious level and not always explicitly stated, among mostly Anglo-Americans libertarian bioethicists, who maintain that the right to reproductive liberty extends well beyond the right to safe contraception and abortion and not to be subjected to sterilization without an informed consent and includes the right to control one's 'reproductive destiny', i.e. choosing what kind of children to have, even if that means determining the life course of someone's offspring through genetic enhancement and cloning. Within this ethical formulation freedom is valuable for its own sake.

We need to make clear that this ideological posture has nothing to do with genuine liberalism. A more correct definition is 'libertarian eugenics'. As Samuel Freeman has forcefully and eloquently demonstrated, "correctly understood, libertarianism resembles a view that liberalism historically defined itself against, the doctrine of private political power that underlies feudalism. Like feudalism, libertarianism conceives of justified political power as based in a network of private contracts. It rejects the idea, essential to liberalism, that political power is a public power, to be impartially exercised for the common good" (Freeman, 2002). The essence of libertarian eugenics thus lies in its pursuit of an enhanced State of Nature typified by free market selfishness, that is, by unaccountable private tyranny. Its stress on 'procreative autonomy' necessarily conflates the meaning of autonomy with that of consumer demand. When John Harris or Julian Savulescu maintain that we all have a moral obligation (!) to enhance ourselves and our children, they reflect the collectivist thrust of libertarian intense individualism – an ideology that binds them together, as a vicarious religious experience – and they make it patently obvious that the total freedom they want for themselves is paired with the right to deny freedom of choice to those who are not equally competent at exercising freedom and would not go along with their 'rational' choices. The new eugenicists believe that everyone is free to act as they please, so long as they do as they are told (for their own good). After all, why should the self-made and self-sufficient successful feel that they owe anything to those who, allegedly, cannot make rational decisions and thereby cause their own misery? Thus, paradoxically, but in accordance with Albert Camus' warning that absolute freedom mocks at justice, and absolute justice denies freedom, the libertarian pursuit of absolute reproductive freedom is likely to end in absolute subjugation and in greater levels of inequality.

This is dangerous ground to tread, not only because modern societies in order to function and to be societies in a significant sense need solidarity, but also because the libertarian undermining of liberalism is likely to open the door to authoritarianism. Saying that individuals are free to do what they like, provided that they do not harm others, begs the question of what constitutes "harm" in the first place. If my decisions affect other people but I am not required to answer to them for my actions, then the definitions of "harm" and "responsibility" become too fluid and arbitrary to serve any meaningful legal, scientific, ethical, and political purpose. This is the essence of authoritarianism.

Civil liberties are what the English jurist William Blackstone (1723-1780) described as "the great end of all human society and government…the state in which each individual has the power to pursue his own happiness according to his own views and of his interest, and the dictates of his conscience, unrestrained, except by equal, just, and impartial laws." This implies that civil liberties may sharply contrast with the self-interest of the majority, which is required to refrain from arbitrary actions. When a majority of citizens strongly believe that their views and reasons are so logically compelling and morally persuasive that everyone in their right mind should agree on a given course of action, the consequences for civil liberties can be devastating. The checks and balances of liberal democracies have been devised precisely with the aim of averting this danger. Antonio Gramsci correctly stressed the point that discipline as such does not compromise freedom, it is the arbitrariness and impunity of the power behind discipline that we should be most concerned about. States must, to some extent, be coercive because their function is to establish and secure civil liberties by overriding individual and group coercion. However, and most unfortunately, individual coercion, whether it is acknowledged or not, lies at the core of the libertarian doctrine, which systematically subordinates positive liberty – the freedom to do something – to negative liberty – the freedom from something –, that is, social justice to economic freedom and private property. All too often, and for far too many, this translates into the negation of liberty

(Newman, 1984). It is the kind of antidemocratic individualism that, according to political philosopher George Kateb, "rests on the notion that only a select few deserve the opportunities of individualism, and society ideally exists for the purpose of allowing them to develop themselves to the fullest and then to assert themselves with impunity, typically but not exclusively at the expense of others" (Kateb, 2003, p. 289). It is important to stress that this is not a new phenomenon, far from it. It is simply a latter day manifestation of the aristocratic radicalism of the Romantic self-styled genius and of the Nietzschean *Übermensch*, who lie beyond good and evil, having overcome bad conscience, the mark of slave morality. They regard themselves as unique and therefore deserving of complete freedom to express their creative energy and talents. Searching for the ultimate moral justification for selfishness, they set the stage for the final clash between "conventional freedom" and "creative freedom".

When John Harris (2007) counts Marx, Plato, Rousseau, and Bentham, among the thinkers who have proven most influential in his recent work it becomes immediately clear that the line between libertarianism and anti-liberalism is very thin indeed and that the rejection of any legitimate authority often goes hand in hand with the rather petulant and self-indulgent assurance of the self-righteous paternalist, which is beautifully portrayed by Fyodor Dostoevsky in "The Legend of the Grand Inquisitor": "If there's only one like my old inquisitor, who had…made frenzied efforts to subdue his flesh to make himself free and perfect. But yet all his life he loved humanity, and suddenly his eyes were opened, and he saw that it is no great moral blessedness to attain perfection and freedom, if at the same time one gains conviction that billions of God's creatures have been created as a mockery, that they will never be capable of using their freedom, that these poor rebels will never turn into giants to complete the tower, that it was not for such geese that the great idealist dreamt his dream of harmony. Seeing all that he turned back and joined the clever people."

Conclusion

It seems that, at times, libertarian bioethicists feel somewhat insecure about the conceptual foundations of their field and, as a result, about their own authoritativeness and authority. And rightly so, given that logical consistency is no proof of wisdom and veracity. When it comes to critics, several of them display a startling lack of the cool, detached, rational style of reasoning that should underpin bioethics theory. Witness the indignant reactions to the legitimate criticisms of bioethics made by prominent philosophers, anthropologists, sociologists, historians of medicine, and even by some bioethicists (Hermitte 1990; Wolf, 1996; Cooter 1995, 2004; Fox 1999; Bosk, 1999; Berlinguer & Garrafa, 2000; Stevens 2000; Campbell, 2000; Benichou, 2002; Ashcroft, 2004; Hedgecoe, 2004, Stephen 2004; Koch, 2006). This is most unfortunate, for democracies thrive on the questioning minds of professionals and lay-people alike, and this means that specialized expertise cannot be exempted from public scrutiny lest, to paraphrase Blaise Pascal, we should make an idol of truth itself.

On the other hand, Troy Duster is spot-on when he opines that the notion of "trained incapacity",[1] due to customary professional biases, may well apply to many bioethicists, who don't always have a good grasp of the social and cultural ramifications of technoscience (Duster, 2003). Personally, I am under the impression that some of the leading libertarian bioethicists are sometimes blinded by their own ostensibly progressive reformism and do not see that through their aggressive argumentation and rigorous, but occasionally simplistic analyses they somehow compel people to freedom (Glover, 2001). Perhaps prompted by an underlying substratum of anthropological pessimism, they tend to reason the public into believing that human life can and should undergo unlimited changes and that the needs and expectations of the well-to-do must not be restrained, even if this means raising the bar of what passes for a decent life and promoting a lifestyle that is not environmentally and socially sustainable. In this sense, many bioethicists who pose as iconoclastic thinkers really are in tune with the core values of a postmodern consumerist society and with the logic of market segmentation and emulative spending. Perhaps the most serious flaw in the vigorous libertarian strand of Anglo-American bioethics is the inability to understand that change is less a free, rational choice than the end result and function of social and economic coercive power-relations.

Unfortunately, the haste with which common sense is waved aside as an inconsequential distraction, together with a rather strong measure of technological determinism, can only reinforce the impression that bioethics has the justificatory function of bringing the public around to the way of thinking of the most enlightened and glamorous elite and, by extension, of the bio-pharmaceutical industry. The fact of the matter is that a thin bioethics confronting the market and powerful professional and corporate interests is bound to be either crushed or to lend itself to the endorsement of an ideology of unbridled competition and rampant consumerism. Bioethicists would therefore be well advised to pay heed to the words of Jean-Baptiste Henri Lacordaire, who once said that "between the weak and the strong, it is freedom which oppresses and the law which sets free."[2]

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[1] This is an expression coined by sociologist Thorstein Veblen and which refers to specialists who have been trained in one discipline to such a degree that they are mostly unprepared to cope with the cognitive demands of a different, possibly more complex, setting.

[2] « Entre le fort et le faible, c'est la liberté qui opprime et la loi qui affranchit. »

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