

# Ethics for the Future of Life

Proceedings of the 2012  
Uehiro-Carnegie-Oxford  
Ethics Conference

Tetsuji Uehiro, Editor

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## CONTENTS

The family-oriented priority organ donation clause in Japan—Fair or unfair?	I
<i>Karuoko Aita</i>	
The Present and Future of Stem Cell Therapy in Japan	9
<i>Akira Akabayashi &amp; Misao Fujita</i>	
Common Morality, Human Rights, and Multiculturalism in Japanese and American Bioethics	20
<i>Tom Beauchamp</i>	
Future Generations, Sufficiency, and Biotechnology	37
<i>Roger Crisp</i>	
Biotechnology, Justice and Health	47
<i>Ruth Faden &amp; Madison Powers</i>	
Hybrid Nature of Causation	60
<i>Masaki Ichinose</i>	
Designing Children and Respect for the Given	81
<i>Guy Kahane</i>	
Tsunami-tendenko and morality in disaster situations	89
<i>Satoshi Kodama</i>	
Why is It Hard for Us to Accept Moral Bioenhancement? : Comment on Savulescu's Argument	97
<i>Masahiro Morioka</i>	

The Meaning of Life: Science, Equality and Eternity <i>Ingmar Persson &amp; Julian Savulescu</i>	109
Risk Assessment of Severe Nuclear Power Plant Accidents and Ethics in Science and Technology <i>Susumu Shimazono</i>	125
The Ethics of Unity and Difference <i>Tetsuro Shimizu</i>	134
The Status of the Human Being: Manipulating Subject, Manipulated Object, and Human Dignity <i>Tetsuhiko Shinagawa</i>	144
Induction of Pluripotency by Defined Factors <i>Shinya Yamanaka</i>	155



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# Preface

Recent advances in the life sciences have posed profound and unsettling ethical questions. We now have an unprecedented understanding of the nature of life on this planet. This has brought us new powers. These powers will change us; our lives going forward will be different than ever before. We now have the technology to regenerate existing life forms, and even to generate new life forms. The science of stem cells, cloning, genetic engineering, artificial reproduction and synthetic biology provides powerful tools to change and create new life. What is the value of these new powers and what is its meaning? What does the ability to create and change life mean for human beings, other life forms and the world? How far should we go? Or have we already gone too far? What possibilities and challenges lie ahead for our medicine and health? What roles can justice and religion play in managing the incessant output of cutting-edge research in the life sciences?

This publication is the outcome of the international conference under the theme 'Life: Its Nature, Value and Meaning – No Turning Back? Ethics for the Future of Life' held on 17th and 18th of May 2012, sponsored by the Uehiro Foundation on Ethics and Education, Carnegie Council for Ethics in International Affairs, and Oxford Uehiro Centre for Practical Ethics.

The world's leading scholars gathered to discuss the possibility and nature of practical ethics for the future of life, chaired by Professor Tetsuro Shimizu and Professor Julian Savulescu.

# The family-oriented priority organ donation clause in Japan—Fair or unfair?

*An analysis using the theory of ethics of unity and difference*

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## ABSTRACT:

The revised Organ Transplant Law in Japan allows individuals to prioritize family members to receive their donated organs after death, although the revised law maintains the original law's fairness clause. The prioritization policy, however, does not seem to have morally offended the Japanese sense of fairness. It may be explained by the theory of ethics of unity and difference conceptualized by Tetsuro Shimizu. The prioritization policy may serve as an example that the interpretation of the fair opportunity rule, a basic rule of organ transplantation, may differ between cultures.



## INTRODUCTION:

The revised Organ Transplant Law that took effect in Japan in 2010 has brought the country somewhat closer to others on the issue of transplantation, while at the same time adding an uncommon aspect to the country's system of organ transplantation. The legal revisions now allow organ procurement only with family consent, unless the brain-dead person has previously refused to be a donor. The revisions also allow organ procurement from brain-dead children under the age of 15. For these purposes, Japan has legally discarded its unique dual conditions on brain death, accord-

ing to which brain death constitutes death only when the patient has given prior written consent to be an organ donor, and the family does not oppose the donation. The revisions were made in an effort to increase the number of organ donors (Aita 2009: 1403–4), although inconsistencies inherent in the concept of whole-brain death adopted by the US and many other countries including Japan have become evident with the advancement of intensive medical technology in the past few decades (Chiong 2005: 20–30, President’s Council on Bioethics 2008, Shewmon 1998: 1538–45, Truog 1997: 29–37). The original Organ Transplant Law, enacted in 1997 and valid through June 2010, resulted in a very small number of brain-dead donors: 86 nationwide in over a dozen years. As part of the effort to increase this number, another legal revision was made and the family-oriented priority organ donation clause was included in the law. This clause is believed to be unusual in the international community of organ transplantation (Aita 2011: 489).

## PRIORITIZATION POLICY

Under the priority donation policy, the priority for organ donation is limited to blood-related parents and children and legally married couples. Adopted children are eligible only when they have cut all legal ties with their biological parents under the Special Adoption System. Under this system, which is designed to support the well-being and protect the rights of children who are not cared for by their biological parents, children below the age of six years at the time of adoption are registered in the family registry system as the adoptees’ natural (biological) children. Those adopted outside this system are registered as adopted children and thus are not eligible under the priority donation system. This strict limit is intended to prevent the abuse of the priority donation system, including secret organ trades under the guise of adoption (Aita 2011: 490).

The priority is realized when the deceased has left a written statement of his/her wishes regarding his/her organs. People cannot designate a specific family member in the statement but can only state “priority donation to the family.” If the donor has written a statement of his/her wish for a family-oriented priority donation but no eligible family member is on the semi-governmental organ waiting lists at the time of donation, then the organs will be given to unrelated people on the waiting lists on the

basis of medical needs and waiting period in accordance with the government guidelines. If, however, the donor candidate has stated that his/her organs should only be given to family members, then no organ donation is performed (Aita 2011: 490).

The legal revisions, including the priority clause aimed at increasing organ donation from cadavers, were proposed by a group of lawmakers including Taro Kono, a Liberal Democratic Party member who had donated part of his liver to his father Yohei Kono, a former LDP president. Many observers predicted that the priority clause would lead to no notable increase in organ donor candidates; however, Taro Kono told the parliament that the clause should be added as it may appeal emotionally to the public and more Japanese may think positively about organ donation (Aita 2011: 490).

Prior to the enactment of the family-oriented priority clause, the nation's health and welfare ministry hastily revised its guidelines to state that those who are believed to have committed suicide in order to provide their organs for their family members will not be able to serve as organ donors. This addendum was made in response to public concerns that the new priority clause would invite suicides in people desperately wishing to save their family members even at the cost of their own lives. Among those who voiced such concerns were the Japanese Circulation Society (JCS), one of the most respected, traditional, and largest academic organizations in the field of medicine in Japan. The society has 22,000 members including more than 10,000 heart specialists across the nation. In October 2009, the JCS filed a petition with the health ministry requesting that the heart should be excluded from organs that come under the family-oriented priority clause; otherwise, "the clause might result in suicides or murders by contract" (The Japanese Circulation Society 2009). Medically, it would be unrealistic to become brain dead intentionally; yet, the JCS, like some segments of the public, was concerned about this possible risk.

At the time when Japan introduced the family-oriented priority donation policy, Israel introduced a different type of prioritization policy, designed to rectify the problem of free riders who are willing to receive but unwilling to donate organs (Lavee et al. 2010: 1131). Under the Israeli prioritization policy, people who sign a donor card receive priority points, as do their family members; as a result, donors and their families are prioritized in the queue for organs should they later require one. In other words, in Israel, priority benefits go to donor-card holders and their families; while in Japan, body parts go first to the donor's family under the prioritization policy (Aita 2011: 490).

## COMPROMISING FAIRNESS?

The revised law retains the original law's fairness clause as one of the fundamental principles of organ transplantation, stating that organ distribution and transplant operations should be conducted in a fair manner. This stipulation is in line with bioethical principles concerning organ transplantation (Veatch 2000: 287–310). Under the law, the Japan Organ Transplant Network, a government-affiliated entity, has taken measures to ensure fair opportunities for people to receive organ transplants based strictly on medical needs and the waiting period. As a result, some Japanese critics have voiced concerns that the family-oriented priority clause would violate the fair opportunity rule. The issue, however, has not drawn much public attention. It was almost outside the legislative debate that focused on whether to uniformly recognize brain death as legal death to allow organ procurement only with family consent and whether to allow organ procurement from those under the age of 15 (Aita 2011: 490). Furthermore, the issue was not on the agenda of the health ministry's working group that discussed the necessary preparations for the enforcement of the revised law. Instead, the panel talked about who would constitute the eligible family members under the priority clause.

The priority clause does not seem to have caused any major moral challenge in Japanese society, suggesting that setting the priority does not morally offend the Japanese sense of fairness. Why might the average Japanese accept the family-oriented priority clause as fair? No quick explanation seems to exist, but a possible argument for the acceptance of the fairness of the clause relates to the boundary of self. Who falls within the boundary of self in the mind of the Japanese? As the government panel concluded, for the average Japanese, it is first-degree relatives. In other words, most Japanese consider their closest relatives an inseparable part of themselves. Transplanting their body parts to their loved ones may be akin emotionally to transplanting their right hand when they themselves need a left hand. If that is the case, it would be irrelevant to question the fairness of prioritizing organ donation for their close relatives.



## A POSSIBLE EXPLANATION: THE ETHICS OF UNITY AND DIFFERENCE

The boundary of self and the relative sense of fairness of the Japanese can be explained by the theory of ethics of unity and difference. Conceptualized by Tetsuro Shimizu, a Japanese philosopher, this theory proposes that ethical codes vary depending on how close the relationship is among the parties concerned (Shimizu 2010: 157–64). The ethics of unity (or togetherness) is characterized as an attitude of mutual support based on the perception that we are companions. The ethics of difference is an attitude of mutual noninterference based on the realization that we are strangers to each other. The ethics of difference is interpreted in a code stating, “One may do anything freely so long as it brings no harm to others”, that is, the principle of “live and let live”. The characteristics of the ethics of difference are found in those of the Harm Principle, proposed by J. S. Mill in *On Liberty*.

The ethics of unity is interpreted in the corresponding code of mutual help, termed the principle of “live by helping each other”. The principle is associated with the unity of those concerned who depend on each other. The ethics of unity works most powerfully among people with the closest relationship, while the ethics of difference works most predominantly among those with the remotest relationship. According to Shimizu, people who share a strong sense of togetherness also share or feel the need to share things and thoughts.

In my view, people who share the strongest sense of togetherness, or unity, would like to (or feel the need or pressure to) do everything they could for those closest to them, even sharing their body parts in an emotional sense.

I believe this has resulted in Japan having by far the largest number of living-donor liver transplantations in the world. As of December 31, 2010, a total of 6,097 liver transplants involving living donors were performed in Japan, while only 98 liver transplants involving cadaveric donors were conducted. Parents accounted for 95 percent of the living donors, 1,166 mothers and 952 fathers, in 2,224 partial liver transplants in which the recipients were younger than 18. For recipients aged 18 and over, in 3,875 transplants (including two dual graft cases), about 43% of living donors were the recipients’ children, 23% spouses, 18% siblings, and 11% were parents (The Japanese Liver Transplantation Society 2012). A study in Japan that examined the

decision-making processes of living liver donors reported that their decision-making model is one of having no other choice but to donate their body parts (Fujita et al. 2006: 774).

If we recognize the ethics of unity at work here, then it is little wonder why the Japanese accept the family-oriented priority clause as fair and also why the Japanese government has called for suicide prevention to be addressed as part of the priority clause.

The ethics of unity and difference coexist, but the balance between the two differs among countries and cultures. I believe that the principle of “live by helping each other”, or the ethics of unity, carries more weight than that of “live and let live”, or the ethics of difference, in East Asian countries, including Japan; while the reverse is true in Western countries. The two principles can also be found in other theories of ethics, which are structured according to different frameworks, including the ethic of care from the gender perspective that was proposed by Carol Gilligan (1993), in contrast to the ethic of justice.

I believe that one characteristic of the ethics of unity can also be found in the familial interdependency, particularly between mother and child, which is described by Takeo Doi (2001: 45–162), a Japanese psychiatrist. When a very strong sense of unity or togetherness within a family works negatively in a crisis, it can result in the tragedy of family suicides (Veatch 2002: 22). In Japan, at times, a mother in a crisis has killed her child and committed suicide.

## CONCLUSION

The revised Organ Transplant Law in Japan, which was amended to boost the number of organ donors, includes the family-oriented priority donation policy that allows people to prioritize a close relative to receive their organs after death including brain death. Since the revised Organ Transplant Law took effect in July 2010, the number of brain-dead donors was 29 as of April 2012. Thus far, a kidney and a cornea donation from cadavers were reported under the priority policy, but no priority donation from a brain-dead donor has been reported. The priority donation policy is a measure intended to appeal emotionally to the public so that more Japanese will think positively about organ donation. Some critics assert that this prioritization policy involves an ethical problem; that is, fairness may be compromised in organ allocation. The prioritization policy, however, does not seem to have morally offended

the Japanese sense of fairness. The sense of fairness of the Japanese may be explained by the theory of ethics of unity and difference conceptualized by a Japanese philosopher. The prioritization policy may serve as an example that the interpretation of the fair opportunity rule, a basic rule of organ transplantation, may differ between cultures.

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# The Present and Future of Stem Cell Therapy in Japan<sup>1</sup>

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## ABSTRACT

Stem cell therapy offers limitless possibilities. If human stem cells enable the creation of new cells and tissues, then treating diseases of the body by replacing cells and tissues as if they were mechanical parts becomes possible, thereby aiding in overcoming illnesses and extending life. Although stem cell therapy is regarded as a blessing, it is necessary to fully discuss its ethical, legal and social implications, given that these therapies can greatly change the concept of human life.

The 23rd November, 2010 issue of *Nature* reported the deaths of two South Korean patients, one of whom travelled to Japan and the other to China, to receive stem cell therapy. The patient who travelled to Japan was a 73-year-old male. Through a company based in South Korea, he received stem cell therapy at a co-operating Japanese hospital. However, he subsequently died of pulmonary embolism. According to the article, the company claimed that ‘only a very small number of patients have died, and the causal relationship with stem cell therapy is unclear’. According to a South Korean expert, however, ‘it is already known among scholars through preclinical trials using animals that side effects such as pulmonary embolism and lymphoma can occur’.

The death of the patient receiving stem cell therapy in Japan did not initially receive widespread domestic coverage. On 1 February, 2011, the Japanese Society for Regenerative Medicine, which had been discussing the issue, released a statement about unapproved regenerative and cellular medicines that do not conform to the

1. This article was originally printed in Japanese in the *Japan Medical Journal*, 4562, pp. 27–31, 2011. It has been revised to suit the theme of the Uehiro/Carnegie/Oxford Ethics Conference.

Pharmaceutical Affairs Act or any research guidelines. In the statement, the Society urged its members not to participate in ‘unapproved’ regenerative cell therapy, advised patients and their families to avoid such procedures and asked the government to construct a new medical services framework that would include legal revision. According to the International Society of Stem Cell Research, however, stem cell therapy can be performed under rigorous conditions in exceptional cases, even if clinical trials or research studies have not been formally approved. If the appropriateness of stem cell therapy cannot simply be judged on the basis of approval or disapproval by law or administrative guidelines, then where does the problem actually reside?

To clarify the issues involved in stem cell research, which is now becoming a topic of discussion, this paper provides a brief introduction of the related trends in other countries and discusses the present situation and potentially relevant problems with the existing regulations in Japan. Furthermore, we propose two future directions (research or innovative therapy) along which the current trends can develop. Finally, we comment on the risks of maintaining the current regulations.



Stem cell therapy offers limitless possibilities. If human stem cells enable the creation of cells and tissues, then treating diseases of the body by replacing cells and tissues as if they were mechanical parts becomes possible, thereby aiding in overcoming illnesses and extending life. Although stem cell therapy is regarded as a blessing, it is necessary to fully discuss its ethical, legal and social implications, given that these treatments could greatly change the concept of human life.

The 23rd November 2010 issue of *Nature* reported the deaths of two South Korean patients who travelled abroad—one of them to Japan, the other to China—to undergo stem cell therapy (Cyranoski 2010a). The patient who travelled to Japan was a 73-year-old male. Through the South Korean-based company RNL Bio, he received stem cell therapy at Kyoto Bethesda Clinic, a co-operating Japanese hospital. However, he subsequently died of pulmonary embolism (Dong-a Ilbo 2010). Because it is illegal to administer stem cells to patients outside the framework of clinical trials in South Korea, RNL Bio extracts mesenchymal stem cells from the patient’s fat and bone and injects these cells back into the patient at co-operating hospitals in other countries. According to the articles published thus far, RNL Bio, which has treated

over 10,000 patients, claims that ‘only a very small number of patients have died, and the causal relationship with stem cell therapy is unclear’. According to Oh Il-hwan, head of the functional cell treatment center at the School of Medicine of Catholic University of Korea, however, ‘it is already known among scholars through preclinical trials using animals that side effects such pulmonary embolism and lymphoma can occur’ (Dong-a Ilbo 2010).

Initially, the death of the patient treated in Japan was not widely reported in Japan. On 1st February, 2011, the Japanese Society for Regenerative Medicine, which had been discussing the issue, released through their website a statement about unapproved regenerative and cellular medicines that do not conform to the Pharmaceutical Affairs Act or any research guidelines (Asahi Shinbun 2011, Japanese Society for Regenerative Medicine 2011, Kyōdo News 2011). In the statement, the Society urged its members not to utilize unapproved regenerative cell therapies, advised patients and their families not to undergo such procedures and asked the government to construct a new medical services framework that would include legal revision. Around the time this statement was issued, scattered reports on the patient’s death appeared in the Japanese media, with the word ‘unapproved’ emphasized in the headlines (Asahi Shinbun 2011, Kyōdo News 2011, Science Portal 2011). Yet, as we discuss in this paper, regenerative cell therapy may not subject to the Pharmaceutical Affairs Act or research guidelines, and it is not clearly prohibited in Japan. Furthermore, according to the International Society of Stem Cell Research (ISSCR), stem cell therapy can be performed under rigorous conditions in exceptional cases, even if clinical trials or research studies have not been formally approved (International Society of Stem Cell Research 2008). If the appropriateness of stem cell therapy cannot simply be judged on the basis of approval or disapproval by law or administrative guidelines, then where does the problem actually reside?

To clarify the issues involved in stem cell research, which is increasingly becoming a topic of debate, this paper provides a brief introduction to related trends in other countries and discusses the present situation and potentially relevant problems with the existing regulations in Japan. Furthermore, we propose two future directions along which the current trends can develop. Finally, we comment on the risks of maintaining the current regulations.

PROBLEMATIC TRENDS RELATED TO STEM  
CELL THERAPY IN OTHER COUNTRIES

Induced pluripotent stem cells, embryonic stem (ES) cells and somatic stem cells carry the potential to treat a great number of conditions that are difficult to cure with contemporary medicine. However, with the exception of haematopoietic stem cell transplantation for leukaemia and lymphoma, the efficacy and safety of stem cell therapy have not been sufficiently proven to permit their widespread use in the clinical setting (Barclay 2009). However, patients with severe diseases that lack treatments, and their family members, place sincere hope in stem cell therapy. Countless patients worldwide undergo stem cell therapy in their own or other countries because they or their families cannot wait for clinical research to begin and do not want to simply wait for death without investigating other potential options. The existence of the Internet in particular has accelerated this trend. Stories of cures appearing on the blogs of affected individuals or clinic websites attract more patients and family members to stem cell therapy.

However, examination of these blogs and websites has revealed the true conditions and problems of stem cell therapy in various countries. For example, according to a fact-finding investigation of patient and family blogs, patients with a wide array of conditions—including spinal cord injury, optic nerve hypoplasia, motor disorders, brain injury, polio and multiple sclerosis—have received stem cell therapy (Ryan et al. 2010). The countries where the treatments were performed include China, India, the Dominican Republic, Costa Rica, Russia, Mexico, Germany and Turkey. Cord blood stem cells, autologous bone marrow stem cells and stem cells derived from human foetuses and embryos were administered by intravenous injection or lumbar puncture. Despite the lack of evidence, a significant number of clinics were very optimistic about efficacy and safety, and they downplayed the risks (Lau et al. 2008). The costs of therapeutic intervention ranged from US\$5,000 to \$39,500 (Regenberg et al. 2009).

Severe adverse effects on health and even deaths have been reported. In Russia, a man who received injections of human ES cells for cosmetic purposes developed multiple tumours on his face (Titova and Brown 2004). A British patient experienced a severe acute allergic reaction and required hospitalization immediately after receiving therapy in the Netherlands (Sheldon 2006). At a Chinese clinic, numerous complications, including cerebral meningitis, were confirmed in five of seven patients injected with foetus-derived cells (Dobkin et al. 2006). A Thai woman whose kidney



was injected with autologous stem cells experienced an increase in vascular and bone marrow cells in her kidneys, liver and adrenal gland 6 months later, and she eventually died (Cyranoski 2010b, Thirabanjasak et al. 2010); however, the causal relationship remains unclear in this case. Moreover, not all reported victims have been adults. A 9-year-old Israeli boy who was administered foetus-derived nerve cells in the cerebellum and spinal cord at a Russian facility developed a brain tumour 4 years later. The tumours were derived from the cells of at least two donors (Amariglio et al. 2009, Pownall 2010). In Germany, a 10-year-old patient from Azerbaijan who received stem cell injections in the brain became gravely ill, and an 18-month-old Romanian child who received the same treatment died (Mendick and Palmer 2010).

As described previously, many patients throughout the world seek these treatments even though their safety and efficacy are unproven, and they pay large sums of money for therapy and travel while exposing themselves to deadly risks. In relation to these events, the ISSCR created 'Guidelines for the Clinical Translation of Stem Cells' in 2008 (International Society of Stem Cell Research 2008). These guidelines clearly state the following: 'The ISSCR condemns the administration of unproven uses of stem cells or their direct derivatives to a large series of patients outside of a clinical trial, particularly when patients are charged for such service'.

National governments have continued to address this issue. The government of the Netherlands banned the clinical use of stem cells in 2007 (Sheldon 2007), whereas the Russian government closed approximately 37 clinics (Cohen and Cohen 2010a). In Germany, the relevant associations issued a statement, and 2 weeks later, the upper house of Parliament passed an amendment that more closely regulated stem cell therapy (Stafford 2009). Regulations enacted in China in 2009 introduced a licensing system for facilities offering unproven treatments such as stem cell therapy. Violations are now punished with fines or suspension of treatment licenses (Qiu 2009). India and Thailand are also moving towards tighter control (Cohen and Cohen 2010a, Qiu 2009). Throughout the world, concerned organizations are releasing critical statements and questioning the clinics involved (Pownall 2010, Qiu 2009). Against this backdrop, the US and UK have adopted a basic stance against the commercialization of stem cell therapies that lack official approval (Cohen and Cohen 2010b).

## CURRENT STATUS AND REGULATORY PROBLEMS IN JAPAN

In Japan, some stem cell therapies are promoted which, in other countries, are considered problematic and strictly regulated as a result. An Internet search provides easy access to clinics that offer stem cell therapy in private practice. The target conditions differ among clinics and range from cancer, cerebral infarction, myocardial infarction, Parkinson's disease, rheumatic conditions, paralysis after spinal cord injury, diabetes and kidney and liver impairment to chronic fatigue, stress relief, menopause, skin rejuvenation and breast augmentation. The stem cells used in these therapies are extracted from bone marrow, cord blood or fat cells and administered intravenously, intradurally, subcutaneously or intra-articularly. Some clinics clearly state that the efficacy is unknown, whereas others offer statements such as 'it is a safe treatment and significant results can be expected' (Kojima Regenerative Medicine Clinic, accessed 2013) or 'in some cases, patients experienced an improvement on the same day of the treatment' (Kanda Ishin Clinic, accessed 2013). Some statements by clinics include no mention of the risk of side effects. The therapies frequently cost several million yen, and treatment costs are not covered by insurance. Compared with international trends, Japan constitutes a distinct case; many Japanese clinics have escaped international criticism thus far because their websites are available only in Japanese. There are, however, clinics that communicate with patients in foreign languages, suggesting that patients do indeed come from other countries to receive treatment.

Relevant to the emergence of these circumstances in Japan is the issue of regulating medical care involving stem cells. In Japan, the administration of stem cell therapies that are still at the experimental stage can proceed along two paths. The therapies can be utilized in trials according to the Pharmaceutical Affairs Act or administered as part of research pursuant to the Ministry of Health, Labour and Welfare's Guidelines on clinical research using human stem cells (hereafter, Human Stem Cell Guidelines) (Ministry of Health, Labour and Welfare 2006). If a treatment is framed as a trial, then a proposal must be submitted to the Ministry's clinical trials review committee and the institution conducting the trial, and the plan must undergo a detailed audit. Therapies that are provided as part of research must be doubly reviewed by the Health Science Council and the research institution's ethics review committee. In both cases, clinics have an obligation to report any serious side effects to the national government. Therefore, irrespective of whether the therapy is administered as part of a trial or research, the national government has an opportunity to evaluate the clinic

administering the therapy, the patients receiving treatment and the extent of risks involved. It also ensures that mechanisms to oversee and manage such therapies are in place.

Another possibility is that stem cell therapy may be provided as practice. In 2010, the Ministry of Health, Labour and Welfare issued a notice on Conducting Regenerative and Cellular Medicine Using Autologous Cells and Tissues at Medical Institutions (Ministry of Health, Labour and Welfare 2010). This notice summarized the requirements that must be met while administering regenerative and cellular medicine using autologous cells prior to insurance listing or approval under the Pharmaceutical Affairs Act, or while offering regenerative and cellular medicine not subject to the Human Stem Cell Guidelines. This notice stated that such care must be provided as part of research, but it did not specifically prohibit the use of regenerative and cellular medicine as a preventive treatment or for cosmetic purposes at the patient's own expense. It did mandate review by the medical institution's ethics committee but not the participation of outside committee members, which would contribute to transparency of the review. Furthermore, it did not address the obligation to report serious conditions to the national government. In short, with respect to stem cell therapies using autologous cells that are not covered by the Pharmaceutical Affairs Act or research guidelines, an official notice has been issued but such therapies are not domestically prohibited. Consequently, much is left to voluntary regulation by the medical facility, thereby precluding third-party audits.

## TWO POSSIBLE DIRECTIONS: RESEARCH OR INNOVATIVE THERAPY

We present two viewpoints that could each serve as a path to improve this situation and regulate problematic stem cell therapy. The first method would define as research all forms of stem cell therapy, including those regarded as problematic, and regulate them uniformly using existing guidelines. Hypothetically, application of the Human Stem Cell Guidelines would enable the government to exercise some oversight and management of the institutions offering the treatment, the target conditions, expected benefits and risks, and details on serious consequences. This may also prevent patients from being overcharged for treatment. However, application of the Human Stem Cell Guidelines will require clarification of the definition of the scope of application: 'clinical research that transplants or administers human stem

cells or the like into the human body for the purpose of treating a malady' (Ministry of Health, Labour and Welfare 2006). Currently, this definition can have multiple interpretations, including the judgment of some in the field that stem cell therapy is practice that aims only at treatment and is not subject to any guidelines because it is not research.

It is not possible, of course, to equate stem cell therapy with routine medical care. It differs from standardized medical care in that aspects of its safety and efficacy cannot yet be verified. This sort of unproven medicine, which physicians administer either as part of pure practice or as part of varying degrees of mixed research and practice intent, is called innovative therapy (Levine 1978). It is a controversial field that lies at the border of research and practice, and it has been debated for over 30 years. It is worth emphasising that the fact that these therapies are unproven and exist in a grey area is not a sufficient reason to ban them. 80%–90% of surgical procedures develop from practice without ever being investigated in clinical trials (Cosgrove 2008). Therefore, the alternative approach is to regard stem cell therapy as an innovative therapy and establish strict requirements for its use.

Adoption of the ISSCR guidelines would truly fit this approach (Hyun 2010). Although these guidelines generally oppose the administration of stem cell therapy to large numbers of patients for profit, they allow the possibility of using cutting-edge medicine related to stem cells to treat a small number of patients with severe conditions. In addition, it is necessary to clarify the requirements that would be equivalent to those covering research (International Society of Stem Cell Research 2008). Two factors are of particular importance: first, a peer review process by an appropriate expert who has no vested interest; second, the existence of clinical quality control monitoring. A number of questions would have to be considered if similar regulations were adopted in Japan. Who (among, for example, the government, medical associations, academic societies, medical institutions) would perform the monitoring and management and at what level (e.g., law, guidelines, notification)? How should we establish the conditions with reference to which procedures qualify as innovative therapy? What types of penalties should be applied for guideline violations? In considering such questions, it should be noted that the ISSCR guidelines could also be criticized on the grounds that some countries do not legally recognize innovative therapies (Cohen and Cohen 2010b).

## CONCLUSION: THE RISKS OF MAINTAINING THE CURRENT REGULATIONS

It is highly likely that many of the stem cell therapies provided in Japan at the patient's own expense do not meet the criteria of research or innovative therapy. Although their safety and efficacy are unknown and they may even pose deadly risks at times, Japan currently does not have an independent body charged with identifying, monitoring and managing the providers and recipients of stem cell therapy, nor with identifying, monitoring and managing the extent of the risks involved. This represents a major problem. Fulfilling these functions would likely have resulted in the death of the Korean patient mentioned in the Introduction being reported more swiftly after the event. To protect future patients from grave consequences associated with advanced medicine, including death and severe side effects, such information should be widely disseminated throughout society.

With the aim of being the first country in the world to act on the development of therapeutic technologies using stem cells, Japan is promoting stem cell research as a national policy. The fear is that this widespread use of stem cell therapies, which are harshly criticized abroad, may jeopardize this aim. If this situation is left unresolved, then the relevant research and researchers in Japan who are involved in global competition may lose international trust. As mentioned previously, several issues relating to the regulation of stem cell therapy warrant discussion. The society must collectively recognize that maintaining the status quo and not implementing proper countermeasures could have dire consequences not only for patients and their families, but also for researchers and national policies.

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# Common Morality, Human Rights, and Multiculturalism in Japanese and American Bioethics

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## ABSTRACT

To elucidate some issues in global biomedical ethics, I consider three problems about alleged moral differences between Eastern and Western cultures. The first is whether Eastern and Western moral traditions are fundamentally different. Concentrating on Japan and the United States, I argue that theses of profound and fundamental East-West differences are implausible since there are many forms of shared morality. The second is whether human rights theory is a Western invention with no firm roots in Eastern moral traditions. I argue that this thesis is unsupported both historically and in contemporary bioethics. The third problem is whether multiculturalist theory casts doubt on claims of universal principles and rights. I argue that the reverse is true: multiculturalism is a universalistic theory. The argument throughout supports common morality theory.



Global ethics is currently a fashionable notion, but its meaning and scope remain underdeveloped. To address some questions in biomedical ethics, I will investigate three problems about cultural moral differences, concentrating on alleged differences in Eastern and Western cultures. The first problem is whether there is merit in the thesis that the East—that is, Asia—has fundamentally different moral traditions from those in the West—that is, Europe and the Americas. I will argue, concentrating on Japan and the United States, that the thesis of *profound* and *fundamental* East-West differences is dubious in light of our many cultural similarities and forms of shared



morality. The second problem is whether human rights should be understood as a Western invention with no firm traditions in Eastern moral and political theory. I will argue that this thesis is unsupported in contemporary bioethics. The third problem is whether the existence of multicultural societies and pluralism of moral viewpoint support the claim that there is no universal morality. I will argue that this claim too is unconvincing.

### ALLEGED DIFFERENCES BETWEEN EASTERN AND WESTERN MORAL VALUES

I begin with a quote from an article published in 1987 in the *Hastings Center Report*—an article that I have long admired. It was written by Professors Koichi Bai, Yasuko Shirai, and Michiko Ishii, who presented the following thesis:

*We must beware of drawing general conclusions as to 'Japanese' characteristics on [bioethical] issues. We ought not to assume too readily a uniformity in Japanese culture; nor, needless to say, can we ignore Japanese peculiarity. The key is to observe the situation as it exists.... [I]t is difficult to generalize about the attitude of the Japanese people [on bioethical issues]. Taken collectively, the numerous opinions do not suggest any uniform perspective. Japanese attitudes have not been examined closely because of misinformation and lack of research. (Bai et al. 1987: 18–20)*

These authors argue, based on the empirical data available to them at the time, that there is a lack of consensus among the Japanese on the acceptability of conclusions about relatively new issues in bioethics. They say that this situation creates both a tension and a link between traditional belief and contemporary practice (Bai et al. 1987. See also Shirai 1993).

I had read this article prior to a Conference in Japan in the 1990s that Professor Bai and I both attended. I told him then that I had been struggling to understand what I had been told by a number of people from Japan *about* Japan. What they had reported as Japanese moral views in conflict with American views is also widely found in bioethics literature. I was at the time reading the available empirical studies of Japanese practices and beliefs that had been published, especially the studies that compared Japanese beliefs and practices with American beliefs and practices. I asked Professor Bai, 'Can you clarify for me how to think about the numerous reports in

the literature that Japanese families and physicians are paternalistic, family-oriented, and opposed to principles in Western ethics such as respect for autonomy, informed consent, and the like?' My problem, I explained, was that much of what is reported to be Japanese beliefs and practices did not seem supported by the empirical literature on Japanese beliefs and practices. I could find only fragments of support in the empirical literature, which simply failed to show that Japanese physicians, nurses, and patients are morally at odds with American physicians, nurses, and patients.

Professor Bai had had his eyes locked on his tea cup as I asked my question. In giving a response, he shifted his gaze from the tea cup and fixed his eyes on mine. He said, 'Professor Beauchamp, the Japanese people will tell you many things about the Japanese people, but look and see.' He had given an answer to my question in one astute sentence. I knew immediately what he meant, and it struck me that it applies just as well to the United States. Whether one starts with cultural stories and traditional beliefs in the United States, or Japan, or anywhere else, one has to look and see what the beliefs and practices are before one is entitled to claim polar viewpoints.

In this paper I will look and see what the situation is today and how we should assess it. I first will devote some time to clarifying a deeply entrenched perspective that I will call 'the received view'.

### THE RECEIVED VIEW

*The received view* is about morally relevant cultural differences between Japan and the United States. It asserts that Eastern cultures are paternalistic and family-oriented in their moral beliefs and practices, with great deference given to physicians, whereas American and European cultures are nonpaternalistic and anti-authoritarian in their treatment of patients and families. Traditional family values in Japanese society are said to feed this custom: individuals are expected to be relatively constrained and unassertive, remaining sensitive to the maintenance of fluent relationships that avoid confrontation and self-assertive conduct. This behavior and these cultural expectations are said to contrast sharply with Western emphases on individual rights and individual choice, which, according to the received view, are not admired in Japanese culture. As Professor Rihito Kimura once put it, 'Autonomy, an important bioethical principle in the Western social context, is out of keeping with the Japanese cultural tradition' (Kimura 1986: 23, see similarly Ishibashi 1996).

I do not deny that there are some differences *in degree* between American and

Japanese societies on these matters. Empirical studies show modest differences, but the view has no merit as an account of differences *in kind*—as if people from the East and the West have fundamentally different principles, beliefs, practices, and conventions in medical institutions. Where others have looked for cultural *differences*, I will emphasize relevant cultural *similarities*.

## INFORMED CONSENT: HISTORY, TRADITION, AND LEGEND

I will use the doctrine of informed consent as my principal example of alleged differences, but more often similarities, between Eastern and Western bioethics. This doctrine has for many years, especially in the literature of the 1980s and 1990s, been presented as a peculiarly American practice and as a notion poorly suited for an Eastern ethics of relationship in communities and family decision making. It was then, and is still today, closely linked in influential bioethics literature to supposedly distinctive American views of autonomy and individualism. As an example of this view, consider a September 2011 article by Professor John-Stewart Gordon of the University of Cologne, Germany, who states that, ‘non-western countries such as China, Japan, and most African countries do not share the idea of individual informed consent in biomedical ethics. Instead, they generally demand that either family- or community-informed consent should be obtained in cases such as life-threatening diseases’ (Gordon 2011: 261).

The view that informed consent is an outgrowth from a history of American individualism is a strange historical thesis. The term ‘informed consent’ emerged only in the 1950s, and discussions of the concept as we know it today began only around 1972. It had no significant prior history in philosophy, law, medicine, or public policy in the US (Faden and Beauchamp 1986: chapters 3–6). The histories of patient-physician interactions in medicine in Europe and the United States prior to the 1970s are at root paternalistic and antithetical to informed consent. The history is one of tight physician control of information and patient deference to physicians (Katz 1984).

In an empirical study in the US published in 1970, 50% of the physicians surveyed thought it *medically* proper, and 30% thought it *ethically* proper, for a physician to perform a mastectomy with no authorization from the patient other than her signature on a blanket consent form required for hospital admission; half of these physicians thought that it is ethically appropriate for a physician not to tell a cancer patient that she has been enrolled in a double-blind clinical trial of an experimen-

tal anti-cancer drug and is currently receiving a placebo (Hagman 1970, Hershey and Bushkoff 1969, Fellner and Marshall 1970, Alfidì 1971). Only during the years between 1972 and 1980 did a major shift occur favorable to the view that physicians have a moral and legal duty to obtain informed consent from patients for many procedures.

Accordingly, I do not accept the received view's claim that American tradition is non-paternalistic, whereas Japanese traditions are deferential to physicians and rest on a paternalistic model of medicine. European and American traditions of medical ethics both derived from centuries of physician paternalism and cultural deference. American interest in patients' rights and paternalism has occurred only in the last thirty-five years.

### EMPIRICAL STUDIES OF JAPANESE BELIEFS ABOUT INFORMED CONSENT

Does the current situation in Japan differ significantly from that in the US, with relation to cultural attitude and medical practice? There are differences, but my working hypothesis is that today no profound cultural differences in consent practices exist between Japan and the US. To assess the current situation, I will consider the findings of several empirical studies on paternalism and informed consent that have been conducted in Japan. These studies elucidate the opinions of Japanese physicians, nurses, patients, and families. Over three dozen such studies have been conducted in Japan since the early 1980s. I will mention only a representative sample conducted or reported over the course of 20 years from 1986 to 2006. These studies have similar, though not identical, results. I know of no serious scholarly study that contains significantly different findings than those I will report.

The first study was reported by Professor Hiroyuki Hattori and five associates, published in 1991, having been conducted in 1986-87 (Hattori et al. 1991). The data in this study show some striking similarities of attitude and behavior to earlier empirical studies of American physicians. This questionnaire survey reached the following conclusions: Japanese physicians are willing to give their patients information adequate to obtain an informed consent, but many physicians retain discretion to judge how much information should be provided. In every category tested, over 50% of Japanese physicians stated that they morally *should* make adequate disclosures and receive an informed consent. One interesting response came in answering the question, 'How do you explain high-risk diagnostic procedures to the patient?' Across

medical students and physicians in university and other hospitals in Japan a consistent result appeared: between 56% to 60% of respondents gave the answer, 'We explain the incidence and the severity of the risk, and if the patient seems to be bewildered by the information, we explain them to the relatives' (Hattori et al. 1991: 1013). These results are largely consistent with various studies of the behavior of American physicians.

A second study was conducted in 1989 by Professor Yutaka Mizushima and eight associates (Mizushima et al. 1990). This study examined disclosures of a diagnosis of cancer (in Toyama Prefecture), and asked the opinion of physicians, paramedical personnel, and lay persons about Japanese practices of nondisclosure. One goal of the study was to critically examine the widespread belief that, 'In Japan, more than 90% of medical doctors hide the actual diagnosis of cancer from patients. On the contrary, in the United States of America, ... more than 90% of MDs reveal the diagnosis of cancer to their patients' The Mizushima study revealed a very different picture of Japan than the 90%/90% hypothesis suggested. In response to the question, 'Do you think we *should* reveal the diagnosis of cancer to patients who have requested it?' 69.2% answered 'yes', 12.7% were not sure, and only 17.7% answered 'no'. Similarly, to the question, 'Would you wish to be told the diagnosis of cancer if you had cancer?' only 13.2% of these physicians answered 'no'. This rate of 'nos' is not surprising in light of another Japanese study that had shown nondisclosures and deception to have been steadily declining in Japan throughout the 1980s (Morioka 1991). They declined still further in the 1990s.

In a third study, in 1995, Atsushi Asai and associates published a questionnaire study about terminally ill patients that was administered to both Japanese and Japanese-American physicians. The most intriguing feature of this study is that significantly fewer Japanese physicians would want for themselves the very same interventions that they recommend to their patients. For example, 74% would recommend blood transfusions for gastrointestinal bleeding to their patients, but only 29% would want these transfusions for themselves (Asai et al. 1995).

Fourth, a 1997 qualitative study, again by Asai and associates, used focus groups (Asai et al. 1997). A number of physicians reported that they regularly disclose a diagnosis of cancer to a patient and also give an accurate prognosis and explanation of the effectiveness of available treatments. Many physicians reported that they make recommendations to patients about life-sustaining interventions, which the patients are free to reject. The study showed a considerable diversity of opinion among

Japanese physicians about disclosure, about making decisions together with patients, about whether to always respect and follow a patient's decision, about withdrawing life-support once started, and about obligations generated by advance directives. The reports of these physicians show deep similarities at the time between US and Japanese physicians in their beliefs and practices.

A fifth study, conducted in 2005, involved a questionnaire on the subject of 'negotiating end-of-life decision making' for incurably ill patients with metastatic gastric cancer, conducted by Baback Gabbay, Shinji Matsumura, and others (Gabbay et al. 2005). This comparative study of resident physicians in both Japan and the United States was conducted at two US sites and five Japanese sites. The widest variation these researchers found is that 94% of Japanese residents try to include both the patient *and* the family when disclosing the diagnosis and prognosis, whereas only about 54% of American residents routinely include the family. Also, Japanese residents generally prefer discussions with the family *first*, and Japanese residents reported in much higher numbers (76%) than Americans (18%), that they had sometimes *deceived* patients at the request of families.

These findings might seem to support the received view that there is a significant cultural difference between Japan and the US in the family's role. However, a strong cultural-difference interpretation of this study would be a mistake. First, the fact that 54% of American physicians follow the apparent Japanese cultural pattern of including the family hardly shows that Japanese are family-oriented whereas Americans are autonomy-oriented. Although a much higher percentage of Japanese physicians reported deceiving their patients at the families' requests, a large number of Japanese physicians in this study expressed serious remorse, guilt, and moral uncertainty about their own moral judgments and behaviors when asked their ethical assessment of their deceptive conduct. Only 5% to 8% of Japanese medical residents were confident that their approaches to disclosure were the best way to handle the situation. Put another way, 92% to 95% of these Japanese physicians expressed some level of uncertainty about their moral duties of disclosure. 45% of Japanese residents and 61% of American residents reported that they felt guilty either 'all of the time' or 'most of the time' when concealing a diagnosis. Both American and Japanese physicians, in comparable numbers, reported high levels of uncertainty about the proper ethics of the disclosure situations in which they find themselves.

In the end, the single biggest difference between Japanese medical residents and American medical residents, based on this study, is that 44% of Japanese residents

would prefer to disclose a diagnosis of cancer to the family first, whereas only 2% of American residents would prefer that practice. Although this difference may seem large, the 44% of Japanese residents preferring this approach is well short of a majority, and this 44% falls to 23% when the disclosure to the family is of *both* a diagnosis *and* a prognosis. At this point we see only a relatively small difference between the practices in Japan and the US. The authors, in addition, point out that several studies conducted in Japan indicate that Japanese cancer patients are now directly expressing to their physicians a desire for disclosure, even though their families often do not express the same desire.

These investigators cite approvingly a sixth study by N. Horikawa and colleagues about how rapid the changes have been in Japan regarding the disclosure of a diagnosis of cancer to adult patients. The Horikawa study found that, in 1993, disclosure of a diagnosis of cancer was made by physicians to only 27% of their Japanese patients, whereas five years later, in 1998, disclosure of the diagnosis of cancer increased to 71%. These investigators state flatly that the higher level of disclosure in 1998 is to be explained by the growing social importance of informed consent (Horikawa et al. 1999, Horikawa et al. 2000). This rate of change in the Japanese medical context seems to almost completely close what had until the late 1990s been the biggest gap in disclosure and consent practices between American and Japanese physicians.

A seventh study, by Yasuhiko Miura and associates, reported in 2006, contains results about how well Japanese families and physicians understand what patients actually want (Miura et al. 2006). Using a questionnaire, they studied 450 dialysis patients in 15 hospitals in Japan. They found that only 47% of patients believed that their families could correctly report what they would want in the way of life-sustaining treatments; and only 31% believed that their physician could do so. As it turned out, about 68% of families made correct predictions of what the patients' preferences would be. Physicians were slightly less accurate in reporting what their patients would want. Investigators point out that the ability of both families and physicians to accurately predict patient preferences is only slightly above chance. These investigators note that their conclusions generally agree with the results of similar studies in the United States.

Finally, a 2006 analysis of informed consent by Akira Akabayashi and Brian Slingsby, expanded on in their recent book with Satoshi Kodama, asserts that informed consent is now an 'imperative aspect of clinical medicine worldwide' (Akabayashi and Slingsby 2006: 9) and that 'nondisclosure is no longer practiced regularly' (p. 11).

They analyse the history and meaning of ‘informed consent’ in Japan, noting the importance of recently issued Professional Ethics Guidelines for Physicians of the Japan Medical Association, which assert that ‘physicians have an ethical obligation to inform patients’ (p. 10) and to ‘fully disclose all relevant information’ (p. 10), even though physicians have some ‘leeway not to inform patients directly’ (p. 10). They note similarities in the U. S. and Japan in the system as it now exists and maintain that any differences in cultures are ‘far less important than the need to understand each patient and family’ (p. 12).

The six studies and a seventh commentary that I have mentioned in this section show the shallowness of the received view about cultural differences, at least when it comes to the imperative of obtaining an informed consent. Both US and Japanese medical cultures have been in a process of progressive change over the course of the last 25 to 35 years, and both have been chipping away at past paternalistic practices (Ninomiya 1978, Novack et al. 1979, Horikawa et al. 2000). The idea that there is a deep divide in medical ethics of consent and paternalism between East and West should now die a quiet death.

## HUMAN RIGHTS AND COMMON MORALITY

I will hereafter assume that there is little, if any, credibility in the received view of differences in bioethics. I move on now to ask whether there is good reason to think there is a substantial, globally shared agreement over moral matters—and, if there is not, whether there should be. I am shifting to the subject of universal morality, or common morality, first considering human rights. Again I will argue against a view that has been prevalent in the literature. This time it is the claim that human rights theory is a Western invention uncongenial to Eastern moral and political theory. I focus on human rights because this category occupies the most prominent place today in discussions of universal morality.

## SEN’S THEORY OF RIGHTS AND EAST-WEST DIFFERENCES

I begin with an argument presented by Amartya Sen in a lecture on *Human Rights and Asian Values* (Sen 1997). Since Sen is from India, his moral outlook presumably descends from an Eastern culture. But Sen rejects the way Eastern views are often presented, especially when it comes to issues of freedom and human rights. Sen points



out that the idea of ‘Asia as a unit’ with a set of Asian values about freedom that are different from those of the West has no historical grounding. He notes that 60 percent of the people in the world live in Asia, with virtually nothing to solidify them as a uniform moral culture—or to distance them as a culture segregated from Europe, for that matter. Sen argues that ‘There are no quintessential values that apply to this immensely large and heterogeneous population, that *differentiate* Asians as a group from people in the rest of the world’. He finds that the major constituent components of basic ideas of liberty, especially political liberty, are present in both Eastern and Western traditions, even though the idea of human rights as having a prominent role in moral and political theory is relatively new to *all* parts of the world. He finds the claim that these ideas are friendly to Western tradition and alien to Eastern tradition ‘hard to make any sense of’ (Sen 1997: 10, 13, 17, 27, 30). I completely agree with him.

In speaking of freedom and authority in the East and the West, Sen does not mean that individual autonomy is prized *to the same extent* in the East as in the West. It could be that many populations in the East prioritize community and authority over individual autonomy to a *higher degree* than do many populations in the West. But this thesis does not entail that Eastern populations deprecate or reject either individual autonomy or political liberty. Sen’s claim is that, as a moral matter, liberty rights are not antithetical to Eastern traditions of freedom and that claims of human rights are not less important in one place by comparison to another.

## UNIVERSAL MORALITY: ITS BROAD SCOPE

The point of human rights language is to provide standards that transcend norms and practices in particular cultures that conflict with human rights, but universal morality—the common morality shared by all morally committed persons—is composed of much more than human rights. That is, ‘rights’ is merely one category of universal morality. We also share universal morality’s *rules*, *virtues*, and *ideals*. I will now briefly examine these three categories of rules, virtues, and ideals.

## UNIVERSAL RULES OF OBLIGATION

I start with a few examples of what I will call rules of obligation in the common morality. These rules require not killing, not causing pain or suffering to others, preventing evil or harm from occurring, rescuing persons in danger, telling the truth,

nurturing the young and dependent, keeping one's promises, not stealing, not punishing the innocent, and obeying the law. These rules of obligation have been justified in various ways in various philosophical theories, but I will not treat problems of *justification* here. These cross-cultural norms are implemented in different ways in different communities, but the general norms themselves are not culturally contested in any community of persons committed to morality.

### UNIVERSAL VIRTUES

Common morality also contains standards that are moral character traits, or virtues. Here are some examples: honesty, integrity, non-malevolence, conscientiousness, trustworthiness, fidelity, gratitude, truthfulness, lovingness, and kindness. These human traits are universally admired (Nussbaum 1988: 33–34, 46–50), and a person is deficient in moral character if he or she lacks one or more of these traits. Negative traits opposed to the virtues are *vices*—for example, malevolence, dishonesty, lack of integrity, cruelty, etc. These character traits are substantial moral defects, universally so recognized by persons committed to morality.

### UNIVERSAL IDEALS

The final of my three examples of the common morality (in addition to rights) is moral ideals, such as charitable goals, community service, maximum dedication to one's job, and service to the poor. These aspirations are not *required* of persons, but they are universally *admired* and *praised* in persons who act on them (Gert 2007: 20–26, 76–77). Four examples are exceptional forgiveness; exceptional generosity; exceptional compassion; and exceptional thoughtfulness.

Some diversity of judgment will arise in interpreting and implementing all of the norms I have used as examples. My claim is only that these norms are shared across cultures and are universally recognized by morally committed persons.

### THE UNIVERSALITY OF PRINCIPLES OF RESEARCH ETHICS

I will now extend this discussion of rights, rules, virtues, and ideals to what I take to be a fact about recent developments in biomedical research ethics. Forty years ago, or even thirty years ago, there was no recognized universal research ethics of the

sort that has become familiar to us in recent years. There was then scarcely any research ethics. Today we can see a vast similarity, in virtually every developed nation, in codes, laws, and regulations governing research with human subjects. There are understandable and justifiable differences from country to country, but the differences pale in comparison to the sea of similarity in the moral and legal norms governing how biomedical research can and cannot be conducted.

Many principles are globally accepted, and violations of them are universally condemned. Examples include:

- ❖ Disclose all material information to subjects of research.
- ❖ Obtain a voluntary, informed consent to medical interventions.
- ❖ Maintain secure safeguards for keeping personal information about subjects private and confidential.
- ❖ Receive surrogate consent from a legally authorized representative for incompetent subjects.
- ❖ Ethics review committees must scrutinize and approve research protocols.
- ❖ Research cannot be conducted unless its risks and intended benefits are reasonably balanced; and risks must be reduced to avoid excessive risk.
- ❖ Special justification is required if proposed research subjects are vulnerable persons.

Several global organizations and many governments have subscribed to these norms in guidelines, codes, or regulations, but the force and authority of the norms is not contingent on particular laws or agreements. These norms are human rights of research subjects and they are in each case correlative to duties of researchers and sponsors. (See, as one of many examples, Part B of the World Medical Association's *Declaration of Helsinki* (World Medical Association 2008).)

Having now explored the categories of rights, principles, virtues, ideals, and I could go on to several other domains of universal morality, but this project is too much of an undertaking for this paper.

## MULTICULTURALISM

In conclusion, I turn to the related subject of multiculturalism. Many writers today maintain that the idea of a universal, or common, morality does not appreciate the ‘multicultural world’ that we now experience. They hold that multiculturalism and secular pluralism have delivered a post-modern world in which our robust past beliefs in the universality of moral precepts are no longer sustained. For example, H. Tristram Engelhardt and Kevin Wildes maintain that a ‘theoretically intractable secular moral pluralism’ pervades the modern world, rendering it unamenable to any form of common morality. From this perspective, one cannot say anything about what constitutes proper physician-patient relationships, what human rights might mean, or what constitutes virtue and character—except from within a commitment to the moral framework of a particular moral community (Engelhardt and Wildes 1994, Engelhardt 1996). This theory makes no sense to me.

It is also dangerous in what it defends. Among the human rights that today should be most vigorously defended are rights against the oppression of minorities, women, children, and other targeted groups. When complaints about violations of rights arise, governments or other controlling groups often use the excuse that they are treating women and children in accordance with their cultural and religious traditions. The premise that cultures have a right to protect *their* traditional values, beliefs, and rituals is unacceptable when used to prevent women from educational opportunities, to exploit human subjects in research without appropriate consent, to foster oppressive child labor conditions, or to discriminate against minorities and disenfranchised populations.

## THE UNIVERSALITY IN THE THEORY OF MULTICULTURALISM

Many of today’s exponents of the view that there are no universal norms also misrepresent the commitments and objectives of multiculturalist ethical theory. Multiculturalism is the theory that respect is owed to cultural traditions because morality demands this respect (Siegel 1999). Multiculturalists accept the principle that group traditions, institutions, perspectives, and practices should be respected and should not be violated as long as the members of the group do not themselves violate the standards of the common morality. The objective of multiculturalism is to provide a theory of the norms that universally should guide the protection of vul-

nerable cultural groups when threatened with marginalization or oppression caused by one or more dominant cultures (Taylor 1992, Fullinwider 1996). Multiculturalism from this perspective is a form of human-rights theory.

## CULTURAL DIVERSITY

These comments do not undercut the importance and legitimacy of cultural diversity. A multiculturalist account protects diversity. From the fact that we are required to tolerate and protect different cultural traditions, different religious views, and the like, it does not follow that *all* convictions and practices must be tolerated and protected. Some basic norms govern everyone's conduct, whereas some norms hold exclusively for particular groups.

## CONCLUSION

I have argued that it is easy to overlook similarities in cultures because of various cultural differences that capture our attention. Whatever our differences, the US, Europe, and Japan share a great deal in common, and no differences in our cultural histories now present major barriers to accord in bioethics.

I have implicitly suggested that we have gradually moved into a globally shared bioethics, and I have highlighted both clinical ethics and research ethics as examples. My hypothesis is that we are well down the path of a process that is still today leveling previous differences through cultural exchange and learning. I do not mean to suggest that a moral imperialism is being imposed universally by the most powerful nations so that learning is unidirectional from West to East. I mean that we have much to learn from each other that we can share. For example, currently in the US we are learning to modify our practices of 'community engagement' to protect the interests of participants in research and to create a better set of responsive relationships while engaging in research with human subjects. In this conception, distinctive social, cultural, political, and economic contexts of research participants will be taken into consideration and rules and practices negotiated. US investigators have much to learn on this subject from other nations with a history of more sensitive practices.

I project that a dialogue and leveling of this sort will continue to occur in bioethics and public policy, hopefully erasing all differences of practice that might prevent human rights from being firmly in place.

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# Future Generations, Sufficiency, and Biotechnology

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## ABSTRACT

Many people believe in egalitarian principles of justice, according to which inequality is bad in itself. These principles can of course be applied to the relation between our generation and future generations. I shall argue that equality is not a value, and that what we should care about is giving some priority to promoting the well-being of the worse off. But this priority should be given only up to a certain threshold—the threshold at which people have *enough*. I shall then consider the implications of this sufficientarian version of the priority view for the ethics of future generations, and for the development of biotechnology.

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## 1. POPULATION ETHICS AND UTILITARIANISM

Population ethics is not new. In the late eighteenth and early nineteenth centuries, for example, Thomas Malthus and others were worrying about the implications of unrestricted population growth for existing and future generations. But in recent decades there has been a huge increase in the attention paid by philosophers to population ethics, mainly as a result of the last part of Derek Parfit's epoch-making *Reasons and Persons* (Parfit 1984). In that book, Parfit sets out many problems for various plausible principles governing population size, and it has especially intrigued philosophers that Parfit himself did not offer a solution to these problems.

The standard approach in population ethics is to apply some general principle or

set of principles, thought plausible *a priori*, to the particular question of population. One very common such principle, of course, is utilitarianism, according to which the right action is that which brings about the greatest amount of happiness overall. And the commonest version of utilitarianism is act utilitarianism, which applies the principle directly to acts, construed in terms of a maximisation of *total* rather than *average* utility. As Henry Sidgwick noticed, the difference between these two forms of act utilitarianism is important *only* when issues of population are at stake (Sidgwick 1907: 114–15). In any fixed population, maximising the total happiness will be the same as maximising the average. But total utilitarianism may require us to bring extra people into being so as to increase the total, even if this decreases the average level within the already existing population.

One common objection to the application of the total act utilitarian view to population ethics is Parfit's:

*Repugnant Conclusion: For any possible population of at least ten billion people, all with a very high quality of life, there must be some much larger imaginable population whose existence, if other things are equal, would be better even though its members have lives that are barely worth living. (Parfit 1984: 388)*

I believe that so-called 'discontinuities' in value can help the total utilitarian to avoid the Repugnant Conclusion. These discontinuities are especially easy to recognise in the case of pain and suffering. Imagine that some evil demon offers you a choice. You must choose between one hundred years of the most agonising torture possible, or one thousand years of a slight itch at the tip of your little finger (the irritation of which never gets any worse, causes any further unpleasant sensations, or has any other negative effect on your well-being). You choose the itch. Then the demon says that after that thousand years is up, you will have to make a similar choice, except that now the time with the itch will be much extended. Indeed the demon keeps extending the length of the itch in an effort to make you choose the agonising torture. It is plausible to claim that *no* amount of itching can be worse than a century of agonising suffering. In the same way, it could be argued, a population of whatever size, whose members have lives barely worth living, could never be more valuable than a population of ten billion people living lives of a very high quality.

But total act utilitarianism is not out of the woods.<sup>1</sup> Consider now the following two outcomes, in which the numbers represent the well-being of members of populations.

	<i>Existing population</i>	<i>Future population</i>
<i>Equality</i>	50	50
<i>Inequality</i>	90	10

For the sake of the argument, assume that (i) well-being can be measured (if only roughly), (ii) each population is of the same size, and (iii) the identities and desert-levels of those in each population respectively are the same in both *Inequality* and *Equality*. According to traditional total act utilitarianism, there is no reason to prefer *Equality* to *Inequality*. Many people find this objectionable, thinking that equality or fairness is relevant to evaluations of population size and relative well-being.

## 2. EQUALITY, PRIORITY, AND SUFFICIENCY

One apparently straightforward way to deal with this problem for act utilitarianism is to introduce an egalitarian principle, such as:

Egalitarianism: *One outcome is to be preferred to another in so far as (undeserved) inequality is minimised.*

Unfortunately, this principle itself faces a problem which Parfit has called the ‘levelling-down objection’ (Parfit 1998: 10). Consider now the following outcomes:

	<i>Rest of existing population</i>	<i>Future population</i>
<i>LD</i>	9	9
<i>Inequality<sup>2</sup></i>	99	100

Imagine there is some policy decision we can make which will bring down the levels of well-being of both existing and future people, so that these levels are equal.

1. Several of the following arguments are based on Crisp 2003.

According to egalitarianism, there is *something* to be said for doing this. This attachment to an alleged value which not only benefits no one but harms many (and in a sense everyone) seems very hard to justify.

Parfit has suggested that what this sort of example demonstrates is that political egalitarians have not in fact been concerned with the relative positions of individuals. Rather, they have been concerned with the absolute position of the worse off. Parfit advocates what he calls:

The Priority View: *Benefiting people matters more the worse off these people are.*  
(Parfit 1998: 12)

On this view, if we consider the levels of well-being of the existing and future populations in our example, we shall prefer *Inequality*<sup>2</sup>. The inequality in this outcome does not matter at all; what does matter is improving the position of the worse-off group (i.e. the existing population).

But Parfit's statement of the view is incomplete. How exactly does benefiting the worse off matter? One obvious interpretation of the view is:

The Absolute Priority View: *When benefiting others, the worst off individual (or individuals) is (or are) to be given absolute priority over the better off.*

Consider the following distributions, where WP is the worst-off person in the existing population, and each group contains one thousand people:

	WP	Existing population	Future population
<i>Status Quo</i>	8.9	9.1	9.1
<i>Absolute Priority</i>	9	9.1	9.1
<i>Expanded Concern</i>	8.9	100	100

The absolute priority view, in this case, favours moving from *Status Quo* to *Absolute Priority* rather than *Expanded Concern*. Because the absolute priority view is an 'innumerate' maximin principle, it will, like Rawls's 'difference principle', allow

the smallest benefit to the smallest number of worst off to trump any benefit, however large, to any but the worst off, even the next worst off. And this, it may be thought, is almost as absurd as levelling down.

What is required, then, is a principle that allows us to give priority to the worse off, but in giving priority to take into account the size of benefits at stake and the numbers of people who will benefit. The most plausible such principle, which can avoid the conclusion that large numbers of tiny benefits to the very well off can trump some smaller number of huge benefits to the very badly off, is:

*The Number-weighted Priority View: Benefiting people matters more the worse off those people are, the more of those people there are, and the larger the benefits in question. But the number of beneficiaries matters less the better off they are.*

But now consider an example in which you can offer fine wine to different groups of well-off individuals, now or in the future:

	<i>10 Existing people</i>	<i>10,000 Future people</i>
<i>Status Quo</i>	80	90
<i>Lafite 1982</i>	81	90
<i>Latour 1982</i>	80	91

Here it seems somewhat absurd to think that the existing people should be given any priority over future people. Indeed, what the wine example brings out is that, once recipients are at a certain level, any prioritarian concern for them disappears entirely. This implies that any version of the unrestricted priority view must fail: when people reach a certain level, even if they are worse off than others, benefiting them does *not*, in itself, matter more. What is required is an account that incorporates a threshold above which priority does not count, but below which it does—and we may assume that it will be priority that takes into account both size of benefits and numbers of recipients, so as to avoid the problems of the absolute priority view, as well as how badly off those below the threshold are. What is to happen above the threshold? The placing of the threshold might well be understood as a tempering of act-utilitarian accounts of distribution, so above the threshold goods and bads should be distributed so as to maximise well-being impartially.

Where is the threshold? This is a very difficult question. One answer that seems quite plausible to me is a life of high value that lasts eighty or so years. What seems to be important, on whatever model one adopts, is that the threshold is tied to the notion of a lack. Where the individual in question has *enough*, special concern seems to give out—though of course their well-being will play its part in the overall good. This gives us:

The Sufficiency Principle: *Special concern for any being B is appropriate up to the point at which B has a level of well-being such that B can live a life which is sufficiently good.*

So it might be thought that the principle of justice between generations that we should adopt is based on the idea that, rather than maximising overall well-being in the future, we should see it as a reasonable aim (perhaps one among others) that future people (and of course existing people too) have lives which are sufficiently good.

### 3. NON-IDENTITY AND PERSON-AFFECTINGNESS

Now, however, we have to remove one of the theoretical assumptions on which we have been so far relying. We have been assuming that those who exist in different possible futures are the same individuals. But of course they will not be. The very identity of future people depends on which decisions we now make. So as long as the lives of future people are better than nothing, they cannot complain if past generations have used up resources and damaged the environment. For if they hadn't done that, then these future people wouldn't exist. Some others would exist instead.

To see this, consider a case adapted from Parfit (1984: 362).

*Resources. A global community has to decide how to use its scarce resources. It has two main choices. Policy (1) will continue with rapid depletion of resources. In about three centuries, this will cause the level of well-being of those then existing to be significantly lower than current levels. But these individuals will still have lives of positive value to them. Policy (2) will involve serious conservation of resources*

*and research into alternatives. This will slightly decrease levels of well-being over the next three centuries. But levels of well-being after that time will be significantly higher than they would otherwise have been.*

Imagine that this community chooses policy (1). In three centuries, the individuals then alive will not be able to complain about that earlier decision. For if policy (2) had been chosen, *they* would not have existed. For the choice of such a policy has major social consequences which affect the very identities of the people who are born.

Utilitarianism has no problem with non-identity. It will advocate choosing policy (2) because all that matters is that the total level of well-being in the history of the world be as great as possible. What about prioritarianism? If we view prioritarianism as a conception of just distribution according to which we should allocate goods and bads in such a way that no one has anything to ‘complain’ of, it will be hard to apply the principle in relation to future generations. Imagine that we choose a policy of resource-depletion which has the result that one group of individuals in future do significantly worse than some other group. The worse off appear to have no complaint against us, since there is no way that *they* could have been better off. If we had chosen a different policy, they would not have existed. It may of course be the case that they have such complaints against the better off in their world. And we may decide that one reason against our choosing a policy of depletion here is that it will result in an outcome in which one group of people have a claim of justice against another group. But this seems to be moving in the direction of a non-person-affecting or impersonal version of prioritarianism, since any duty we have to avoid causing such outcomes is not plausibly understood as a duty to any particular people.

How, then, should we understand prioritarianism in relation to future generations? In a suggestive paper on the topic, Nils Holtug defines the view as follows (Holtug 2007: 10–12):

*Prioritarianism. An outcome is (non-instrumentally) better, the larger a sum of weighted individual benefits it contains, where benefits are weighted such that they gain a greater value, the worse off the individual to whom they accrue.*

As Holtug points out, prioritarianism so understood supports the Repugnant Conclusion even more strongly than utilitarianism, since the benefits in the world

with the much larger population go to people who are very badly off, while those in the world of ten billion people go to those who are very well off. But there is something peculiar about the view understood in this way. The cases which lead us initially to adopt prioritarianism tend to involve a choice about which existing person or persons will receive a benefit. We have some special concern for the worse off, and this leads us to give them some degree of priority over the better off. And if we give the benefit to the worse off, the better off will in these standard cases retain whatever benefits they have. But in the case of the Repugnant Conclusion, we do not have existing people who are respectively worse off and better off. We have to decide which people to bring into being. And it is not clear why we should decide that it matters more to bring into being people who will be badly off in preference to people who will be less badly off. If we bring the badly off into existence, there will be no less badly off or 'better off'.

Impersonal prioritarianism, then, should not be understood in terms of weighting benefits more the lower the absolute level of well-being of their recipient. The prioritarian is indeed concerned especially with the well-being of the worse off, but her aim is, in the right way, to raise the levels here. So, when applied to the Repugnant Conclusion, prioritarianism may in fact favour the population of ten billion, because the 'worse off' (or the 'worst off') in that outcome do so much better than their analogues in the much larger population.

The best distributive principle governing future generations, therefore, will be a form of threshold-based prioritarianism or sufficientarianism, which will maximise well-being overall unless there are individuals in an outcome falling below the sufficiency threshold. If there are, benefiting these individual will be given special weight or priority.

#### 4. BIOTECHNOLOGY, HUMAN ENHANCEMENT, AND JUSTICE

Many existing people have complaints based on sufficientarian justice against others. One obvious example is those malnourished children in developing countries who die early as a result of easily preventable disease. But there are other ways to increase well-being than preventing disease. And this brings us to biotechnology and its potential for positively enhancing human well-being, in a non-therapeutic but still beneficial way.

I have admitted that where the threshold of sufficientarian concern lies is unclear.



But biotechnology, along with other measures, may place us in a position in which most future people have lives at a level of well-being equivalent to the *most well-off* individuals now alive. Consider, for example, memory enhancement. The first to benefit greatly from memory-enhancing drugs may well be those suffering from conditions such as Alzheimer's. But it may also be that these drugs will be developed to the point at which all human beings have memories as good as, or even better than, those with the best memories living today. On any plausible view of human well-being, it is easy to see how the possession of such a memory could increase well-being: more people could enjoy more activities, and to a greater degree; more preferences could be satisfied; greater accomplishments would be more widely available; and so on.

Or consider human relationships. Many human beings are made very unhappy through their inability to engage well in close personal relationships with others. This again seems true on any plausible account of well-being: good relationships enhance felt contentedness and enjoyment; they satisfy deep desires and needs; and they are thought by many to serve as independent constituents of well-being in themselves. It may be that germ-line genetic engineering will enable future human beings to be more co-operative, understanding, and patient with one another than many existing people. Again this could bring many people above the threshold of sufficientarian concern who would have otherwise been below it. The correct principle governing our actions in relation to future generations, then, appears to support further appropriate research and development of biotechnology.<sup>2</sup>

2. For comments on an earlier version of this paper, I am most grateful to the audience at the 10th Uehiro-Carnegie-Oxford Conference, held in Tokyo in May 2012. For very helpful advice and discussion, I wish to thank John Broome, Tom Douglas, and Guy Kahane.

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# Biotechnology, Justice and Health

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## ABSTRACT

New biotechnologies have the potential to both dramatically improve human well-being and dramatically widen inequalities in well-being. This paper addresses a question that lies squarely on the fault line of these two claims: When as a matter of justice are societies obligated to include a new biotechnology in a national healthcare system? This question is approached from the standpoint of a twin aim theory of justice, in which social structures, including nation-states, have double-barreled theoretical objectives with regard to human well-being. The first aim is to achieve a sufficient level of well-being in each of six core dimensions. In the special case of healthcare systems, this aim is focally but not exclusively attentive to achieving health sufficiency as one of the core dimensions. The second aim is to combat the emergence and persistence of densely woven patterns of systematic disadvantage that tend to undermine the achievement of a sufficient level of health and the other core elements of well-being of some persons and groups. Judgments about entitlements to health related resources, including new biotechnologies, are made in light of a threshold notion of health sufficiency. What is enough or sufficient health? The answer that is defended here is that sufficient health is enough health for a decent human life, understood as enough health to live a full life course without preventable, significant functional disability or decrement in health, or treatable pain or suffering. When a state must include a new biotechnology in its national healthcare system is also influ-

1. Co-authored by Ruth Faden and Madison Powers, presented by Ruth Faden at the Uehiro Carnegie Oxford Conference, May 2012.

enced by ancillary concerns about the connection between health and other core dimensions of well-being. What counts as a significant functional impairment or health decrement is thus explicated, in part, in relation to the theory's sufficiency aim for the other essential dimensions of well-being, and thus for a decent life, overall. Those elements of health that play a critical role in the experience of sufficient reasoning, affiliation, security, respect and self determination are especially important; any loss of health function or capacity that threatens the individual's prospects for sufficiency in these other dimensions, including the relational egalitarian concerns they entail, constitutes a significant functional impairment. Within national borders, individuals are thus entitled to those health-related goods and services that are essential for a sufficiency of each of the dimensions of well-being; with regard to self determination and respect, what is sufficient by way of guaranteed access to specific goods and services is going to depend on the implications of such access for where an individual stands in relation to her co-nationals. The content of any entitlement to health-related goods and services is also necessarily dynamic. What can be done for health and the other core dimensions of well-being as a function of technological innovation and diffusion is in constant flux. The paper concludes by considering the implications of this analysis for the conditions under which states are obligated to include access in their healthcare systems to one biotechnology, deep brain stimulation.



New biotechnologies have the potential both to dramatically improve human well-being and to dramatically widen inequalities in well-being. In this paper, we tackle a question that lies squarely on the fault line of these two claims: When, as a matter of justice, are societies obligated to include a new biotechnology in a national health care system or otherwise ensure that all have reasonable access to it?

The paper proceeds in three parts. We begin by explicating one way of thinking about this question by providing a very brief sketch of our twin aim theory of justice as presented in our book, *Social Justice* (Powers and Faden 2006), and a new book currently in progress. In Part Two, we focus on the concepts of a decent life and sufficiency, which play prominent roles in our theory by helping to explicate what goods and services individuals are entitled to receive. In Part Three, we illustrate some of the implications of our approach by looking more carefully at an existing neurotechnology, deep brain stimulation, that has some promising new applications.

## PART ONE: A TWIN AIM THEORY OF JUSTICE

For us, claims about justice in access to healthcare goods and services draw their foundational legitimacy—their ultimate justificatory structure—from the essential and direct role that these goods play in human well-being, which we take to be the primary object of social justice. Ours is a twin aim theory of justice, in which social structures, including both global institutions and nation-states, have double barreled objectives or aims with regard to human well-being. The target of each barrel is morally distinct from the other, but strategically reinforcing.

One aim is the improvement of well-being. In the special case of healthcare systems, this aim is focally but not exclusively attentive to improving health as a core dimension of well-being. The other aim is to combat, whether by prevention or amelioration, the adverse effects on well-being caused by densely woven patterns of systematic disadvantage that profoundly compromise (or will compromise) the health and other core elements of well-being of some persons and groups.

The well-being aim begins with a broadly Aristotelian-inspired effort to identify some core components of human well-being that are suitable objects of concern within a theory of justice. We specify core elements of human well-being as having three characteristics. They are (1) typical of normal human development and valuable for their own sakes, apart from any further good they might bring; (2) of value to anyone, on reflection, whatever their particular life projects, chosen activities, or personal aspirations might be; and (3) humanly alterable and profoundly and pervasively influenced in their development and maintenance by basic social institutions and social practices.

## THE WELL-BEING AIM AND ITS CORE ELEMENTS

The well-being aim of social justice is defined in terms of a level of sufficiency of each of its core elements. Although it is beyond our task here to give full consideration to how sufficiency for any element is assessed, we will have more to say about this later, particularly with regard to health. The key point for now is that sufficiency represents a moral minimum of justice. Inequalities in well-being in which individuals fail to meet even this moral minimum are among those most morally urgent to address.

Our list includes six core elements. Though these six overlap in terms of both determinants and effects, each is of independent and equal moral value.

1. We have already mentioned health. Although health is the element of human development and flourishing most intimately connected with the biological or organic functioning of the body, the absence of health refers to more than biological malfunctioning or impairments. Being in pain—even if that pain does not impede proper biological functioning—sexual dysfunction, and infertility are also incompatible with health.

2. The second element is personal security from actual physical and psychological harm, as well as the threat of such harm.

3. The third element is the development of reasoning, both for deliberation and choice and for the formation of beliefs and inferences regarding facts about the natural and social world.

4. The fourth element involves the formation and maintenance of personal attachments of various kinds with varying degrees of intimacy, commitment, and affective engagement.

5. The fifth element is the respect of others. Here, the central concern is that individuals should be able to live under social conditions in which others judge and treat them as moral equals, as persons worthy of the same sort of treatment any other person merits; and among co-nationals, as fellow citizens, as persons having comparable political standing.

6. The sixth element is self-determination, the ability to shape the broad contours of a life, to have some significant say over the general course of one's life. Put slightly differently, self-determination is about living a life that is not in crucial respects under the domination and control of others or the tyranny of profound necessity.

The importance of these last two elements to our overall account of well-being cannot be overstated. Whether in the domestic case, in which equal moral standing

and political standing are at issue, or in the international case, where moral equality is the paramount concern, the intention is that no-one should face the tyranny of deprivation or the threat of domination or oppression of others. Thus, ensuring sufficient well-being involves securing two important goods: the good of living a self-determining life and the good of having a social standing involving the respect of others.

### THE SYSTEMATIC DISADVANTAGE AIM

The core concern of this aim of justice centers on systematic disadvantage. Systematic disadvantage occurs in a variety of familiar forms. Ethnic and gender-based oppression are paradigm examples, as are pervasive forms of economic and cultural subordination. In each of these, the causal vectors of disadvantage are multiple and mutually reinforcing. In the worst instances, systematic disadvantage exhibits a cascading effect in which each deficiency in one dimension of well-being contributes causally to the reduction of well-being in some other respect (poor health leads to impairments in reasoning, for example). Multiple strands of the densely woven vectors of disadvantage thereby magnify and increase the risk of negative consequences across the board. The result is that the greatly diminished well-being prospects for those who are systematically disadvantaged are compounded, perpetuated, and sustained over the course of a lifetime and, frequently, over the course of generations.

It is important to emphasise that the impact of patterns of systematic disadvantage is not equal across the course of life, and is not solely a result of greatly restricted opportunities for choice among mature, autonomous adults. When experienced in childhood, as is frequently the case with extreme poverty, the negative effects of systematic disadvantage at this critical stage in human development can be so devastating as to put the prospects for a decent adult life permanently out of reach.

In short, our theory is meant to include a special concern for the familiar forms of systematic disadvantage inherent in various forms of subordination or oppression based on group membership and resulting from extreme poverty; but our critique of systematic disadvantage also encompasses any kind of social structural impediments to securing sufficient well-being—and thus to human development—in the earliest stages of life, even when its predictable consequences are not intended.

## PART TWO: SUFFICIENCY AND A DECENT HUMAN LIFE

To summarize, then, our twin aim theory of justice has as its focal object the design of social arrangements having profound and pervasive impact on well-being. The first aim is to achieve a sufficient level of well-being in each of the six core dimensions. The second aim is to combat the emergence and persistence of densely woven patterns of systematic disadvantage that tend to undermine the achievement of a sufficient level of well-being in each of its core dimensions.

As we have already noted, each dimension is essential in that a reflective agent, taking stock of the most basic requirements for a decent human life, would want each one, whatever else she might want; and she would judge that none is reducible to others on the list. While a decent human life is surely possible for persons lacking in some core dimension—those who are in poor health, for example—each dimension earns a place on the list because of its presumed contribution to a good life for anyone, whatever their particular life plans and projects. Moreover, each is relevant to creating just social arrangements, since these arrangements exert profound and pervasive influence over the course of a life and should therefore reflect factors that are important to ensuring well-being.

There is much that could be said about the work that the notion of a decent human life does within our theory. A few comments should suffice for now. A decent life requires more than mere subsistence, for example, but less than a maximally flourishing life for all. These points are familiar from contemporary discussions of human rights, which aim to articulate the minimum demands of a transnational standard of well-being (Nickel 2007: 61–66, 98–103, 138–42; Buchanan 2010).

In addition, in accordance with relational egalitarian concerns, our account of a decent life involves the goods of respect and self-determination. In this respect, our account is comparable with a position taken in the human rights literature. James Nickel, for example, suggests that human rights may involve reasonable claims for things other than food, shelter, and education; such as some measure of control over one's own life and some social guarantees of equal standing in political and legal arenas (Nickel 2007: 63–64).

Having emphasised self-determination and respect in our account of well-being, we can make a few observations about what would be *contrary* to a decent life. A decent life is not one that is marked by servility, slavishness, the necessity to grovel, or deep dependence on the good will or whim of others for the most basic requirements of



life. A decent life is not one marred by the most degrading aspects of poverty, including squalor, helplessness, extreme vulnerability, or the inability to provide for one's own children and family (Powers and Faden 2006: 138–41, Margalit 1998). A decent life cannot involve being treated as less than a full member of the human community or having one's most vital concerns accorded little or no weight. Indeed, to be treated as a second-class citizen within one's own society is to be treated as a second-class human being, as someone who is not due the full measure of respect and concern accorded to other members of a common political community (Margalit 1998).

A decent human life does not involve being subjugated, marginalised, stigmatised, infantilised, or deprived of the full use of one's mature faculties.<sup>22</sup> Much more might be said along these lines, but the essential point we make here is that these relational aspects of well-being earn a place on the list of constituents of a decent human life as securely as concerns about health, cognitive development, and physical security. Moreover, they function as a check on how we should understand what counts as sufficiency for other constituents such as health.

Both the notion of a decent human life, and the relational egalitarian concerns that are built into our conception of well-being, bear on what counts as sufficiency in health. They also bear on our answers to questions of entitlements to health care goods and services instrumental to health sufficiency. We identify minimal conditions for health, for example, in part by reference to the impact of relative inequalities on social standing and the ability of individuals and groups to lead self-determining lives and avoid the kinds of conditions inimical to a decent human life. We then make judgments of entitlements to health related resources, *including new biotechnologies*, in light of that notion of health sufficiency, influenced by ancillary concerns about the connection between health and other core dimensions of well-being and how resource policy choices impact the full set of well-being concerns.

## HEALTH SUFFICIENCY AND HEALTHCARE ENTITLEMENTS

What is enough for sufficient health? And what instrumental goods and services, what resources, are individuals entitled to as a consequence?

Our answer to the first question is: people must have enough health for a decent human life. For us, this means enough health to live a full life course without signifi-

22. Many of these points are developed in Mill 1869, which has influenced our own views about what is central to well-being in the context of a decent human life.

cant disability or decrement in health, or pain or suffering that can be reasonably prevented, treated or relieved. Clearly and intentionally, this is a higher threshold than one that would require only enough health to escape severe pain or suffering, death in childhood or early adulthood, or the most egregious of disabilities.

At the same time, however, our requirements fall short of what is demanded for a maximally flourishing life, which would involve maximal health for all. That the world's oldest person just celebrated his 115<sup>th</sup> birthday in Japan, and increasing numbers of people in many countries are now living into their 90s, do not entail that the threshold of health sufficiency requires all to do so. It is sufficient that all live through each stage of life, including old age. Similarly, health sufficiency does not require the absence of any and all limitations on health-related quality life. It is enough that all live lives unmarked by significant disabilities or decrements in health that could reasonably be prevented or mitigated, and pain and suffering that could be alleviated.

What counts for us as a significant health decrement is explicated, in part, in relation to our theory's sufficiency aim for the other core dimensions of well-being, and thus for a decent life overall. Those elements of health that play a critical role in the experience of sufficient reasoning, affiliation, security, respect and self determination are especially important; any loss of health function or capacity that threatens the individual's prospects for sufficiency in any of the other dimensions, including the relational egalitarian concerns they entail, constitutes a significant impairment.

What instrumental goods and services, what resources, are individuals entitled to as a consequence of this sufficiency threshold?

Our formal answer is deceptively simple. Individuals are entitled to those health-related goods and services that are required for a sufficiency of health and the other essential dimensions of well-being, as needed for a decent life. With regard to self determination and respect, what is sufficient by way of guaranteed access to specific goods and services depends on an individual's relation to her co-nationals, who also require access.

The global and domestic health-related goods and services to which an individual is entitled will change over time. What can be done to protect, restore and promote health and the other essential dimensions of well-being is constantly changing as a result of technological innovation and diffusion, as well as cost and value.

At minimum, interventions that produce at least moderate value at no more than moderate cost are likely candidates for inclusion in the content of the entitle-

ment. For us, the value of a health intervention is defined not only in terms of its impact on health morbidity or life expectancy or pain, but also in terms of the effect it might have on prospects for achieving sufficiency with regard to reasoning, affiliation, security, respect and self determination. Thus, for example, the value of providing contraception includes not only its impact on a woman's prospects for surviving into older age, but also how control over whether and when to become a parent affects her prospects for living a life that is sufficiently self determining, with adequate social respect and sufficient capacity to care for those she loves. Also, in some cases, value can permissibly be cashed out not only in terms of the impact on the well-being of those who are the direct recipients of a health good or service, but also on the well-being of those who care for them, such as the loved ones of people with special needs.

The national entitlement may also include interventions that are higher cost or lower value, but only when this would not negatively impact the availability of essential goods and services required by all citizens. Here, our theory mirrors, with a moral grounding rather than a strict efficiency grounding, the concern captured in allocational efficiency in economics to avoid expenditures and entitlements that 'crowd out' goods and services that are necessary to secure sufficient well-being or a decent human life.

Also, it is important to emphasise that sufficiency in health and the other dimensions is pegged to a decent life, and not an infinitely elastic notion of human flourishing. To do otherwise would result in another kind of unacceptable crowding out, in which valuable goods such as the arts, play and recreation are pursued at the expense of goods more basic to well-being.

### PART THREE: NEW BIOTECHNOLOGIES AND THE EXAMPLE OF DEEP BRAIN STIMULATION

We turn now to the question of with which this paper began: When, as a matter of justice, are societies obligated to include a new biotechnology in a national health care system or otherwise assure that all have reasonable access to it?

Consider the example of deep brain stimulation (DBS). In DBS, guide wires are inserted through the skull and into the brain, where they deliver electrical currents to clusters of neurons that are no longer performing properly. DBS was first

employed to control the tremors of Parkinson's disease and is now routinely used in many countries to treat other movement disorders, such as seizures and Tourette's, along with recalcitrant depression.

In early 2012, the *New England Journal of Medicine* reported the results of an experiment to use DBS for yet a different purpose: to boost failing memory (Suthana et al. 2012). Two key memory regions of the brain were stimulated in 7 seizure patients, all of whom showed improved cognitive performance during stimulation. These findings have generated excitement about the prospect that DBS might become an effective treatment for dreaded memory disorders like Alzheimer's. Diseases and injuries that interfere with cognitive processes threaten prospects for sufficiency in virtually every dimension of human well-being. As patients with progressive dementias lose the capacity to recall even the basic who, what, where and when of their everyday lives, their suffering, and that of the people who love them, is enormous.

Much more work needs to be done to establish whether DBS will prove effective in preventing or mitigating the ravages of Alzheimer's and other severe memory-impairing disorders. However, assuming it does, and assuming that providing DBS to all relevant patients does not impact too negatively on responding to other sufficiency claims, then patients with Alzheimer's and the like would certainly be entitled to DBS under our sufficiency standard.

But also consider the following. Some of the seven epilepsy patients in the aforementioned experiment were *not* suffering from memory impairments that sometimes accompany seizure disorders, yet *all* of them did better on the cognitive tasks when their brains were being stimulated. This suggests that some people with normal cognitive function will likely seek DBS (or some other non-invasive neurotechnology such as transcranial magnetic stimulation) solely to get an intellectual edge.

We are now in the familiar and contested territory of the ethics of human enhancement, a complex set of issues that has generated a substantial literature (Buchanan 2011; Savulescu and Bostrom 2009, Harris 2007, President's Council on Bioethics 2003). We engage here only with one of these issues: the contentious relation between enhancement and justice, to which our account of sufficiency has at least a partial response.

Some argue that what is most morally troubling about biotechnological enhancements is their potential to exacerbate or create egregious inequalities in human

well-being. Some even hold that these technologies and social justice are on an inevitable collision course. Here we agree with Allen Buchanan's trenchant analysis that these criticisms are both overgeneralised and misguided (Buchanan 2011).

Even if it were possible to draw a sharp line between new biotechnologies that protect or restore health and new biotechnologies that enhance health or other dimensions of well-being, that difference would not entail that therapies and enhancements pose fundamentally different challenges for the kind of justice theory that we defend. In both cases, the same basic question is raised: as the technology diffuses, under what conditions, if any, are individuals entitled to it as a matter of justice?

Whether a biotechnology that enhances memory or any attribute critical to reasoning and cognitive performance should become a service to which individuals are entitled depends at least in part on the impact of access to that technology on considerations of relational equality. Put another way, a key question for us is whether, at some point in the diffusion of DBS in society, people without DBS would be so deprived in absolute terms, or systematically constrained relative to what is possible for others, that they cannot live decent lives as human beings or as members of a particular society.

Aim 2 of our theory, which we have not examined in depth here, focuses on the profound injustices that arise from conditions of systematic disadvantage. However, not all inequalities confer advantages and disadvantages, and even those that do may not necessarily place others in a position of systematic disadvantage. What we are concerned about are the kinds of disadvantages that are so systematically oppressive that they prevent people from having decent lives.

Imagine a future in which so many people have DBS-enhanced memory that the unenhanced have no option but to take the lowest, most menial jobs. In such a case, the negative impact of not being enhanced bleeds into many if not all of the other dimensions of well-being. Without the enhancement, you cannot lead a self-determining life, you cannot understand the world around you well enough to be able to evaluate options and plan the way others can, you cannot assert your own interests in a meaningful way in the appropriate forums, and you cannot interact with others with a sense of your own comparable standing but instead feel only shame or embarrassment.

If not having been treated with DBS renders you like the crossing sweeper Jo to the wealthy landowner John Jarndyce in Dicken's *Bleak House*, feeling unworthy of

shelter in the other's person home even when deathly ill, then DBS for memory enhancement would fall within the entitlements of the sufficiency standard under our account.

Alternatively, imagine a future in which not having DBS is disadvantageous in a way comparable to not being able to attend an elite university. Although others with enhanced memory may do better in many arenas of life, much as the graduates of an elite university benefit from their superior connections and education, your information processing skills are still adequate for participation in the economic and cultural life of society as a moral and political equal. You are still able to navigate the social world sufficiently to determine the broad pathways of your life and to advocate for your interests. You do not feel, nor do others perceive you, as less worthy of respect and dignified treatment because you are not DBS-enhanced. In such a world, DBS for memory enhancement would fall outside what sufficiency would require, and would be ruled out as an entitlement.

Consider a further twist on the DBS example. Imagine that in affluent countries there is universal access to DBS enhancement and that the global affluent also avail themselves of the intervention. The comparative disadvantages of not being enhanced, which we further imagine are as oppressive as described in our first DBS scenario, now fall on the world's poor. Because of continued and escalating global interaction, these people are so systematically constrained relative to what is possible for others that they cannot live decent lives as human beings or as participants in the global order. In such circumstances, DBS enhancement would be required by our entitlement standard, transnationally as well as nationally.

In summary, the standards we set for identifying the goods and services that fall under the sufficiency threshold for health and the other dimensions of well-being are necessarily comparative. These standards are also necessarily dynamic, as dynamic as the creativity that fuels the life and engineering sciences towards technologies that for some seem almost beyond imagining. Which technologies are required for sufficient well-being, for a decent life, will change over time and are in part context specific. The answer to that question, and to when on the diffusion of innovation curve the demands of justice are triggered, cannot be given with algorithmic precision. But there is no necessary reason to conclude that these answers, or the approach to these answers, must be different when the technology is aimed at what some view as enhancing rather than protecting human biology, or even human nature.

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# Hybrid Nature of Causation

## *A Consideration from Some Ethical Issues*

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### ABSTRACT

In this paper I will explore the nature of causation in our ethical judgements. Generally speaking, the causal relation is regarded as something to be objectively confirmed. This is certainly true, but is not perfectly true. There are several cases where the causal relation could not be confirmed in principle only by investigating something objective in a scientific or statistical way. I will examine two ethical cases. The first is the case of the causal relation between exposure to low dose radiation and dying of cancer, which has become controversial because of Fukushima nuclear plant's accidents since March 11th, 2011 in Japan. The second involves causal relations in which the cause of the effect is the non-occurrence (rather than the occurrence) of an event, a typical example of which is the alleged deterrent effect of the death penalty. I aim at clarifying that the causal relation involves something narrative as well as objective, whereby I hope to show the hybrid nature of causation.



### CAUSATION MATTERS

In this article, I will argue that a causal relation appearing as a key idea in ethical or social justice issues is so perplexing that we should be extremely careful in apply-



ing it to those issues. It is theoretically important for us to be free from presuppositions or conceptual biases while making causal judgements. I will develop my argument by focusing in particular upon the two following cases:

1. *Death penalty deters people from committing crimes in the future (DEDP).*
2. *Exposure to low-dose radiation causes people to die of cancer (ELDR).*

Obviously, ELDR is a kind of causal claim that asserts the causal relation between exposure to low-dose radiation and cancer death. Japan has been subject to complete and utter confusion about ELDR since 11 March, 2011, when a massive earthquake and tsunami occurred, bringing about equipment failure and damage that resulted in the release of radioactive materials at the Fukushima nuclear power plant. We have to admit that some radiation or radioactive matter was emitted from the nuclear plant and we—and in particular, people living in the eastern parts of Japan—have been exposed to a higher degree of radiation than before. However, the true problem here is not our increased exposure to radiation; instead, it is precisely the causation between exposure to radiation and cancer death. If such causation does not exist at all, there is no problem, no matter how much radiation we are exposed to. Sometimes people consider the issue of radiation exposure as a fundamental problem independent of its causal relation to health problems, which is a grave error. We have to focus on the essential issue, that is to say, the causal relation.

How, then, should we understand DEDP? I am fully convinced that DEDP is another kind of causal assertion. What DEDP asserts is that the existence of the death penalty system causes a decrease in serious crime. Or, more precisely, DEDP claims that the existence of the death penalty causes the non-existence of serious crime. This may seem a strange sort of causal relation; however, it is undoubtedly a causal relation. In any case, to understand causal judgments such as DEDP or ELDR, which are deeply entrenched in our moral decisions, we must focus upon causation itself. Therefore, let us begin an analysis of causal relations from a philosophical point of view.

## A RELIC OF A BYGONE AGE

We observe causal relations in physical phenomena. I drop my pen on the floor, and a sound is heard. This is one of the clearest examples of a causal relation. A cause occurs, immediately followed by its supposed effect. However, we often take two events separated by a long interval to be causally connected. For instance, we could say that

- \* Heavy snowfall caused a traffic jam (Proposition 1).

In this case, the moment it snows is not necessarily the same moment the traffic jam occurs. Nevertheless, we have no problem in understanding these events to be causally related. Roughly speaking, we could safely say that natural science primarily aims at clarifying the causal relation in this world.

Bertrand Russell once fiercely criticised the notion of cause by pointing out the impossibility of necessary connection between cause and effect in the physical world given the structure of time-series. Moreover, he presented his unique view of science in terms of functional relations rather than causal ones. Russell's argument was as follows:

i) *'No two instants are contiguous, since the time-series is compact'* (Russell 1956: 177).

ii) *'If there are causes and effects, they must be separated by a finite time-interval  $t$ '* (Russell 1956: 177).

iii) *'However short we make the interval  $t$ , something may happen during this interval which prevents the expected result'* (Russell 1956: 179).

Therefore, it is impossible to define the causal relation in terms of (spatio-) temporal contiguity.

Russell gives a negative evaluation of causal concepts because, as we saw, it is theoretically difficult or impossible to explain the occurrence of cause and effect in the time-series. He argues that

*the law of causality, I believe, like much that passes muster among philosophers, is a relic of a bygone age, surviving, like the monarchy, only because it is erroneously posed to do no harm. (Russell 1956: 173)*

What then about the possibility of interpreting cause as occurring completely simultaneously with its effect? Unfortunately, this route might not be at all promising because of Hume's famous objection against the simultaneity theory of causation:

*If any cause may be perfectly co-temporary with its effect, 'tis certain ... that they must all of them be so ... The consequence of this wou'd be no less than the destruction of that succession of causes, which we observe in the world; and indeed, the utter annihilation of time. (Hume 2000: 54)*

Consequently, if a cause precedes its effect, then it would not be the cause; and if a cause is simultaneous with its effect, the annihilation of time would result (setting the possibility of backward causation aside here). As far as we accepted a combination of their arguments (Hume's argument itself seems to be reasonable although Russell's might not be so), causal relations do not obtain; contrary to our common sense.

However, we still continue to use causal notions in everyday life as the example of the snowfall and traffic exemplifies, even though a hundred years have passed since Russell made his argument. The same is true in academic research. Medical research still seeks causes of particular diseases. Etiology comprises one of the fundamental cores of medicine. Why is this so? It seems to me that Russell overlooked the wide range that causal notions cover. Or, at least, Russell intentionally or unintentionally restricted the domain of causality too much. A couple of points need to be clarified.

First, we have to examine the tasks philosophy should be engaged in. In principle, there could be two possible tasks of philosophy with regard to how to deal with our ordinary concepts: (1) Philosophy should try to alter our dictionary or eliminate some words in the dictionary by exposing something vague or imperfect about our ordinary concepts; or (2) philosophy should elucidate what implications could be drawn from our ordinary concepts, accepting something vague or imperfect in those concepts as reality or defaults. As far as I understand, Russell seems to be engaged in conducting the first task. His strategy is analogous to what is called eliminativism in the field of the philosophy of mind. However, I cannot help thinking that philosophers ought not to violate the right of editors of dictionaries. Editing dictionaries is

beyond the territory of philosophers as they are neither omnipotent nor authorised to deal in all things. In this respect, the first task Russell focused on seems to distort the proper practice of philosophy. As per my understanding, the second task looks overwhelmingly sound in comparison to the first. That is, philosophy should accept the actual usage of causal concepts and scrutinise those rather than abandoning them as Russell suggested. This might explain why Russell's arguments on causal concepts have not been influential.

### PHYSICAL AND METAPHYSICAL

The second point to note is that Russell seems to require an overly meticulous precision in specifying the notion of cause. He seeks location of the cause of a particular effect in time so that the cause can be claimed to be nowhere. At first glance, this sounds rigorous enough to be suitable as philosophical analysis. However, in reality, this rigorous attitude to causal concepts is unfortunately inappropriate. Certainly, we apply causal concepts to physical phenomena to understand the situations occurring in the world; however, the method we use to apply these concepts differs from the method used to apply concepts of perceivable events or objects. We can, theoretically, identify events or physical objects by denoting those. To put it another way, generally speaking, events or physical objects must be the ontological basis for us to understand the world in an extensional manner so that we can identify (at least some of) them by definition. Otherwise, we cannot begin our understanding of the world. However, the same is not true of causal concepts. Simply speaking, a particular cause of a particular effect cannot be uniquely identified or specified in principle, which is the very nature of the notion of cause.

This is illustrated by the snow and traffic proposition above. In the proposition, the heavy snowfall is assigned as the cause of the traffic jam. We often believe propositions like this to be true whilst also believing similar, apparently competing propositions to be true. It is perfectly possible, for example, to assign the cause of the traffic jam to the road network, when we judge that the traffic jam would be unlikely to occur even after heavy snowfall if the road network were more orderly. This assignment of the cause to the road network would be more persuasive if the neighbouring city with an excellent road network suffered no traffic jams at all despite having the same amount of snowfall. Similarly, it is perfectly possible to assign the cause to the large number of traffic signals if the neighbouring city with a smaller number of traffic

signals suffered no traffic jams at all despite having the same amount of snowfall. In those cases, heavy snowfall works only as a trigger or a sufficient condition to begin the true cause.

Where does this flexibility in the notion of cause come from? Why do each and all of those different assignments sound appropriate? This is because a causal relation itself is intrinsically unperceivable so there is room to change the assignment of the cause to a certain extent. The unperceivable character of cause was classically pointed out by David Hume, when he referred to constant conjunction in investigating causal connection. Only a temporal series or succession of different events or objects is perceivable; their causes are not directly perceivable. Therefore, we have to observe certain unique and external characteristics such as constant conjunction around what is supposed to be a causal relation to analyse causation. This situation seems to suggest the *metaphysical* nature of causation. In fact, the issue of causation is universally classified as a metaphysical problem. Historically speaking, causation has been discussed in the context of the relations between God and the world, or between free will and our actions, which are genuinely metaphysical. That is, although causation is supposed to obtain in the physical world, its nature is intrinsically metaphysical as well. However, at the same time, as far as we search for causation in physical phenomena, the flexibility of the assignment of a particular cause of a particular effect is restricted to a certain extent by physical possibilities (i.e. it is not the case at all that anything goes). In this respect, causation should be treated as a *physico-metaphysical* relation.

## CAUSATION AS TO INSTITUTIONAL FACTS

The argument about causation, however, must not stop here. The third point in relation to Russell's argument is that causal relations can matter considerably in ethical issues. This aspect of causation is completely overlooked by Russell's argument, although he might have had some positive reason to do so. Of course, causation between free will and human actions has been discussed as one of the traditional subjects in the history of philosophy, which Russell also notes. However, I want to highlight the context where the causal relation works in a replaceable way with the notion of responsibility based upon some social or institutional backgrounds. Let us consider these three examples:

- ❖ The president's inactivity caused the bankruptcy (Proposition 2).
- ❖ Her careless pass caused our defeat (Proposition 3).
- ❖ His emphasis on the danger of radioactivity caused many people's radiophobia and political protest against nuclear power stations (Proposition 4).

Those are perfectly appropriate and understandable as assertions of causal relations despite being impossible in principle to reduce those relations to physical causation, because those causal relations obtain only based upon some institutions.

Perhaps this range covered by causal concepts, namely, institutional and physico-metaphysical phenomena, could be regarded as corresponding to two types of facts once proposed by John Searle. He proposed a dichotomy between brute facts and institutional facts, and gave the following examples of brute facts (Searle 1969: 50):

- ❖ This stone is next to that stone (Proposition 5).
- ❖ Bodies attract with a force inversely proportional to the square of the distance between them and directly proportional to the product of their mass. (Proposition 6).

On the other hand, Searle gives the following examples of institutional facts (Searle 1969: 51):

- ❖ Mr Smith married Miss Jones (Proposition 7).
- ❖ The Dodgers beat the Giants three to two in eleven innings (Proposition 8).

Searle distinguishes institutional facts from brute facts as follows: there is no simple set of statements about physical or psychological properties of states of affairs to which statements of institutional facts are reducible (Searle 1969: 51). If we adopt the scheme such that causation obtains between facts (I believe this is actually the case), we could naturally apply causal relations to institutional as well as brute facts. That is precisely what Russell overlooked or intentionally set aside.

## CAUSALITY AND RESPONSIBILITY

I believe it possible that this institutional aspect of causation universally permeates causal relations, at least at a fundamental level, although in that case the distinction between brute and institutional facts might finally be abandoned. We can at least propose this possibility as a research programme, where we are expected to elucidate the nature of causation by presupposing the possibility as a hypothesis and searching for what would result from the presupposition. In fact, the possibility could be confirmed to a certain extent by English usage of 'cause' and 'responsibility'. It is perfectly possible to replace Proposition 1 with the following:

- \* Heavy snowfall is responsible for the traffic jam (Proposition 1\*).

Needless to say, similar replacements make perfect sense in the cases of Propositions 2, 3 and 4. Relatedly, there is a paper by Elliot Sober entitled, 'Apportioning causal responsibility', where he uses the notion of responsibility as 'cause' (Sober 1988). Etymologically speaking, 'responsibility' and 'cause' originate from the same Greek word, 'αἰτία'. Etiology in medicine, of course, corresponds precisely to the original Greek word. (In Japanese as well, remarkably, there is a word meaning both 'cause' and 'responsibility', i.e. 'no-se-i'.) In addition, obviously, the notion of responsibility presupposes some institutional system. At least, a language of 'responsibility' seems to be rather different from a language of purely natural phenomena (i.e. phenomena at quantum-mechanistic level), as natural phenomena could admit an endless chain of how-questions in principle, whereas 'responsibility' and 'cause' seems to demand a stopping point somewhere by definition.

Consequently, if all this is true, it seems that the notion of cause intrinsically involves some *normative* implications given the intrinsic connection between cause and responsibility under certain institutional conditions. That is,

*Accepting 'A causes B' in some institutional conditions entails that 'we ought to attribute responsibility for B to A'.*

Let us return to Proposition 1. In a certain institutional context (in other words, in a customary context or from the viewpoint of, for example, the city government in this case), *the heavy snowfall* rather than the road network or the large number of traffic signals *ought to* be viewed as a cause of the traffic jam.

This suggests that causal judgements imply something narrative as well as objective because, speaking purely objectively, it is almost impossible to uniquely identify a specific thing as being responsible for (i.e. causing) a particular phenomenon. The process of uniquely identifying causes is arbitrary to an extent, hence narrative factors are needed to make judgements. To put it another way, as far as we understand ‘causation’ simply and in a restricted way as an objective mechanism (if any), ‘causation’ alone is insufficient to establish responsibility, particularly moral responsibility in a normative sense. The following remark by Michael Moore corresponds to this point:

*The moral view reflected in the structure of Anglo-American criminal law makes causation of some harm neither sufficient nor necessary for moral responsibility.*  
(Moore 2009: 21)

However, conversely, if we understand ‘causation’ in a broader sense to subsume the use of the concept of responsibility, ‘causation’ of itself should involve something narrative and normative. Moore’s remark, in reality, intimates that ‘causation’ intrinsically has a narrative or normative nature, as his main thesis involves elucidating problems of responsibility by connecting responsibility with causality. In fact, considerable evidence about our causal understandings, including those discussed previously, seems to indicate that the broader sense of ‘causation’ is actually dominant in our linguistic activities. We are at least permitted, therefore, to presuppose the broader sense of ‘causation’ as one hypothesis. Thus, for the time being, we can say that causal relations are not only *physico-metaphysical* but also *normative*. They are intrinsically *hybrid*. This is destined to be perplexing!

## NECESSITY OR PROBABILITY

I have already discussed three issues concerning Russell’s argument. However, there is also a fourth point to be noted: Russell’s argument presupposes that causal relations logically require the necessary connection between cause and effect. However, this presupposition is simply wrong, or at least incongruous with our everyday usage of causal concepts, as we ordinarily use causal concepts without the notion of causal necessity. We might reflect this feature of our ordinary attitude towards causal rela-



tions by introducing the concept of probability, which opens a new way (that started after Russell's argument at least as a philosophical discussion) to investigate the nature of causation.

The next example is one of the most popular cases referred to in this context:

- \* Smoking causes lung cancer (Proposition 9).

We do not apply the notion of causal necessity to propositions such as Proposition 9, as there are many exceptions. In fact, there are examples of people who enjoyed smoking into their 90s and subsequently died of old age.

How then do we verify whether such types of causal judgments are true or not? We verify them in terms of statistics or epidemiology; that is, we introduce probability. In this context, 'probabilistic causality' is the most dominant view, and has been developed through arguments by *inter alia*: Reichenbach, Good, Suppes, Salmon, Cartwright and Eells and so on. What then is the core idea of probabilistic causality? Here, I rely on Nancy Cartwright's formulation, paraphrased by Jon Williamson:

*C causes E iff  $P(E | CK) > P(E | K)$  for all states  $K$  of the  $E$ 's other causes that are not between  $C$  and  $E$ . (Williamson 2009: 193)*

This idea of probabilistic causality defines causation in terms of probabilistic dependence rather than only using probabilistic dependence as evidence of causal relation. In this sense, this claim is so strong that many objections and counterexamples have been raised.

In any case, DEDP and ELDR, raised at the beginning of this article, are good candidates for applying the idea of probabilistic causality. This is because neither DEDP nor ELDR make any commitment to a claim of necessary connection. Both DEDP and ELDR clearly admit of exceptions. Given this, we must seriously consider, at least at first, the idea of probabilistic causality as well as the hybrid nature of causation in order properly and carefully to evaluate the significance of both cases.

## DETERRENT EFFECT OF THE DEATH PENALTY

Let us now apply my arguments thus far directly to DEDP and ELDR, beginning with DEDP. The argument for the deterrent effect of the death penalty probably arises from 'common sense' thinking. For example, Pojman argues that 'there

is some non-statistical evidence based on common sense that gives credence to the hypothesis that the threat of the death penalty deters and that it does so better than long prison sentences' (Pojman 1998: 38–39). Specifically, this deterrent effect presupposes the utility calculus that a human being conducts, whether consciously or unconsciously, in terms of 'weighing the subjective severity of perceived censure and the subjective probability of perceived censure against the magnitude of the desire to commit the offence and the subjective probability of fulfilling this desire by offending' (Beyleveld 1979: 219). Therefore, if we presuppose the basic similarity of human conditions, it may be plausible to state the following about the deterrent effect of the death penalty: 'this can be known *a priori* on the basis of an analysis of human action' (Beyleveld, 1979: 215). However, in fact, the death penalty is specifically restricted to heinous crimes, such as consecutive homicides, which suggests that we must conduct empirical studies, case by case, if we want to confirm the deterrent effect of the death penalty. Therefore, the relevant question to ask about the deterrent effect is not whether the death penalty is theoretically effective or not, but rather how actually effective it is in restricted categories of crimes.

It is well known that there have been many statistical surveys concerning this issue. In particular, an economic investigation by Ehrlich is frequently mentioned as a typical example of statistical work on the issue. After examining detailed statistical data in terms of various factors, such as race, hereditary characteristics, education and cultural patterns, Ehrlich suggests

*An additional execution per year over the period in question [i.e. 1935–1969] may have resulted, on average, in 7 or 8 fewer murders. (Ehrlich 1975: 414)*

Of course, this estimation includes too many factors and presumptions to be perfectly accurate. Ehrlich himself is aware of this, and thus argues:

*It should be emphasized that the expected tradeoffs computed in the preceding illustration mainly serve a methodological purpose since their validity is conditional upon that of the entire set of assumptions underlying the econometric investigation ... however ... the tradeoffs between executions and murders implied by these elasticities are not negligible, especially when evaluated at relatively low levels of executions and relatively high level[s] of murder. (Ehrlich 1975: 414)*

Ehrlich's study provoked considerable criticism, most of which indicated insufficiencies in the statistical methodology of his study. Therefore, we should conclude that we are not able to infer anything definite from Ehrlich's study, although we should value the study as a pioneering work. Therefore, uncertainty still exists regarding the issue.

Van den Haag proposes an interesting argument based upon uncertainty peculiar to the deterrent effect of the death penalty. He considers two cases, Case 1 wherein the death penalty exists, and Case 2 wherein the death penalty does not exist. Risk or uncertainty exists in each case. On one hand, in Case 1, if there is no deterrent effect, we simply lose the life of a murderer in vain, whereas if there is a deterrent effect, some murderers and innocent victims in the future will be saved. On the other hand, in Case 2, if there is no deterrent effect, we save at least the life of a convicted murderer, whereas if there is a deterrent effect, we will lose the lives of some innocent victims in the future (Van den Haag 1969: 133–134). Conway and Pojman represent these outcomes by means of 'The Best Bet Argument' table, which I have slightly modified:

WAGER		
	<i>DE works</i>	<i>DE does not work</i>
<i>We bet DP works</i>	save: murderers and innocent victims in the future lose: convicted murderers	save: nothing lose: convicted murderers
<i>We bet DP does not work</i>	save: convicted murderers lose: innocent victims in the future	save: convicted murderers lose: nothing

*Note: DP represents Death Penalty and DE represents Deterrent Effect in the above table.*

Following this table, Conway assumes (after Van den Haag's suggestion that the life of a convicted murderer is not valued more highly than that of the unknown victims) the following numerical values for each case:

*A murderer saved* = +5

*A murderer executed* = -5

*An innocent saved* = +10

*An innocent murdered* = -10

Moreover, he assumes that for each execution, only two innocent lives are spared. Then, consequently, executing convicted murderers becomes a good bet (Conway 1974: 265–66, Pojman 1998: 40–41).

## NEGATIVE CAUSATION

Van den Haag's 'Best Bet Argument' is very interesting. However, Conway has already proposed a fundamental challenge to this argument; namely, this argument mistakenly regards the *actual* death of convicted murderers as being on a par with the *possible* death of innocent victims in the future (Conway 1974: 269–70). Certainly there seems to be confusion or possibly a trick in 'The Best Bet Argument'. I believe Conway's challenge is a reasonable reaction to Van den Haag's argument.

I will raise two problems regarding Van den Haag's argument. First, as I have already mentioned, we have to confirm that any argument—including Van den Haag's—supporting the death penalty because of its deterrent effect presupposes a causal relationship between the existence of the death penalty and people not killing others. (I presume crimes corresponding to the death penalty are killing people for brevity. I believe that this presumption is actually correct). For example, Pojman writes, 'the repeated announcement and regular exercise of capital punishment may have deep causal influence' (Pojman 1998: 48). However, epistemologically speaking, the presupposition is extremely difficult to confirm because the effect of this causal relationship is not a positive but rather a negative event, which is the event of *not* killing others. This is related to the philosophical problem of how to understand negative properties.

By negative properties we mean, for example, this room is not full of sea water; this room does not consist of paper; this room is not melting us, etc. We can immediately find that such descriptions of negative properties are almost endlessly possible. In other words, one identical event described by a positive property (e.g. this room is well lit) can be re-described in infinite ways in terms of negative properties. Take the example (that actually occurred in May 2012) that I am giving a presentation now in Tokyo; however, this event can also be described as 'I am not eating', 'I am not sleep-

ing', 'I am not killing others'(!), etc. The positive event, 'I am giving a presentation now' can be understood through a causal relationship. Probably the event was caused by my intention, which was caused by my relationship with the Uehiro Foundation and the Uehiro Centre of the University of Oxford. However, then, what about 'I am not killing others'? What caused my present state described as 'I am not killing others'? Was this caused by the existence of the death penalty in Japan? I was completely unaware of the existence of the death penalty in Japan when I gave the presentation. Could the death penalty be its cause? Could the negative event, 'I am not killing others', be an effect of the death penalty? If it is, it is tremendously difficult to say how.

Of course, someone may raise an objection that statistical correlation between the number of executions and the number of homicides is relevant in this context, rather than a singular causal relation. This could probably be confirmed in terms of the scheme of probabilistic causality that I introduced before. However, this kind of correlation between categories of events is too rough to predict a causal relationship between them. This, in my view, is the second problem with Van den Haag's argument. Causes to reduce or increase the number of homicides can be interpreted or estimated in various ways (considering confounding factors, such as education, economic situation, urban planning and so on). Therefore, in principle, there always remains the possibility that the apparent correlation between the death penalty and the reduction of homicides is merely accidental. There may be another, common cause that brings about both people's tendency to support the death penalty and the reduction of homicides. We should recognise that there is intrinsic uncertainty here. This point is a fundamental problem with the idea of probabilistic causality in general.

I wish to add one further remark, following my arguments above. Some data about probabilistic dependence with regard to the relation between the number of executions and the number of murders are academically worth collecting and investigating. This is because those data could work as evidence at the level of our conviction or persuasion, apart from purely objective confirmation of the causal relation concerned. This aspect corresponds to the physico-metaphysical nature of causation. However, this is not sufficient. We should reflect on how to reach a social agreement about whether or not the supposed causation between the deterrent effect and the death penalty functions as the justification for the death penalty. This issue lies not at the physico-metaphysical level but at the normative level. Statisticians who are

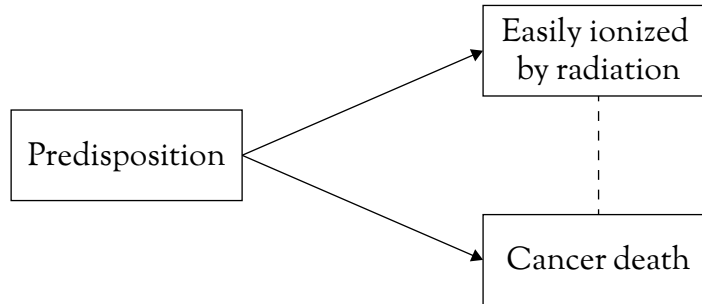
interested in the issue of the deterrent effect of the death penalty must conduct their research while being clearly aware of this normative aspect of the problem. We must avoid treating this issue as if it can be resolved by considering statistics alone. Of course, there is another more fundamental question about whether the death penalty should be retained (or revived) or abolished (or left abolished), which is beyond the topic at hand here.

## EXPOSURE TO RADIATION AND CANCER DEATH

Lastly, I return to the case of ELDR, which is, as I said, a very controversial topic recently in Japan. However, here I only focus upon the supposed causal relation between exposure to low-dose radiation and cancer death. First, we should say that we have to conduct further scientific research on this causal relation from epidemiological or molecular-biological perspectives. Only that research has the potential to provide the information necessary to decide how to tackle the problem. This is a relatively natural strategy given the physico-metaphysical nature of causal relations, although such research is not easy at all. In addition, we must point out that such research must involve scrutinising probabilistic relations. That approach is a characteristic of epidemiology or molecular biology.

However, in the same way as the case of DEDP, there are some crucial difficulties in investigating causation through studying probabilistic dependence.

First, as noted with regard to the case of DEDP, we could not eliminate the possibility that a common cause exists. We are now exploring causation between the exposure to low-dose radiation and cancer death. In addition, the causation is supposed to manifest itself in such a way that radiation ionises our cells to produce active oxygen which finally damages our cells and DNA, and the damage could result in cancer and death. However, we cannot theoretically deny the possibility that there is a common cause of both our being likely to be damaged by active oxygen and death from cancer. For example, it might be that some people have an inborn predisposition that is highly likely to cause them to be more easily ionised by radiation. At the same time, this inborn predisposition may be highly likely to cause them to suffer from cancer and die, irrespective of whether they are exposed to radiation or not. This possibility can be delineated in the next diagram.



In this diagram, the arrow represents probabilistic causation, and a dotted line shows only a non-causal correlation. If this is actually the case, avoiding exposure to radiation does not prevent us from dying of cancer. That may be useless resistance. If we have the relevant predisposition, we would probably die of cancer irrespective of whether we are exposed to radiation.

### SIMPSON'S PARADOX

In addition, when we make causal judgments based upon probabilistic dependence, we are involved in a serious paradox. Philosophers who refuse the idea of probabilistic causality, such as Nancy Cartwright, take what is called 'Simpson's Paradox' seriously. Actually, I also think that Simpson's Paradox is fatal to the idea of probabilistic causality, except when we use probabilistic dependence as evidence rather than to define causation. I show here how Simpson's Paradox operates in the relation between exposure to low-dose radiation and cancer death, taking the example of exposure to 5 mSv/y radiation (as effective doses), which must be accepted as low-dose radiation according to contemporary understandings of radiation.

Let us examine the next inference:

1. the probability for male individuals exposed to more than 5 mSv to die of cancer is higher than that for male individuals exposed to less than 5 mSv.
  
2. the probability for female individuals exposed to more than 5 mSv to die of cancer is higher than that for female individuals exposed to less than 5 mSv.

3. therefore, the probability for all individuals (male and female) exposed to more than 5 mSv to die of cancer is higher than that for all individuals (male and female) exposed to less than 5 mSv.

This valid inference can be represented as follows (See Pearl 1988: 496, Malinas 2003: 171):

1.  $p \supset r$

2.  $q \supset r$

3.  $(p \vee q) \supset r$

(1) & (2)  $\supset$  (3) looks logically true.

However, the next case is perfectly possible (where each number stands for number of people, 'ca.de' stands for 'dying of cancer', and 'no ca.de' stands for 'not dying of cancer').

TABLE 1

	<i>female</i>		<i>male</i>		<i>female &amp; male</i>	
	<i>ca.de</i>	<i>no ca.de</i>	<i>ca.de</i>	<i>no ca.de</i>	<i>ca.de</i>	<i>no ca.de</i>
<i>more than 5 mSv</i>	20	40	20	10	40	50
<i>less than 5 mSv</i>	15	40	90	50	105	90

In this scenario, females exposed to more than 5 mSv have a 20/60 probability of dying of cancer, whilst for females exposed to less than 5 mSv the probability is 15/55. 20/60 is greater than 15/55. (2) in the inference above obtains. Similarly, males exposed to more than 5 mSv have a 20/30 probability of dying of cancer, compared to a 90/140 probability for males exposed to less than 5 mSv. 20/30 is greater than 90/140. (1) in the inference above obtains.

However, when we consider the population as a whole, those exposed to more than 5 mSv have a 40/90 probability of dying of cancer, compared to a 105/195



probability for those exposed to less than 5 mSv.  $40/90$  is less than  $105/195$ . (3) does not obtain despite (1) and (2) being true. This is Simpson's paradox (see Malinas and Bigelow 2004: 3). This suggests that the logical symbolisation of our inference above must be somehow wrong.

### HIGHER-ORDER SIMPSON'S PARADOX

This paradox seems to be simply solved by the process of normalisation, which makes denominators equal. For instance, we can make the denominator for each female and male by 200 which we can revise using the same data as in Table 1 as follows:

TABLE 2

	<i>female</i>		<i>male</i>		<i>female &amp; male</i>	
	<i>ca.de</i>	<i>no ca.de</i>	<i>ca.de</i>	<i>no ca.de</i>	<i>ca.de</i>	<i>no ca.de</i>
<i>more than 5 mSv</i>	67	133	133	67	200	200
<i>less than 5 mSv</i>	55	145	129	71	184	216

In this case, Simpson's paradox does not arise. The probability of dying of cancer in the case of people exposed to more than 5 mSv per year is higher than in the case of people exposed to less than 5 mSv per year.

However (again), Simpson's paradox can arise at a higher order. The same data as Table 1 can be sorted through a different categorisation, namely, people aged over 50 and people aged under 50.

TABLE 3

	<i>over 50</i>		<i>under 50</i>		<i>total</i>	
	<i>ca.de</i>	<i>no ca.de</i>	<i>ca.de</i>	<i>no ca.de</i>	<i>ca.de</i>	<i>no ca.de</i>
<i>more than 5 mSv</i>	10	20	30	30	40	50
<i>less than 5 mSv</i>	20	15	85	75	105	90

In this case, as opposed to Table 1, the probability of dying of cancer in the case of people exposed to less than 5 mSv is greater than in people exposed to more than 5 mSv. Simpson's paradox does not arise here, although we could theoretically suppose that this consists of precisely the same data as the case shown by Table 1.

In addition, this situation in Table 3 is the same even if we normalise it by making the denominator 200.

TABLE 4

	<i>over 50</i>		<i>under 50</i>		<i>total</i>	
	<i>ca.de</i>	<i>no ca.de</i>	<i>ca.de</i>	<i>no ca.de</i>	<i>ca.de</i>	<i>no ca.de</i>
<i>more than 5 mSv</i>	67	133	100	100	167	233
<i>less than 5 mSv</i>	114	86	106	94	220	180

In this normalised table, as opposed to Table 1, the probability of dying of cancer in the case of people exposed to less than 5 mSv is greater than people exposed to more than 5 mSv. That is to say, Tables 1 and 3 are contradictory with regard to whether Simpson's paradox arises or not, although the data are exactly the same. Additionally, Tables 2 and 4 are contradictory, although the data are exactly the same. This phenomenon can be called a higher-order Simpson's paradox. We are in complete darkness concerning probabilistic causality. (See Malinas 2003: 169–70).

Of course, philosophers and statisticians neatly arrange their ideas through taking confounding variables into account to avoid Simpson's paradox. However,

unfortunately, as far as I understand, it is ultimately impossible to completely eradicate the possibility of Simpson's paradox arising. Nevertheless, we cannot doubt that when we use causal concepts, we rarely consider the notion of necessity; rather we are dealing with uncertainty. This uncertainty absolutely conforms to the notion of probability. That is to say, we cannot distance ourselves from the idea of probabilistic causality, even though we must admit that the idea of probabilistic causality certainly ends with being involved in a chaotic situation.

## A CONCLUSION

How should we deal with this situation? We collect statistical data to find the causal relation between exposure to radiation and cancer death. We should do our best to collect data, given the physico-metaphysical nature of causation. However, theoretically speaking, as the possibilities of common cause or Simpson's paradox show, we cannot be perfectly convinced of our conjecture about the causation based only on research at the physico-metaphysical level. We should make decisions at some point about whether exposure to low-dose radiation can cause cancer or not through a process of social agreement or something such as court proceedings. This is not a deviation from our original aim of finding causation to different contexts external to our aim. Instead, it is a way of establishing our causal judgments, as this route to decision making corresponds precisely to the normative nature of causation, probably and often involving an approach to how to treat the problem of responsibility.

We should always take the hybrid nature of causation seriously when we consider causal relations in ethical issues. (I want to assert that the same is true of any causal judgment in principle, even if the degree by which the normative nature becomes conspicuous in the case of purely scientific causal judgments could be lower than that in the case of ethical issues.). We should not suppose that we could finally solve the problem of causal relations purely through physico-metaphysical investigations (although of course such investigations are indispensable). I conclude my article with this modest warning.

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# Designing Children and Respect for the Given<sup>I</sup>

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## ABSTRACT

This chapter is about the relation between biomedical enhancement, religion, and our attitude to life. Several major thinkers have suggested that we cannot address worries about the ethics of human enhancement without first answering neglected questions about value, questions that verge on theology but can be pursued independently of religion. These thinkers include Jurgen Habermas, Ronald Dworkin, and G. A. Cohen. But the most influential example is Michael Sandel, who argues that the deepest objection to human enhancement is that it expresses a Promethean drive to mastery which deprives us of openness to the unbidden. In this chapter I will focus on Sandel's views.

I argue that Sandel misunderstands the notions of mastery and the unbidden and their significance. Once these notions are properly understood, they have surprising implications. First, the unbidden is best understood as referring, not to what is random, but to what is out of our control. Sandel associates 'the drive to mastery' with the aim of utterly removing the unbidden from our lives, but such an aim is both childish and incoherent. But it does not follow that we should not try to make things better, when this is under our control. It is one thing to accept things as they are, when we can't change them; another to accept them as they are, even when we can easily make them better. Sandel confuses the two. Second, to try to promote (or even protect) the acceptance of the unbidden is self-defeating, since such acts are themselves instances of mastery. If respecting the unbidden is a genuine value, then it calls for our complete passivity. Third, Sandel presents the acceptance of the unbidden as

1. This chapter offers a much abridged version of an argument I first developed in Kahane 2011. For further details, please consult the full paper. A version of this chapter was presented in the Carnegie-Oxford Conference in Tokyo, May 2012. I am very grateful to the audience there for extremely useful comments.

a value that we need to retrieve from theist religious traditions. But once it is properly understood, it turns out that theism does not, in fact, recognise this value, and indeed makes its full realisation impossible. Ironically, the absolutely unbidden can be fully appreciated only in the cold, purposeless world described by modern science.

Even more importantly, even if we accept the value of openness to the unbidden, this value cannot support Sandel's objection to genetic enhancement. Current reproductive arrangements are not as unbidden, or random, as Sandel presents them. There are numerous ways in which we can make them even more unbidden. But it would be absurd to replace, for example, the fairly predictable natural 'genetic lottery' with a genuine genetic lottery. Sandel also misrepresents what genetic enhancement would involve. In fact it is likely to increase appreciation for the role of the unbidden in our lives. And, ironically, the Judeo-Christian tradition that Sandel appeals to is far from opposed to attempts to control the reproductive process and its results.

If anything, it is opposition to enhancement that is likely to express a pernicious desire for mastery—a desire to control the future, to impose one's will on others, and to cling to a familiar and predictable kind of unpredictability.



One of the most important debates in contemporary bioethics is about human enhancement—the possibility that recent advances in science will allow us to radically change human nature; for example, by using genetics to create children who are smarter, happier or kinder. Some philosophers are excited by this possibility, but most people find it very scary. What is still unclear, however, is what exactly is supposed to be so dangerous or terrifying about the very idea of biomedical enhancement.

In this chapter, I will examine a suggestion made by the American philosopher Michael Sandel, when he writes that

*In order to grapple with the ethics of enhancement, we need to confront questions largely lost from view—questions about the moral status of nature, and about the proper stance of human beings toward the given world. Since these questions verge on theology, modern philosophers and political theorists tend to shrink from them.*  
(Sandel 2007: 9)<sup>2</sup>

2. His views here are based on Sandel 2004.

In other words, Sandel thinks that we can't fully address ethical worries about enhancement by appealing to *standard* moral concepts and principles—concepts like well-being, rights or justice. We need to go deeper than that, and address worries that arise out of what he calls '*religious sentiments*'. But Sandel insists that even if these sentiments are associated with religion, they nevertheless resonate '*beyond religion*'. We don't need to be religious, or believe in God, to accept their validity.

This is an interesting idea, and I think it might even be right. In fact, Sandel is not the only one to make this suggestion. Several important thinkers have recently said similar things –including Jurgen Habermas (2003), Ronald Dworkin (2002) and Jerry Cohen (2004). But in what follows, I will focus on how Sandel develops this idea in his bestselling book, *The Case Against Perfection*.

Sandel's argument in that book is rather obscure. But it's nicely encapsulated in two key passages. In one of them, Sandel writes that

*the deepest moral objection to enhancement lies less in the perfection it seeks than in the human disposition it expresses and promotes ... The problem is in the hubris of the designing parents, in their drive to master the mystery of birth ... (Sandel 2004: 57. See also Sandel 2007: 83–85, 100.)*

And later, he adds that

*the deeper danger is that [enhancement] represents a kind of hyperagency—a Promethean aspiration to remake nature, including human nature, to serve our purpose and satisfy our desires ... (Sandel 2004: 54)*

Supporters of enhancement often mock these ideas. They think that, like 'intelligent design', they really are just religion in disguise. But I want to try to take them more seriously here. In what follows, I will ask whether we can make sense of Sandel's contrast between mastery and the unbidden, and about the relation of these notions to religion. I will then ask what would follow for questions about enhancement, genetic selection, and human reproduction if we did agree with Sandel that there is some special *value* in having an appropriate attitude to the unbidden.

So let's start by trying to clarify the notions of mastery and the unbidden. This seems to be the distinction between what we have mastered, and what we haven't, or can't. Other philosophers speak instead about the distinction between chance and

choice, or more precisely, between what is under our control, and what isn't. Notice that the unbidden, in this sense, can be either relative or absolute. Something can be outside *your* control, but still in someone else's control. It's unbidden only in a relative sense. For something to be absolutely unbidden, it needs to be outside of *anyone's* control. Sandel seems to be talking about the unbidden in this absolute, unqualified sense.

When we face some decision, we can leave things either to chance, or to choice. But there seems to be a clear presumption in favour of mastery—*against* leaving things to mere chance. After all, whenever something occurs, it can be good, bad, or indifferent. If this occurrence is under our control then (so long as we aim at the good) the outcome is more likely to be better than if we left to chance. This is why, when we *can* make the outcome better, we *should* bring it about (when permissible). So if something really matters to us, it's hard to see why should we ever leave it to chance rather than to choice.

You might think that many religious traditions disagree. After all, many religions tell us to resign ourselves to fate, however grim. For example, many theists believe that everything that happens plays some role in a divine plan—even if this plan is inscrutable to us mortals. And this might mean that we sometimes have reason to just let the dice fall where they may.

This belief can have extreme implications. For example, the Moravian Church, an evangelical Protestant movement, held at one point that all important decisions should be decided by chance—they even used a lotteries to decide whether some couple should marry or not! But these religious practices don't involve genuine, unqualified 'openness to the unbidden'. After all, in a universe in which God exists, nothing is ever unbidden in an absolute, unqualified sense. These believers assume precisely that things are never decided by pure chance, but express God's good will. To say, 'Thy will be done' is not to be open to the (absolutely) unbidden, but to submit to God's bidding.

But if God doesn't exist, and things really do happen simply by chance, why on earth shouldn't we intervene to make them better? What could be Sandel's problem with mastery? In the closing words of his book, Sandel writes that the drive to mastery threatens 'to leave us with nothing to affirm or behold outside our own will'. The idea here seems to be that unless we recognise something external to our will (something 'unbidden'), we do not fully recognise, and relate to, the world outside us. Perhaps the



idea is that if we had (or even thought we had) complete mastery, then we wouldn't be able to distinguish between fact and fantasy, and could only live an egocentric, solipsistic existence.

This idea echoes a famous passage in Milan Kundera's novel *The Unbearable Lightness of Being*:

*the heavier the burden ... the more real... [our lives] become. Conversely, the absolute absence of a burden causes man to be lighter than air, to soar into the heights... and become only half real, his movements free as they are insignificant. (Kundera 1984: 5)*

However, we need to distinguish two senses of mastery. There is first what we can call *extreme mastery*: a kind of Satanic desire to master absolutely everything. Such an aim is childish. And it's not even logically possible. Even God can't make  $2+2=5$ , or make murder a good thing. But that's anyway not relevant to us mere humans. After all, we can't even predict (let alone control) the weather. But there is a more sensible form of mastery: the aim of improving things, to the extent that is within our power. This needs to be guided by a realistic appreciation of our limits, and by external standards of value and morality. And such mastery makes sense only in relation to an external world.

We should also distinguish two ways in which we could accept the unbidden. We can, as Sandel comes close to recommending, simply let chance decide what happens, even if we can intervene to make the outcome better. But a more sensible approach would be to change things for the better, when we can; but to also recognise limits to our power, and learn to accept things as they are when we can't change them. This is really an obvious and familiar point.

We can now finally turn to enhancement, and the ethics of reproduction. In natural reproduction, genetic material from the parents is randomly combined to create the unique genetic endowment of the resulting child. In the future, reproductive technologies might allow us to select at least some aspects of the characteristics of future children. To do so, Sandel argues, would be deeply wrong, because such mastery would undermine our openness to the unbidden. Reproduction should remain a mystery, unpredictable and outside human control.

There are many problems with Sandel's argument.

(i) Consider first the point that reproduction, as practiced today, is actually not

that unpredictable. Parents anticipate and value expected similarities between themselves and their children. And, of course, people can control who they reproduce with, and when. Finally, needless to say, birth control is a form of control.

We could easily change that. Instead of ‘willfully’ selecting whom we marry this could be decided by lottery. Instead of letting couples decide if and when to reproduce, contraception could be made mandatory—but with random flaws so that conception is always possible, but never predictable. We could even replace the highly limited genetic lottery with a proper lottery, so that it will be impossible to predict what our children will be like: black or white, tall or short, handsome or ugly. This would be absurd. But shouldn’t it be better, on Sandel’s view?

(2) Second, genetic selection involves far less mastery than Sandel thinks. Genetics is incredibly complex, and there is a great gulf between genotype and phenotype. Enhancement will inevitably be a matter of calculating probabilities, which is extremely complex given that genes interact with an unpredictable environment. Only someone in the grip of a crude genetic determinism could worry that genetic selection would simply erase the unbidden from reproduction.

(3) Perhaps Sandel’s problem isn’t with removing the element of the chance from our life, but in undermining our appreciation of the unbidden? This is suggested when Sandel claims that ‘parenthood, more than other human relationships, teaches ... “an openness to the unbidden”’ (Sandel 2007: 45). But parenthood couldn’t be the only or even the central way to appreciate the unbidden, otherwise people with no children would have a deficient sense of reality. Religious tradition of course rejects this absurd idea—think of Catholic nuns and priests. There are surely plenty of other ways to learn to appreciate the unbidden. One example, by the way, is natural science, where we confront an indifferent, ‘unbidden’ reality abstracted from everything human.

(4) More importantly, it’s just not true that enhancement must be a kind of a wilful self-assertion, and a rejection of any external reality or constraint. Proponents of enhancement argue that we have reason to use biotechnology to bring into the world children with a range of talents and capacities most likely to lead to a good or flourishing life. To have such an aim is hardly to indulge in self-assertion. It is indeed a form of mastery, but it is a sensible kind of mastery that answers to what is outside one’s will: the welfare of a future person, and standards of the good life.

Actually, genetic selection is likely to make prospective parents *more*, not less, acutely appreciative of the unbidden. In vitro fertilisation is a highly demanding, un-

pleasant and uncertain process. And parents who use reproductive technologies to try to promote the well-being of their child will be engaged in a risky project against a highly resistant external reality.

(5) Finally, if we should be suspicious of anything, it's rather of the motivation that drives *opposition* to enhancement. Let us set aside the point that to try to actively promote the unbidden is self-defeating, because, inevitably, this is itself a form of mastery. But opposition to enhancement might be self-defeating in a further way, by itself expressing an unpleasant drive for mastery, and a failure to accept the unbidden. After all, such opposition seems to express precisely a desire to master technology and social change, to control the future—perhaps even to impose one's will, and fears, on others. It seems to express a desire to cling, not to unpredictability per se, but to a very predictable and familiar kind of unpredictability. Thus Sandel's worries, far from expressing openness to the unbidden, might in fact express deep fear of an unpredictable, risky and alien future—that is, fear of losing control.

(6) Let me end with a brief note on genetic selection and religion. The Judeo-Christian tradition is actually in some tension with Sandel's view, and not only because it leaves no space to anything absolutely unbidden. After all, in the Old Testament, God gives his blessing, and active assistance, to Abraham and Sarah's pursuit of post-menopausal sex selection. Sarah, by the way, was 90 years old. And, on most theist views, we are born with certain characteristics and talents precisely because God wills it so. God, then, selects our genetic endowment. We are His artefacts, playing some role in His cosmic plan. If genetic selection involves a vicious attitude, what does that say about God?

I conclude that Sandel's argument against enhancement is not successful. Sandel misunderstands the notions of mastery and the unbidden, and what follows from them. In fact, respect for the unbidden is actually perfectly compatible with a sensible form of mastery. And genetic selection will not remove the element of chance from our lives: it might actually *increase* our appreciation of a resistant external reality, and the limits of our power. If anything, it is actually opposition to enhancement that might express a problematic refusal to face the unbidden.

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# *Tsunami-tendenko* and morality in disaster situations

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## ABSTRACT

Disaster planning challenges our morality. Everyday rules of action may need to be suspended during large-scale disaster situations in favor of maxims that are rationally acceptable but emotionally hard to accept, such as *tsunami-tendenko*. This maxim dictates the individual not to stay and help others but to run and preserve his or her life instead. *Tsunami-tendenko* became well known after the Great East Japan Earthquake on March 11, 2011, when almost all the elementary and junior high school students in one city survived the tsunami because they had been taught this maxim for several years. While *tsunami-tendenko* has been praised, two of its criticisms merit careful consideration: one, that the maxim is selfish and immoral; and two, that it goes against the natural tendency to try to save others in dire need and cannot possibly be followed. In this paper, I will explain the concept of *tsunami-tendenko* and then respond to these criticisms. Such ethical analysis is essential for dispelling confusion and doubts about evacuation policies in a disaster situation.

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## WHAT IS TSUNAMI-TENDENKO?

In Kamaishi, Japan (estimated population: 40,000), about 1,200 residents were designated as missing or killed after devastation of the city by the Great East Japan Earthquake on March 11, 2011 (also known as the 3.11 earthquake) and resultant tsunami. Almost all 2,900 elementary and junior high school students, however, sur-

vived the calamity. This remarkable feat was due not to pure luck but rather a disaster education program started in 2005. One of the topics extensively taught was *tsunami-tendenko*, a rule of action that commanded people to ‘run for your life to the top of the hill and never mind others or even your family when the tsunami comes’ (Komine and Kaneko 2011). (*Tendenko* translates as ‘go separately’.)

*Tsunami-tendenko* is a traditional idea from the Sanriku region of northeastern Japan (facing the Pacific Ocean), where tsunami disasters have frequently occurred. The phrase itself became well known after Fumio Yamashita, a historian of Japanese tsunami disasters, described his own experience with the Great Tsunami of 1933 (Shishido 2011; Yamashita 2008). His father fled from the approaching tsunami and left behind his family, including then nine-year-old Yamashita. When criticised by his wife afterwards, Yamashita’s father answered, ‘It’s *tendenko*, as they say’. He previously lost his mother (Yamashita’s grandmother) in the Great Tsunami of 1896 because she spent time trying to save her infant daughter. Yamashita told this story to emphasise the importance of avoiding *tomo-daore*, where the rescuer loses his or her life along with the victim.

*Tomo-daore* was a serious issue during the tsunami from the 3.11 earthquake. According to a central government report, more than 40 percent of the tsunami survivors did not evacuate immediately after the quake because they searched for family members or went home (*Daily Yomiuri* 2011). Most of the casualties likely fell into this category too. For example, some elementary schools in tsunami-stricken areas had the disaster policy of handing students to their parents. Unfortunately, many of the students were killed by the tsunami because the parents then tried to go back home and meet up with other family members before evacuating (Nemoto and Horie 2011). Towns with the so-called policy of ‘collective evacuation’ also suffered heavy casualties because people spent potential escape time gathering and waiting at the town hall instead (Nagano and Sakai 2011).

The successful evacuation of the Kamaishi school children led to wide recognition and praise of *tsunami-tendenko* (Kaneko and Komine 2011; Futagi 2011). Reportedly, the Ministry of Education, Culture, Sports, Science and Technology (MEXT) is even planning to teach the maxim as a part of nationwide disaster education in elementary and secondary schools (*Yomiuri Shimbun* 2011). However, there are at least two important criticisms of *tsunami-tendenko* that should be carefully examined and responded to before considering full implementation.

## THE TWO CRITICISMS OF TSUNAMI-TENDENKO

One criticism of the maxim is that it promotes egoism. After the 3.11 earthquake, a mayor was quoted as saying, ‘I wonder if it is right to teach kids to run for themselves even when they have a bed-ridden grandmother at home’ (*Asahi Shimbun Evening Edition* 2012). To be sure, ‘run for your life to the top of the hill and never mind others or even your family’ sounds egoistic and seems diametrically opposed to what we have been taught, and to what kids should be taught about the moral responsibility to help others in need.

The second, and related, criticism of the maxim is that it is psychologically difficult or plainly impossible to follow when the life of a loved one or neighbour is at stake. A volunteer firefighter who lost teammates while helping an elderly, bed-ridden woman to evacuate said, ‘It’s only our human nature to go save others when we hear the word “Help!” It really came home to me this time that it is humanly impossible to follow *tsunami-tendenko*’ (*Mainichi Shimbun* 2011). A professor was similarly quoted as saying, ‘Perhaps the teaching of *tsunami-tendenko* has been told time and again precisely because it is too much against our human nature (to care for others) to follow the maxim with ease’ (Ishizuka 2011).

The first criticism appears to be that the maxim is morally wrong, while the second appears to be that the maxim may not be morally wrong but is psychologically difficult or impossible to follow. The next two sections will respond to these criticisms.

## IS TSUNAMI-TENDENKO EGOISTIC?

I would contend that practicing *tsunami-tendenko* is not being egoistic. It is best construed as a utilitarian maxim that can maximise the number of lives saved if enough people follow it. In contrast, the ostensibly moral maxim of ‘help others in need’ may not maximise or even minimise the number of lives saved.

To illustrate this point, it may be useful to compare a tsunami disaster to the prisoner’s dilemma. Both situations involve participants acting with uncertainty about the other party’s behaviour. In a typical prisoner’s dilemma, two suspects of a crime are placed in different interrogation rooms and given the choice to either ‘confess and receive some sentence mitigation’ or ‘do not confess and receive the full sentence’ (Table 1). If neither suspect confesses, the total number of years they spend

in prison will be much less than if both confess. However, because each suspect does not know what the other will choose to do, they both decide to confess out of self-interest and end up worse off than if they had trusted each other to not confess.

TABLE 1: THE PRISONER’S DILEMMA

	<i>A does not confess</i>	<i>A confesses</i>
<i>B does not confess</i>	Both receive 3 years in prison	A receives 1 year in prison B receives 15 years in prison
<i>B confesses</i>	B receives 1 year in prison A receives 15 years in prison	Both receive 10 years in prison

A similar situation, which I will call the tsunami dilemma, can occur when a tsunami is expected to hit an area soon and to kill people unless they evacuate immediately. If two separated family members decide to look or wait for each other, both will likely die in this lose-lose, tomo-daore situation. If each one decides to run for his or her life, however, both will more likely than not survive (Table 2). However, because each person does not know what the other will choose to do, they may both decide to look or wait for each other and end up worse off than if they had both run for their lives.

TABLE 2: THE TSUNAMI DILEMMA

	<i>A does not search for B (runs for his/her life)</i>	<i>A searches for B</i>
<i>B does not search for A (runs for his/her life)</i>	Both likely to survive ( <i>Tsunami-tendenko</i> )	B likely to survive A likely to die
<i>B searches for A</i>	A likely to survive B likely to die	Both likely to die ( <i>Tomo-daore</i> )

An obvious difference between the prisoner’s dilemma and the tsunami dilemma is the motive behind the actions. People involved in a tsunami dilemma do not act



solely out of self-interest, which is a standard supposition in the prisoner's dilemma. Thus, while concern for oneself prevents mutual cooperation in the prisoner's dilemma, concern for others leads to *tomo-daore* in the tsunami dilemma. This does not necessarily imply, however, that those who follow *tsunami-tendenko* are egoistic (i.e., acting out of self-interest). They may adopt the maxim because they are concerned for others but wish to avoid *tomo-daore*. By following *tsunami-tendenko*, they are actually cooperating and not betraying each other.

For *tsunami-tendenko* to work, there must be trust between the two parties to remove any doubt that one is looking for the other. *Tsunami-tendenko* disaster education for the students in Kamaishi included children repeatedly telling their parents, 'I will evacuate without fail. So please run away and don't come searching for me'. The parents in turn were asked by the teachers to discuss this issue with their children until they were absolutely certain the students would run away on their own initiative (Aono 2011).

I believe that *tsunami-tendenko* is not an egoistic maxim but rather a teaching justified by indirect utilitarianism. It is indirect because the rule of action individuals are expected to follow is not one of maximising the happiness of all concerned, but of saving an individual's own life to collectively maximise the total number of lives saved. To achieve this goal, one not only needs to internalise *tsunami-tendenko* but also cultivate trust among all concerned to guarantee they will also follow the maxim. *Tsunami-tendenko* is emphatically not egoistic in disaster situations where the ordinary morality of helping others in need does not apply.

## TSUNAMI-TENDENKO AND PSYCHOLOGY

I now turn to the criticism that *tsunami-tendenko* is psychologically difficult or impossible to follow. Human beings sometimes feel a strong urge to help those in need, known in bioethics literature as the rule of rescue: 'Our moral response to the imminence of death demands that we rescue the doomed [at whatever cost]' (Jonsen 1986). This rule is considered to be a deontological constraint that limits the maximisation of total utility.

This second criticism of *tsunami-tendenko* may seem slightly odd, given that some Japanese did follow the maxim during the 3.11 earthquake and that the MEXT plans to teach it to school children. Proponents and opponents of *tsunami-tendenko*

may have different scenarios in mind for their arguments. To further examine where the psychological difficulty lies, let us consider three situations where the dilemma between running to safety and helping others may occur.

In the first situation, you would not know if your loved one is safe but would know that they are able to evacuate by themselves. *Tsunami-tendenko* works best in this scenario, provided that all involved parties thoroughly discussed their options beforehand in a manner similar to the disaster education of the Kamaishi schoolchildren.

In the second situation, you would not know if your loved one is safe and would know that they are *unable* to evacuate by themselves. This scenario is clearly more psychologically difficult than the first because *tsunami-tendenko* could necessitate giving up on your loved one. The mayor quoted in a previous section may have been thinking of this situation when he wondered if it is right to teach kids to run for themselves even with a bed-ridden grandmother at home. We have to bear in mind, however, that these situations are very uncertain. For example, a rescue worker may have helped your loved one evacuate. Following *tsunami-tendenko* may still be the right choice, albeit more psychologically difficult.

In the third situation, you would know that your loved one is *not* safe and that they are *unable* to evacuate by themselves. The volunteer firefighter quoted in a previous section may have been thinking of this scenario when recounting the deaths of his teammates. I do not believe it is right to follow *tsunami-tendenko* when one is a professional rescue worker (e.g., firefighters and police officers). If there is no one to help those in need, we would all be much worse off and unable to follow *tsunami-tendenko* in the second situation if a loved one was guaranteed to die. If citizens can rely on rescue workers doing their best to rescue people, however, we would all be better off. These professionals are trained to rescue others while minimising the risk to their own lives and are therefore expected to offer help in disaster situations.

But what if you are not a firefighter or other rescue worker, but only a parent of several children? Leaving them behind would be very difficult psychologically, and few would likely disparage mothers and fathers who die while trying to save their children. This psychological difficulty or seeming impossibility, however, should not be the main reason to reject *tsunami-tendenko* as the correct evacuation policy. Indeed, following the maxim in this scenario is not impossible because Fumio Yamashita's father did exactly that, as previously mentioned.

Yamashita wrote that when the tsunami hit his town in 1933, no one in his family helped him to evacuate. Nine-year-old Yamashita ran up a snowy hill alone and bare-

foot. He later discovered that his friends had the same experience and realised *tsunami-tendenko* was the best strategy for maximising the number of lives saved. Yamashita thus repeatedly emphasised that however cruel it might seem, one must always remember to run for his or her life to prevent *tomo-daore* (Yamashita 2008). Yamashita's story shows the importance of education and trust within both the family unit and the community in order for *tsunami-tendenko* to be most effective.

I would dare to suggest that *tsunami-tendenko* is the right evacuation policy in all the situations described above, unless you are a rescue professional with a duty to save others. Tsunami disasters are very exceptional, and as such our psychological response may not be the best guide in finding a maxim to follow. Any psychological barriers to following *tsunami-tendenko* may need to be overcome through education and advance disaster planning for people unable to evacuate by themselves.

## CONCLUSION

The maxim of *tsunami-tendenko* has the beauty of simplicity but needs some clarifications and limitations. When teaching this concept, the importance of trust among loved ones must be emphasised to achieve the aim of maximising the number of lives saved. It is also important to emphasise that *tsunami-tendenko* is not an egoistic maxim. Finally, a different maxim may need to be articulated for rescue professionals.

This ethical analysis is essential for dispelling confusion and doubts about evacuation policies. My elucidation on *tsunami-tendenko* may entail further development, but I firmly believe this discussion will better prepare people to save more lives in tsunami-prone areas around the world.

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# Why is It Hard for Us to Accept Moral Bioenhancement? : Comment on Savulescu's Argument<sup>I</sup>

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## ABSTRACT

In my paper I would like to criticize Julian Savulescu and his colleagues' argument on moral bioenhancement. If we want to improve our society, it would be easier and more effective to improve social conditions. Our personality ought to be constructed upon our inner foundation, which should not be tampered with by outside intervention or control, and I dare say this belief is a healthy one that should not be overturned.



## WHAT IS MORAL BIOENHANCEMENT?

Julian Savulescu and his colleagues have recently advocated the necessity for developing moral bioenhancement technologies, while Peter Singer and Agata Sagan discussed a 'morality pill' in *The New York Times* (Singer and Sagan 2012). Moral bioenhancement is, according to Persson and Savulescu, 'moral enhancement not merely by traditional means, such as education, but by genetic or other biological means' (Persson and Savulescu 2011: 2). Savulescu argues that, in the future, in addi-

1. This paper was first presented at the Fourth GABEX International Conference held at the University of Tokyo, on 7 January 2012, under the title 'Criticism of Moral Bioenhancement: Commentary on Julian Savulescu'.

tion to pharmacological means, non-pharmacological methods such as transcranial magnetic stimulation, deep-brain stimulation, genetic manipulation and targeted optic stimulation could be used to influence one's moral motivation and behaviour (Savulescu 2012).

Persson and Savulescu's argument for moral bioenhancement is eloquently presented in their 2008 paper, 'The perils of cognitive enhancement and the urgent imperative to enhance the moral character of humanity'. They argue that we are now living in an age of cognitive enhancement, and 'this expansion of scientific knowledge and cognitive ability will put in an increasing number of people's hands "weapons of mass destruction" or the ability to deploy them' (Persson and Savulescu 2008: 166). With these weapons, even a small terrorist group will be able to devastate the whole world. Hence, '[t]o eliminate this risk, cognitive enhancement would have to be accompanied by a *moral* enhancement which extends to *all* of us, since such moral enhancement could reduce malevolence' (Persson and Savulescu 2008: 166). They further argue that:

*'[i]f safe moral enhancements are ever developed, there are strong reasons to believe that their use should be obligatory, like education or fluoride in the water, since those who should take them are least likely to be inclined to use them. That is, safe, effective moral enhancement would be compulsory' (Persson and Savulescu 2008: 174).*

## SOCIAL IMPROVEMENT AND MORAL BIOENHANCEMENT

Persson and Savulescu talk about two different kinds of moral bioenhancements: moral bioenhancement applied to individuals, such as criminals; and that applied to a group of people or to an entire population in an area. An example of the former is hormonal manipulation treatment prescribed to pedophiles, and an example of the latter is altruism-enhancing drugs blended in the tap water in an entire area for the purpose of preventing actual use of weapons of mass destruction by terrorists.

The former, a drug treatment for pedophiles and other criminals, has already been performed in some countries, and it may be effective in preventing future crimes. However, this kind of drug therapy targeting a single criminal individual is not the main aim of Persson and Savulescu's moral bioenhancement agenda. What they

really have in mind is compulsory manipulation of the minds of a group of people by coercing them to take moral bioenhancement drugs. Their aim is moral bioenforcement of the whole population.

John Harris severely criticises Persson and Savulescu in his paper titled ‘Moral enhancement and freedom’ (Harris 2010). He argues that human immorality, such as racism, has been ‘reduced dramatically in the last hundred years by forms of moral enhancement including education, public disapproval, knowledge acquisition and legislation’, hence, ‘racism can be defeated by such means without resorting to biological or genetic measures which might have unwanted effects’ (Harris 2010: 105).

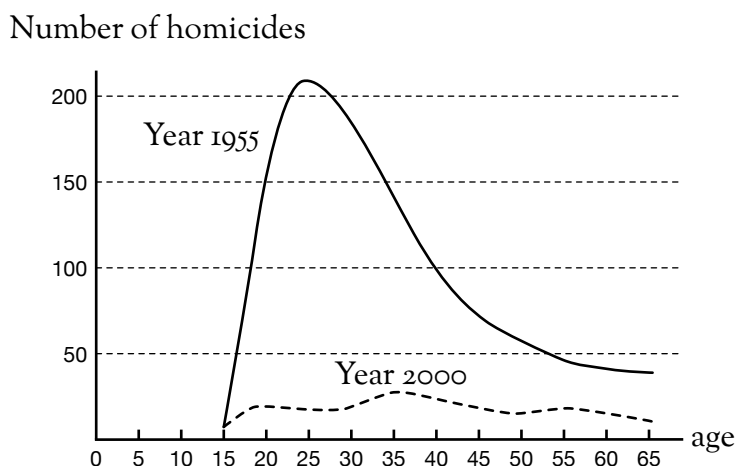


Fig.1. Number of Homicides committed by men per one million people in Japan

I agree with Harris’s argument. Let me present an interesting example that might illustrate the relationship between moral enhancement and social improvement. Figure 1 shows the number of homicides committed by men per one million people in Japanese society in 1955 and 2000.<sup>2</sup> You can see a drastic reduction in the number of homicides during the 45 years, particularly by men in their twenties. This is attributable to Japan’s economic prosperity and 45 years of peace in our society. (Japan has not directly waged war against any country in more than 55 years, since the end of World War II.) Japan has succeeded in reducing the number of homicides by improving social conditions and environments. This implies that social improvement is easier and more effective than moral bioenhancement.

Of course, in the future, by taking enhancement drugs, people may have the ca-

2. This graph was created by the author using the statistical data in Hiraiwa-Hasegawa 2005.

capacity to run 10 times faster, see in the dark and instantly kill more than 10 people by hand. They could easily steal dirty bombs and detonate them in cities. This appears to be one of the things that Persson and Savulescu fear. However, coercive moral bioenhancement would not be able to prevent the occurrence of such events. The only way to prevent them would be to strictly control the access to those problematic pharmaceutical substances and establish laws to punish individuals for possession of those drugs. Japan has succeeded in prohibiting the possession of guns among ordinary citizens. (I have never seen a real gun in our country in my life.) Hence, prohibition should be possible in the case of cognitive enhancement drugs or advanced technologies that could be detrimental to humans. (Nevertheless, it might not be possible in countries where people have the right to carry guns for self-protection. This suggests that gun control among citizens ought to be the first challenge for ethicists in favor of moral bioenhancement.)

### COMPULSORY MORAL BIOENHANCEMENT OF ALL PEOPLE IS IMPOSSIBLE

Persson and Savulescu insist that moral bioenhancement ought to be forced on all of us, but this is impossible because powerful, rich and greedy people would use every conceivable method to avoid taking moral bioenhancement drugs. Even if drugs are blended into the tap water in an area, it is possible to get pure water from elsewhere. Furthermore, it is difficult to force moral bioenhancement on those who are in a position to force it on ordinary people. Hence, a moral bioenhancement policy will create two groups of people: those who are forced to take moral bioenhancement drugs, and those who can avoid taking such drugs. Then, what would happen among them?

Imagine lifeboat ethics. There are six people on a lifeboat with a capacity for five. One of the six individuals is a morally bioenhanced person. Savulescu argues that self-sacrifice and altruism are the two central characteristics of morality, and that these traits can be enhanced by biological determinants. If Savulescu is right, the morally bioenhanced person in the lifeboat would think that she has to sacrifice herself to save her fellow passengers by her plunging into the sea. As a result, the other five greedy people would be saved. A lesson from this episode is that when there are



both morally bioenhanced people and non-enhanced people, the latter could survive at the expense of the former. Is this what ethicists in favor of moral bioenhancement would aim at?

Savulescu suggests that oxytocin could be used to enhance morality, since, according to several studies, it enhances pro-social attitudes such as trust, sympathy and generosity (Savulescu 2012). Is this really good news for moral bioenhancement? The answer is negative because after providing a group of people with oxytocin, we could effectively dominate them, use them and finally exploit them as slaves. This shows that moral bioenhancement can be used to control the minds of people who do not have social resources or social status to bypass the coercion to take moral bioenhancement drugs. Moral bioenhancement functions as a tool to divide our society into two layers.

Savulescu and colleagues might emphasise that moral bioenhancement should be mandatory for all without exception, but it is virtually impossible as mentioned above. Even if it becomes possible to force everyone to take moral bioenhancement drugs, there still remains a very difficult problem. Let us assume that everyone in a society becomes morally bioenhanced by drugs blended in the tap water. The morally bioenhanced people would become highly vulnerable to aggression, violence and exploitation by other people. If a group of people immune to those drugs were to appear, they could easily dominate and exploit the morally bioenhanced people in way similar to that in which wild colonists enslaved empathetic and generous indigenous peoples in the past.

In the first place, can we imagine a morally bioenhanced police force or a morally bioenhanced army? If they are under the influence of moral bioenhancement drugs, they cannot accomplish their tasks properly. I am basically a pacifist who believes that the army should be reduced as much as possible; however, I do think that a society needs a well-organised police force who perform their jobs in a law-abiding manner, and that they should even execute violence and aggression in order to save the lives and properties of ordinary citizens in case of emergencies. The police whose hearts are filled with empathy and generosity would never be able to complete their mission in emergency situations. Then, should the police be an exception? But if the police are considered an exception, it would open a route for them to become conquerors of society, thereby leading to police despotism.

In short, compulsory moral enhancement will lead to the exploitation of one group of people by another. Persson and Savulescu emphasise the danger of ter-

rorist attacks carried out by a small terrorist group with weapons of mass destruction (Persson and Savulescu 2008: 166). However, I suspect that the most dangerous players in the contemporary world would still be the military forces, equipped with a variety of weapons, which take many lives every year.

### ENHANCEMENT OF MORAL SENSITIVITY IS NOT ALWAYS GOOD

Savulescu writes that '[o]ur point is merely that, in many people, enhancing one or more of the traits we have discussed would, in many circumstances, result in that individual being more likely to act morally than would otherwise have been the case' (Savulescu 2012). This is a fairly naïve idea. Persson and Savulescu state that moral bioenhancement can be achieved by enhancing people's disposition toward altruism and their sense of justice or fairness (Persson and Savulescu 2008: 168–69). In other words, moral bioenhancement requires the strengthening of a person's moral sensitivity; but empirically speaking, the strengthening of moral sensitivity does not necessarily bring happiness. Consider the number of immoral and unfair acts that we commit every day. Remember what you said to your partner last night when you were quarrelling. Remember the sumptuous dinner you had at a fabulous party, and think about how many starving people's lives in a developing country could have been saved if the cost of the dinner had been spent on helping them. Think about why you did not invite a stranger, who was standing outside your apartment shivering in the cold, into your home. That person might have suffered hypothermia and frozen to death during the night. Without moral bioenhancement drugs, such ideas would only come to mind for us for a very short period of time, quickly disappearing without any traces. However, morally bioenhanced people could not easily escape these disturbing ideas. They would be trapped in such moral dilemmas every day and might become distressed day and night.

Morally sensitive people worry about every immoral and unfair deed they commit. They are not saints. They cannot save every suffering individual whom they encounter or call on every suffering individual who resides in their neighbourhood. They might think that this is their own fault. Morally bioenhanced people might wish to escape from this type of psychological stress and take other drugs to forget their painful memories and thoughts. The reason why ordinary people can survive every day is that they are not so morally sensitive as to worry about such 'small' matters.

Hence, at first, a society filled with morally sensitive people might be considered a good society, but in reality, against our expectations, people living in such a society might not necessarily be happy.

## CASES IN WHICH MORAL BIOENHANCEMENT COULD BE EFFECTIVE

In the previous chapters we considered some negative aspects of moral bioenhancement; however, on closer examination there are some exceptional cases in which moral bioenhancement could be effective.

One of those cases would be the medical treatment of paedophiles, who are believed to be incapable without medication of overcoming their inner drive for sex with young children. As discussed earlier, this is not the main objective of moral bioenhancement, but I suspect this may be one of the exceptional cases in which moral bioenhancement would be effective and reasonable. There has been considerable debate in many countries over the compulsory pharmaceutical treatment of sex offenders who target young children. I have not reached a conclusion concerning this subject, but if we were to allow our society to impose such treatment on criminals, they should have the right to choose between being forced to take medication or being kept under watch by surveillance technologies.

The second case would be one in which a person voluntarily chooses to take moral bioenhancement drugs to calm his/her strong tendencies toward egocentrism, sexual interest in young children, rape, violence or a desire to harm others physically or mentally. There might be many people who are badly troubled by their own immoral conduct and strongly wish to cure their inner evils through pharmaceutical measures. It would be reasonable for doctors to prescribe such medication to those who come voluntarily to see them. In this case, moral bioenhancement drugs would be given to the patients according to their needs on a voluntary basis. There has been considerable debate about the morality of treating patients with depression through the use of SSRIs, because these drugs can radically modify the personality of the patients who take them. Similar discussions will be needed on voluntary moral bioenhancement.

The third case would be compulsory moral bioenhancement for those who have power and/or tremendous wealth; that is to say, moral bioenhancement would be

forced upon top political and military figures, the chief executive officers of large companies and multimillionaires to mitigate the risk of megalomania. Persson and Savulescu argue that moral bioenhancement ought to be compulsory; however, as discussed above, compulsory moral bioenhancement for all people would be impossible and meaningless. But if the authors persist with the idea of compulsory moral bioenhancement at the societal level, its application to the powerful might be a good starting point for the actualisation of such an idea. Everyone would agree that those who are powerful enough to influence the political and economic policy of a country ought to abide by much higher moral standards than ordinary people. If that is the case, then the compulsory moral bioenhancement of those people under the watch of ordinary citizens might be a promising solution. Persson and Savulescu would probably be against this idea, but I believe this type of enhancement would be at least more effective and meaningful than that which is forced on ‘terrorists’, people who might become ‘terrorists’ or all the people who live within a vast area. Of course, such enforcement would endanger the fundamental human rights of people in power; hence, we must have a deliberate discussion on the morality of this type of enhancement before it actually becomes reality.

### WHY IS IT HARD FOR US TO ACCEPT MORAL BIOENHANCEMENT?

The most common reaction of ordinary people to the idea of compulsory moral bioenhancement is outright emotional rejection of it. This reaction is understandable, but what is the reason for their rejection of it?

Moral enhancement has been one of the great goals of ethics since the dawn of human civilization. For example, ancient philosophers in Greece and China attempted to discover how to help people to become virtuous, which we could say was an ancient version of moral enhancement. They thought this goal was achievable through adequate education and habituation. Many people would not reject these ideas, but when it comes to moral bioenhancement attained by pharmaceutical means, they may be hesitant about it, at least to a certain degree.

At first glance, moral bioenhancement seems to resemble moral education, which is taught in compulsory school education, because they have in common the compulsory manipulation of morality from the outside; however, interestingly, many

people who are hesitant to accept moral bioenhancement would never reject the moral education of young children at school. Let us take a brief look at the characteristics of the moral education of young children in compulsory school education.

First, children are taught moral values and virtues by teachers. While teachers provide children with the opportunity to engage in dialogue or free discussion in their classes, the basic tone of moral education in school is nothing but a unilateral transmission of ideas from teachers to children. However, through this process, it is expected that a 'kernel of our moral integration' will be formed inside children's minds, and that they will gradually become capable of making moral judgments and carrying out moral conduct in reference to their own kernel of moral integration which has come into being inside them. In other words, moral education begins with a compulsory transmission of external moral values into the minds of children; but after the process is complete, a kernel of moral integration is formed within children, and they become capable of thinking or acting according to their own inner moral standards. It is important that this process be carried out through the personal relationships between children and teachers. This is one of the basic ideas we have of moral education.

Let us further examine the idea of 'moral integration' mentioned above. The idea of moral integration has at least three implications. The first implication is that within the mind of a moral person there is a kernel of moral integration that cannot be decisively controlled by the desires or intentions of other people. In addition, it is important that this kernel be formed by an interaction between that person and those people who surround him/her at some point in his/her developmental process.

The second implication is that moral judgment and moral conduct are executed not through influence from the outside but through the control of the agent him/herself. That is to say, the starting point of moral judgment and moral conduct is nothing but a kernel of moral integration existing within the mind of the agent, which means that the source of morality exists within the agent.

The third implication is that there has to be a historical integrity in the kernel of moral integration within a person. That is to say, the fundamental inclination of a person's moral judgment and moral conduct cannot change instantaneously without any prior signs. This transformation is made possible mainly by the gradual development or maturation of a person's personality, which is brought about by the accu-

mulated human interactions in which that person engages, and this transformation process ought to be understandable from within, through the everyday experiences of ordinary people.

The above three characteristics are a set of beliefs that many ordinary people have in mind when thinking about the moral integration of a person. It is according to these beliefs that they judge the acceptability of a particular moral enhancement. For example, moral bioenhancement by pharmaceutical means is considered not to be true moral enhancement because it goes against all three of the requirements mentioned above: (1) a person's moral judgment and moral conduct are carried out under the influence of drugs introduced from the outside, (2) the starting point of moral bioenhancement is not the kernel of moral integration within the person, and (3) the person's transformation does not occur through personal development or maturation.

While moral education during compulsory school education basically satisfies these three requirements, moral bioenhancement by pharmaceutical means does not. I believe that this is the main reason why people are hesitant to consider moral bioenhancement by pharmaceutical means as an acceptable means of moral enhancement. Many people might think of this approach as a type of coercion, and might not view it as an acceptable form of moral enhancement. Pharmaceutically enhanced human beings might be viewed as pharmaceutically 'enslaved' human beings, not as 'morally enhanced' human beings.

However, our analysis does not necessarily reject all of the pharmaceutical means used for the moral development of a person. If drugs were employed in a limited way, in other words, if they were used only to support an autonomic moral development or transformation of a person, then the use of these drugs would probably not clash with people's beliefs on moral integration and acceptable moral enhancement, because appropriate supportive uses might not contradict the above three requirements.

Then what about moral bioenhancement attained by the modification of one's own genes, or moral bioenhancement attained by the direct control of one's brain by outside systems or people? I think the above three requirements should also be applied to these cases, and if they fully satisfy them, then they might be considered by many to be an acceptable form of moral enhancement, although I believe such a possibility would be lower than that in pharmaceutical cases.<sup>3</sup>

3. It should be noted that there might be cases in which although these enhancements were not considered an acceptable form of moral enhancement, they may be considered an acceptable form of

## CONCLUSION

My provisional conclusion is that moral bioenhancement might be effective in treating paedophiles and other criminals, but not in other cases, and that if we want to improve our society, it would be easier and more effective to improve social conditions. Many people currently remain hesitant to accept a large part of moral bioenhancement, because those enhancements do not satisfy the three requirements for moral integration.

We are still living in a society in which it is widely believed that our personality ought to be constructed upon our inner foundation, which should not be tampered with by outside intervention or control, and I dare say this belief is a healthy one that should not be overturned.<sup>4</sup> If our society transforms into a new one and our beliefs on personality radically change—for example, if people really come to believe that there is no such thing as a kernel of moral integration inside oneself and that one's personality is completely integrated into external social-technological networks—then my analysis here will no longer hold true.<sup>5</sup> I pray that such a society will not come about in the near future while I am alive.

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coercion, just like legal punishment.

4. Of course, I have to explain why this belief can be said to be a healthy one, but I will leave that to a future paper. For the time being, please see Morioka 2012, in which I discussed issues concerning this topic.

5. Postmodern thinkers have debated these theories, and I find their arguments interesting, but I believe there are few individuals who really live according to those philosophies in everyday settings while maintaining good relationships with the people who surround them.

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# The Meaning of Life: Science, Equality and Eternity

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## ABSTRACT

We will: (1) argue that lives can be meaningful to different degrees; (2) explore some ways in which science can be used to make lives more meaningful; (3) explain why some people, such as Leo Tolstoy, even though they have the most meaningful lives, have been tempted to believe that their lives are meaningless.

The question of the meaning of human life came to the fore in the Western world as Christianity lost ground to modern science and philosophy. According to Christianity, our lives are embedded in a divine scheme which presents them as a preparation to an eternal afterlife. We are made in the image of the creator of the universe, and the Earth is the centre of the universe. According to modern science and philosophy, we are instead as mortal as the non-human animals from which we have descended, and this planet is a vanishingly small, perishable speck in a vast universe. From such a cosmic perspective, it seems inescapable that what we do, or what happens to us, will have virtually no significance. We might be oblivious to this perspective when we engage in the pursuits of everyday life, but when we sit back and contemplate our lives *sub specie aeternitatis*, they are bound to appear petty and futile. However successful our undertakings, however fulfilled and influential they make us, we along with all our achievements will soon be annihilated on a cosmic time-scale. Thus, it seems that from this detached point of view our lives cannot but be meaningless. We can suppress this insight by indulging headlong in our earthly lives, but if we are reflective enough it will now and then take possession of us. Our ordinary state of mind with all its anxieties and pleasures will then seem like a state of intoxication from which we are sobering up to a cold and bleak reality.

This picture wrongly presents the meaning of life as though it was an all-or-nothing matter: either life has meaning or it is meaningless. We will instead suggest that there are degrees of personal meaning: human lives can have more or less meaning to the people who live them. However, the fact that some human lives are more meaningful than others raises another problem. This is because some people's lives are often less meaningful than the lives of others through no fault or voluntary choice of these people. Under such conditions it seems unfair or unjust that these people lead less meaningful lives than some others do. To some extent, we might be able to rectify this unfairness by making social conditions more equal and by enhancing hereditary human capacities, but a certain amount of human inequality is bound to remain. We will review some of the ways science can tell us how lives can be made more meaningful by presenting the means to make them better. But philosophy alone can tell us what is ultimately good in life.

At this point, the cosmic perspective which seemed wholly destructive of the meaning of human life could be seen to have one redeeming aspect. Against a vast eternal backdrop, it will be seen that even the most successful human beings achieve comparatively little. Even the most lasting achievements shrink to insignificance in a cosmos which is infinite in space and time. Thus, although it remains true that some human lives are more meaningful than others from the personal perspective, the difference in meaning might appear as relatively small from the cosmic perspective; eternity will almost equalise the meaning differences between human lives. Which perspective we choose to evaluate our lives from is up to us.



## INTRODUCTION

While human beings have puzzled over the meaning of life for thousands of years, the question of the meaning of human life came to the fore in the Western world as Christianity lost ground to modern science and philosophy. According to Christianity, our lives are embedded in a divine scheme in which they are mere preparation for an eternal afterlife. We are *Imago Dei*, made in the image of the creator of the universe, and the Earth is taken to be the centre of the universe. According to

modern science and philosophy, we are instead as mortal as the non-human animals from which we have descended and with which we still share the world, and this planet is a vanishingly small, perishable speck in an infinite universe.

We are social beings with an almost uncontrollable predilection for explaining things in mental and moral terms. This predilection is useful in our dealings with other human beings, whose behaviour is indeed explainable in such terms. But this predilection is so powerful that it produces false positives, i.e. we often believe that events can be given mental or moral explanations when in fact, as science has convincingly shown, this is not so. In early human societies, animism was prevalent; that is, processes in inanimate nature were accounted for in mental terms. Thus, a crop failure was seen as the result of the anger of some super-natural agent, the behaviour of liquids was explained by reference to their ‘horror vacui’, and so on. Such explanations not only made these processes comprehensible, they also promise a possibility of control, e.g. one could prevent future crop failures by appeasing the angry super-natural agent with suitable sacrifices. Science has long since outmoded such animistic explanations by highly successful mechanistic explanations.

Nonetheless, in modern societies our disposition to supply mental explanations still works overtime, though less blatantly than in animistic societies. People are still inclined to think that, for instance, misfortunes signify something, have a meaning. They ask questions like ‘Why am I so unlucky, and Richie so lucky?’, as though they expect a reason justifying this. They tend to attribute mental states even to dead human beings—witness how common it is for people who have been bereft to talk to the deceased and ask for forgiveness, etc. It has been suggested that this irresistible urge to seek explanations in intentional and moral terms may account for why the belief in an afterlife associated with some religions is found in societies all over the world at all times (see e.g. Boyer 2001). Similarly, we suggest that it is often what drives people when they ponder the meaning of their lives. What they want to know is what role or purpose their lives have in a cosmic plan or drama. This question can be answered positively only if there is some Intelligence authoring such a cosmic plan or drama. According to a scientific and secular view, our lives can have no meaning in this sense.

According to science, planet Earth is indeed a vanishingly small speck in a huge universe, and the conclusion is inescapable that whatever we do, or whatever happens to us, will have virtually no impact on this universe (cf. Nagel 1986). We are oblivious to this cosmic perspective as we engage in the pursuits of everyday life, but

when we sit back and contemplate our lives *sub specie aeternitatis*, this perspective opens up and makes our lives appear petty and futile. However successful we are in our undertakings, however fulfilled and influential they make us, we along with all our achievements are ephemeral on a cosmic time-scale. Thus, it seems that from this detached point of view our lives cannot but be meaningless. We can suppress this insight by indulging headlong in what our earthly lives have to offer; but, if we are reflective enough, it will now and then creep in on us and a sense of meaninglessness will take possession of us. Our ordinary state of mind with all its anxieties and pleasures will then seem like a state of intoxication from which we are sobering up to a cold and bleak reality.

In our view, there is a considerable amount of truth in these deliveries of the cosmic picture; but they are exaggerated. We will argue that they wrongly assume that the meaning of life is an all-or-nothing matter: either life has meaning or it is meaningless. We will instead suggest that there are degrees of meaning: human lives can have more or less meaning. The meaning of life is a scalar notion.

However, the fact that some human lives are more meaningful than others raises another problem. This is because some people's lives are often less meaningful than the lives of others through no fault or voluntary choice of their own. Under such conditions, it seems unfair or unjust that the former lead less meaningful lives than the latter. To some extent, we might be able to rectify this unfairness by making social conditions more equal and by enhancing hereditary human capacities. The progress of science has put in our hands powerful means to this end. Nevertheless, science is not all-powerful and a considerable amount of human inequality is bound to remain.

At this point, the cosmic perspective which seemed wholly destructive of the meaning of human life can be seen to have one redeeming aspect. Against a vast eternal backdrop, it will appear that even the most successful human beings achieve comparatively little. Even the most lasting and profound achievements shrink to insignificance in a cosmos which is infinite in space and time. Thus, although it remains true that some human lives are more meaningful than others, the difference in meaning will appear relatively small in a cosmic setting; eternity will almost equalise the meaning differences between human lives. So, the unfair inequality in respect of meaningfulness will be less glaring, though it will not be non-existent, and this small difference matters.

From the more involved, personal perspective that we adopt when we conduct our everyday lives, this difference is significant to us. You might be envious of your

neighbours because they are slightly better off than you—say their apartment has two bedrooms rather than one. To those who are much better off in a different country, whose houses have four or five bedrooms, this difference may seem too small to care about. But to you, the fact that your neighbour's apartment has one more bedroom may be a source of considerable unhappiness. How things appear from this personal perspective has priority when the subject is social equality.

### THE MEANING OF 'THE MEANING OF LIFE': MEANING AND VALUE

As a first shot, we propose an analysis according to which an activity that you engage in has meaning only if it intentionally produces some good. It seems necessary that you intentionally rather than unintentionally produce the good. Suppose that you sit idly in a coffee shop, just whiling away your time, not knowing what to do with it; but that unbeknownst to you, your presence scares off a robber who would otherwise have held up the shop. Then your sitting in the coffee shop unintentionally produces some good, but we would not say that your sitting there had meaning—at least not for you, if you felt that sitting there was a waste of time. You have to mean or intend to produce the good that your activity in fact produces, which is not the case in this example.

On the other hand, imagine that your action fails to produce the good that you intend and produces no good whatsoever, e.g. you intend to rescue somebody, but fail to do so and achieve nothing of value. Then your action is meaningless, a waste of time and energy. This is precisely why Sisyphus' attempt to roll the boulder up the hill in a famous piece of ancient Greek mythology is seen as a paradigm instance of a meaningless activity; he fails to do it and it rolls back all the time.

However, the condition of an activity producing some good cannot be sufficient for it to be meaningful. This is because an activity might have both good and bad effects. If the bad effects were to outweigh the good effects, we would be disinclined to say that the activity had meaning. So, it would seem that to obtain a condition which is both necessary and sufficient for the meaningfulness of a life, we have to claim something like this: your life has meaning if and only if you spend your life intentionally producing a net balance of goodness over badness. This proposal raises the question of what we should say about a life spent intentionally producing a surplus of badness. It seems too weak to say that such a life—the life of a satanically wicked

person—is meaningless. It seems better to distinguish between positive and negative meaning and claim that when we speak of a life having meaning simpliciter, this is elliptical for a net balance of positive meaning. If a sadist spends his life intentionally producing a surplus of badness, of pain and suffering, his life has negative meaning, but we would be disinclined to say that it has meaning without qualification.

We should also distinguish between what is valuable for you and what is valuable for others. Imagine that you spend your life intentionally doing things that have value only for you, e.g. that give you pleasure, but that you produce nothing of value for others. Richard Taylor (1981) claims that such a life is meaningful: he conducts the thought-experiment of imagining that Sisyphus enjoys (rather than endures) rolling the boulder up the hill more than he enjoys anything else, though it always rolls back. Taylor claims that Sisyphus' life would then have meaning, even though it does not result in anything that is valuable for anyone else.

Susan Wolf denies this claim of Taylor's because, in spite of his enjoyment, Sisyphus' activity 'remains futile' (2010: 17). She claims that in order to be meaningful, apart from being subjectively fulfilling, a life must be 'something the value of which is (in part) independent of oneself' (2010: 22). According to her view, 'a life is meaningful insofar as its subjective attractions are to things or goals that are objectively worthwhile' (2010: 34–35). By it being 'objectively worthwhile', she means that it is of value to individuals other than oneself. In contrast to Wolf, we would like to claim that one's life can be meaningful, though it produces something that is of value only to oneself. As Wolf herself writes:

*there seems good reason to ask why, if an activity's value to oneself is insufficient to give meaning to one's life, an activity's value to some other creature should make it any more suitable (2010: 38).*

And,

*It may seem odd that if I benefit you and you benefit me, our activities may contribute to the meaningfulness of each other's lives, but if we each tend to our own well-being, our actions will have no such effect (2010: 42).*

Since we cannot see that Wolf has any satisfactory answer to this kind of query, we take it that spending one's life intentionally promoting what is of value to oneself

provides it with meaning just as spending it intentionally promoting what is of value to others. Both the promotion of what has value for others and of what has value for oneself contribute to making ones's life meaningful.

It should however be noted that we conceive the notion of value to a person more broadly than Wolf does. She takes it to imply 'a form of hedonism', where pleasure and other valuable mental states alone are of value (2010: 15). But consider someone who spends his life trying to achieve something that is remembered for thousands of years, long after his death, and succeeds. Even if this achievement is something that does not have value for others, this success is on a reasonable view enough to give his life meaning, by fulfilling the aim or desire this person had in his life. This is so, even after he is no longer around to enjoy or feel pleased by the successful fulfilment of the dominant ambition of his life. Hedonists would deny this, so this view is not 'a form of hedonism'. Thus hedonism, even if it is a part of the correct account of value, does not fully constitute it. According to the view proposed, a life like that of Herostratus—who burnt down the Temple of Artemis to gain immortal fame, knowing he would be executed—can be meaningful (albeit negatively meaningful).

What is needed for one's life to have meaning is that it in fact fulfils some self-regarding desire—roughly, a desire whose object ineliminably involves oneself (Persson 2005: 151)—not that one is aware of this fulfilment and feels satisfaction, as hedonists would require. On the view here sketched, value consists in the fulfilment of desires—value for oneself in the fulfilment of one's own self-regarding desires, and value for others in the fulfilment of the self-regarding desires of others.

Now it is reasonable to claim that in order for the fulfilment of a (self-regarding) desire to be of value the desire must satisfy some requirement of correctness. There are different ways of understanding such a requirement.<sup>1</sup> According to one account, a desire is correct if it is not based on any factual mistakes. According to a stronger account, there are certain norms of conative correctness that a desire must also pass in order to be correct. We cannot here attempt to solve this highly controversial issue. However, we would like to suggest that in order for one's life to be meaningful, it is not necessary that there be any objective norms that one's self-regarding desires satisfy. Whether or not our lives can be valuable and meaningful for us cannot reasonably hinge on the solution of this meta-normative issue. Perhaps things cannot be valuable simpliciter if there is not any objective value, but it is much harder to believe that objectivity is necessary for things to be valuable for us.

1. For a well-known discussion of this matter, see Parfit 1984: Appendix I.

It is important to stress that the meaning of your life can be constituted by the good you intentionally bring to the lives of others as well as your own life. This is because it is easier to bring great value to the lives of others than it is to bring a commensurate value to your own life. If you spend your life intentionally doing things that are good only to yourself, your life is likely to produce less good than if you intentionally do things that are good also to others. We propose to capture this fact by distinguishing between lives having more or less meaning. If you spend your life intentionally producing a greater balance of good over evil to yourself or others, your life will have more meaning than it would have if it had intentionally produced a lesser balance of good over evil to yourself or others.

This distinction between degrees of meaning also enables us to deal with some strange imaginary cases that Wolf describes. She writes of a woman whose life revolves around her pet goldfish that, although perhaps ‘the life and comfort of a goldfish is worth something’, these things ‘do not seem valuable enough to merit the kind of time, energy, and investment’ that the woman devotes to them, particularly not in light of the wealth of other things that she could devote herself to (2010: 37–38). But this seems to us not to be a reason for saying that focusing on the well-being of a goldfish cannot provide a life with any meaning. It seems more natural to claim that it could provide it with only very little meaning compared to other things to which the woman could have devoted herself. It would seem that if the woman had devoted herself to the well-being of many animals, Wolf would have to concede that this could make her life meaningful; but there is only a difference of degree between this case and the case of concern for a single goldfish. Therefore, we conclude that it is more natural to claim that this woman’s life has very little meaning than that it does not have any meaning whatsoever.

Compare two people with advanced dementia. Agnus doesn’t get pleasure out of anything, staring vacantly into space, drooling, unable to engage with herself, others or the world around. Gladys gains pleasure from one thing: tending to her goldfish. It is plausible to claim that the life of Gladys is a bit more meaningful than the life of Agnus. If we could apply some treatment to Agnus that could bring her to the level of Gladys, this would be a good thing. Of course, it would be much less meaningful than a normal life; but it would not be meaningless, as it was prior to treatment. Lives, then, differ in degrees of meaning and, if we can, we should make less meaningful lives more meaningful.



## THE INJUSTICE OF SOME LIVES BEING LESS MEANINGFUL

If we introduce degrees of life meaning, it becomes obvious, as we have indicated, that the lives of some human beings have more meaning than the lives of other human beings. They are more meaningful because they contribute more to what is (positively) valuable to themselves and others. It is worth emphasising that lives of people differ most radically not in what they can contribute to themselves, but with regards their contribution to the lives of others. Think for instance of people who have created artistic masterpieces, like Leonardo da Vinci, William Shakespeare and Wolfgang Mozart; people who have made great scientific discoveries, like Isaac Newton, Albert Einstein and Alexander Fleming; or people who have founded world-wide religions, like Buddha, Confucius, Jesus and Muhammad. Since the achievements of such people could have an impact upon the lives of others for centuries, they could contribute to the good of others to an extent that enormously exceeds the impact of the lives of more ordinary people. In this way, the most meaningful lives will be those which produce a lot of value for others.

But, needless to say, humans also vary considerably in respect of the value they put into their own lives. Some people fail to put much value into their lives because they are lazy; others fail because of mental or physical handicaps. The value one's life has to oneself could also be increased by rewards that one receives because of the services one does to other people.

To a great extent, the fact that the lives of some humans are less meaningful than the life of many others is not due to the fault or voluntary choice of these people. Many people will contribute less to the value of their own lives and the lives of others because they happen to be born into social conditions which leave them malnourished, ridden with disease or uneducated. Others are genetically disfavoured and have severe mental or physical congenital handicaps. Still others who are genetically and socially well-endowed from the start have their lives stunted by unforeseen accidents, crimes or diseases which kill or cripple them prematurely. Through no fault or voluntary choice of their own, all of these people lead lives that are less meaningful than the lives of other, more fortunate people.

It is plausible to claim that when the lives of some humans are less meaningful through no fault or voluntary choice of their own, this is unjust or unfair. It is arguable that it could be just or fair that some are worse-off only if they are in some way responsible for their plight, and this is not so if it occurs through no fault or volun-

tary choice of theirs. To some extent, injustices can be rectified by human action. We can improve the socio-economic conditions of the worse-off, so that they will be better nourished and educated and, hence, better equipped to lead lives of value to themselves and others. We are also beginning to acquire genetic therapies and other biological interventions to cure or mitigate some congenital diseases and handicaps, so that not only the socio-economic, but also the genetic start of human lives could become more equal. Science and medicine constantly make progress such that more and more diseases can be treated. The fight against violent crimes could be made more effective, and roads could be made more secure, so that fewer people fall victims to violent crimes and traffic accidents, and so on. But it is most unlikely that we shall ever succeed in equalising all of the unjust differences in respect of the meaningfulness of lives. Some socio-economic differences will remain that will help some to a better start than others. So will some genetic disadvantages, and there will be some unforeseen accidents, crimes and diseases which claim or stunt lives prematurely.

In this connection, it is worth saying something about how the notion of one's life being less meaningful through one's voluntary choice is to be understood, and to reflect upon another common everyday dilemma in connection with the meaning of life. When considering how to live your life, you might well ask yourself whether you should 'live for the moment' or pursue some more long-term goal, such as writing a book or working for some political cause, though this requires you to sacrifice some immediate rewards. It might well be that, if you succeed in attaining the long-term goal, your life will be more valuable both to yourself and others than it would be were you successfully to live for the present moment. But if you fail in attaining the long-term goal—perhaps because some unforeseen accident, crime or disease prematurely kills or incapacitates you—it will be less valuable in both respects. Imagine that you choose to spend your life pursuing the long-term goal, but fail to attain it because of some fatality that you could not possibly have foreseen. Then your life comes to have less meaning in some sense because of your choice. However, this is not the sense which removes the injustice of your life being less meaningful, since strictly speaking you do not choose to lead a less meaningful life, but to pursue a long-term goal. Your leading a less meaningful life is not intentional, but accidental. It happens through no fault of yours and might therefore be unjust.

It should be clear that this dilemma of having to choose between living for the moment or living for long-term goals is inescapable so long as we cannot reliably predict what the outcomes of choices will be. Presumably, we shall never be able to

predict this in any detailed way. Moreover, in the unlikely event that we were to be capable of making such detailed predictions, a lot of the point of living would be lost, since much of this point concerns finding out what we are capable of achieving.<sup>2</sup> For instance, it would be rather pointless to set out to acquire knowledge of certain facts if you were able to predict in advance what facts you are going to acquire.

### THE 'EQUALISING' EFFECT OF ETERNITY

We have defended a view according to which our lives can have meaning on a scientific and non-religious understanding of the universe. Our lives can have meaning even though death is the end and there is no eternal afterlife of the sort that many religions postulate. Now it is certainly good news that our lives are not necessarily meaningless according to a scientific picture of the universe, as many religious believers and non-believers have thought. But our view also implies that some of us lead more meaningful lives than others and that this is often unjust. Since injustice is something bad, our view also carries some bad news. In respect of justice, the nihilist view that all human life is meaningless is better than the view we have defended, since it does not imply that there is any unjust inequality in respect of meaningfulness—though it accomplishes equality by means of a radical 'devaluation' of our lives, by removing all life of meaning. We might ask whether our view could acquire something of the egalitarian merits of the devaluative view by assimilating something of what motivates it.

To find out whether this is possible, let us look at one of the most famous accounts of the experience of life as meaningless, namely Leo Tolstoy's. At the age of about fifty, Tolstoy was seized by a feeling that his life was meaningless, though he 'was on every side surrounded by what was considered to be complete happiness' (1981: 10): he was a famous writer, a rich land-owner, and had a loving wife and a large family. The origin of Tolstoy's feeling of meaninglessness seems to be the awareness that nothing of all this happiness would last:

*Sooner or later there would come diseases and death ... to my dear ones and to me, and there would be nothing left but stench and worms. All my affairs, no matter what they might be, would sooner or later be forgotten, and I myself should not exist* (1981: 11).

2. Cf. Persson 2005: 148–50.

It seems that Tolstoy was of the opinion that his life could have meaning only if there is something eternal and indestructible that could issue from it:

*The question was ‘Why should I live?’ that is, ‘What real, indestructible essence will come from my phantasmal, destructible life?’ (1981: 15)*

And,

*‘What is the meaning which is not destroyed by death?’—‘The union with infinite God, paradise’ (1981: 16).*

The fact that life is nothing but ‘a particle of the infinite not only gives it no meaning, but even destroys every possible meaning’ (1981: 14). In sum, Tolstoy’s view seems to be that if our lives are to have meaning, they must go on forever, in a way that is (overall) valuable, or at least they must result in something of eternal value. If this is right, a scientific, secular view of the universe will imply that our lives are meaningless because death will then seem to be tantamount to our annihilation. And whatever value we contribute to the lives of others will fade gradually to nothing over eternity. Our lives being meaningful, according to people like Tolstoy, requires a religious view like Christianity, which offers an eternal afterlife.

However, it is certainly false that something cannot be of value unless it lasts forever, or is of infinite duration. That something is of infinite temporal extension is as little necessary for it to be valuable as it is that it is of infinite spatial extension. Perhaps something cannot be of infinite value, unless it is of infinite duration or infinite spatial extension. But why claim that our lives must result in something of infinite value in order to be meaningful; why is it not enough that they result in something of finite value (overall)? Once we distinguish between degrees of meaning, it should readily be seen that in order to have some degree of meaning, it is enough if our lives (intentionally) result in something of finite value or, more precisely, a finite net balance of positive value. True, our lives would be more meaningful if they resulted in something of infinite value to ourselves or others, but that is no reason for denying that their resulting in something of finite value is capable of supplying them with some meaning.

But when one adopts a cosmic perspective which opens up a universe that is

apparently endless both spatially and temporally, why is it so tempting to deny that anything that we could do here and now on Earth could make our lives meaningful? This is doubtless tempting, since Tolstoy is far from being the only one who has succumbed to this temptation.<sup>3</sup> If one views a valuable everyday state of affairs from a mundane personal perspective which often does not range over more than our neighbourhood and the near future—in any case, not beyond this planet and its foreseeable future—this state of affairs could occupy a relatively large part of the perspective. For this perspective cannot harbour states of affairs that are hugely more extensive in space and time. But with a switch to a cosmic perspective which extends over more of the universe than the Earth and over millions of years, hugely more extensive states of affairs become imaginable. In comparison to them, what we could accomplish in our lives dwindles to something so small that we may find it difficult to care about it. If we take into consideration the billions of years that we shall be dead, a few decades of happiness before we die might seem insignificant. In contrast, if our time frame is nothing beyond the rest of our lives, and we compare being happy with being unhappy during those decades, it comes out as being so much better to be happy that we will be keen to be so. The loss of concern about our few decades of happiness that we experience when we shift from this mundane perspective to a vastly more extensive cosmic perspective is so drastic that we might feel that this period of happiness loses all value, though this is strictly speaking not true.<sup>4</sup> This might explain why people like Tolstoy come to perceive life as meaningless; however, this is an erroneous exaggeration.

Although adopting the cosmic perspective can involve such a negative exaggeration, it must not be confused with situations in which we claim that our life is meaningless because we take an altogether false view of it. Consider people who spend most of their life in pursuit of some aim—perhaps they aim to create a great work of art, make some important scientific discovery, or promote some political cause—and in old age find out that they have failed to achieve this aim. They might then feel that their entire life has been meaningless, a waste of time and effort. At this moment of disappointment, they are prone to overlook that they have spent many long periods

3. For a recent example, see Robert Nozick's speculations about the meaning of life culminating in the boundless *Ein Sof* (1981: chap. 6).

4. Cf. the discussion in Persson 2005: 224–27).

of their lives happily engrossed in the pursuit of this goal, experiencing what has been called flow by Mihaly Csikszentmihalyi. They might also overlook the joy they have brought to their family and friends.

In general, it is exceedingly difficult to make a balanced estimate of the good you have done to yourself and others during your life-span. So, you are prone to be guided by some episodes in your life that readily present themselves to you, e.g. what you experience right now.<sup>5</sup> Such misguided estimates could be self-fulfilling: if you judge that your life has been going badly, this might cause you to make your life take a turn for the worse. Of course, misguided positive estimates are also likely to be self-fulfilling: if you judge that your life has been going well, this might make your life go better than it otherwise would have gone. But note that we are more likely to make misguided negative estimates because we are more inclined to reflect upon our lives overall when we are dejected and bored than when we are fulfilled and stimulated. In the latter case we simply immerse ourselves in the activities of life, get on with the business of living.

You are not guilty of such erroneous, partial judgments of your life when you adopt a cosmic perspective: this perspective could take into account every fact about your life that the most accurate mundane personal perspective on your life can take into account. But it covers more by widening the earth-bound context of your life to a cosmic context. In virtue of being more encompassing, the cosmic point of view can claim to present your life in a truer light than any mundane point of view it contains. This does not imply, however, that you should adopt a cosmic perspective rather than a mundane personal perspective, since it is not clear that being more truthful is worth the cost in respect of involvement in life. This involvement is probably necessary to motivate us to make our lives as meaningful as possible, by promoting what is of value in our own life and in the lives of others. Also, it is probably necessary to motivate us to rectify unjust inequalities in respect of the value of lives as far as this is possible.

However, to a considerable extent the injustice of some humans leading less meaningful lives than others through no fault or voluntary choice of their own cannot be abolished by us. To the extent that this is so, the loss of concern that the adoption of a cosmic perspective brings could provide some consolation, by alleviating some of the sting of the feeling of this unavoidable injustice. Even the achievements of the most influential people, the people whose achievements have affected the history of

5. Cf. Kahneman: 'the score that you quickly assign to your life is determined by a small sample of highly available ideas, not by a careful weighting of the domains of your life' (2011: 400).

the world for centuries and even millenia, like Aristotle and Buddha, will shrink to minuteness from a point of view which ranges widely over the universe for billions of years. Thus, the cosmic perspective has something of an equalising effect: its spatio-temporal vastness will make the differences between more and less meaningful human lives appear comparatively small. Note, however, that this perspective does not obliterate the differences in meaning between human lives: it is still true—and important—that some lives are more meaningful than others.

Bernard Williams (1973) speculates that if we were to live forever, we would eventually be overcome by boredom. If he is right, eternal life would be terrible, since there would be no possible escape from the boredom of an eternal life (at least if we cannot make ourselves unconscious forever). But it is hard to tell whether he is right, since it is so difficult to imagine a life that goes on forever. However, we can imagine a life that goes on apparently without end, i.e. a life such that, whatever point in it we consider, life goes on beyond that point. There seems to be no reason why such a life cannot be happy and fulfilling. The world is seemingly inexhaustible, so an alert and curious person could constantly discover new sources of interest. Compared to such a life lasting for thousands and even millions of years, the few decades of happiness that we could hope for appear trivial. Since such an indefinitely long life is a possible object of comparison *sub specie aeternitatis*, a humanly possible period of happiness could appear trivial to us.

If the explanation of the meaninglessness of life is a shift to a cosmic perspective, we can understand why Ludwig Wittgenstein could believe that '[t]he solution of the problem of life is seen in the vanishing of the problem', and that this is the reason why those who, after doubting 'the sense of life', have become clear about it have 'been unable to say what constituted that sense' (1963: 6.521). If you cease feeling that life is meaningless because you are sucked back into a mundane personal perspective from a cosmic perspective, this feeling could evaporate even though you have not made any new discovery about life to which you could point.<sup>6</sup>

6. However, the same inability to report a 'sense' could also result when your judgment that your life is meaningless has been prompted simply by the disappointment or unhappiness you feel at a particular stage of your life: when this stage becomes temporally distant and you enter a happier phase of life, this gloomy judgment is likely to vanish.

## CONCLUSION

In this paper, we have argued that science represents no threat to finding meaning in life. Our lives have meaning if we intentionally promote what is of value for ourselves and for others. The meaning of life in this sense is scalar: some lives are more meaningful than others. It is true that science undercuts our lives having meaning in the sense of having a role or purpose in cosmic plan or drama designed by a super-natural intelligence. Instead it opens up a vast universe of which human affairs occupy a vanishingly small place. On the other hand, science provides us with effective means to provide our own lives and the lives of others with value and to reduce the inequality in respect of value between human lives. Although the value our lives can have appears small from the cosmic perspective of science, it is a mistake to feel that they have no value and meaning at all. In particular, it is mistake, committed by Tolstoy and others who have been taken in by religious world-views, to think that our lives can have meaning only if they last forever, or make contributions to something that lasts forever.

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# Risk Assessment of Severe Nuclear Power Plant Accidents and Ethics in Science and Technology

*Roles of Scientists in the Study on the Effect of Low-dose Radiation*

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## ABSTRACT

The information provided by specialists as to the level of risk by radioactive substances scattered by the accident of the Fukushima Daiichi Nuclear Power Plant did not gain public trust, and caused great public confusion. People in Fukushima and other districts with higher dose contamination are suffering radiation contamination itself, and have to take various measures in their daily living. They are further burdened with sufferings due to insufficient measures taken by the central and local governments and municipalities. Being possessed by the profits for the developing entities, people involved in scientific technology with possible enormous risk tend to pay only slight consideration to people to whom serious life-threatening health injury may be caused. This tendency is found not only among specialists in health hazards from low-dose radiation exposure, but also among specialists in many other fields including medicine and life science. The risk assessment of the nuclear power plant disaster is greatly related to various problems of life ethics of today.



The accident that occurred at the Fukushima Daiichi nuclear power plant as a result of the Great East Japan Earthquake on 11<sup>th</sup> March, 2011 scattered a large amount

of radioactive substances throughout the area. The information provided by specialists in terms of the level of risk posed by these substances did not gain public trust and caused great confusion.

One Japanese leader of scientific opinion, Hiroyuki Yoshikawa, former president of Tokyo University and former chairman of the Science Council of Japan wrote an article, published in the April 2012 issue of *Chuo Koron*, titled 'What did scientists learn from Fukushima? In order to regain fallen trust'. In this article, he takes up the issue of the downfall of the public's trust in nuclear power and radiation 'specialists' after the nuclear power plant accident. He also candidly admits that these so-called specialists have caused confusion about the 'influences of radioactive materials on the human body'.

*'People have had a certain level of trust that scientists are neutral. However, the nuclear power plant accident revealed the presence of nuclear cronyism in which a group of scientists who were working as an interest group was widely exposed'. (2012: 23)*

In reference to the public confusion, Yoshikawa writes,

*'As to radioactivity, the world has not accumulated sufficient data on the level of harm to the human body. ... Even so, the available data have not been used effectively'. (2012: 23)*

What negative effects and difficulties have been imposed on the people most likely to be affected by this failure? On 19<sup>th</sup> April, 2011, the Ministry of Education, Culture, Sports, Science and Technology (MEXT) and the Ministry of Health, Labour and Welfare (MHLW) issued an official notice, 'Provisional attitude on determining the use of school buildings and grounds outside the evacuation areas'. This notice instructs that, 'in the regions where preschool children and elementary and secondary school children can go to their schools, the reference level of between 1 mSv/y and 20 mSv/y should be considered as a provisional level to determine the use of school buildings, grounds, etc., once high alert conditions are over'. In addition, in order not to exceed 20 mSv/y exposure, outdoor activities on the school grounds and in other areas should be limited to when outdoor radioactive contamination is 3.8  $\mu$ Sv per hour and below. It means that when outdoor contamination is less than

3.8  $\mu\text{Sv}$  per hour, by calculation, the indoor contamination level is equivalent to 1.52  $\mu\text{Sv}$  per hour or less. This means that if children spend 8 hours outdoors and 16 hours indoors, their accumulated exposure can be controlled below 20 mSv per year.

The notice brought an enraged outcry as the public questioned whether the highest level of allowable dose was too high. Professor Toshiso Kosako of Tokyo University, who resigned as an advisor to the Cabinet Secretariat on 30<sup>th</sup> April, 2011, expressed his concern in his resignation address.

Kosako stated that the standards outlined in the notice issued by MEXT and MHLW for the allowable use of the school grounds in the Fukushima Prefecture were incorrect. Since these schools would be conducting ordinary school activities, the level of radioactive contamination should be close to the ordinary radioactive protection level—1 mSv per year, with the exceptional limit of 5 mSv per year for special cases. The level suggested in the notice can only be adopted in a high alert situation for a few days or one to two weeks at most. It would be utterly wrong to adopt these in the current situation. By informing the people in the region that this was an alert period and providing them with special measures, 10 mSv per year could be applied; yet this high level should be avoided. Even among the 84,000 people concerned with radiation-related work in nuclear power plants, there are only limited people who are exposed to nearly 20 mSv per year. To adopt the said figures for infants, young children and elementary school children is not acceptable not only from a scientific standpoint but also from a humanist viewpoint. A level of 10 mSv per year is rarely observed in the cover soil at uranium mine disposal sites, which typically have levels of only several mSv per year at most. Adopting the figures in the notice should be done only with great caution.

It is inferred that the 19<sup>th</sup> April notice was prepared mainly by experts on the health influences of radiation and protection from it, such as the Nuclear Disaster Experts Group in the Prime Minister's Office (Keigo Endo, Kenji Kamiya, Kazunori Kodama, Kazuo Sakai, Yasuhito Sasaki, Shigenobu Nagataki, Kazuhiko Maekawa and Shun-ichi Yamashita) and Fukushima Prefecture Radioactive Health Risk Management Advisors (Shun-ichi Yamashita, Noboru Takamura and Kenji Kamiya). As a specialist in radiation protection, Professor Toshiso Kosako squarely opposed the contents of the notice.

Prior to his resignation, a situation was mounting which amplified the public's sceptical view of the precautionary measures taken to mitigate health concerns over radiation, presented by the Japanese government and the Fukushima Prefectural gov-

ernment. An increasing number of citizens doubted what Shun-ichi Yamashita had said in his article 'Influence by radioactive substances' (Yamashita 2011). Yamashita plays an important role for the Prime Minister's Office as well as the Fukushima Prefectural government as a specialist on the thyroid gland. He is also a professor at Nagasaki University School of Medicine and Vice President of Fukushima Medical University at the same time.

His statement in the article was as follows:

*The likelihood of getting cancer increases a little if a person is exposed to 100 mSv and more radiation at one time, and it is said that when the amount is controlled under 50 mSv per year, people are not affected. The total amount of exposure for workers at nuclear power plants is designated to be 50 mSv per year because greater safety is considered.*

*The greatest concern over people about being exposed to radiation is that they may get cancer later in their lives. In a case where 100 people are simultaneously exposed to 100 mSv radiation, one or two more persons than usual will get cancer at some point in their lives. Currently, one out of three Japanese dies of cancer. As such, in the above-mentioned situation, there would be no significant increase in the number of cancer patients. (Yamashita 2011)*

Yamashita repeatedly stated that the influence of low-dose-radioactive substances was negligible. He said, 'You will not be affected by radioactivity if you keep on smiling. But you will be affected by it, if you are worried about it'. And, 'Even in difficult times, you will not have any harm to your health if you are not worried about it'. Also, 'In any case, if you are exposed to less than 100 mSv per hour, your health will not be affected' (through Internet retrieval). Because of these statements, he faced criticism from many people, and the force of criticism increased after the resignation of Professor Kosako as an advisor to the Cabinet Secretariat.

Since Yamashita's speeches, an intense conflict has continued between those who agree with the Japanese and Fukushima Prefectural governments that the health damage resulting from radioactive fallout is so negligible that preventive measures should only be taken in limited districts, and those who believe that preventive measures should be taken because health damage due to radioactive fallout, particularly in children, is unknown. The national and Fukushima governments have not taken suf-

ficient preventive measures against radioactive substances on the grounds that their findings show that health effects from radioactive substances is small. This stance can be confirmed by the Report of the Working Group (22 December, 2011) on Low Dose Exposure, organised under the government's Advisory Committee on Measures Against Radioactive Contamination:

According to international agreements, the significant increase in the risk of cancerogenesis by radiation exposure under 100 mSv is difficult to prove as it is so negligible that it may be hidden by other cancer-promoting factors. Although attempts are being made to clarify the cancer-promoting risk of low-dose-radiation exposure by scientific procedures other than epidemiologic research, at the moment, the risk to the human body has not yet been revealed (19).

People in Fukushima and other districts with higher doses of contamination are suffering radiation contamination, and have to take various measures in their daily living. They are further burdened with suffering due to insufficient measures taken by the central and local governments and municipalities. The anger, sorrow and stress among the local residents, including those who have taken refuge elsewhere, is mounting a search of public support. Their complaints include measures being too few; geographically biased radioactive surveys; poor assistance for relocation or evacuation; lack of food safety measures and indefinite safety standards for produce, animal products, and marine products; poor support for decontamination work; too little compensation, overly complicated application procedures for compensation and difficulty initiating the application; and dissention and conflict caused by differences in radioactive risk assessment among specialists.

Why have specialists made safety-inclined assessments about 'radioactive influence on the human body'? The author has collected speeches repeatedly delivered by specialists after the nuclear power plant accident in order to consider what research studies and ideologies they had based their safety-inclined speeches on (Ichinose et.al. 2012) and the blog article 'The process through which Japanese specialists on radiation effects and their prevention have become inclined to have less severe safety standards than the ICRP level' (Shimazono 2012). Since the late 1980s, it was observed that Japanese specialists on radiation effects and health physics had been studying with a view to emphasise that health risks from low-dose-radiation exposure are small, and that in fact, such exposure has a favourable effect on health.

For example, Kazuo Sakai conducted a biological experimental study of low-dose radiation at the Central Institute of Electric Power Industry (CIEPI) and devised

the ‘dose and dose rate map’. Hence, he is highly regarded for his contribution to the development of the theory on the safety of low-dose radiation. Sakai stated the following in his article in the ‘CIEPI News’ No. 401 (2004):

*A mistaken idea that even a micro amount of radiation is harmful is the cause of people’s fear about radiation and radioactivity. I have considered the need to uniformly integrate reports on micro amounts of radiation, which have previously only been fragmentarily disclosed, and have therefore devised the ‘dose and dose rate map’. I expect that this map will alleviate public fears over radiation and simultaneously incite discussions leading to the effective use of low-dose/low-dose-rate radiation. (Sakai 2004, 3)*

Studies including the above are geared towards those who consider the standards laid by the International Commission on Radiological Protection (ICRP) ‘too strict’, and who aim to lower the standards. ICRP, the leading agency that the world relies on to present universal standards for radiology protection, advocates the linear no-threshold hypothesis for the estimation of cancer risk (i.e. LNT hypothesis), considering that even low-dose radiation under 100 mSv will continue to adversely affect human health, causing illnesses such as terminal cancer, although the level of harm will decline over a period of years if there is no further exposure. However, some specialists consider that the ICRP standards based on the LNT hypothesis are too strict and insist that they should be relaxed in order to promote nuclear power plants.

CIEPI has been taking the lead in asserting that the ICRP standards are too rigid both in Japan and the world and has been promoting studies in favour of the safety of low-dose radiation in partnership with universities across Japan. The National Institute of Radiological Sciences, where Kazuo Sakai moved to from the CIEPI, has also been energetically engaged in research studies to review the LNT hypothesis from the standpoint of studying the cancerogenesis mechanism. The National Institute of Radiological Sciences is the core Japanese agency for scientific studies of radiological influence and protection. Toshihiko Sado, who has been leading the research study, makes the following statement:

*As long as we take this stance, it would mean that there is no ‘safe amount’ of effects of these sources acting on the human body. This view makes the public excessively nervous, thinking that even micro amounts of radioactive substances and environ-*

*mental chemicals will have health risk. This nervousness may cause them to have higher levels of stress, which may cause new health issues. In this sense, it seems that the LNT hypothesis is exerting an impact on the public beyond the function of simply setting the safety guidelines to prevent harm from radioactive substances and environmental chemicals (Sado et al. 2005: 4–5).*

The above discussion proves that many Japanese experts in radiological health hazards have conducted their studies based on this concept, considering health effects of low-dose-radiation exposure to be minimal.

The preventive measures taken after the 11<sup>th</sup> March earthquake to protect the local people against low-dose-radiation exposure at the suggestion of the specialists were so precarious that they resulted in provoking resentment among the public. While saying that they were committed to observing the ICRP standards, specialists were strongly influenced by the notion that the ICRP standards were too rigid. In formulating measures, they consequently paid little consideration to the local people.

The Japanese government (i.e. the cabinet and related ministries) and local governments had delegated the formulation of important policies to specific groups of specialists for many years. After the 11<sup>th</sup> March earthquake, the authorities again had to entrust a limited range of specialists to formulate policy measures. In the process of developing nuclear power plants, the government has pushed forward the establishment of nuclear power plants at different locations, depending on the help of specialists while being faced with opposition by local people in respective locations. This was true with the question of health hazards caused by low-dose-radiation exposure.

Specific groups of politicians, government officers, business circles, academicians and the media, who are deeply involved in the development of nuclear power plants, have formed a special interest group, commonly called 'Nuclear Cronies'. They spent enormous amounts of money on advertising the advantages of nuclear power plants and embracing interested people. On the other hand, they have hidden unfavourable information on nuclear power plants from the public. These points have been criticised by the public. Many specialists in radioactive health hazards have also been integrated into that community with the communal principle of nuclear cronyism.

This kind of situation has arisen because of the special features of nuclear power development and the studies of the health hazards of radioactive substances. Since the beginning of research on atomic bomb development (under the direction of the military during World War II), these fields have been veiled in secrecy. One reason

may be that nuclear power development was initiated in the military arena, where means that were hardly considered to be humane or ethical were justified for the sake of the purpose. Even under the name of ‘peaceful use of nuclear power’, nuclear power plant development was still associated with a military purpose. The closed nature and information cover-up also continued because nuclear power plant development involved enormous risk. Being conscious of uneasy feelings among local people opposing nuclear power plants, the people on the development side have been beset by the temptation to select or embody risk information in favour of the promoters, and a mechanism to justify this has been developed.

Given their interest in the profits for the goods they develop, people involved in scientific technology that possibly poses an enormous risk tend to pay only slight consideration to those people who may suffer serious life-threatening health injuries as a result of risky technologies. This tendency is observed not only among specialists in health hazards from low-dose-radiation exposure but also among specialists in many other fields including medicine and the life sciences. In this sense, the issue of risk assessment arising through the nuclear power plant accident in Fukushima is considered to be relevant to bioethics and medical ethics, and further to the ethics of contemporary scientific technologies. The risk assessment of the nuclear power plant disaster is highly relevant to various problems in applied ethics today.

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# The Ethics of Unity and Difference

*Interpretations of Japanese Behaviour Surrounding 11 March 2011*

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## ABSTRACT

This paper presents the theory of the ethics of unity and difference and illustrates it with behaviours observed in Japan around the March 2011 tsunami. First, it explains beliefs and behaviours in relation to ‘the ethics of unity’ and ‘the ethics of difference’. The former embodies attitudes of mutual support based on the belief that people are *companions*, while the latter attitudes of mutual non-interference based on the belief that people are *strangers* to each other. Second, it discusses the darker sides of both ethics, how deficiencies of each can be offset by the merits of the other and how the darker side of the ethics of unity appeared when the ethics of difference faded in tsunami-stricken areas. Third, a philosophical hypothesis suggests how these two ethics originated, evolved and developed darker sides from the motive of group survival, which was guided by intra-group and inter-group relationships. Finally, it explores behavioural discrepancies between the rational and emotional aspects of the ethics of unity highlighted by the adage of *Tsunami tendenko*.



## INTRODUCTION

This paper presents my theory of the ethics of unity and difference and illustrates it with behaviours observed in Japan around the March 2011 tsunami. First, it

explains beliefs and behaviours in relation to ‘the ethics of unity’ and ‘the ethics of difference’. Second, it discusses the darker sides of both ethics, how deficiencies of each can be offset by the merits of the other and how the darker side of the ethics of unity appeared when the ethics of difference faded in tsunami-stricken areas. Third, a philosophical surmise suggests how these two ethics originated, evolved and developed darker sides from the motive of group survival, which was guided by intra-group and inter-group relationships. Finally, it explores behavioural discrepancies between the rational and emotional aspects of the ethics of unity highlighted by adage *Tsunami tendenko*.

## TWO PRINCIPLES OF ETHICAL BEHAVIOUR

My ‘ethics of unity’ and ‘ethics of difference’ emerged after observing how the Japanese behave when encountering each other. Ethical codes seemingly vary depending on people’s perception of the closeness of perceived relationships. For instance, friends and acquaintances are keen to help each other, even if they might be thought meddling or even self-sacrificing; whereas people whose relationship is not close exhibit mutual non-interference over mutual help behaviours. Most human interactions involve relationships that are neither intimate nor distant, and people’s behaviour falls between extremes.

After a lengthy observation, I formed the hypothesis that the observed behaviours originate from seemingly incompatible principles: the *ethics of unity* (or *togetherness*) and the *ethics of difference*. The former embodies attitudes of mutual support based on the belief that people are *companions* who share lives, values, understanding and feelings. The latter embodies attitudes of mutual non-interference based on the belief that people are *strangers* with unrelated lives, values, understandings and feelings. People gauge appropriate behaviour by assessing the distance between each other and blending the two ethics in proportion to that distance. For instance, I might wonder whether to advise a colleague about disreputable attire. My decision depends on whether our relationship is close or distant. If close, I speak; if not, I choose mutual non-interference.

Several points about ethical principles are relevant to the discussion. First, *Mill’s harm principle*, widely known from *On Liberty* (Mill 1859: 21–22), is the bedrock of ethical and legal codes worldwide. It states, ‘One may do anything freely, so long as

it brings no harm to others'. This principle is the foremost practical expression of mutual non-interference and the distinguishing aspect of the ethics of difference. '*Live and let live*' expresses its literal meaning.

A second ethical principle is 'Help others who need your help' and might be termed the *principle of mutual help*. It is a prescription as well, but its imperative is different from the prescriptiveness of Mill's harm principle; the former is a *collective* prescription that prescribes mutual help for people as a group, whereas the latter is a personal one, which prescribes no harm for each member of a society. If I act in contravention to Mill's harm principle, I am ostracised, even if others act according to it. By contrast, if I chose not to help someone when I could have done so, I am not criticised, provided someone else helped him. Nevertheless, if it is known that I never or seldom help others in need, I will likely be criticised by my peers for not respecting the principle. The principle of mutual help is fundamental to the ethics of unity, and '*Live by helping each other*' is its essence.

Third, Mill insisted that the harm principle is the only ethical principle and that other ethical codes can be reduced to or comprehended by it. Grounded in the ethics of unity and difference, however, I believe Mill's harm principle alone neither encompasses all ethical codes nor satisfies ethical common sense. The principle of mutual help must complement it.

Fourth, the *illocutionary* forces (Austin 1975: 148–57) of Mill's harm principle and the principle of mutual help vary with the relationships of people involved. If our relationship is remote, the prescriptive, or *exercitive*, force of Mill's harm principle is strong and we feel as if we are coerced to observe it strictly; while in case of a close relationship, the force of the harm principle is weaker and we occasionally think we are permitted to cause annoyance or mild harm to our colleagues, expecting their tolerance. By contrast, in remote relationships, the prescriptive force of the principle of mutual help is weak and we feel as if it is a kind of recommendation; while in closer relationships, it is stronger and we consider it a personal prescription, thinking that 'I, and not others, have to help a certain person'.

Finally, the ethics of unity and difference coexist in society and constitute a fundamental social structure. Liberals seek to balance them, whereas libertarians stress the latter and relocate the obligation for mutual support from the social to the private domain. The balance between the two also differs between countries and cultures.

## DEFECTS OF THE TWO ETHICS

In blending the ethics of unity and difference, the Japanese ethical system counterbalances the defects of one with the merits of the other. The ethics of unity emphasises an attitude of mutual support, a cooperative intent grounded in the perception that people share important similarities. This description hints at its defects. First, it promotes meddlesomeness. People undertake behaviours that they believe benefit people they care for but ignore the preferences of those people because the group must be united in its preferences. Second, and in contrast, the ethics of unity may sacrifice unwilling persons for the group. Third, it may ostracise ‘the odd one out’ as insistence on group uniformity excludes those who seem different.

The ethics of difference are noted for mutual non-interference and the belief that people are strangers. Accordingly, it is unlikely that people would assist others if they observed only the ethics of difference. Human interactions would be *give-and-take* propositions. Reciprocity would dominate behaviour, and few would sacrifice themselves for others.

Adopting the ethics of difference offsets the defects of the ethics of unity and *vice versa*, for the two are complements. Normally, the former’s live-and-let-live spirit functions alongside the latter’s cooperative spirit. People try to cooperate with others in daily life and generally tolerate those who think and act differently. In a crisis, however, the balance between the two ethics may collapse. One or the other dominates, and the defect of the dominant ethic emerges. I witnessed that occurrence in the aftermath of 11<sup>th</sup> March 2011.

## WHEN THE ETHICS OF UNITY DOMINATED

The seacoast district near my home in Sendai, the largest city in the northeast district of Japan’s main island, suffered extensively from the tsunami following the 11<sup>th</sup> March 2011 earthquake. After 11<sup>th</sup> March, Japanese media promoted nationwide cooperation to assure the survival and reconstruction of disaster-stricken areas and Japan as a whole; but Sendai’s residents had been helping each other long before the campaign, sharing water, kerosene, boiled rice, canned foods and other necessities. Little self-centred behaviour was evident, and Japanese media reported that foreign countries were applauding the behaviour of the Japanese in disaster-stricken areas.

However, the cooperative spirit underlying the ethics of unity had a dark side.

For example, as reported in *Asahi Shinbun* (a Japanese newspaper) on the morning of 27<sup>th</sup> March 2011, inland resorts invited refugees in evacuation centres near the disaster area to stay with them. Some accepted the invitations, albeit reluctantly. One elderly woman regretted leaving while others remained and expressed hope of living again at the centre when she returned to salvage her house. However, one left-behind refugee replied, 'I would not like them to come back here again and stay; they left here and abandoned us.' In another example, a relief volunteer told me that many who had suffered considerably from the tsunami resented—and discriminated against—those who suffered only slight damage.

I argue that victims' sense of—or desire for—unity prompted both behaviours. In the darker instances, the will for unity expressed itself by excluding people who differed from the majority—'the odd man out.' Admittedly, the crisis required a cooperative spirit for survival and reconstruction, but people might have done better had they observed the edict 'Live and let live'—that is, had they adopted the ethics of difference toward lesser-suffering fellow victims.

## ORIGINS OF THE TWO ETHICS AND THEIR DEFECTS

Why do people act according to the ethics of unity and difference and blend their behaviour in proportion to the distance between them? How did each ethic acquire its distinguishing defect? To answer these questions, I offer a narrative about the development of ethics in human culture based on a philosophical surmise. I speculate that, starting as a genus of primates, humankind adopted ethical positions *logically* required for individual and groups of *Homo sapiens* that yielded ethical structures we now have.

### (i) *Intra-group codes of behaviour*

Humans lived in groups long before our ancestors became *Homo sapiens*. In our primitive state, people lived by the *principle of group survival*, as we might easily conclude by observing other animals and even insects that dwell in groups. Groups promoted collaboration and mutual support as behaviours that enhanced group survival and rejected behaviours that did not. Where such rationality and behavioural disposition prevailed, groups survived; and we, their descendants, share it. We also share

their emotional confirmation from the unity and sharing that further enhance group survival. It joined a rational disposition toward group survival as constituents of a *cooperative spirit*.

Another emotional disposition advantageous to group-survival was *compassion*. Our group-dwelling ancestors, having acquired the disposition, became able to efficaciously help others in suffering or need. Moreover, a negative disposition arose alongside compassion: *hatred* for those who would not cooperate in group survival or assist others. That negative disposition sponsored an associated behaviour: ostracism. Ostracism became the origin of *guilt feelings*. These emotional dispositions were based not on reason but on intuitive apperception. Cooperative feelings, hatred for uncooperative members and feelings of guilt originated in humankind's encompassing perception of togetherness, not rational evaluation.

Among the defects of the ethics of unity, meddling and unwilling sacrifice come from its primary characteristic: homogeneity of thought and will inherent in group unity. By contrast, the 'odd-one out' comes from the constitution that the negative emotions seeking for cooperation are set in motion by an apparent heterogeneity, not by rational recognition of actual affairs.

Rational, behavioural and emotional dispositions advantageous for group survival were the germination of present-day ethical beliefs and behaviour alongside recriminations against the uncooperative and self-centred.

In my conjectural narrative, respect for the individual was not logically required for mutual supportiveness to secure group survival, but totalitarianism or communitarianism (they are indistinguishable in the primitive state) was required. Members need not have respected—might not have been aware of—companions' personal wills or preferences. Only the will and judgment of the group presided, which all were required to share.

Groups accept members to the extent they acknowledge the group's will. Thus, when one group member was in need, others would do what they thought best for him without seeking his consent, assuming he must consent to judgments that facilitate group unity. Individuality could not flourish in this situation.

Although I have presented the ethics of unity through a historical supposition, it plausibly explains Japanese behaviour following the earthquake and tsunami. The ethics of unity has crucial defects, and the ethical system we admit differs substantially from it. How, then, has our ethical system arisen from the ethics of unity? To answer, consider a second historical wellspring.

(2) *Inter-group codes of behaviour*

Along with intra-group relationships, groups interact with other groups by observing *rules of demarcation* and *visiting courtesies*. For example, consider neighbouring groups that occasionally fought over territory but generally coexisted peacefully by acknowledging the boundaries of each other's domains. In following *rules of demarcation*, they practised mutual non-interference in others' affairs, including mutual nonaggression—literally '*Live and let live*'. Rules of demarcation eventually became dominant among humans because they promoted peaceful coexistence and mutual survival.

Second, trade is an inter-group activity, and when one group's traders visited another group, they honoured its culture under the adage '*When in Rome, do as the Romans do.*' Conversely, they respected, or tolerated, cultural practices of foreigners among them unless they were incompatible with their own. In this way, different groups again practised mutual non-interference. Inter-group relationships were characterised not by mutual assistance but by willingness to *live and let live*. That is how reciprocity between groups should be understood.

From the preceding description of inter-group demarcation and visiting, it can be concluded that the ethics of difference originates in inter-group relationships in which people recognise others as different from themselves.

(3) *How have the two ethics comingled?*

We have examined discrete ethics that apply to intra-group and inter-group relationships, but nothing could force their comingling because people inevitably adopted one or the other once they realised another person belonged to their group or another. In other words, they decided whether an intra-group or inter-group relationship governed their encounter. Today, by contrast, we comingle the two ethics in complex cultural proportions.

Imagine several groups living on an island, sharing related languages and cultures and trading together, but also trading with distant groups having unrelated languages and cultures. This situation prompts feelings of unity with fellow islanders. The ethics of difference and unity governs their behaviour with fellow islanders somewhat. Conversely, they feel different to non-islanders, and the ethics of difference governs their behaviour. This illustrates a case in which the ethics of unity and of difference are concurrently at work.



Nations arose. Their inhabitants developed a shared identity. Within nations, groups resemble each other or differ, and the ethics of unity and difference inter-mix intricately. As we contemplate the concept of humankind—a global relationship among all persons—we feel some human commonalities, and somewhat observe the ethics of unity through public services or international aid. Yet simultaneously we perceive our differences and act according to the ethics of difference, maintaining the live-and-let-live attitude that shuns dominating others.

At the other extreme, the family is the core unit in most cultures. It has been difficult for inter-group ethics to penetrate families or to overcome intra-group ethics because there has been little logical motivation. In the West, the ethics of difference obtruded into families under the values of individuality, personality and autonomy. It has been introduced somewhat in Japan, but the ethics of unity still presides in daily life. In other words, the proportion between the ethics of unity and the ethics of difference varies among cultures.

#### DISCREPANCY BETWEEN DICTATES OF REASON AND EMOTIONAL CONTEXTS: TSUNAMI TENDENKO

I report a final interpretation derived from my encounters in tsunami disaster areas: a dilemma arising from the ethics of unity supported by rational and emotional human dispositions. *Tsunami tendenko* is an old adage in northeast mainland Japan's Tohoku District, which was overwhelmed by the tsunami. *Tendenko* denotes a context in which people act in their own interests disassociated from others. *Tsunami tendenko* is advice about behaviour. It means 'When the tsunami approaches, escape as quickly as possible without regard for others'. Encoding wisdom from millennia of experience, it declares you will neither succeed nor survive if you try to help others as a tsunami approaches. Yet Japanese media reported many instances of self-sacrifice as the tsunami approached. A home hospice nurse working under my doctor friend tried to move a bedridden patient to a higher floor and was overtaken by the tsunami. Many died giving in to their humane impulses to help others. On the other hand, many who saved themselves suffer 'survivor's guilt', believing they could have done more for others. Thus, ethical feelings accompany ethical thoughts.

Some interpret *Tsunami tendenko* as endorsing selfishness amid catastrophe, but its significance lies in promoting behaviour that promotes group survival. *Tsunami*

*tendenko* effectively declares ‘When the tsunami comes, saving yourself is the best you can do for your group and your individual colleagues’. It advises a rational choice to preserve your group by saving yourself. As such, it serves the ethics of unity.

However, people defied that rational choice. Perhaps they did not comprehend that such a devastating tsunami was approaching so rapidly. More likely, the cooperative spirit and compassion that accompany the ethics of unity moved them to help others. Although impulses towards mutual help generally serve group survival, they threaten it during catastrophes. That *Tsunami tendenko* remains a contemporary expression indicates how strongly the emotional context surrounding the ethics of unity has functioned as a drag. Here the dictates of reason and the emotional context conflict. The former shows a rationally correct choice based on the ethics of unity; the latter shows the emotional correctness of the ethics of unity. The dilemma illustrates the discrepancy that is inherent in the ethics of unity.

## CONCLUSION

As presented in this paper so far, the theory of the ethics of unity and difference explains at least ethical beliefs and behaviours of Japanese people fairly well, especially those beliefs and behaviours surrounding the huge earthquake and devastating tsunami. Each of the two ethics has defects in itself and both complement each other. Especially, some defects of the ethics of unity originate from the discrepancy between their rational and emotional bases. Such a situation is appropriately illustrated with the plausible conjecture concerning the development of human ethics. Although instances in this paper are taken only from Japanese behaviours, the theory, in my opinion, can be applied to universal human beliefs and behaviours in human relationships. In fact, using this theory, I have already interpreted ethical affairs in medical activities (Shimizu 2010: 152–66, 188–99, Shimizu and Aita 2012: 21–24, 31–32), but unfortunately in Japanese. In English, based on the theory, although without mentioning it, I have argued why ‘respect for human beings’ rather than ‘respect for autonomy’ is appropriate as ethical principles in medicine (Shimizu 2012: 330–34). Aita applied the theory to explain the sense of fairness of the Japanese concerning the family-oriented priority organ donation policy (Aita 2011: 489–91, Aita 2012). However, there remain many other issues to which the theory can be well applied. I will address these issues in another study.

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# The Status of the Human Being: Manipulating Subject, Manipulated Object, and Human Dignity

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## ABSTRACT

The manipulating subject is designated as person. The nominalist view of person is now prevalent; persons are assumed to be individuals making free choice. However, although an action itself does not exert a great influence, the aggregation of individual actions might beget a worldwide and nonreversible catastrophe in our times of technological civilization. Therefore, Hans Jonas points out that we should regard humankind as one agent responsible for future generations. Genetic intervention does not directly infringe human dignity, since an embryo is not yet a person. However, if it grows up to be a person, the asymmetry between the person and those programming the person's genes will undermine the equality between members of the moral community. Therefore, Jürgen Habermas propounds humankind's ethic that guards the prenatal human life from genetic manipulation under the concept of dignity of human life. Thus, when we endeavour to found moral consideration about technological manipulation of human beings, the nominalist view of person is not sufficient, but the universal idea of humanity is requisite for it.

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## 1. SUBJECT MANIPULATING NATURE

Through technological advances, human beings have increased their ability to manipulate nature. Beginning in the seventeenth century, modern science and the

technology based on it have permitted the planned and systematic manipulation of outer nature, i.e.. the environment, in which human beings live. Furthermore, inner nature, the human body itself, became an object of experimental medical manipulation in the nineteenth century. The progress of biomedicine has rendered this manipulation ever more potent.

The contrast between outer nature and inner nature may be grasped intuitively. However, these spatial metaphors cannot exactly correspond to truth. If inner nature is the object of manipulation, it is no longer 'inside,' but rather 'outside' the subject who handles it. Accordingly, the subject must be regarded as an entity that can, in some sense, be disentangled from its body. As with other bodies, human bodies belong to nature. Thus, the manipulating subject itself is not situated in nature, as if it alone stands apart from the whole of nature under its control.

What existing concept precisely expresses the nature of the subject? There are various candidates: human beings, humankind and person. The concept of person appropriately emphasises the subjectivity of the subject, since it usually denotes beings that have continuous self-consciousness and can act intentionally. As indicated, this subjectivity can in some sense be disentangled from the body. Given this, it is appropriate to ponder in what sense a person can be detached from her body.

The concept of person separate from her body is found in Locke, who argues that 'should the soul of a prince, carrying with it the consciousness of the prince's past life, enter and inform the body of a cob[b]ler, ... every one sees he would be the same person with the prince...' (Locke 1997: 339). Although Locke's assumption is based on imagination, the advances of biomedical technology seem to have moved in the direction of his conclusions. Transplantation medicine has realised the prince's situation, at least on the level of organs. It would even more closely approximate reality if a person could transform or enhance her body at will.

Why does the person wish to have such powers? The reason is that the person's body is an essential condition that realises or hampers her intentions and directly influences her consciousness or mental states. Therefore, the body is pre-given to the person; a person is thrown into her bodily situation. This fact does not mean that such a person is devoid of freedom and inevitably constrained by her body. Indeed, the person is moved by the desires stemming from the body. These desires can be called ones of the first order ('She desires x'). However, the person can approve or disapprove of them. A person has not only desires of the first order, but also those of the second order ('She desires/does not desire that she desires x'). It requires taking a

propositional attitude to have desires of the second order (For a discussion of orders of desire, see Frankfurt 1997: 14). For example, an alcoholic has the inclination to drink. Nevertheless, he may not desire to have such an inclination. It is in the desires of this second order that the person is a free subject. However, even this freedom can be undermined by the body. When a patient suffering from unbearable pain wishes to be terminally sedated, the result is that she will lose consciousness forever. Therefore, such a wish amounts to the decision to cease existence as a person or a free subject.<sup>1</sup> This observation suggests that the human person cannot be ontologically abstracted from her body.

## 2. SUBJECT AS PERSON

Nevertheless, the concept of a person as a free subject must be assumed in the setting of medical practice, because medical intervention in a human body is only justified by the subject's acceptance. A person *has* her body, and the body *is* at once the person. The idea that a person's body is her property can be traced back to Locke once again. When a person reaches out a hand and gains from nature something that has not yet been occupied by others, the person is entitled to own it. The movement of a limb forms labour, which in turn establishes the right to property. This reasoning presupposes that every person has property of her body. Denying property of one's own body would abolish the concept of property outright. However, the entitlement to one's body has never been secured by any labour. From where does it come? Is it extrapolated as *sine qua non* for establishing property in general? However, Locke assures it without referring to a further foundation: 'Though the earth, and all inferior creatures, be common to all men, yet every man has a property in his own person: this nobody has any right to but himself' (Locke 1823: 353). Here, the phrase 'his own person' means nothing other than his own body. The subject of this sentence, 'man', stands for person. Accordingly, the sentence above is equivalent to saying that every person has property of his own person. Therefore, Locke's foundation of property of a person's own body is extremely paradoxical. Nevertheless, we can (and even cannot help but) maintain it, since it expresses a truth: the body *is* the person. It is so obvious that we tend to say that the body is the person rather than that it is her property,

1. In contrast to the desires of the first order ('I desire x') and the desires of the second order ('I desire/do not desire that I desire x'), man may conceive of the highest order of desire: 'I desire that I desire/do not desire that I desire x'. However, such a desire means nothing other than that 'I desire to exist as a person'.

consistent with Warren's claim that 'it would be very odd to describe, say, breaking a leg, as damaging one's property, and much more appropriate to describe it as injuring oneself' (Warren 1973: 44, emphasis by Warren). Thus, the human person cannot be ontologically abstracted from her body. Nevertheless, ethical considerations require this detachment.

By definition, a person should be intrinsically respected. In Kantian ethics, the action of intentionally putting an end to an existent person is, even if done by the person herself, the infringement of duty, because such an act destroys the humanity in the person (Kant 1968: 429). In contemporary bioethics, however, such actions as the inducement of terminal sedation, euthanasia, and physician-assisted suicide are sometimes regarded as ethically permissible. The justification for them consists in affirming that the person judges her present predicament as not compatible with her personality that has been created throughout her life. The concept of 'personality' is material, because it refers to something that is idiosyncratic, i.e., embracing certain character traits of the individual person; while 'personhood' is a formal concept that denotes the universal conditions necessary to be a person. Indeed, it is because the human being meets the criteria of personhood that her self-decision<sup>2</sup> should be respected. However, the fact of her being a person does not indicate what she should choose. Even the measures of what nullifies the most essential condition for being a person, i.e., consciousness, are justified, only if they are adopted by the person herself. In this procedure, only personhood is referenced. However, the person in general, which Kant called 'humanity', receives less attention in this case. Thus, the subject manipulating nature is no more than an individual. What does it mean to respect any human person without appealing to the universal idea of humanity?

### 3. HANS JONAS' INSIGHT

One possible answer to this question is given by Hans Jonas. He started his intellectual career by studying Gnosticism under the great influence of his mentor, Martin Heidegger. At first, Jonas thought that Gnosticism could be elucidated by applying Heidegger's concept to it: human existence is thrown into the world. However, he was startled by Heidegger's assumption of the presidency of the University of Freiburg

2. In bioethics, the terms 'self-decision' and 'autonomy' are sometimes supposed to be interchangeable, but I retain the concept of 'autonomy' for the Kantian context. A decision based on inclination may be called 'self-decision', but not 'autonomy' in the Kantian sense. According to Kant, a confirmation of inclination is no more than heteronomy.

under the Nazi regime. Jonas wondered how this could happen. The meaning of his first research changed completely. Indeed, he was never in error in underscoring a common point between Gnosticism and modern existential philosophy: the alienation of human beings from nature (Jonas 1991: 327). Because human beings have no place in the order of nature, they have no nature and no norm is afforded by it. Therefore, their decisions are judged as authentic only by the fact that they make them (Jonas 1991: 334). According to Jonas, Heidegger's collaboration with Nazism is an instance of the immorality brought about by this process. Since Heidegger's ontology is devoid of norms for distinguishing 'calls' of being, it is possible to listen to even Hitler as a voice of being (Jonas 1964: 229). After World War II, Jonas developed a philosophy of the organism. It meant a farewell to his mentor. (Despite Wolin's calling him one of Heidegger's children, we maintain with LaFleur that this epithet cannot cover Jonas's whole philosophical career (Wolin 2001; LaFleur 2008; Shinagawa 2012).) He intended to establish an ontology that integrates human beings into nature.

His insight may be applied not only to existentialism, but also to modern thought in general, because it dismissed Aristotelian cosmology and denied values and ends inherent in nature. The evolution of contemporary technology has been encouraged by this mechanistic view of nature. It is self-evident that Jonas proceeded to engage with the problem of technology. He proposed an ethical theory that censures the global destruction of the ecosystem: the imperative of responsibility (Jonas 1984a). The collective effects of our activities have brought about the present ecological crisis. An individual action itself does not exert a great influence, but can be diluted in the global environment. However, the aggregation of our individual actions might beget a worldwide and nonreversible catastrophe. Therefore, we should regard ourselves as *one* subject, i.e., as humankind. Thus, the problem of modern technology obliges us to tackle a metaphysical question about whether and why humankind should exist (Jonas 1987: 48). Humankind is the only being who can be responsible. We should bear responsibility for future generations and ecosystems, since their survival is threatened by our behaviour and the weight of responsibility is functionally related to our power.



## 4. HABERMAS' IDEA OF HUMANKIND'S ETHIC

Jürgen Habermas also offers an ethical consideration of technological intervention in human nature. He criticises 'liberal eugenics' that entrusts individuals with the deployment of gene technology. If expectant parents intervene in the genes of their embryos, the latter become the mere instruments for fulfilling the formers' desire (Habermas 2001: 58). In his terminology, the term 'moral' prescribes the mutual equivalent respect of persons; in other words, it involves the prohibition of turning persons into mere instruments, which is an infringement of human dignity. By contrast, the word 'ethic' in Habermas's sense denotes the norms of behaviour of the specific community. A person must be born and grow up in a specific community with a culture and tradition. The person forms her conception of how to live, appropriating and sometimes even resisting the ethic of her community. The choice of how to live belongs to the 'ethical' consideration. In contrast to 'ethical' norms, 'moral' norms enable people with different values to live and let live. Therefore, they cannot depend on a specific culture and tradition. Nevertheless, some 'moral' norms can be appropriated into an 'ethic'. For example, mutual respect for persons is more or less maintained in the 'ethic' shared by modern and enlightened communities.

Now an embryo does not belong to the moral community, since it is not yet a person. Accordingly, gene intervention does not infringe human dignity. However, when the embryo has become a person, a past intervention cannot be undone. The asymmetry between the person and those programming the person's genes undermines the equality between members of the moral community. Habermas proposes, therefore, not in the moral, but in the ethical sphere. When we prefer living a moral life, offering others equal respect, we must not only acknowledge human dignity, but also the dignity of human life, even in the prenatal stage. He calls this the 'moralization of human nature' (Habermas 2001: 48, 123). He concludes that the technological intervention in human genes should be regulated by the idea of humankind's ethic (*Gattungsethik*). This idea of humankind's ethic presupposes that humankind has managed to evolve a global community in which mutual respect can be acknowledged as one of its ethical norms.

Jonas and Habermas differ. Most fundamentally, Jonas undertakes the establishment of a metaphysic, while Habermas insists that any metaphysic cannot be presupposed in contemporary society which embraces a variety of values. However, both believe that (1) the technological manipulation of nature requires the supposition of

humankind as its subject and (2) its justification depends on an appeal to the idea of what humankind should be. Jonas maintains that in the whole of nature, humankind alone bears a responsibility. Retaining the Kantian concept of human dignity, Habermas insists that the concept of humankind comprises all possible members of the moral community who must be equally respected.

## 5. THE DIVIDE BETWEEN PROPONENTS AND OPPONENTS OF APPEALING TO THE UNIVERSAL IDEA OF HUMANKIND

One must, however, raise the question whether man can specify which technological interventions are acceptable by appealing to the concept of humankind. Indeed, the prescription given by Jonas and Habermas may not be practical. Technological advance may be fettered by Jonas's idea of the heuristics of fear. According to Jonas, 'We know much sooner what we do not want than what we want. Therefore, moral philosophy must consult our fears prior to our wishes to learn what we really cherish' (Jonas 1984b: 27, Jonas 1984a: 63-4). Some passages from Habermas's work may be described as comprising a 'dramatized and hardly realistic scenario' (Birnbacher 2001: 123, translated by Shinagawa) or as an 'apocalypse' (Feese 2003: 38, translated by Shinagawa). I agree with Birnbacher and Feese, for example, about the following passage: '[research on embryo and preimplantation diagnosis] *exemplify* a risk that is combined with the perspective of "breeding of human beings"' (Habermas 2001: 122, translated by Shinagawa, emphasis by Habermas). Accordingly, these philosophers are often also criticised for sanctifying nature and shielding it from technical procedures. For example, although Habermas himself affirms that 'moralization of human nature does not mean a problematic re-sacralization' (Habermas 2001: 48, translated by Shinagawa), Birnbacher regards Habermas's view as a sanctification of nature by forcing us to choose between the alternatives: 'Is human being as humankind free to transform his own nature as well as the outer nature? Or should "human nature" be considered as sacrosanct?' (Birnbacher 2006: 170, translated by Shinagawa). This condemnation, however, misses the mark, because the concept of humankind in Jonas's and Habermas's sense is not scientific (*Homo sapiens*), but ethical; these philosophers focus on the attitude that humankind should take.

For example, Habermas rejects the cloning of human beings, because the cloned is 'made' as a sheer means for fulfilling the end set by the person who 'makes' the cloned embryo from his somatic cell. Indeed, we can refute this claim by pointing

out that the cloned is in fact not a sheer means. In the case of a human being born by cloning, we can impress upon him that he can live as a free person independent of his maker's will. If we could isolate him from his maker from birth, he would conceive himself to be a free person just like other people. Thus, cloned people are no doubt persons. Nevertheless, we cannot dismiss Habermas's claim as nonsense. As long as the clone maker's motive is to produce the clone as a tool for fulfilling his purpose, his conduct is morally impermissible, because the maker intends to infringe human dignity in a possible member of humankind. Here, moral value of action is not determined by its consequence, but by its motive.

The divide between proponents and opponents of appealing to the universal idea of humankind does not only consist in the difference between the deontological and consequentialist stances. More important is the difference in the significance of the universal concept. It is not unconditionally respected to be an individual as such, but the universal idea of humanity affords the individual human being dignity. The universal idea of humankind or humanity (these two concepts can be expressed with one German word, '*Menschheit*') is found in a person as something beyond individual desires. In this sense, it denotes the transcendence of human beings. As Kant correctly states, 'the human being is indeed unholy enough, but the humanity in his person must be holy to him' (Kant 1979: 102, translated by Shinagawa).

On the contrary, the subject manipulating nature as an individual is a genuinely nominalist concept. For example, Engelhardt assures that '[t]he concept of *Menschenwürde* [human dignity], if it is to be more than a reminder not to use persons without their consent, must depend on a particular vision of proper human conduct' (Engelhardt 1996: 209). Taking the nominalist view, the mediating concept of human dignity is not thought to be dispensable to esteem the will of each party combined by conduct. A person's desire is also regarded as given in that its fulfilment is taken for granted. The subject will not give it up, unless the satisfaction of desire leads to a long-term disadvantage. This conception of a person is actually none other than the concept of *homo economicus*; the individual subject is a participant in the market rather than a member of moral community.

This observation does not entail the claim that no ethical norm is operant here. There is the normative prescription against the global crisis of the ecosystem, which is prohibited as an external diseconomy. The infringement on human dignity, in such acts as fraud, robbery, and so on, is also precluded, since it leads to destruction of the market system. Summing up, these norms are required only to satisfy our own

desire in the long run. The possession of desires is approved and accepted as a given premise. However, they cannot be esteemed without foundation. It is because the idea of human dignity affords each person the right to be respected as ends as such that we should care for fulfilment of a person's desire. Nevertheless, the market as a system of desires tends to forget it. A reflection on the concept of *homo economicus* can be also found in a splendid economist's writing. Sen raises the question of 'whether there are a plurality of motivations, or whether self-interest *alone* drives human beings' (Sen 1987: 19). He also reminds us of two origins of economics, one of which was Aristotle's ethics as related 'to the end of achieving "the good for men"' (Sen 1987: 4). Even if human nature in the biological sense can be technologically transformed under the pursuit of an individual person's desire, as liberal eugenics endorses, it will not contribute to human nature in the sense of humanity, but rather encourage human beings merely to satisfy their individual desires.

The divide between proponents and opponents of appealing to the universal idea of humankind also does not consist in the difference between the conservative and liberal stances. The universal idea of human dignity is not necessarily advocated by those philosophers who are thought to be conservative or communitarian. For example, Sandel writes that 'Habermas is right to oppose eugenic parenting, but wrong to think that the case against it can rest on liberal terms alone' (Sandel 2007: 80), because he stands by the defenders of liberal eugenics insisting that designer children are as autonomous as children born the natural way. Nevertheless, he offers his sympathy with Habermas's emphasis on the significance of the uncontrolled beginning of a life and connects this idea with his notion of giftedness. However, his case for it is somewhat consequential: 'An appreciation of the giftedness of life ... conduces to a certain humility. It is, in part, a religious sensibility. But its resonance reaches beyond religion' (Sandel 2007: 27). Whether man favours humility over freedom to genetically design one's children is an issue about how to live; it is a choice in the ethical dimension, in Habermas's sense. Indeed Habermas's ethic of humankind (*Gattungsethik*) is an ethic, but it requires that we should continue to live in a moral community, namely, a community in which each member is equally respected. By contrast, Sandel's justification for giftedness is devoid of moral consideration which can be expected to be accepted beyond ethical differences. Therefore, it is unlikely to become predominant in a contemporary pluralistic society. (Furthermore, it is a complete duty not to infringe human dignity, while it is an incomplete duty to have the

virtue of humility.) This lack renders Sandel's stance conservative or communitarian. It proves in turn that appealing to human dignity does not stem from a conservative point of view.

## 6. CONCLUSION

As we have seen, the manipulating subject is assumed to be separated from the whole of nature under its control. In fact, it cannot be ontologically disentangled from its own nature, its body. This detachment is required by the ethical assumption that technological intervention in the body is justified by the consent of the subject owning the body. If this subject is assumed to be an individual unrelated to the universal idea of humanity, the consideration is not ethical, but rather economic. It is natural that the proponents of this line of thought do not admit the legitimacy of their opponents' claims, because the thought of the former is genuinely nominalist. In addition, they tend to stigmatise the latter as conservative, since the concept of transcendence was cultivated in religious tradition. However, the ideas stemming from it, such as human dignity, have been integrated into secular society, since the respect for the individual will must be founded on what is common to all human persons. Therefore, the nominalist view is devoid of foundation. The universal idea of humanity or human dignity lays the foundation of moral consideration about technological manipulations of human beings, when we ponder about which such manipulations should not be done to human beings as manipulated objects, and about which of them humankind as manipulating subject may morally hope to develop and execute.

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# Induction of Pluripotency by Defined Factors

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## ABSTRACT

Induced pluripotent stem cells (iPSCs) were originally generated from mouse and human skin fibroblasts by introducing 4 transcription factor genes. iPSCs are similar to embryonic stem cells (ESCs), having a potential to produce cells for all the tissue types in the body such as neuron, blood, eyes and heart. iPSCs can be generated from various genetically identified individuals including patients. These iPSCs and subsequently differentiated target cells/tissues would provide unprecedented opportunities in regenerative medicine, disease modelling, drug screening, and proof-of-concept studies in drug development.

Compared to ESCs, iPSCs have less ethical controversy since they can be generated without destroying fertilized eggs. However, as iPSCs still share some ethical issues with ESCs, it is necessary to deepen the discussion in order to make further progress on iPSC research.



Induced pluripotent stem cells (iPSCs) were originally generated from mouse and human fibroblasts via the retroviral introduction of *Oct3/4*, *Sox2*, *c-Myc* and *Klf4* (Takahashi and Yamanaka 2006: 663–76, Takahashi et al. 2007: 861–72). The iPSCs are similar to embryonic stem cells (ESCs) in terms of their morphology, gene expression, and most importantly, pluripotency and self-renewal.

Compared to ESCs, iPSCs can be generated from various genetically identified individuals, including patients with diseases for which there is no appropriate animal model, or those with specific human leukocyte antigen (HLA) types. Patient-specific

iPSCs provide unprecedented opportunities for disease research, drug screening and toxicology studies. A stock of iPSC clones constructed from HLA homozygous donors would therefore provide a significant resource for cell therapy.

For the future clinical application of iPSC technology, there are several technical hurdles that must be overcome to ensure the safety of iPSCs as a source of cell therapies. Recent reports on tumour formation following transplantation and the large diversity between iPSC clones highlight some of the potential problems.

One concern that was highlighted as a potential problem is the possibility of tumour formation caused by the reactivation of retroviral integrated genes in iPSCs. As alternatives to retroviral transduction, several alternative protocols for iPSC generation have been proposed, such as using lentiviruses, adenoviruses, plasmids, transposons, recombinant proteins, synthetic mRNA or chemical compounds. Our research team has also reported an integration-free induction method using episomal vectors (Okita et al. 2011: 409–12). This method can induce human iPSCs efficiently and reproducibly. Regarding the iPSC induction factors, we discovered that L-Myc (Nakagawa et al. 2010: 10,1073) and Glis1 (Maekawa et al. 2011: 225–29) can be used to establish iPSCs with high efficiency and quality, replacing the oncogene c-Myc. Many research groups worldwide have been developing iPSCs induction protocols to further enhance the capability of producing safe and effective cell sources. However, in addition to these technical view points, it is necessary to consider the ethical issues related to further progress of iPSC research.

Human ESCs also have potential for use in regenerative medicine. However, the generation of human ESCs poses ethical and religious issues, as these cells are generated by destroying human embryos left over from *in vitro* fertilisation procedures. In fact, although more than ten years have gone by since human ESCs were first established (Thomson et al. 1998: 1145–47), the development of their applications has been limited. One reason for this lack of progress with ESCs is that multiple restrictions were enacted against studies to generate human ESCs. For example, the former US President George W. Bush prohibited the generation and use of human ESCs with federal research funds after taking office, and the Vatican announced that the medical use of ESCs ‘will undermine the human dignity and will not be tolerated from a bioethical viewpoint’.

As human iPSCs are generated from human somatic cells without using embryos, most of the ethical questions can be avoided. However, iPSCs share some ethical issues with ESCs. One example is the generation of germ cells from ES/iPSCs.



Whereas germ cells derived from human ES/iPSCs can be useful to elucidate the mechanisms involved in human infertility, it will also assist reproduction technology. This could lead to the possibility of the birth of a child resulting from fertilisation of the ES/iPSC-derived gametes, thereby provoking debate over the propriety, as well as the safety, of this technology.

In Japan, there are no statutes or regulations governing the use of human embryos for research. Some Japanese guidelines regarding human stem cells were revised or established in 2010 to permit germ cell differentiation only for the purposes of research into the mechanisms underlying development and regeneration, or for the development of diagnostics, preventive, or regulatory medical procedures or products; but fertilisation via gametes derived from human pluripotent stem cells has been prohibited (MEXT 2009, MEXT 2010). Under these guidelines, studies are being undertaken of the molecular profiles and characteristics of germ cells and their role in human germline development.

Another example of an ethical issue shared by both iPSCs and ESCs involves a recently developed iPSC application, which enabled researchers to generate a rat pancreas in a mouse by microinjecting rat iPSCs into mouse blastocysts that were deficient in pancreas development (Kobayashi et al. 2010: 787–99). Using this technology, it might become possible to regenerate healthy human organs *in vivo*. However, this technology is ethically controversial because it means creating a human/animal chimera. In Japan, the research on human-animal chimeric embryos is regulated under the Act on the Regulation of Human Cloning Techniques (Government of Japan 2000), which requires notification of a Cabinet minister, and which prohibits the transfer of the embryos into a uterus and handling the embryos for more than 14 days after fertilisation.

It is expected that the application of research with iPSCs will be accelerated, as iPSCs can be prepared relatively easily. There is a need to deepen the discussion with the public and bioethicists, as scientific technology sometimes advances ahead of ethical acceptability. Researchers should not only follow the present guidelines, but also respond quickly to emerging ethical issues by disclosing as much information about their studies as possible to the public so that the public can understand the research properly and can then make decisions regarding the use of such new technologies.

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