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## Editorial: Ethics and Climate Change Project in Asia & Pacific

This final issue of EJAIB for 2011 includes papers on environmental and medical ethics topics, and comes soon after the review meeting of the Ethics and Climate Change in Asia-Pacific (ECCAP) project organized by RUSHSAP, UNESCO Bangkok. Many of those papers will be published in a future book from UNESCO.

The first paper in this issue is from the working group 2 of the ECCAP project, and Napat has explored the views of nature with an illustration of Thailand. The paper follows a set format that calls for further contributions towards a repository of ethical world views of nature. The outline is printed below.

There is a book review of a new book by Richard Evanoff on Bioregionalism and Global Ethics. There are two papers on water ethics, with the paper by Gregor applying the concept of ableism to this area.

Funda and Selim give an overview of empirical ethics research in Turkey, surveying trends in themes of medical ethics publications over the past few decades. Chandralekha explores the process of a conference to discuss a GMO, Bt eggplant in India, with the Asilomar conference. The final paper looks at the ethics of blogging in Tamil.

At the ECCAP review conference 50 participants from over 20 countries explored the current status of the working group reports of the ECCAP project. There was consolidation of some working groups, and a focus on the reports expected to be published in the remainder of 2011, which are:

- Energy Equity and Environmental Security (WG7)
- Adoption and Development of Energy Technologies: Ethics and Algal Technology (the only Case Study completed under WG9)
- Ethics of Nuclear Energy Technology (WG12)
- Gender, Environment and Energy technologies (WG15)
- Ethics and Biodiversity (WG16)
- Educational Frameworks for Environmental Ethics (WG11)

Those reports expected to publish in 2012 include:

- Ethical Worldviews of Nature (WG2)
- Visions and Hopes of the Future (WG3)

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New articles are welcome

- Ethical Frameworks for Research Agendas and Policy (WG10)
- Ethics and Aquaculture (WG13)
- Ethics and International Investment in the Energy Sector, and the Environment (WG17)

**Outline of report and call for contributions to ECCAP WG2: World Views of Nature**

The following aspects need to be considered in addressing for further discussion.

**1: What is the broader framework that influences ethics among the people**

Dharma: It is a generic word for Indian traditions, philosophies and ways of life. They tend to be holistic and can mean anything from the nature of a substance, a life form to the place of human within the entire cosmos and even scientific rules.

Religion: Mostly revelations and mostly Abrahamic.

Evolved traditions: traditions that may or may not have any religious or theoretical explanation, for instance many tribal practices.

Secular theories: most of the ideas inherent within international conventions. Utilitarian, altruistic, instrumentalist etc.

Democracy: whether democratic consensus determines a worldview or policy, irrespective of its benefits or threats to environment.

**2: What is the broader outlook of the environmental concepts within the tradition? Is it one of the ones listed below or a combination of them or others? (ref WG1 for detail)**

- |                  |               |
|------------------|---------------|
| Anthropocentrism | Biocentrism   |
| Ecocentrism      | Cosmocentrism |

**3: What are the human –environmental relationships? Are they... (refer to ECCAP WG1)**

- |            |                |
|------------|----------------|
| Apathetic  | Apocalyptic    |
| Symbiotic  | Integrationist |
| Managerial |                |

**Examples of Applications of World Views to Modern Technology / Globalization**

Is the world view compatible with modern technological advances, Does it already have some position and ethical guidance on human relation to technological advances. Are there principles that can be developed? Do main practitioners or proponents of the worldview think about modern advances and their impact on resources, human relations, society and other species. For instance increasing dependence on technological mobility (cars, planes etc) or transplant surgery and possibilities of cloning? Increased age expectancy, larger populations in cities, reduced agricultural land, impact on climate change with energy emissions and consumption.

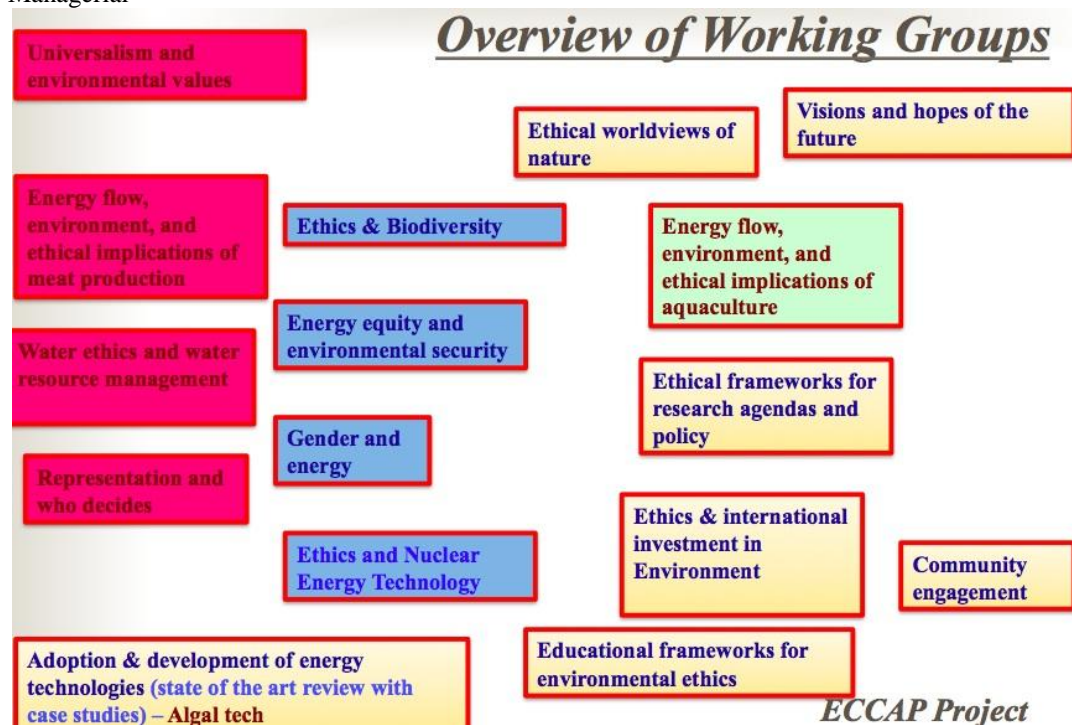
Impact of globalisation on smaller communities, on traditional ethical values, on interaction with larger world. And whether there already are ideas of interacting and coping with globalisation trends.

**Conclusions**

The conclusions should indicate whether the worldview is a living set of concepts, whether a set of values can be developed from it, whether it is largely reflected in the current conventions, whether a distinct document for that particular worldview would benefit greater compliance to goals to achieve better sustainable environment. Conclusions could suggest whether more work is needed and whether communities can be encouraged to develop perspectives that can stand on their own and help the larger population in that community to take ownership of environmental concerns through the prism of their worldview.

**Please send contributions and/or outlines for contributions by 30 September 2011 to:**

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# Ethical Views of Nature: Illustration of Thailand

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## 1. Thailand and Siam

Everything that surrounds us is Nature. Nature is related to everyone of us. Basically, we may not even notice how much our activities are related to nature. Technology has advanced to where people may have forgotten Nature. We can say that Nature is the land one steps on, the water one drinks, and the air one breathes. Even though human beings appear to be indifferent towards nature, the human being is a part of biological diversity and the world itself.

Throughout history and civilizations, humanity has managed to continue and pass down generations its ways of living by coexisting, and sometimes fighting, with Nature. People struggled to survive in many harsh climates but comfortably in others. This overview is of the views of nature from Thailand.<sup>1</sup> This includes reflection on the various schools of thought and tradition in this community, not only referring to ancient or romanticized views, but also to the views of people today.

What is a Thai person's view of Nature? Thailand is a country which once was under the rule of Khmer Civilizations, so the culture and tradition of its people has roots including significant input from Cambodian arts, as well as Brahman culture and more recent influences of mundalization. Thailand is a melting pot of Indic, Buddhist, Chinese, (Hindu) and tribal culture. The culture and beliefs of Thai people have been shaped through numerous cultural exchanges through trading and conquering of lands back and forth.

Thailand is complex due to the fact that it is located in the centre of the South East Asian mainland, it is connected to Laos, Myanmar, Cambodia, Vietnam and Malaysia. The history of Siam often emphasizes themes of serenity and harmony of nature, though there are references to natural disasters such as flooding. The King is sacred because he is the representative of a divine god. This divine nature of the royal King is adopted from traditions we can also see in the Cambodian royal court. The lands do not belong to the people, but the king (Ruler class). The land people are living in is lent, rented

<sup>1</sup> The Ethics and Climate Change in Asia and the Pacific (ECCAP) Project Working Group 2 is focusing on producing an ethical repository of world views of nature. This exercise is to examine whether there are indeed universal foundations underneath the external and superficial coating of differences or whether there are indeed irreconcilable perspectives that lead to different worldviews and approaches to ethics and issues of concerns in different civilisations. It follows up the working Group 1 report on *Universalism and Ethical Views of Nature* (Rai, et al. 2011). We invite scholars from different schools of thought, communities and traditions, to provide a summary of Views of Nature from other communities, with historical references following a general structure to allow readers to compare different traditions for common views of nature.

or borrowed, and in the end to be returned to the king. Siam has been a hierarchical society since the beginning of recorded history.

The human species depends on nature in every part. This includes the prosperity of crops, which has usually provided a constant food supply in Thailand. Since humans have learnt how to plant crops, we have been planting, storing and collecting natural products for many purposes. In farming people use food with respect and sometimes ascribe great reverence to plants and foods.

The current United Nations approach to ethics is to reach a normative set of concepts, principles, ethics and commitments that assume universal foundations to enact 'universal' conventions. However, a contrary perspective is that different civilisations and Peoples have evolved different philosophical perspectives to knowledge, to human relations with nature and human relations to other humans and species. Inside the nation called Thailand there are several groups of "People".<sup>2</sup>

## 2. Outlook of Environmental Concepts in Thai Tradition

Thailand has a long history and The Thai people have been influenced by various traditions, beliefs and cultures through periods. There are also a plurality of beliefs resulting in different perspectives on nature. However some traditions seem to be held in common by a majority of Thai people. In modern times, modernity and western perspectives have also influenced Thai people's approach to the environment in the last century, replacing some deeply held views.

People in the past worshipped Animism and Hinduism, then adopted Buddhism. Hinduism was directly introduced by the Cambodian Empire. The Cambodians at that time was the Khmer empire. Then they accepted Buddhism as it swept through the East. But people integrated Hinduism into their world view along with Buddhism.

The long relationship of Thai people and Theravada Buddhism is deep. Thai people consider Buddhism as their national religion. It came from India. During early 19<sup>th</sup> century, Christian priests introduced Christianity with their missionary efforts.

When Buddhism first arrived, Thai people were worshipping animism and Brahmanism. They believed in ghosts and ancestral spirits. The Thai adopted Buddhism upon their existing beliefs without facing any conflicts or segregation of their previous beliefs (Adian and Arivia, 2009). But the depth of Buddhism and its impact on tradition beliefs has been variable in different regions of Thailand. Consequently, in each province we may see some difference in the common views of nature, for instance in the north more people believe in animism.<sup>3</sup> On the other hand Christian, western and scientific ideas have strongly influenced views in larger cities such as Bangkok.

### 2.1. Anthropocentrism

Anthropocentrism means human-centred – the view of

<sup>2</sup> The term "People" refers to a group of persons that form a community or nation.

<sup>3</sup> ธรรมชาติ

an issue, need or problem from a human eye. Although traditional Thai views do not explicitly state it, anthropocentrism seems evident in practice. One of the basic human relationships with animals is of utility. Let us consider some examples.

The elephant has significant importance in Thailand. In history, elephants have been great companions in warfare, and were used for fighting. They were the transport for fighting wars for kings. In the reign of king Rama the second, the national flag of Siam or Thailand had a portrait of an albino elephant which is believed to be the majestic elephant that only belonged to kings and suited their great virtue. Elephants were also domesticated for labour, to shift heavy logs and forest work.

Every year Thais celebrate Wan Chang Thai, or Thai Elephants Day on the 13th March to show their appreciation of Elephants. However, paradoxically, even if elephants may be viewed as a great animal over other kinds of animals in the wild hierarchy, they are also hunted down for ivory. Consequently there are not many elephants left in Thailand. They are also used for forest work and hard labour. In practice, the respect of elephants or animals may not be as high as that written in literature, It can be said that attitudes to elephants are a form of theoretical tokenism to give the impression that they are protected whereas in reality they are not. In reality, while the elephant is revered in folklore, its real relationship with humans is one of utility, serving an anthropocentric attitude.

## 2.2. Biocentrism

There is a ceremony in Thailand for the care of trees called Phithee Buadpa.<sup>4</sup> Trees are ordained by people, and the ordained trees are bound with colourful cloth to protect them being cut down. As a result other people wouldn't dare harm these ordained trees for they are now sacred and not allowed to be used for any purpose. This practice may be regarded as saving the tree for its sake, so any harmful action against the tree as a living being will not be tolerated.

Another example is the Bodhi tree which is related to the epic of Guatama Bhudda or "The Enlightened one". Thai people don't dare to cut down this special tree for fear of sinning by cutting down the symbolic tree of Lord Buddha's enlightenment. The Bodhi tree represents the same Bodhi tree where Buddha has attained his enlightenment, Cutting it down is considered symbolically to destroying the existence of Buddhism.

In Thailand snakes are regarded as holy and fearful animal. Naga is an image of a great snake who lives on the land, earth and in water. We can see images of Naga in Khmer Buddhist art as well as in Thai art. Naga was believed to be a powerful mythical creature. Naga is known as "the guardian of the aquatic world." Naga is also associated with rainfall in Thai beliefs Mythical Thai view of biological diversity. In addition, Garuda is also included in such creatures of Hinduism. The Thai national emblem has a portrait of Garuda (Desai, 1980).

Animism is from Latin word "Anima", meaning soul. Animism related to the belief of inhabited spirit in rocks,

tree, rivers or things, which is animate and inanimate,(Subberwal, 2009). In addition, simply, the personification of non living or living things to be associated with spirit of the higher realm that consists of emotions and behaviors.

Belief in such mysticism is still widespread across the Asian region. Cambodians believed in "Neak Ta" or so-called the spirit or the Ancient one. It is believed that natural resources are provided and protected by the spirit. This view is also found in neighboring countries as well, for instance in Cambodia. This view of environment is that a superior being protects water, rivers, forests, earth, sea and so on. An offensive act against nature is unacceptable which may cause discord of harmony of nature.

Reverence for life is common. Thais believe in celestial beings or spirits that live in trees as protectors of the wild and/or supreme beings. However a parallel view is that Nature is wild and dangerous and not a place for humans but only for other animals and hermits, but still as something sacred and mysterious.

As mentioned, before, Thai people, just like any other people from neighboring countries, have a strong background in Agriculture. Their lives ultimately rotate around natural resources such as rice fields, crops and cattle. The culture of dependency on nature has given rise to and survival of Animism as a belief in Thailand. In addition, Siamese also consider themselves as Theravada Buddhist, similar to Cambodians. Like them, Thai Theravada Buddhist society live around and connect strongly with the Buddhist temples. However some people still hold on to Animism as a belief. Animism has integrated with the wider culture and traditions.

## 2.3. Ecocentrism

Views about nature in Thailand have been influenced by the rich biodiversity and environment that have provided and continue to provide ready access to food, water and other necessities of life.<sup>5</sup> People living in harsher environments may have different views of nature. The diversity of nature surrounding a People is bound to influence views on Nature.

Many cultures and civilization share the belief in Mother Earth as a living entity. The Thai regional culture on this is influenced by Hindu literature and arts. The portrayal of Mother Earth is shown in many cultures, for instance Hinduism or as it is known in Tamil, Bhumi devi (Bhu devi) is Mother Earth. She represents earth, soil, and is the supporter for daily activities. (Nelson, 1998). Mother Earth is also believed to be an avatar of goddess Lakshmi. Thai culture still has strong influences of Hinduism with Thai names for gods and goddesses. The goddess Lakshmi is called Pramae Dharti<sup>6</sup> (Dharti or bhumi devi). It is the same in Cambodian Hinduism. Bhumi Devi is respected according to the Hindu culture. This theology and view of nature can be found in a number of South East Asian cultures and mythological

<sup>5</sup> Similarities are noted with other countries in South East Asia. South East Asia includes mainland and islands. The climate is very well known as tropical, warm and humid. South East Asia consists of Cambodia, Myanmar, Thailand, Laos, Vietnam, Malaysia, Indonesia and several other countries.

<sup>6</sup> พระแม่ธรณี

<sup>4</sup> พิธีบวชป่า

beliefs. Their origins are in Hinduism but transformed into regional versions first in ancient Cambodia then the rest of the region.

#### 2.4. Cosmocentrism

The centre of Thailand is dominated by Theravada Buddhism, whereas the eastern part of Thailand has strong remnants of Hinduism. Mahayana Buddhism also coexists with them. Although the philosophy and theology of Hinduism doesn't religiously affect the Thai, however the essence of value from epics (e.g. Ramayana) and rituals do play a role in Thai society, arts, politics, astrology and culture tremendously. (Desai, 1980).

According to one Thai cosmological view influenced by Hinduism, the universe is composed of three realms: Earth as a place for humans and animals, Heaven as a place for Supreme Being, while demons and ghosts occupy Hell. They can be reborn due to the beneficent or maleficent actions in different realms. Their previous forms would be changed due to their previous "karma". Some ghosts behave as a guardian of certain places for instance forests. This influenced Thai people to give humble respect to the sacred nature.

As an example Himmaphan<sup>7</sup> was an imaginary mystical forest located in the Himalayas. According to the myth, legends, and folktales there are many auspicious diverse creatures that are magical.

#### 2.5. The creation and cycle of life

The general concept about life and death in Thailand is of "reincarnation." People believe that every being on this planet gets transformed from one kind of life form to another after death. Most people believe that this is predetermined by the good or bad karma they have in their previous lifetimes. One of the Buddhist cosmological views is that past previous karma determines why individuals are born to be men, women, rich, poor, ugly, or beautiful. Humans are born in human realms because of their predestined fate while karma causes suffering of their own actions. Theravada Buddhists who lived in South East Asia for instance, also believed that their goal is to have a better life in the next birth by not doing acts that lead to demerit. For instance, stealing, killing lives, telling lies, and drinking.

The reward of good deeds is to become rich, enjoy worldly material, higher social status and being male. The punishment is vice versa. According to these theories, human lives and karma seems to be restricted to the cycle of rebirth and death. Good Karma and bad karma follow anyone causing many unexplainable situations and events in their lifetimes (Watts, 2009).

One must always be careful of one's action as once someone commits an action, it is impossible to change it. Similar many catastrophes are caused by uncaring selfish acts against nature by humanity. Humans are at risk of losing their lives and households because they have challenged nature since the beginning of humankind. On the other hand, humanity has been struggling to survive in many different environments. A similar struggle for living and continuing their clan is made across the world (Keyes, 1997). The relation

between humans and nature may be considered exploitative and misusing natural resources for selfish purposes. This needs some sort of redemption. Perhaps this is an aspect for survival of humankind which needs to be revisited.

### 3. Human –environmental relationships

#### 3.1. Apathetic

There is a growing apathy towards caring for the environment and a distant relationship with nature that is becoming part of modern society. Instead of a close and caring attitude towards nature we can see that many areas of Thailand are being developed by industry in what could be described as signs of an indifference towards nature. In recent times, human activity has abused the balance of nature, which has caused many natural disasters and catastrophes to all living creatures including ourselves. This may even lead to the end of our beloved planet. There are some important questions, how are humans subjected to nature? Should human beings continue to bring nature upon her knees?

#### 3.2. Apocalyptic

All in all we could say that the Siamese or Thai people have the practice of worshipping pristine nature and succumbing to the wrath of disasters that affect their lives and well-being. Could this be considered an instrumental view of nature associated with animism?

Compared to nature human beings are inferior. Nature is powerful and cannot be tamed. Thailand is located in the centre of the mainland surrounded by Myanmar, Vietnam, Laos, and Cambodia. There are annual floods in these areas every year. In recent years, Thai people have faced natural disasters and traumas caused by the wrath of nature. They have seen the horrifying experiences of their neighbouring countries. For instance, the tsunami which caused thousands of deaths of people at the south of Thailand, as well as in Sumatra and Indonesia. This also traumatized people's minds with the fear of natural disaster. Thai people have learnt and fear disasters that might could happen to them. The great numbers of deaths and media coverage increases the awareness of environment issues.

At the time of an apocalypse, the differences between every animate or inanimate beings would come to an end, one way or another. Suffering as a result of Karma and reincarnation cycles of living creatures will affect human beings. Exploitation of natural resources has become perhaps the biggest selfish act and violation of the relationship between human beings and nature. As redemption, humankind will be forced to respond to the retribution.

Thai tradition mentions about the era of evil<sup>8</sup>, where people are morally unjust and commit wrongful actions. Nature will restore its own order.

#### 3.3. Symbiotic

In a Buddhist view the relation of humans and other beings needs to be cooperative. It is impossible to be created alone and to live alone. Every being is intertwined as Bhuddhadasa said, "We are all mutual

<sup>7</sup> ป่าหิมพานต์

<sup>8</sup> กสิยุค

friends inextricably bound together in the same process birth, old age suffering, and death.”( Mun, C. 2006).

### 3.4. Anthropomorphism and Mother Earth

The northeastern people of Thailand, or Isaan people have an anthropomorphic belief of nature. They explain nature in the form of male and female personifications. The female represents nature in her ability to give birth and breastfeeding. (Bruun and Kalland, 1995). Men meanwhile are considered superior over women in reproductive rights. In Buddhism, women are believed to be an inferior gender born as female according to the bad karma of their previous lives.

Thailand is essentially a male dominated society where men are considered as being more spiritual. Men can become monks catering for communities while women are deprived of seeking spiritual guidance. For instance, women are restricted from many sacred places or areas, for instance, Pra thad Sri Song Rak. Buddhist nun institutions are not fully supported and recognized by the general public compared to monasteries for men because Men hold a spiritually higher position than women. Women cannot find a female Buddhism resort in Thailand while men can find plenty.

One of the beliefs that empowers male domination concerns women's menstruation. Menstrual blood is considered sordid and unclean. According to some beliefs, evil women would use their menstrual blood to become powerful control men. Consequentially, menstruating women would not be allowed to give any offering to the monks for it could "ruin" the monk.

This gender hierarchy is reflected in ideas about nature. In Boon Bang Fai, a traditional rain-making ceremony in Isaan, or North Eastern part of Thailand, people gather and construct a rocket looking like a male sex organ, then shoot the rocket into the sky. The rocket symbolized the male phallic. Believing that the rain would fall down on earth as semen<sup>9</sup>, it is a way to impregnate mother earth. (Stott, 1978). During the ceremony men wear women's clothes and people are allowed to publicly talk about sexuality which is otherwise considered a taboo.

### 3.5. Integrationist

The king of Thailand or Bhumibol Adulyadej has mentioned that Dhamma is Nature. Humans should try to adapt in order to survive. According to this view if human beings maintain the balance of the four elements, earth, wind, water and fire, everything will be back the way it used to be.

There are influences from Animistic beliefs in Thai cultural practices. Most of these emanate from Cambodia, particularly in relation to agriculture. Annually, Loy Krathong (what is it about) festival is still held on the full moon night during November or December in Thailand. The festival is still popular among Thai, and foreigners.

There are many beliefs behind this festival. Buddhists gather for Loy Krathong festival in honoring Buddha's footprint by giving offerings. Others give offerings to Mae Khongkha (Gangas River), "the goddess or the mother of

water.”(Swearer, 2010). People take an apologetic attitude towards the great lady of the rivers. The river of the kings or Chaophraya River is one of the most important water source for Thailand agriculture. As the main river, it has a spiritual value. In old Bangkok people commuted by boats as it used to be called Rattanakosin , or the Venice of the East. People's daily life depended on the riverside. Nature is viewed as the supporter of daily life and is celebrated or thanked during these festivals.

Although floods can be considered as apocalyptic, their annual occurrence made them part of life's relationship with nature. Consequently a more of an integrationist view of nature emerged with appropriate strategies to cope with floods. In upcountry or rural areas, Thai wooden houses are built on stilts to withstand floods. People escape by being on upper floors of stilted houses. However, these form of Thai houses are not so popular anymore. Modernisation with new building materials and concrete, able to withstand floods are more common. The cities are expanding.

I interviewed, Mr. Chonlatid Suraswadi the Deputy Director General of Royal Forest Department of Thailand, on his views of nature. Regarding Thai views on Natural disaster he said:

*“Humans exist because of nature. Before we were surrounded by the natural environment, forests, rivers, mountains. Later on, we have acknowledged the great usage of natural resources around us. Nonetheless, humans seek for nature and religious beliefs at the same time, therefore Nature, religion and beliefs are related to our lives. Nowadays people around the world are aware of, and fearful of, the natural disasters which have happened, for instance, the Tsunami in Phuket. At that time, many Thai people had never learnt of or experienced, or some may even never heard of the word “Tsunami”, until it occurred and destroyed so many lives in our and neighboring countries. However, I think Thai people are more aware of natural disasters the same as people around the globe, and we have learnt from that lesson. On the other hand we mustn't forget economics, social, and ecology for our country to move forward”.*

Natural disasters couldn't be stopped in the past. People often considered them as vengeance by nature. Sp traditions developed around fear of nature and appeasing it with respect. However with modern science offering alternative rationalist explanations a more critical thinking has emerged in the minds of people replacing traditional perspectives. This has also taken away awe and fear of nature. People are increasingly less integrationists.

### 4. Human beings and nature

As has been described above, there are several parallel views about nature, human relations with nature an human approaches to nature in Thailand. Over history some have survived as dominant views in certain regions or among some trades and classes of people. Other views have become hybridised with new ideas. Modern scientific thinking has become dominant in cities although festivals and cultural practices still have strong traditional influences.

Views range from animistic, religious to rationalist, anthropocentric to cosmocentric as explained before.

<sup>9</sup> น้ำกาม

#### 4.1. Animism

Reincarnation is an important belief in animism. A person who commits sins gets reincarnated as an animal. After going through several cycles of animal births, a soul may be born as human again with an opportunity to redeem itself.

There are several animistic traditions in Thailand. Phra Mae Thoranee is mother earth, and Phra Mae Phosop is the rice goddess. Thai people have both worshipped and exploited these natural resources in many ways. However most show their appreciation to them. Agriculture and rice continue to dominate Thai traditional cultural practices.

#### 4.2. Agriculture and rice

Agriculture remains the mainstay of the lives of most Thai people, in fact 90% have direct or indirect association with it. (Wielemans and Chan, 1992). Rice is the staple food in South East Asia. Thailand is world's number one rice exporter of rice. Some form of relationship between Nature and human is quite evident in Thailand.

The goddess of rice or Mae Phosop is highly worshipped by rice farmers. They would give her offerings as if she is personified as a goddess. She would be considered as a pregnant lady when the rice grains appeared. (Monaghan, 2010).

Language reflects civilization and its culture dominances. In Thai Language, whenever Thai people craved for food they say Heaw Kaow<sup>10</sup> which means hunger for rice. The Khmer people use a similar term in their language, Nyham Bai which means similar to eating rice. Rice is a symbol of prosperity and life of the people.

In the old times, Thai people used banana leaves for eating food instead of Chinese porcelain plates and bowls and for some other purposes. As a result banana trees were revered. It was and is still believed by many that there are spirits inside them, for instance, one belief was in a female nymph which resides in a banana plantation or in the banana trees itself called Nang Tanee or Prai Tanee.<sup>11</sup>

Consequently banana trees were not cut. It is still a practice among many rural Thai. It was common practice to get permission from the personified spirit in order to take the leaves of the bananas from the trees for consumption.<sup>12 13</sup> In the form of a ritual just in case the spirit got angry.

<sup>10</sup> หิวข้าว

<sup>11</sup> พรายตานี The scientific name is *Musa balbisiana* Colla from the family Musaceae.

<sup>12</sup>

สกุลไทย

<http://www.sakulthai.com/DSakulcolumnndetailsql.asp?stcolumnnid=3199&stissueid=2602&stcolcatid=2&stauthorid=19>

ตานี ๑ น. ชื่อกล้วยชนิด *Musa balbisiana* Colla ในวงศ์ Musaceae

ใบเหนียวกว่ากล้วยชนิดอื่น มีเมล็ดทั่วทั้งผล, เรียกมีผู้หญิงที่

กำลังตั้งท้องสิงอยู่ในต้นกล้วยตานีว่า พรายตานี.

<http://rirs3.royin.go.th/new-search/word-search-all-x.asp>

พจนานุกรม ฉบับราชบัณฑิตยสถาน พ.ศ. ๒๕๔๒

Cambodia holds a royal ploughing service. Thailand also holds the royal ploughing ceremony annually so that every year the crops will have good productivity and prosperity.

The royal ground or Sanam Luang remains in inner Bangkok and used to be called "Ratanakosin Island". King Rama III allowed farmers to create rice plantations there while the country was in border arguments with Cambodia (Khmer). Gradually, they allowed farmers to use the royal ground, which was usually used only for royal cremations.

#### 4.3. Views of Nature

In the reign of Rama IX, His majesty created natural conservation projects. He has been a role model for Thai people to reconnect with nature and its reconstruction and preservation. The royal projects are generally highly regarded.

This is reversing some of the colder utilitarian approaches that people have developed under the influence of scientific rationality towards nature. One strong redeeming aspect is that mystical belief still lingers strongly among Thai people's perspective of nature.

In 1993 in the International Bioethics Survey was conducted in a number of Asian countries including Thailand (Macer, 1994). The survey explored the views of ordinary citizens on their views of bioethical questions. One of the interesting questions was an open question, "Write in your own words, or draw in a picture, what comes into your mind when you hear the word "Nature"? The survey results of the view of nature among 685 Thai respondents were examined. Here are some example answers of the question:

*"Do you know nature is the same as Buddhism, if you want to know, you must understand Buddhism."*

*Everything that is born on earth or other planets. In Buddhism : "Dham" means nature*

*Nature is an untampered or non-interfered environment, especially by human beings.*

*Nature is? Everything that is not created by human.*

*Nature is something which is born spontaneously and vanished to same way.*

*Killing wild animals is killing nature.*

*Nature has an intrinsic value and a compliment for its beauty. Ecologically, Nature provides benefits and harms. Nature can perfectly counter balance itself. Thus, other variants, which joined with the ecosystem, have to comply accordingly in harmony, and simply coexisting is the essence of nature.*<sup>14</sup>

*Nature is not to take advantage of others, ourselves, and animals."*

The views of the respondents are mixed. Some are heavily influenced by the impact of globalization and modernity while a few held some convictions drawn from

<sup>13</sup> From the Department of Agricultural Extension. Retrieved from

<http://www.doae.go.th/library/html/detail/banana/page94.html>

<sup>14</sup> ธรรมชาติ เป็นสิ่งที่สวยงาม และมีคุณค่าในตัวของมันเอง ถึงแม้จะให้คุณค่าหรือโทษก็อยู่ในขอบเขตของระบบนิเวศน์ ธรรมชาติสามารถจัดการกับตนเองได้ลงตัวที่สุด ตัวแปรอื่นๆที่เข้าแทรกในระบบนิเวศน์ของธรรมชาติ ต้องสอดคล้อง และเป็นไปตามแนวทางของ ธรรมชาติ ตามเรียบง่าย และการพึ่งพาอาศัยซึ่งกันและกัน เป็นสิ่งสำคัญสำหรับธรรมชาติ

old mythical beliefs without actually referring to the mythical stories.

Humans seem to have an innate desire to control all around us including the environment. This can be quite damaging as traditional myths which generated some veneration and awe for nature seem to be disappearing. In evolution a zero-sum game may have been the cause for our success but now human beings pursue domination and control.

There is hope as some Thai people still hold traditional views balancing them against an increasing media dismissal of traditions. However many people believe that some natural disasters are caused by the careless usage of natural resources and exploitation of nature, such as landslides in the mountains after deforestation.

#### 4.4. Coping with modernity

Despite modern influences, most Thai people generally see nature as superior and the resource for survival of the human race. But their needs for comfortable lives, air conditioned houses, material goods are overwhelming. They forget that everything eventually originates from nature.

There are some movements to address over consumption and damage to nature. For instance while deforestation is still being practiced in parts of the country it is less than in some surrounding countries due to general antagonism.

#### 5. Conclusions

Thailand is a country which is very well-known as Buddhist. It is the national religion, and 95 percent of the people are said to be Buddhist, with smaller numbers of Christians, Muslims, Sikhs, Hindus, and persons of other faiths as minority members of society. However, due to the fact that there is mixture of Hinduism, Confucianism, Buddhism, Sikhism and other belief systems, Thai society may be considered as a society with a diversity of views of nature. Also as surveys show, even within each faith system there are a variety of views of nature.

In conclusion, however, we may say that Thai culture was significantly influenced by Hinduism and Khmer civilisation. Like all countries the People of Thailand have passed through a series of events in history and period of times. The diversity of cultural difference were fused and shaped Thai culture. The perspectives on nature were a harmonious mixture of cultural traditions, beliefs and practices. They still are in large rural sections of society.

Nature is to be preserved for younger generations. Nature is everything around us, food resources, medicines, habitats, aesthetics, and traditions. Globalisation has changed the Thai view of Nature from respecting spirits of nature to more often instrumentally exploiting nature. Following and encountering the series of events of natural disasters, for example, floods, earthquakes, landslide, and global warming. Nowadays, Thai people and their beliefs are put to the test. Accordingly, a challenge for the survival of humanity on the planet has reached a critical phase.

There is a need to revive some of the principles that lay behind the myths and animistic as well as Buddhist ideas on nature. While the language of demons, gods

and revengeful earth may not be much appreciated in a world brought up with scientific rationality, nevertheless the concepts that gave rise to these myths need to be reinterpreted in contemporary context. Some of the reverence for nature needs to be restored and the cultural practices and festivals need to be celebrated in new form, built on old foundations

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#### New Book

Richard Evanoff, *Bioregionalism and Global Ethics: A Transactional Approach to Achieving Ecological Sustainability, Social Justice, and Human Well-being* (London and New York: Routledge, 2011).

ISBN: 978-0-415-87479-3 [Routledge: <<http://www.routledge.com/books/details/9780415874793/>>

Amazon: <<http://www.amazon.com/Bioregionalism-Global-Ethics-Transactional-Sustainability/dp/0415874793/>>

"Bioregionalism and Global Ethics" suggests that current trends towards globalization are creating new social and environmental problems which require cross-cultural dialogue towards the creation of a new "global ethic." Current models of development are based on an implicit global ethic which advocates bringing everyone in the world up to the same standards of living as those prevalent in the so-called "developed" countries through unlimited economic growth. These issues are familiar to the readers of EJAIB, but this book proposes a solution.

Richard Evanoff holds a Ph.D. from the Institute for Environment, Philosophy, and Public Policy at Lancaster

University in the U.K. and teaches in the School of International Politics, Economics and Communication at Aoyama Gakuin University in Tokyo, Japan. His publications are mainly in the areas of intercultural ethics and environmental ethics. He is active with numerous international environmental NGOs and associations, and was a regular speaker at the Tsukuba International Bioethics Roundtables organized by Eubios Ethics Institute from 1992 to 2004.

Richard argues that this goal is not only unattainable but also undesirable because it ultimately undermines the ability of the environment to sustain both human and non-human flourishing, exacerbates rather than overcomes social inequalities both within and between cultures, and fails to achieve genuine human well-being for all but a wealthy minority. An alternative bioregional global ethic is proposed which seeks to maximize ecological sustainability, social justice, and human well-being through the creation of economically self-sufficient and politically decentralized communities delinked from the global market but confederated at appropriate levels to address problems that transcend cultural borders. Such an ethic is based on a transactional view of the relationship between self, society, and nature, which attempts to create more symbiotic and less conflictual modes of interaction between human cultures and natural environments, while promoting the flourishing of both. Instead of a single monolithic global ethic (even if it was possible), bioregionalism suggests that there should be sufficient convergence between cultures to allow for the successful resolution of mutual problems, but also sufficient divergence to enable the continued evolution of both biological and cultural diversity on a global scale.

Contents are:

Part I: A Bioregional Perspective on Global Ethics

1: Bioregionalism and the Dominant Development Paradigm

2: Cross-Cultural Dialogue on a Global Ethic

Part II: A Transactional Framework for Bioregional Ethics

3: Transactionalism and Bioregional Ethics

4: The Coevolution of Nature and Society

5: The Social Construction of Nature

Part III: Harmonizing Self, Society, And Nature

6: Beyond Anthropocentrism and Ecocentrism

7: Communicative Ethics and Moral Considerability

8: Cross-Cultural Dialogue on a Land Ethic

Part IV: A Bioregional Paradigm for Global Ethics

9: Bioregionalism and Ecological Sustainability

10: Bioregionalism and Social Justice

11: Bioregionalism and Human Well-Being

Part V: Bioregionalism in a Global Context

12: Preserving Biocultural Diversity

13: Bringing the Economy Home

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Part VI: Globalism in its Place

15: Global Ethics Revisited

16: Transitions to a Bioregional "World Order"

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## An Overview of Empirical Ethics Research in Turkish Medical Ethics Literature

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### Abstract

**Objective:** The aim of this study was to evaluate empirical research in Turkish medical ethics literature.

**Method:** Data were collected from different sources representing Turkish medical ethics literature. This retrospective and descriptive study included only the medical ethics research reports. All research reports were classified by publication source and year, study topics and samples.

**Results:** A total of 1205 articles were published in Turkish medical ethics literature. The study was performed on 161 empirical researches published between January 1994 and December 2009. The most investigated study topic was patient rights (11.2%) and the most frequent participant group was physicians (16.8%).

**Conclusion:** Empirical studies in Turkish medical ethics literature have become more noticeable as in general medical ethics literature. Among the most studied three subjects in both ethics literature, informed consent was the common topic. Patients, physicians, nurses and students were the most commonly studied samples of both these literatures.

**Key words:** Medical ethics literature, Turkish medical ethics literature, Empirical ethics research.

### Introduction

Conceptual studies and case analyses dominating the medical ethics literature in the 1970s tended to be replaced by a new study type especially in the field of clinical ethics in the 1990s. This study method is "empirical research" originating from social science methodology and based on qualitative and quantitative data<sup>1,2</sup>. In their series of papers on clinical ethics,<sup>3-5</sup> Singer, Siegler and Pellegrino defined clinical ethics research, presented their taxonomy for them, and reported that clinical ethics researches could be separated into two subdivisions as theoretical and empirical. In the subsequent period, many studies (6-13) were published evaluating empirical ethics research in the fields of bioethics, medical ethics and clinical ethics and emphasizing that this research together with normative ethics studies would make significant contributions to the field of medical ethics. In empirical ethics studies, data are collected and analyzed by

research methods of clinical epidemiology or social sciences. The main objectives of empirical ethics studies are to introduce ethical problems that result from clinical applications, to determine the adoption of ethical principles by health professionals and to evaluate the contributions of ethics education to medical applications (1,2,4,8,13). Within the framework of the present study, two significant studies investigating the empirical researches in medical ethics literature in detail were taken as references.

The first study belongs to Sugarman et al. (14) who scanned a total of 19.486 ethics researches published in Bioethicsline between 1980 and 1989 and determined that 663 (3.4%) of them used empirical research methods; furthermore, 88% of these empirical researches were published in 251 different journals, while the rest appeared in book chapters. The second study belongs to Borry et al.<sup>15</sup> who investigated publications between 1990 and 2003 and determined that 453 empirical researches were published in 9 medical ethics journals. These journals are as follows: *Nursing Ethics*, *Journal of Medical Ethics*, *Journal Clinical Ethics*, *Cambridge Quarterly of Healthcare Ethics*, *Bioethics*, *Theoretical Medicine and Bioethics*, *Hastings Center Report* and *Kennedy Institute of Ethics Journal*. Borry et al. found no empirical study published in *Christian Bioethics*. Both Sugarman et al. and Borry et al. investigated the number and percentage of empirical research as well as the subjects and participants. Based on these two studies, we planned to evaluate empirical research published in Turkish medical ethics literature. We determined the objectives of the present study as to introduce Turkish medical ethics literature, to determine subjects and participants of the empirical ethics researches in literature and to compare the study findings with the results of the previous studies.

## Material and Methods

### Data Source

In the study, data were collected from 5 different databases (a journal, congress books, and annual publications) representing the Turkish medical ethics literature. This retrospective and descriptive study included only the medical ethics research reports. Case reports, review studies and letters to editor were omitted. Medical history studies in the databases were completely excluded (In Turkey, medical ethics and medical history were institutionalized as one academic discipline with two components). Among databases, on-line access is only available for the *Journal of Turkish Medical Ethics*, *Law and History*. Therefore, hand-searching method was used for the articles in other sources. All research reports were investigated and classified by the publication source, publication year, study topics and study samples.

### Study Limitations

In Turkey, studies on medical ethics are not only published in medical ethics periodicals, but also in the periodicals of different medical disciplines. However, because the present study aims to introduce the Turkish medical ethics literature, articles on medical ethics published in other medical periodicals were omitted. Empirical research conducted in Turkey but published in

the journals of other countries were also excluded. Therefore, the study database was limited to empirical research in Turkish medical ethics literature.

### Reliability

The study criteria for "empirical ethics study" were that the study should investigate a specific problem in ethics, collect qualitative or quantitative data by a method of clinical epidemiology origin and lastly analyze and interpret the obtained data. The full texts of 161 articles included in the study were evaluated by both researchers in accordance with the previously prepared control list. Researchers classified each study report according to study subject and material. Kappa statistics were used to determine inter- and intra-researcher reliability; accordingly, intra-researcher agreement was found quite good (0.90) and inter-researcher agreement was good (0.77).

### Statistical Analysis

Descriptive statistics, frequency and percentage were used for the distribution of research reports by years and sources, as well as for study subject and material.

### Findings

A total of 1205 articles were published in Turkish medical ethics literature in the databases examined in the study. The study was performed on 161 empirical research papers consistent with inclusion criteria and published between January 1994 and December 2009.

Distribution of empirical research papers published in Turkish medical ethics literature is given by their subjects in Table 1. These subjects could be summarized under 27 titles. Certain subjects were extensively studied, while there was only one study on some other subjects. The five most investigated subjects were patient rights (11.2%), transplantation (9.9%), informed consent (8.7%), euthanasia (8.1%) and malpractice (5.6%). On the other hand, the five least investigated subjects were autonomy (1.2%), Hippocratic Oath (0.6%), health news (0.6%), veterinary ethics (0.6%) and "Do not resuscitation" instruction (0.6%). There was one study for each of the last four subjects.

Distribution of empirical research in Turkish medical ethics literature by participants and materials is given in Table 2. There are 22 participant groups and 4 material groups. The five most extensively studied participants groups were physicians (16.8%), medical students (13.7%), nurses (11.8%), patients (10.6%) and health professionals in general (8.7%). The least studied subjects were patient relatives, veterinary physicians, editors of medical journals, jurists and students other than medical faculty. There is one empirical research for each of these participants. The most investigated materials were ethics literature with three papers (1.9%), medical ethics curriculum (0.6%), medical ethics articles (0.6%) and newspaper reports (0.6%) each with one study.

Table 1: Prevalence of empirical research by topic in Turkish medical ethics literature

Research Topics	f	%
Patients' rights	18	11.2
Transplantation	16	9.9
Informed consent	14	8.7
Euthanasia	13	8.1
Malpractice	9	5.6
Clinical ethics	8	5.0
Ethical sensitivity	7	4.3
Professional responsibility	7	4.3
Ethics education	6	3.7
Drug industry	6	3.7
Telling the truth	6	3.7
Ethics committee	5	3.1
Physician-patient relationship	5	3.1
Nursing ethics	5	3.1
Death	5	3.1
Allocation of healthcare resources	5	3.1
Pharmacy ethics	4	2.5
Empathy	4	2.5
Research ethics	3	1.9
Futility treatment	3	1.9
Alternative medicine	3	1.9
Medical ethics literature	3	1.9
Autonomy	2	1.2
Hippocratic Oath	1	0.6
Health news	1	0.6
Veterinary ethics	1	0.6
DNR	1	0.6
<b>Total</b>	<b>161</b>	<b>100.0</b>

Table 2: Prevalence of different subjects in empirical research in Turkish medical ethics literature

Subjects	f	%
Physicians	27	16.8
Medical students	22	13.7
Nurses	19	11.8
Patients	17	10.6
Health professionals	14	8.7
Patient records	14	8.7
Pharmacists	6	3.7
Physician vs. patients	5	3.1
Woman	5	3.1
Lay person	5	3.1
Hospital workers	3	1.9
Medical student vs. non-medical student	3	1.9
Literature	3	1.9
Dentists	2	1.2
Health professional vs. lay person	2	1.2
Members of ethics committee	2	1.2
Representative of drug companies	2	1.2
Alternative medicine practitioners	2	1.2
Relatives of patients	1	0.6
Veterinarian	1	0.6
Medical journal editor	1	0.6
Jurist	1	0.6
Non-medical student	1	0.6
Medical ethics curriculum	1	0.6
Medical ethics articles	1	0.6
Newspaper	1	0.6
<b>Total</b>	<b>161</b>	<b>100.0</b>

Table 3: Comparison of results of studies

	Sugarman's study (1992)			Borry's study (2006)			Present study		
Years	1980-1989			1990-2003			1994-2009		
Data bases	Bioethicsline			General medical ethics literature			Turkish medical ethics literature		
Empirical research	663			435			161		
		f	%		f	%		f	%
The most studied topics	Informed consent	109	16.4	Prolongation of life and euthanasia	68	15.6	Patients' rights	18	11.2
	Research ethics	69	10.4	Ethics and bioethics	58	13.3	Transplantation	16	9.9
	Mental health	58	8.7	Informed consent	42	9.6	Informed consent	14	8.7
The most studied subjects	Patients	234	35.4	Nurses	98	22.5	Physicians	27	16.8
	Physicians	192	28.9	Patients	97	22.3	Students	22	13.7
	Nurses	72	10.8	Physicians	92	21.1	Nurses	19	11.8

## Discussion

In this section, results obtained from the present study were compared to findings of previous studies in literature (Table 3) and a general assessment was made for empirical studies in Turkish medical ethics literature. In the study by Sugarman et al., the first study on this subject in medical ethics literature, the most focused subjects were informed consent (16.4%), research ethics (10.4%) and mental health (8.7%), respectively. In the

study by Borry et al., the second study on this subject, the most investigated subjects were prolongation of life and euthanasia (15.6%), theoretical perspectives of ethics and bioethics (13.3%), informed consent and patient participation in decision process (9.6%), respectively. The three most examined subjects in the present study were patient rights (11.2%), organ transplantation (9.9%) and informed consent (8.7%). The

most common investigated subject of three studies is informed consent.

The three most investigated participant groups in the study by Sugarman et al. were patients (35.4%), physicians (28.9%), and nurses (10.8%), respectively. On the other hand, the three most investigated participant groups in the study by Borry et al. were nurses (22.5%), patients (22.3%), and physicians (21.1%). The three most investigated participant groups in the present study were physicians (16.8%), students (13.7%), and nurses (11.8%), respectively. The student group ranked fifth in the study by Sugarman et al., and fourth in the study by Borry et al.; in addition, the patient group ranked fourth in the present study. Accordingly, we can say that patient-physician-nurse-students groups were the most studied groups in the three studies.

Studies on medical ethics in Turkey was performed as a literature review or case analysis until 1990. As of 1990, empirical studies started to take place in academic field of Turkey in parallel with the general trend in world medical ethics literature. *The Journal of Turkish Medical Ethics, Law and History* was regularly issued on medical ethics in Turkey and only 36.6% of empirical studies were published in this journal. This journal contained history and judicial discipline in addition to ethics discipline, which could be the reason for low number of ethical articles in the content.

The majority (59%) of the empirical studies in Turkish medical ethics literature were published in full texts of conference-symposium books. Meanwhile, publishing the full text of presented or to be presented papers just before or after the symposium and conferences especially on ethics field is a common application in Turkey. The findings of the present study indicated that the majority of the clinical ethics studies were presented in these meetings and these studies are published on congress books rather than journals.

### Conclusion

Empirical studies gain increasing importance in medical ethics literature. Empirical studies in Turkish medical ethics literature have become more noticeable like in the general medical ethics literature in the last 20 years. There is a wide scale of empirical study subjects in Turkish literature, changing from informed consent to newspaper reports on medical ethics and from organ transplantation to Hippocratic Oath. Informed consent is a frequent subject of empirical medical ethics studies both in Turkey and globally. The most commonly studied groups are patients, physicians, nurses and students in both Turkish and world medical ethics literature.

The availability and recognition of studies in Turkish medical ethics literature is limited, because there is only one source with on-line access (*Journal of Turkish Medical Ethics, Law and History*) and the majority of the studies are published in congress books than the journal.

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## Fight for Water

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Water, as a marvelous substance exhibits flowing, rippling, swirling, seeping, dripping, trickling and constantly moving from rivers to sea and back again. It plays the key role in sculpting the earth's surface, moderating climate and diluting pollutants. Without water, life could not exist and hence it becomes the elixir of life. About 60% of our body is formed of water. It acts as the medium, in which all living processes occur, dissolves nutrients and distributes them to cells, regulates body temperature, supports structures and helps in the removal of wastes. One could survive only a few days without water.

The earth may be the only place where liquid water exists in substantial quantities. Water covers more than seventy per cent of the world's surface. Earth is unique in

having an atmosphere to trap water vapour and a suitable temperature range that keeps most of its liquid. Only a small fraction of the earth's abundant water is available to us as fresh water. Major water i.e. ninety seven percent is found in the marine environment and is too salty for drinking, irrigation or industry except as a coolant. In the remaining three percent i.e. the fresh water, about 2.997% is held up in ice caps or glaciers or is buried so deep that it costs too much for extraction. Hence about 0.003% is available to us in soil moisture, ground water, water vapour and island water systems. Fresh water is necessary for agriculture, manufacturing, transportation and countless other human needs all over the world.

We get a generous supply of water which is continuously collected, purified and distributed through the hydrological cycle. But this cycle is seriously affected by the addition of wastes and unlimited withdrawal. This problem is made further serious with the uneven distribution of fresh water through the differences in average annual precipitation which divide the earth into water 'haves' and 'have-nots'. With the growth in industrialization, urbanization and population explosion, water scarcity in already water deficit regions will further intensify leading to water disputes. The severe effects of global warming causing drastic changes in rainfall patterns may worsen the conditions further.

### Sources

The sources of fresh water are the surface water and the ground water. Rainwater that does not soak in to the ground or return to the atmosphere by evaporation or transpiration is known as surface water and it forms the streams, lakes, wetlands and artificial reservoirs. Some rainwater that infiltrates the ground and fills the pores in soil and rock forms the ground water. There is forty times as much ground water as there is surface water which is unequally distributed and only a small amount of it is exploited economically. If the withdrawal rate of an aquifer exceeds its natural recharge rate, the water tables get lowered. Some aquifers known as fossil aquifers get very little recharge and are nonrenewable.

### Water use

The common measures of human water use are withdrawal and consumption. Water withdrawal is taking water from a ground water or surface- water to a place of use while water consumption occurs when the withdrawn water is not returned to the surface water or ground water. About sixty percent of the water withdrawn is consumed throughout the world. Since 1950, the rate of global water withdrawal has increased about fivefold to meet the needs of ever increasing population. The USA has the highest per capita water withdrawal and if every country were to withdraw water like USA, we would be trying to withdraw more than the available supply. Averaged globally, about sixty nine percent of the water withdrawn each year is used to irrigate the agricultural field and in this about seventy to eighty percent of the water is lost through evaporation and seepage before reaching the crops. Throughout the world about twenty three percent of the water withdrawn is utilized for energy production, industrial use, cleaning and removal of

wastes. Agricultural and industrial products require large quantities of water. Municipal and domestic use accounts for about eight percent of worldwide withdrawal and it is thirteen to sixteen percent in industrialized countries.

### Water Resource Problems

Droughts characterized by lower precipitation and higher evaporation cause severe damage. Since the 1970s, droughts have killed more than 24,000 persons per year and created large number of environmental refugees. In water deficit areas, women and children have to walk long distances each day for fetching water. Competition exists between cities and farmers for water use. Hence in the near future water will be the point of contention between water scarce countries.

### Water Rights

Laws governing surface water access and use differ. In certain regions water use is based on the doctrine of riparian rights. In this system, the law empowers the land owners adjoining the flowing river, to use water from the river as long as some water is left for downstream landowners. But with the explosion in population and intensive use, water will not be enough to satisfy the requirements of all the people along the river.

In other regions the principle of prior appropriation regulates water use. In this first-come, first-served approach, the first user of water from a river establishes a legal right for continued use of the amount originally withdrawn. If there is a scarcity, later users are cut off, one by one, until there is enough water to satisfy the demands of the earlier users. In some regions, combinations of both types of rights are adopted.<sup>15</sup>

### Causes for conflicts

The conflicts arise between the countries or states over who has the power to control water and in turn the economy and population. They can be caused by water use which includes industrial, agricultural, domestic, military and political uses. Pollution also aggravates the problem by affecting quality of water supply. Wastes from agriculture, industries and residential areas contaminate water resources. Uneven distribution of water resources among people and countries creates an imbalance between the parties who share water supplies. As communities become more developed and modernized, they tend to exploit water resources to the maximum.

### Fight for water

There are conflicts in many regions of the world over inadequate water resources and disputes over shared water supplies. It is estimated that about 1,250 sq. km of freshwater is remaining in the semi-arid and arid regions where the supply is not evenly distributed among the nations. Rivers arise in one country and pass through other nations before joining the sea. Their waters are shared by more than one country, but the countries where such rivers originate tend to gain control over the waters leading to water disputes between water sharing countries. Since biblical times, competition for water has

<sup>15</sup> For extensive discussion see Jie Liu et al. 2011. *Water Ethics*. RUSHSAP, UNESCO Bangkok.

been a source of warfare in the Middle East. After a half century of hostility, Jordan and Israel signed a historic peace agreement in 1994. The key issue of the agreement was cooperative management of one of this region's most valuable resources: water. The next wars in the Middle East may be fought over water and not oil. Most water supplies for this arid region are from three shared river basins, the Jordan, the Tigris-Euphrates and the Nile.

### **Jordan River Basin**

It includes parts of Lebanon, Syria, Israel, Jordan and the West Bank. River Jordan originates in Lebanon with an average flow of 1200 million cubic metres per year. As this region has an arid climate and low rainfall, water has become the most valuable resource. Israel uses most of the water available in the basin followed by Jordan. Without a proper water sharing agreement, Syria and Israel have taken over the water supplies. The mountain aquifer underneath the West Bank is a point of dispute between Israelis and Palestinians. There is a heavy competition for water among Jordan, Syria and Israel from the Jordan River basin. Syrian attempts to divert water from the Jordan River induced the 1967 six day war between Israel and its Arab neighbours. This war gave Israel control over two important water resources namely the Golan Heights which form the watershed of the Jordan River and the mountain aquifer under the occupied West Bank. This helped the sustained growth of farms and industries of Israel but also created envy and resentment among the nations who have less water.

### **The Tigris and Euphrates**

These rivers originate in Turkey and their waters are shared by several countries who regularly disagree to cooperate on water issues. These rivers are very important to Syria and Iraq as they receive 85% and 100% of their water supply, respectively, from the rivers. The downstream states heavily rely on these two rivers for their water supplies, but the dams constructed by Turkey have restricted the flow to these drier countries. Conflicts arose between Turkey and Syria over the use of Euphrates River. Syria's share of the Euphrates was reduced due to Turkey's plans of increasing its irrigation facilities. As Syria initiated the filling of Lake Assad, hostilities between Syria and Iraq increased in the 1970s. Turkey has a plan to build twenty two dams along the upper Tigris-Euphrates to generate electricity and irrigation facilities. But these dams reduce the flow of water to Syria and Iraq which lie downstream. The greatest threat to Iraq is a cutoff of its water supply by Turkey and Syria. Turkey also has plans to build pipelines to transport and sell water to parched Saudi Arabia, Kuwait, Syria, Israel and Jordan. Iraq brought its armies in 1975 when Syria reduced the flow in the Euphrates to fill its new dam at Tabqu. Both Iraq and Syria watched keenly in 1990 when Turkey closed the giant Ataturk Dam upstream on the Euphrates. When filled, the reservoir would hold ten times more water than the Sea of Galilee, the largest body of fresh water in the Middle East. Turkey was able to grow peaches, pomegranates, melons and grapes in the semiarid Anatolian plains at the expense of water use

downstream. In the 1991 Gulf war, Turkey threatened to cut off water flowing to Iraq which will be a death knell for Iraq. But in turn, Iraq threatened to blow up the Ataturk Dam. Thus water disputes could drive nations to war or be used as a weapon against enemies.

### **The Nile**

It is the longest river in the world with a stretch of 4,130 miles. This river has been the source of life in Egypt and Sudan and its tributaries collect and disperse water in nine African countries before joining the Mediterranean Sea. As Egypt has no other water resource, it tries to have control over the headwater of the Nile. But the government of Uganda, Sudan and Egypt entered into a pact for sharing the waters of Nile. Quarrels among Ethiopia, Sudan and Egypt over access to water from the Nile river basin are on the increase. Ethiopia which controls the headwaters of eighty percent of the Nile's flow has plans to divert more of this water. Sudan also has similar plans. Hence this could reduce the water availability to water deficit Egypt, which is almost a desert except for the thin strip of cropland along the Nile. By 2025, the population of Egypt may double thus increasing the demand for water. Its only alternatives are to go to war against Sudan and Ethiopia to get more water or to slash population growth and improve irrigation efficiency. Egypt has threatened war if any country in the upstream interferes with its only water source, the Nile.

### **USA**

Within the country, water disputes arise between states. In California, USA seventy five percent of the population lives south of the river Sacramento, but seventy five percent of the rain falls north of it. Hence a group of giant dams, pumps and canals were created by the California water project to transport water from northern California to the heavily populated regions of the south. People in the southern region argue that they need more water to support cities like Los Angeles and San Diego and to irrigate more crops. But their opponents in the north feel that this transport would deteriorate the River Sacramento, threaten its fishery resources and reduce the flushing action that cleans San Francisco Bay.

### **Africa**

Many African countries experience water scarcity and hence they have to share the water supplies within the limited resources. Rivers like Nile, Volta and Zambezi are being shared by several countries. With the unequal distribution of water supplies among neighbouring states, conflicts arise between them due to the growing demand for water, poor management of water resources and improper conflict resolving strategies.

### **Asia**

Water disputes become a political issue throughout Southeast and Central Asia for having control over water resources. Sharing of water supplies was not properly understood by these countries resulting in ethnic and political conflicts. Water deficits are triggering conflicts in India, China, Pakistan, Nepal and Bangladesh. The Indus

river basin has been a point of conflict between India and Pakistan. Dams and canals built towards enhancing irrigation facilities and hydel power generation dried up stretches of the Indus River. They also resulted in the displacement of several people and the deterioration of the Indus plain ecosystem. India and Bangladesh compete for the use of the waters of the Ganges River. As the demand for water increased in the state of West Bengal in India towards industrial and domestic use, conflicts over water increased between these countries.

#### Conclusion

We need to treat water as if there were an endless supply and as if the water itself had no intrinsic value. Numerous municipalities and local bodies also have unreasonably low prices for water. If water uses were charged the real price for environmental damage, future use, and public subsidies, water conservation would be more attractive. Allowing the market to determine a price for water can encourage efficiency that makes more water available. It is also important, as water markets develop; we have to be sure that environmental, recreational and wild life values are not sacrificed to the lure of high-bidding industrial and domestic uses. Water shortages severely affect the agricultural sector and hamper the food security which leads to internal and transborder conflicts. According to the Human Development Report of 2006, about 700 million in 43 countries live below the water-stress threshold of 1700 cubic meters per person. Uneven access to water, wastage and widespread corruption in water tariff collection are compounding the problem. In the near future the loss of irrigation water could override technological progress and start shrinking the yield in many countries. People in water rich countries think water as an infinitely available, renewable resource because of its constant supply by the action of sun, wind and gravity. But in many parts of the world where water supply is limited, more demands and natural variations in rainfall exacerbate problems. Thus distribution of water resources is going to be a key issue in any future peace talks. The keys to resolving these water disputes involve a combination of regional cooperation reduced population growth and improved water efficiency.

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## Water discourse, Ableism and disabled people: What makes one part of a discourse?

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#### Abstract

More than 1 billion people in the world lack access to clean water, and 2.6 billion to sanitation. Halving the number of people without access to water and sanitation is a Millennium Development Goal. According to a DFID research project description, 60 million physically disabled people have difficulties related to water supply, use, and sanitation. However, access to clean water and sanitation and other water related problems disabled people face are not mentioned and dealt with in high level policy documents such as the three existing editions of the world water report, the memorandum for a World Water Protocol (MWWP) or the Human Development Report 2007/2008 'Fighting climate change: human solidarity in a divided world' which covered water scarcity and floods. Disabled people are invisible in these documents and although all of these documents mention other marginalized groups such as indigenous peoples, women in developing countries, the rural poor and their children, young people workers/peasants, 'the poor', farmers and displaced people. This paper submits that certain forms of ableism are responsible for the invisibility of disabled people in various water discourses.

#### Introduction

The World Water Council (WWC) notes that the right to water "entitles everyone to sufficient, safe and acceptable, physically accessible and affordable water for personal and domestic uses" (1). Reducing, by half, the number of people without access to water and sanitation is on the list of Millennium Development Goals (MDGs). According to the UNESCO World Water Assessment Program, water is important for achieving all Millennium Development Goals (2). Various health promotion conferences state that access to clean water and sanitation is an essential determinant of health (3-5). Water is critical for sustainable development, the eradication of poverty and hunger, and is indispensable for human health and wellbeing. (6) (7)

However, despite all these acknowledgments of water being essential there are, according to the 2010 report of the Joint Monitoring Programme for Water and Sanitation, still 2.6 billion people that lack adequate sanitation. (7) And some believe that "Sanitation and drinking-water are relatively low priorities for domestic allocations and ODA, despite the huge potential benefits for public health, gender equity, poverty reduction and economic growth.(8) Access to clean water and sanitation is also a major challenge faced by disabled people around the world (9). Disabled people often do

not have access to water and sanitation because of their high level of poverty and marginalized status as well as their often-different needs concerning access to water and sanitation due to their different sets of abilities.

Disabled people have clear ideas about how their needs can be met (10), but their expertise remains shut out of mainstream clean water and sanitation discourses. All three existing editions of the World Water report(11-13), the 2009 memorandum for a World Water Protocol (MWWP)(14) and the Human Development Report 2007/2008(15) ignored disabled peoples' needs and insights with regard to water issues despite mentioning other marginalized groups such as indigenous peoples, women in developing countries, the rural poor and their children, young people, workers/peasants", 'the poor', farmers and displaced people. This quote from the third edition of the World Water report is indicative of the invisibility of disabled people in the water and sanitation discourse. "Those who suffer the most usually have the least to start with – indigenous peoples, women in developing countries, the rural poor and their children."(13)

Indeed the majority of countries and principal international water and environmental sanitation agencies still have to embark on a path towards including a disability perspective in their water and environmental sanitation work. (16) The water and environmental sanitation and disability sectors have previously had little contact, common language, or understanding of each other's perspectives or experience. (16) Question is why are disabled people invisible in certain parts of water discourse and for that matter in most discourses of contemporary issues ranging from climate change (17) to nanotechnology (18)? This paper focuses on water discourses and the author submits that the invisibility is due to certain ability expectations, certain forms of ableism, evident in the water discourses. Ableism describes the phenomenon that individuals, households, communities, groups, sectors, regions, countries and cultures cherish and promote certain abilities while viewing other abilities as non-essential or even undesirable (favoritism of abilities) (19). The author introduces in this paper the angle of favouritism for abilities as a new lens through which to analyze discourses and the visibility of actors in discourses. The paper looks at water discourse and what arguments are used to demand and justify the visibility of certain groups; it highlights which abilities are used to justify the involvement of a given group in the water discourse.

### **Water documents and social groups**

Public participation is seen as important in regards to the water discourse (20) (21) Social groups –in this case women and men- were first recognized as being important in the management of water and sanitation at the 1977 United Nations Water Conference at Mar del Plata (22). The 1992 Dublin Statement was the first that recognized the central role of women related to water supply and sanitation. (22) Since then many document mention gender/women. Highly influential water policy documents such as the three existing editions of the World Water report(11-13), the 2009 memorandum for a World Water Protocol (MWWP)(14) and the Human

Development Report 2007/2008(15) which covered water scarcity and floods mention indigenous peoples, women in developing countries, the rural poor and their children, young people workers/peasants", 'the poor', farmers and displaced people as stakeholders. However, disabled people are not mentioned as stakeholders. If they are mentioned it is in the context of unclean water and lack of sanitation generating impairments and diseases (8;23;24). If one searches these leading policy document on water (8;11-13) for the term disability what shows up is the term 'Disability adjusted life years' or nothing. So why are disabled people so invisible? It cannot be due to lack of needs. According to a DFID research project description 60 million physically disabled people (mainly living in rural areas) have difficulty performing the basic tasks of daily life related to water supply and use, and sanitation (9). Needs analyses exist that show the lack of access of disabled people to clean water and sanitation (25). Furthermore legal instruments also highlight the right to water and sanitation for disabled people (26) (27). The author submits that the dynamic of ableism might be one reason.

### **Water and Ableism**

The term ableism evolved from the civil rights movements in the United States and Britain during the 1960s and 1970s (28) to question and highlight the expectations towards certain body abilities and the prejudice and discrimination persons experienced whose body structure and ability functioning were labelled as 'impaired'. However, the favoritism for abilities and ableism is a much broader phenomenon. The cherishing of abilities happens on the level of individuals as well as on the level of households, communities, groups, sectors, regions, countries and cultures (19) changed over time and will continue to change. Favoring certain abilities often morphs into ableism where one not only cherishes certain abilities but where one sees certain abilities in oneself or others as essential. Ableism leads to an ability based and ability justified understanding of oneself, one's body and one's relationship with others of one's species, other species and one's environment (19). Ableism as such is not negative it just highlights that one favors certain abilities and sees them as essential. Ableism deployed in a negative way often leads to disablism (29) which among others is characterized by the unwillingness to accommodate the difference in ability needs of certain social groups and the discriminatory treatment of them. Whether we come to an agreement as to what to do and how to do in regards to water and sanitation depends partly on what abilities are favoured and what forms of ableisms different stakeholders exhibit. This also sets the stage for which stakeholders are visible and invisible.

### **Ableisms influence on which marginalized group is involved**

Today women<sup>16</sup> are the group that is the most recognized one as being missing in the water and

<sup>16</sup> This article is NOT negating the necessity of the involvement of women in water and sanitation discourses. This paper wants to shed light on the consequence for other social groups such as disabled people of using certain strategies to achieve the goal.

sanitation discourse and gender equity is a highlighted target; disabled people are not cited by the many documents and declarations that demand the presence of women and other social groups for that matter in the water and sanitation discourses. Why is this? It cannot be because disabled people have already a clean water and sanitation access advantage over other social groups as this paper showed. It can also not be because there are no ways to meet the needs of disabled people. Various literatures exist within the disabled people circles that identify the problem and propose solutions to the water and sanitation access problems (10;16;30;31).

Furthermore, on local level, various albeit only a few initiatives of individuals and individual group's strategies and actions exist that make clean water and sanitation accessible to disabled people (32-35). The author proposes another reason for the invisibility of disabled people and their needs and problems on especially high-level policy discourses around water and sanitation, namely that the arguments used to justify the involvement of certain social groups might not be applicable to disabled people. If one investigates how international and other key water discourse documents justify the demand for example including women in water discourses one finds that these documents do not simply say 'it's the right thing to do'. The arguments used to justify the visibility of for example women fall into two categories. One line of reasoning highlights the ability of women to have a positive impact on the issues of water and sanitation and on other indicators that depend on a resolved water and sanitation issue. The second line of reasoning highlights the disablism women face due to certain exhibited ableisms by the male population. Both lines of reasoning the author submits might not be seen to extend to disabled people. To give a few quotes which illustrate the author's analysis: "Women had a traditional role in fetching water, which impacted on their school enrolments rates, health, and ability to find food and care for their children. "It's not always a celebration," he stressed." (7) This quote exhibits the argument that women should be involved because the ableism generated by a given society burdens women with the task of fetching water. The expectations of women to fulfill; this ability role of fetching water disables them by impacting on essential abilities women should have namely access to education, health and abilities they should fulfill namely being the food producer and care giver for children. Disabled people do not fit these ability roles and as such, water is not seen in this context to impede on disabled people access to education and health and there is no expectations that they care for children and generate food.

"Principle No. 3 - Women play a central part in the provision, management and safeguarding of water This pivotal role of women as providers and users of water and guardians of the living environment has seldom been reflected in institutional arrangements for the development and management of water resources. Acceptance and implementation of this principle requires positive policies to address women's specific needs and to equip and empower women to participate at all levels in water resources programmes, including decision-

making and implementation, in ways defined by them."(36)

The Dublin Statement reflects the sentiment that the ability of women to provide, manage and safeguard water is seen as essential in many social settings and needs to be recognized through the involvement of women so they can fulfil the role to act out the ability many society structures linked to women. Disabled people are not linked to these abilities. "Recognize the leadership of women in sanitation and hygiene. As caregivers who suffer the consequences of managing health within the family, women have always been quicker than men to appreciate the importance of sanitation and hygiene; they have been at the forefront of efforts to improve them. This does not mean that men can "leave this challenge to women", but rather that the role of women must be understood, respected and supported if the challenge is to be met"(37). This quote highlights by using the word suffer that the role of women as care givers is seen as an ableism generated by male that leads lead to a disablism but at the same time generates in women unique abilities to act faster and to be more responsive to problems. As disabled people are not seen as caregivers, this framework would not involve disabled people. "(b) Local communities must participate in all phases of water management, ensuring the full involvement of women in view of their crucial role in the practical day-to-day supply, management and use of water"(38). This quote acknowledges the crucial role of women. Disabled people are not associated with playing a role in the practical day-to-day supply, management and use of water. The UNESCO document *Women and Water: An Ethical Issue* has various statements which disabled women and men cannot live up to. "It is now recognized that the exclusion of women from the design, planning and decision-making of water supply and sanitation projects in developing countries is a major obstacle to the improvement of their well-being (World Bank, 1989)" (39)

This argument is per se not confined to women but can be applied to every marginalized group. Disabled people's wellbeing depends on access to water and sanitation. However, it is not applied to disabled people in a mainstream way. "Because women and children are usually the most affected persons by conflicts, they would clearly be the main victims of the resulting poverty often linked with the lack of access to fresh water (UNDP, 2001)." (39) This quote does set the stage for a hierarchical involvement and visibility of marginalized groups by claiming a hierarchy of victimization caused by lack of access to water. As disabled people are not listed as the top group affected but women and children it focuses the first line of action on women and children. Of course, one could say that disabled women and children are mend to be included in the statement but this is not how people will perceive the sentence and the actions

So far in regards to water focuses mostly on non-disabled women and children. "In addition to the set of principles against discrimination of all kinds contained in its Article 2, the Declaration of Human Rights states that each person has the right to attain a minimum standard of quality of life. It implies that access to fresh water must provide equal opportunity for both women and men to enjoy a productive livelihood and that it must ensure the

life for the next generation (UNICEF, 1998).”(39) This quote mentions women and men and one could simply say that this means every human has to be provided with equal opportunity however by adding productive livelihood to the mix it slates the playing field against many disabled people as many disabled people are seen within many social dynamics as unproductive. Furthermore, disabled people are not seen as instrumental in ensuring life for the next generation.

The third edition of the World Water report (13) has examples for arguments based on ableism, disablism and the utility of women. It writes about how the empowerment of women and a positive role of women affect in a positive way the ability to increase the potential rate of economic growth; the ability to meet the challenges of rapid urban population growth; the ability to influence positively important driver, particularly at the household and community levels. It highlights the ableism generated by men that makes women labour to provide water for household needs; draw water for household use, transport it home and store it until it is used for cooking, cleaning and washing; collect water from drains, ditches or streams that are often infected with pathogens and bacteria, causing severe illness or even death. It questions the ableisms that expects women to spend considerable time collecting water by questioning the disablement women experience such as diminishes access to the important ability of generating income; exposure to sexual abuse and other forms of violence and less time for girls to attend school. Women are seen to have the ability to positively influence operation and maintenance of water facilities, health for the community, privacy and dignity for women, girls attending school and income opportunities for women if they participate in decision-making (13). Most of these sentiments the public and policy makers would not linked to disabled people.

### Discussion

According to the 2002 General Comment No. 15 on the right to water (26) adopted by the Committee on Economic, Social and Cultural Rights accessibility to water entails the following:

“(c) Accessibility. (i) Physical accessibility: (ii) Economic accessibility: (iii) Non-discrimination: (iv) Information accessibility. However a hierarchy as to the ‘everyone’ and ‘all’ exists at least if one looks at the involvement of different social groups in the water discourse which might be explained by exhibited ableisms and ability expectations in the water and sanitation discourse as outlined above. Using an ableism and utility driven justification for involving a social group often leads to exclusionary practices and a hierarchy in visibility as these abilities and utilities that are linked to a particular social group often cannot be, or for political, cultural, social and economic reasons are not extended to another social group. Many will not see that the abilities marshalled to justify the inclusion of women in the water discourse also apply to disabled people; these abilities are not associated with disabled people. Indeed, in most countries disabled people have to fight against prejudice, which sees little utility in disabled people. This invisibility comes with consequences namely that

solutions are not tailored towards them(30) and that implementation of disability related water solutions do not work (40).

The author suggests the analysis of the water governance and engagement process through an ableism and favoritism of ability lens including ableism studies (19), governance of ableism (19), ableism foresight (19) and ableism ethics (19) might be useful. To say it again this paper is NOT questioning the visibility of women in the water and sanitation discourse but the reasoning used to achieve the goal. As is disabled people are visible mostly in discourses that are linked to the narrative of suffering but not utility. Therefore, every utility driven justification discourse will exclude disabled people. The author suggests that arguments for the justification of inclusion and visibility of groups and identification of stakeholders should be developed that are exclusionary in nature. As access to water and sanitation is needed by every human there should not be a need to use any other argument than that everyone needs access to water and sanitation to include every human in the water and sanitation in the discourse.

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# Ethical Perspectives of Scientific Persuasions: A Comparison between the Indian Science Academy Meeting on Bt Brinjal of 2010 and the Asilomar [recombinant DNA] Conference of 1975

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## Abstract

This presentation discusses scientists' bioethical responsibilities with the outcomes of two meetings, the Asilomar 1975-recombinant DNA (rDNA)-conference and the Bt-brinjal-2010-meeting attended by the Scientific-Apex Body of India, the National Academies. The aim is to find whether the Bt-brinjal (a genetically modified brinjal [egg plant]) situation was discussed under the same diligent scientific-guidance as it was done in case of Asilomar-Conference-1975. If not, what was missing at the Indian meeting and is needed to be done before Bt-brinjal can be used for human-consumption?

The Asilomar-Conference was aimed to consider whether to lift a moratorium (set in 1973) on rDNA-research. The meeting concluded that rDNA-research should proceed under strict guidelines. These guidelines were set and later published by the National-Institute-of-Health-USA.

Bt-brinjal was approved by the Genetic Engineering Approval Committee (GEAC) for commercial use following the review-reports submitted by the Maharashtra-Hybrid-Seeds-Company-Limited (Mahyco) in 2009. Severe (scientific and public) opposition was raised. A general concern was about the inadequacy and competence of Indian-science. In the context of the national opposition, Shri Ramesh (Minister of Environment and Forests) called a meeting with the Presidents of six National Academies and other experts. The meeting was held and a document was prepared, which was found inadequate and immediately replaced by a follow up report. Neither report included further evidence for justifying 'human consumption'.

Fact remains that Bt brinjal and other genetically modified crops/food have potential to help the world by removing hunger and in other ways. However, it needs scientific and social acceptance. The scientists of India are capable to do this and they must work on it.

**Key words:** Scientists' Bioethical responsibilities, Indian National Academy, Asilomar Conference, Bt brinjal.

## Introduction

Advances in science usually benefit humanity; but their introduction is often the source of heated controversy. As biotechnology/genetic manipulation pushes the frontiers of human knowledge, it starts to generate important ethical issues. What is 'ethical' in pursuit of Bt brinjal [a genetically modified brinjal (egg plant) developed in India] research and/or its application? How can one be sure that an apparently innocuous food [Bt brinjal] will not cause havoc years later? How can a balance be struck between benefits and risks? Who shall decide when and where to draw the line between acceptable and unacceptable risks given the substantial benefits? These issues are more serious in a nation like India, where lack of awareness along with many social taboos and strictures, makes ethical queries more difficult to understand, grasp and pursue.

Scientists usually dedicate their lives towards the betterment of humankind. This includes a responsibility to protect the society and environment from potential adverse effects of their work [if any]. Fulfillment of such a responsibility requires an understanding of bioethics. Ethics as a whole is concerned with principles of right and wrong and of moral integrity. Bioethics more specifically considers questions of scientific integrity. In this communication an attempt is made to discuss scientists' bioethical responsibility illustrating examples of two conferences, apparently took place under different situations. The first one was the Asilomar [recombinant DNA (rDNA)-guidelines] conference of 1975 (1, 2) and the second, a meeting held by the Presidents of six National Academies of India to discuss a moratorium and thereafter on Bt brinjal in 2010 (3, 4). The aim of this paper is to examine whether the present day Bt brinjal situation has been discussed at the Indian National Academy forum under sufficient/proper and diligent scientific guidance as it was done in case of the set up of rDNA-guidelines in 1975 (1, 2). If not, what were lacking in the Indian Academy meeting and might also be 'not correct' ethically and should be rectified before Bt brinjal would be recommended for a large-scale production to serve the general public in India. It may be worthwhile to mention that the NIH- rDNA-work guidelines were first formulated in the Asilomar-1975 Conference and were adopted by many nations thereafter [with their own modifications].

## The Two Meetings, their Backgrounds and thereafter Asilomar Conference, 1975:

It all started with Berg et al.'s *PNAS* paper (5) and also the historic work of Cohen et al (6). For the first time scientists demonstrated the ability to clone DNA segments from any organism (6). The prospects of the ability to clone DNA brought out enthusiasm as well as certain threat and scepticism. A new chapter of science with rDNA began. Many ethical and safety questions were raised. A voluntary moratorium on certain rDNA experiments were issued right after the Gordon Conference on nucleic acid of 1973. All these culminated

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into the Asilomar Conference of 1975. The Conference was aimed to consider whether to lift the moratorium on rDNA research; and if so, under what guidelines this particular area of research (on rDNA) could proceed safely.

A report of the meeting was drafted by the Organizing Committee (Paul Berg, Chairman, David Baltimore, Sydney Brenner, Richard Roblin and Maxine Singer). They summarized the organization, proceedings and recommendations of the Conference (1, 2). Each presentation and discussion was recorded on audio tapes and these provided an evidence of all discussions (1). A "Provisional Statement of the Conference Proceedings" was drafted earlier and it served as the working document for the discussion at the final session. This was a highly debated conference and the conclusions and recommendations presented different [at times highly contradictory] view points particularly in the assessment of the risks and their dealings. The recommendation was "that research with rDNAs could proceed provided that the experiments were performed under conditions which ensure a minimum of risk to the experimenters and the public at large" (1). The evidence-based Asilomar conference concluded that rDNA research should proceed but under strict guidelines. Guidelines were also formulated under a strongly 'debated' forum, which was later taken up by the National Institute of Health, USA and published. Interestingly, the ethical issues were discussed discretely in this meeting and the essence remained throughout.

### ***Bt Brinjal of 2010:***

#### **1. Background**

"Bt brinjal" is a genetically modified brinjal [egg plant] developed by Maharashtra Hybrid Seeds Company (Mahyco). Mahyco is the Indian subsidiary of Monsanto (US). The Tamil Nadu Agriculture University and the University of Agricultural Sciences, Dharwad were the scientific partners of Mahyco in the development of Bt brinjal. "Bt" stands for Bacillus thuringiensis, a gram positive soil bacterium. A modified gene Cry1Ac and two other supporting genes nptII [an antibiotic resistance marker, neomycin phosphotransferase] and aad [for another marker O-aminoglycoside adenyltransferase], were assembled to produce an artificial insecticidal protein, toxic to the brinjal fruit and shoot borer [FSB] (7, 8). Bt is considered to be relatively harmless to the environment by several scientists.

#### **2. Development & Problems in the of Bt brinjal Production**

Brinjal transformation studies by Mahyco (and associates) started in 2000. Limited field trials on Bt brinjal were carried out between 2002 & 2005 along with other verification studies (7). The bio-safety and other data were submitted to the Review Committee of Genetic Modification (RCGM) in 2006. RCGM recommended that the Genetic Engineering Approval Committee [GEAC] of the ministry of environment and the regulatory body for approving genetically modified crops in India consider granting approval for large scale trials. Meanwhile, in 2005 a Public Interest Litigation (PIL) petition was filed by

Rodrigues et al (9, 10) which resulted in the Indian Supreme Court issuing a ban on all GM field trials in September 2006 pending scientific consensus on the risks involved [11]. It became more complex with civil society organizations asking for [toxicity etc] data under the Right to Information (RTI) Act (12). GEAC created a Bt Brinjal Expert Committee I (EC-I), to look into the concerns raised by civil society on the accuracy of the submitted bio-safety data; and a second sub-committee (EC-II) to look into the adequacy of bio-safety data. In 2007 despite the fact that GEAC recommended seven more repeat studies on bio-safety data, Mahyco sought permission to go ahead with large scale field trials through EC-I recommendation. GEAC finally accepted the report and Supreme Court lifted the ban on GM crop (12). In 2007-2008 several large scale trials were initiated.

On a different front the field study data [carried out by Mahyco] were obtained by civil society organizations and were sent to several expert scientists [Judy Carman, Inst Environ. Health, Gilles-Eric Seralini, the Committee for Independent Research and Information on Genetic Engineering, D. S. Williams, Jules Stein Eye Institute, David Geffen School of Medicine at UCLA and others]. These expert-reviews questioned Mahyco's experimental protocols and also the interpretation of the data (13-15).

#### **3. A Moratorium issued**

The EC-II report [developed by Mahyco] was submitted to GEAC on October 8, 2009 (16). This was approved at the GEAC 97th Meeting on October 14, 2009 and made public with immediate effect. Within 48 hours Minister of Environment and Forests (MoE&F), Sri Jairam Ramesh, intervened and halted the approval for commercialization and issued a moratorium in February 2010 "it is my duty to adopt a cautious, precautionary principle-based approach and impose a moratorium on the release of Bt brinjal". He also extended an invitation to the public for comments. Seven public hearings [13 January – 6 February, 2010] were organized by the CEE [Center for Environment Education] supported by the MoE&F. Approximately 8000 people from different sections of society participated [in the public hearings] (12).

Severe opposition arose against Bt brinjal for human consumption. Professor David A Andow of University of Minnesota pointed out that "most of the possible environmental risks of Bt brinjal have not been adequately evaluated; this includes risks to local varieties of brinjal and wild relatives and risks to biological diversity. Briefly, EC-II relied on dubious scientific assumptions, did not focus on realistic environmental concerns, inadequately evaluated some important environmental concerns, and ignored other real environmental concerns". (17). Dr S. Seetharam reported from a different perspective that, "the testing requirements for GM crops are more lax than those for drugs. Drug trials are conducted in five stages, with the first stage involving only animals. Regulations for a product meant predominantly for human consumption do not insist on human trials. Mahyco's toxicology studies have been performed only on animals and are therefore

equivalent only to the pre-clinical studies that are prescribed for drug trials" (18).

#### 4. The Indian National Science Academy [INSA] Meeting (2010) and its Reporting

In the context of the national debate and opposition earlier and in 2010 on GM-crops [special reference to Bt-brinjal], Minister Shri Jairam Ramesh with Dr. K. Kasturirangan, Member of Planning Commission called a meeting with the Presidents of the different National Academies and other experts to discuss the issue. A meeting was held at INSA on June 1, 2010 and a document on the meeting was prepared in September, 2010 (3).

A few significant points are quoted here to have some essence of the report. *"The overwhelming view is that the available evidence has shown, adequately and beyond reasonable doubt, that Bt brinjal is safe for human consumption and that its environmental effects are negligible. It is appropriate now to release Bt brinjal for cultivation in specific farmers' fields in identified states. There does not seem to exist any reasonable doubt on the biosafety of Bt brinjal. However, particularly to address public concerns as well as to doubly ensure biosafety, a group of experts or/and institutions should be constituted for conducting post market surveillance study of short, medium or long term health hazards, if any Bt brinjal has been subjected to a rigorous biosafety regulatory process. Studies on food and feed safety have been conducted on rats, rabbits, fish, chickens, goats and cows it can be safely assumed that GM brinjal is similar to the non-GM version except"* (3). Prof. Seralini's safety dossier review showed significant differences between GM and non-GM brinjal (15).

The meeting report contained several flaws. According to Latha Jishnu (19) the report *"has no references, not a single citation; makes sweeping statements, unsubstantiated claims; has lifted passages wholesale from a government newsletter. For good measure, it puts forward the view of the global biotech industry as its own. Although everyone has trashed the report, the cream of Indian science, represented by the country's apex organisations—Indian Academy of Sciences remains unfazed"*. Dinesh C. Sharma in his article in *India Today*, 26 September 2010 (20) wrote, *"India's top science academies have done the unthinkable. They have copied and quoted extensively from an industry lobby report to give a clean chit to the controversial genetically modified (GM) brinjal"*. Minister Sri Ramesh disregarded the report saying that *"it does not appear to be the product of rigorous scientific evaluation. There is not a single citation or reference in the report. So there is no way to know how the authors reached their conclusions. The report doesn't even say who all were consulted in this exercise."* (21). Therefore, an immediate update of the Inter-Academy report was published involving the inclusions of appropriate references and 'rectification of the slip[s]' keeping the body of the report, the main conclusions and recommendations the same (4). However, the moratorium continues and so are the objections and protests by the activists and others.

#### The Two Meetings: Important Considerations

Modern-day biotechnology completed its 38th birthday in November 2010. The extraordinary scientific, popular and political reaction generated by Cohen and Boyer's experiments of 1973 (6) was debated many times on various forums. As biotechnology pushes the frontiers of human knowledge, it starts to raise important ethical issues. In 1974 scientists for the first time declared and observed a moratorium on gene-splicing technology. The famous Asilomar Conference took place in 1975 and in 1976 Committees of Scientists from many countries established guidelines for using recombinant DNA technology. The general consensus among scientists and scientific organizations was that recombinant DNA technology poses no known risk beyond those posed by other methods of genetic manipulation. The Asilomar-1975 Conference was referred here not simply because it had been the very first International Congress on Recombinant DNA Molecules and towards the formulation of certain guidelines but also for it was a defining moment for science and society. It was a landmark of social responsibility and self-governance by the scientists. It paved the way of modern-day Biotechnology and related research.

Historically, the recombinant DNA related debate started right after the Gordon Conference on Nucleic Acid in 1973. Maxine Singer of National Institute of Health and Dieter Soll of the Yale University wrote two letters, the first one to the President, National Academy of Sciences, USA and the second one to the *Journal, Science* expressing their great concern over recombinant DNA technology as "we are writing to you, on behalf of a number of scientists, to communicate a matter of deep concern" [2]. And that paved the road to Asilomar. "But in reality", as Watson and Tooze pointed out in their classical book *The DNA Story: A Documentary History of Gene Cloning*, *"this debate began earlier. Events in the United States within the community of molecular biologists between 1971 and 1973 made the Gordon Conference discussion and its aftermath almost an historical inevitability"* [2]. The Asilomar-1975 Conference took place when scientists just started with cutting and splicing DNA from two different species. The scientist-organizers of this meeting did not address the ethical issues surrounding genetic alterations and only remained focused on the safety issues to settle a set of guidelines. These guidelines not only allowed the scientists to resume the work with recombinant DNA but also helped to persuade the US Congress that the scientists were capable to govern themselves and no legislative restrictions were needed.

An important point to mention here is that the Organizing Committee of Asilomar Conference, 1975 recommended that the meeting report should be published 'as quickly as possible in appropriate scientific journals, like *Science*, *Nature*, *the Proceedings of the National Academy of Sciences* and others, so that many scientists could read and discuss further (1). Contrary to this, the updated version of the Inter-Academy Report on GM crops started with a statement that "report submitted in September, 2010 elicited a great deal of public discussion, although it was meant only for limited circulation" (4). Does it mean that the meeting was

supposed to be a secret one and so were the reports? The possibility of the vast applications of recombinant DNA technology such as in human cloning, genetic manipulation of drugs and food or genetic testing, and others keeps reminding us of Mary Shelley's brainchild Victor Frankenstein. This archetypal story continues to embody and encapsulate human fears. How can one be sure that an apparently innocuous food/drug (in this case Bt brinjal) would not cause havoc years later? What will be 'ethical' in Bt brinjal situation? How can a balance be struck? And who shall decide where to draw the line? A question remained whether the scientific Apex body of India has done it with all seriousness and sincerity to remove the doubts from the minds of other scientists and also of common people. Were they sufficiently critical about the data that were placed to them for assessment?

The free pursuit of scientific knowledge and the implementation of new technology have the potential to conflict with the rights and dignity of people and the preservation of a safe and desirable environment. At times regulatory measures must be imposed to maintain an appropriate balance between competing interests, and it is in this regard that bioethical role of a scientist assumes a critical role. Perhaps Bt brinjal case is just an example of today's reality that was 'science fiction' not long ago. The current state of science is such that the realm of possibility and the rapidity with which we are confronted with new life situations are unprecedented in the history of mankind. In some ways the rate of change now exceeds the human ability to psychologically and culturally adapt without fear and uncertainty. The Indian Science Academies must have the patience to get Bt brinjal through social acceptance. It requires time for any society to understand, assimilate and accept something very new.

### Conclusions

Let us think positively that not only Bt Brinjal but many other genetically modified crops/food soon will help to remove hunger / nutrient deficiencies from the world. But the science related to these must be done properly. There must be human trial[s] and evaluation on well designed experiment(s) before Bt Brinjal can be released for regular human consumption. The evaluation of these human trials must rest upon good understanding of the science behind the interventions; balance of risks and benefits; and revelation of all facts (both good and ill). It must also be emphasized that an impartial or unbiased assessment (review) of the programs and the results generated therein should be an absolute requirement.

Sunita Narain, Director, Centre for Science and Environment, presented a two-sided view at the sitting Committee on October, 2010 (22). In the one hand she questioned whether the research conducted by Mahyco-Monsanto is 'credible enough to trust and whether it is impartial'? She also pointed out that there is report of conflict of interest among members of the GEAC along with their links to the biotech industry. On the other hand she viewed and supported the issue of "genetically modified food crops" and said it "must be considered in terms of India's ability to regulate new technologies, the credibility of the scientific system" that allows the use of these new technologies and most importantly, "the issues

of price and control of new technologies that take agricultural decisions out of the hands of farmers" (22). Advancement of Science and Technology must occur and people of India must accept and support it at their own terms.

We must have hope and trust rather than suspicion and fear to excel our scientific achievements. Let us have Asilomar Conference, 1975 as a guiding lesson. Asilomar-1975 was an example of 'precautionary thinking'. The potential risks there were all hypothetically portrayed. There was no definitive evidence of a biohazard—merely a buildup of circumstantial evidence. The risks were theoretically plausible but not explicitly known. There was a presupposition that the concerns raised by the colleagues regarding the risky experiments of another scientist. It was addressed within the scientific community. In the Indian National Academy meeting (2010) the Scientists should have been more outspoken and place their view points more assertively. Surely the Indian Scientific Apex body is capable to do function this way and it must. Scientists of India (Presidents of the National Academies in particular) must assume their bioethical responsibility at this juncture and work alongside with the regulatory authority to remove the fear and uncertainty from the mind of other scientists and common people. Initially there may have some difficulty, but ultimately it will pay off.

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## Mis-Un-True Informed Consent: A Brief Report from Turkey and a comparative study about "Ethics in Clinical Trials of EEG" in Psychiatry.

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### Abstract

New applications in medicine, science and technology are changing our lives. The delicate border between clinical trials and conventional diagnostic / treatment methods is becoming more evident. At this border new questions arise that need both rational and humanistic answers and that affect humankind's understanding of self: What are our responsibilities towards human subjects in clinical trials? What are our responsibilities towards patients and decisionally impaired psychiatry patients? What are rules about the routine techniques on decisionally incompetent psychiatry patients? What are the economic parameters' affecting decisions?

Many current research projects are concerned with the ethical problems of clinical trials of newly used medication, clinical trials of newly used measurement techniques, clinical trials proposed as conventional treatment methods, new measuring methods or conventional measuring methods on irrelevant patient groups; all being concerned with clinical trials of EEG and neuroscience. In 2009, the Ministry of Health of Turkey implemented new legislation on "clinical trials and newly established independent ethics committees (IRBs)". These independent and multidisciplinary IRBs analyze research projects and make recommendations about them. What should be the rationale about psychiatric patients in Turkey in a global setting?

**Key Words:** Clinical trials, ethics, psychiatry, informed consent, IRBs, EEG, neuroscience, Turkey, global setting.

### 1. Introduction

Progress in medicine and new applications in psychiatry, medicine, science and technology are changing our lives. The delicate border between clinical trials and conventional diagnostic / treatment methods is becoming more evident. At this delicate border, new ethical questions arise, which need both rational and humanistic answers and which affect our understanding of our species. Most mental health professionals and behavioral scientists enter the field with a strong desire to help others, but clinical practice and research endeavors often involve decision-making in the context of ethical ambiguity. Good intentions are important, but unfortunately, they do not always protect the practitioner and client from breaches in "Ethical Conduct". (1)

Mental Health Professionals encounter many ethical questions and dilemmas of informed consent in their everyday practice, research, and teaching. It is imperative that those of us, who are trained to provide the most intimate of care to some of the most vulnerable individuals, understand our responsibility to ensure that the service which we provide is grounded in a sound and ethical framework.

### 1.1 Unethical characteristics

Although rarely mutually exclusive, attitudes of most mental health professionals who engage in questionable, unethical, or unprofessional behavior could be described as having one or more underlying characteristics (1):

- Are ignorant or misinformed regarding the ethical standards of their profession;
- Practice outside their realm of competence and expertise, with or without awareness;
- Show insensitivity to the needs of those with whom they work or to situational dynamics;
- Exploit clients by putting their own needs first;
- Behave irresponsibly due to laziness, stress, lack of awareness, or other reasons that take their attention away from their professional responsibilities;
- Seek vengeance against perceived harms to themselves by clients or others with whom they work;
- Suffer from burnout or other emotional impairment;
- Have no concept of or have distorted views of interpersonal boundaries;
- Rationalize actions that are often unrecognized as self-serving;
- Usually behave competently, ethically, and with good awareness, but “slip” by losing sight of a goal or becoming momentarily distracted.

### 1.2 Clinical Trials in Psychiatry

Issues include newly used medication, Newly used measurement techniques, Newly used treatment tools, Clinical trials proposed as conventional treatment methods and misinformed patient groups, and Conventional diagnostic methods on irrelevant patient groups, for example.

### 1.3 Unethical Characteristics in Clinical Trials of EEG and neurosciences

Issues include Lack of “Informed Consent”, “Uninformed” or “Misinformed” consent, Impaired risk assessment, Questionable incentives such as “money.”, and Impaired and vulnerable subjects.

“.....There has been much discussion of late that confidence in medicine is being eroded. No less an authority than Elias A. Zerhouni, M.D., Director of the National Institutes of Health (N.I.H), Bethesda, Maryland, has recently said that forty percent of science news relates to health and medicine and a gradual erosion of public trust is being observed. The main trust of this discussion is the ever profiteering drug industry, the ever loosening professional standards of the physician, and the standing and expectations from the state health authorities, i.e. the Federal Drug Administration (FDA), among others.....”

### 1.4 Conditions of Informed Consent in Clinical Trials

Various issues are important such as the settings where the consent is taken, Behavior of the health care

professionals, Having no pressure on subjects, Discussing the clinical trial in detail, and Not using jargon.

### 1.5 Electroencephalography (EEG)

Electroencephalography (EEG) is the recording of electrical activity along the scalp produced by the firing of neurons within the brain (3). The main diagnostic application of EEG is in the case of epilepsy, as epileptic activity can create clear abnormalities on a standard EEG study (4). A secondary clinical use of EEG is in the diagnosis of coma, encephalopathies, and brain death. Although no consensus has been reached, quantified EEG has been proposed to be used in psychiatry to make a diagnosis, and follow up. EEG used to be a first-line method for the diagnosis of tumors, stroke and other focal brain disorders, but this use has decreased with the advent of anatomical imaging techniques such as MRI and CT.

Derivatives of the EEG technique include evoked potentials (EP), which involves averaging the EEG activity time-locked to the presentation of a stimulus of some sort (visual, somatosensory, or auditory). Event-related potentials refer to averaged EEG responses that are time-locked to more complex processing of stimuli; this technique is used in cognitive science, cognitive psychology, and psychophysiological research.

### 1.6 Research use of EEG

A different method to study brain function is functional magnetic resonance imaging (fMRI). Some benefits of EEG compared to fMRI include (5):

- Hardware costs are significantly lower for EEG sensors versus an fMRI machine
- EEG sensors can be deployed into a wider variety of environments than can a bulky, immobile fMRI machine
- EEG enables higher temporal resolution, on the order of milliseconds, rather than seconds
- EEG is relatively tolerant of subject movement versus an fMRI (where the subject must remain completely still)
- EEG is silent, which allows for better study of the responses to auditory stimuli
- EEG does not aggravate claustrophobia
- Limitations of EEG as compared with fMRI include:
- Significantly lower spatial resolution
- ERP studies require relatively simple paradigms, compared with block-design fMRI studies.

### 1.7 EEG vs fMRI and PET

EEG has several strong points as a tool for exploring brain activity. EEG's can detect changes within a millisecond timeframe, excellent considering an action potential takes approximately 0.5-130 milliseconds to propagate across a single neuron, depending on the type of neuron (5). Other methods of looking at brain activity, such as PET and fMRI have time resolution between seconds and minutes. EEG measures the brain's electrical activity directly, while other methods record changes in blood flow (e.g., SPECT, fMRI) or metabolic activity (e.g., PET), which are indirect markers of brain electrical activity. EEG can be used simultaneously with fMRI so that high-temporal-resolution data can be recorded at the same time as high-spatial-resolution data; however, since the data derived from each occurs

over a different time course, the data sets do not necessarily represent the exact same brain activity (5).

## 2. Methods

### 2.1 Examples of clinical trials

Price GW, Lee JN, Garvey CA, Gibson N. *The use of background EEG activity to determine stimulus timing as a means of improving rTMS efficacy in the treatment of depression. Brain Stimul. 2010 Jul; 3(3):140-52. Epub 2009 Sep 17.* Health Service-Mental Health, Perth, Australia. (6)

#### Abstract

**BACKGROUND:** Repetitive transcranial magnetic stimulation (rTMS) treatment of depression utilizes numerous predetermined patterns of stimulation. As an alternative to using invariant stimulus timing parameters, the interactive technique delivers individual stimuli based on the background electroencephalogram (EEG) activity.

**OBJECTIVE:** This study examines the use of an EEG-dependent technique as a means to enhance the efficacy of rTMS in the treatment of depression.

**METHODS:** Forty-four patients with treatment-refractory major depression were treated, in a randomized, doubleblind, 4-week trial, with two different rTMS stimulus timing techniques (left dorsolateral prefrontal cortex). Standard rTMS utilized 10-Hz stimuli, whereas interactive rTMS applied individual stimuli in response to a selected pattern of background EEG activity analyzed in real time. Hamilton Depression Rating Scale (HDRS) and the Beck's Depression Inventory-II (BDI) scores were recorded at baseline, 2 weeks and after the final treatment.

**RESULTS:** The interactive group showed a trend toward greater efficacy than the standard group in both absolute ( $t=-1.68$ ;  $P=.100$ ) and percentage ( $t=-1.74$ ;  $P=.090$ ) change in scores on HDRS (and similarly BDI). The response rate (>50% reduction) for the interactive technique of 43% (9/21) was also different to that of the standard technique (22%; 5/23; odds ratio: 2.70).

**CONCLUSIONS:** The use of EEG-based TMS stimuli has been shown to be feasible in an rTMS clinical trial in treatment-resistant depression. The EEG-based interactive technique was associated with an indication of a trend toward a greater clinical effect than the standard rTMS technique. The interactive technique thus has the potential to refine the rTMS methodology and to enhance efficacy in the treatment of depression.

Kayran S, Dursun e, Dursun N, Ermutlu N, Karamürsel S. *Neurofeedback Intervention in Fibromyalgia Syndrome; a Randomized, Controlled, Rater Blind Clinical Trial. Appl Psychophysiol Biofeedback 2010 Jul 8.* Department of Physical Medicine and Rehabilitation, Faculty of Medicine, Kocaeli Univ. Umuttepe Campus, Old Istanbul Road 10, 41380, Kocaeli, Turkey. (7)

#### Abstract

We designed a randomized, rater blind study to assess the efficacy of EEG Biofeedback (Neurofeedback-NFB) in patients with fibromyalgia syndrome (FMS). Eighteen patients received twenty sessions of NFB-sensory motor rhythm (SMR) treatment (NFB group) during 4 weeks, and eighteen patients were given 10 mg per day escitalopram treatment (control group) for 8 weeks. Visual Analog Scales for pain and fatigue, Hamilton and Beck Depression and Anxiety Inventory Scales, Fibromyalgia Impact Questionnaire and Short Form 36 were used as outcome measures which were applied at baseline and 2nd, 4th, 8th, 16th, 24th weeks. Mean amplitudes of EEG rhythms (delta, theta, alpha, SMR, beta1 and beta2) and theta/SMR ratio were also measured in NFB group. All post-treatment

measurements showed significant improvements in both of the groups (for all parameters  $p < 0.05$ ). NFB group displayed greater benefits than controls (for all parameters  $p < 0.05$ ).

Therapeutic efficacy of NFB was found to begin at 2nd week and reached to a maximum effect at 4th week. On the other hand, the improvements in SSRI treatment were also detected to begin at 2nd week but reached to a maximum effect at 8th week. No statistically significant changes were noted regarding mean amplitudes of EEG rhythms ( $p > 0.05$  for all). However, theta/SMR ratio showed a significant decrease at 4th week compared to baseline in the NFB group ( $p < 0.05$ ). These data support the efficacy of NFB as a treatment for pain, psychological symptoms and impaired quality of life associated with fibromyalgia.

This study indicates that NFB procedure can not be put in the first line treatment procedure.

LoSS, Sobol JB, Mallavaram N, Carsan M, Chang C, Grieve PC, Emerson RC, Stark RI, Sun LS. *Anesthetic-specific electroencephalographic patterns during emergence from sevoflurane and isoflurane in infants and children. Pediatr Anaesth 2009 Dec; 19(12): 1157-65.* Department of Anesthesiology, Columbia University, New York, NY 10032 USA. (8)

#### Abstract

**BACKGROUND:** Devices that monitor the depth of anesthesia are increasingly used to titrate sedation and avoid awareness during anesthesia. Many of these monitors are based upon electroencephalography (EEG) collected from large adult reference populations and not pediatric populations (Anesthesiology, 86, 1997, 836; Journal of Anaesthesia, 92, 2004, 393; Anesthesiology, 99, 2003, 34). We hypothesized that EEG patterns in children would be different from those previously reported in adults and that they would show anesthetic-specific characteristics.

**METHODS:** This prospective observational study was approved by the Institutional Review Board, and informed written consent was obtained. Patients were randomized to receive maintenance anesthesia with isoflurane or sevoflurane. EEG data collection included at least 10 min at steady-state maintenance anesthesia.

The EEG was recorded continuously through emergence until after extubation. A mixed model procedure was performed on global and regional power by pooled data analysis and by analyzing each anesthetic group separately. Statistical significance was defined as  $P < 0.05$ . **RESULTS:** Thirty-seven children completed the study (ages 22 days-3.6 years). Isoflurane and sevoflurane had different effects on global and regional EEG power during emergence from anesthesia, and frontal predominance patterns were significantly different between these two anesthetic agents. **CONCLUSIONS:** The principal finding of the present study was that there are anesthetic-specific and concentration-dependent EEG effects in children. Depth-of-anesthesia monitors that utilize algorithms based on the EEGs of adult reference populations therefore may not be appropriate for use in children.

### 2.2 Experiences from IRBs about EEG trials in Turkey

We know that EEG as a tool of diagnostic and treatment procedures has a defined role in psychiatry patients. It is mostly not risky and unharmed. Sometimes time concern and the physical restrictions are burden for the patients. However, EEG can very easily be modified in applications and used on irrelevant patients just for research purposes or replace drug therapy. As an example, we had some experience of researches offering EEG applications after bypass surgery for the purpose of

detecting some functions of the brain to observe the efficiency of blood circulation. However, according to our experience, when it is used out of the range of accepted measures and definitions, it becomes a clinical trial and if appropriate "informed consent" is not taken, patients may become anxious and prognosis might become worse. Besides, if economic parameters are not monitored properly, then patients might be under a heavy burden.

### 2.3 From theory to practice

In Turkey, we have come through a long way with the concept of informed consent in clinical trials, ethics committees (IRBs), health care professionals and public, as the country's talks with European Union is continuing. However, there are still fundamental obstacles about clinical trials and informed consent.

### 2.4 Necessity and safety of the trials in Turkey

Lately, a positive report has been observed about healthy human subjects joining clinical trials in Turkey. The trial was roughly about the comparing the efficiency of bioequivalent drugs in healthy human subjects. If subjects justified the prerequisite conditions, they were accepted for the trial and were required to sign the informed consent form. Before, it was reported that only a small number of people volunteered for such studies but now the number reached 12000 in one of the research centers. The center mentioned that the real incentive was money. (9)

There has always been an ambiguity about the relatively new concept "informed consent" in clinical trials in Turkey. There have been very negative responses about giving consent to swine flu vaccination in Turkey in 2009-2010. Although rates of vaccination against regular seasonal flu and pneumonia were quite normal, few people gave consent for swine flu vaccination and even parents for elementary school students. The main reason is emphasized was a "lack of confidence in the necessity and safety of the trial and a very obscure informed consent process."

### 2.5 A local small study from Turkey

For the purpose of understanding in a preliminary manner the attitudes of randomized healthy people towards clinical trials and informed consent process, we have carried out a small qualitative research among 200 healthy volunteering subjects above 18 years of age. 5 questions were asked and subjects wrote down their ideas (10).

The questions were:

1. What is clinical research?
2. Would you like to join a clinical research project? Would you demand to get paid?
3. How would you know if the clinical trial has risks or benefits for your life?
4. Do you understand the informed consent forms? How do you feel when you read them?
5. Are you familiar with the idea from your experience or environment that physicians explain clearly if they will carry on a research project or apply conventional treatment when you are admitted as a patient?

The results were evaluated just by simple percentage calculation.

### 3. Results

So far, we might conclude that many research projects and clinical trials are being carried out by a variety of disciplines like neuropsychiatry, neurophysiology etc. about EEG, comparative methods like fMRI, neuroimaging and brain functions all around the world. Although there are differences between the perspectives of different countries in handling the ethical issues in clinical trials, we observe that ethical justification and informed consent is inevitable and there is an ongoing debate about the topic in different disciplines and cultures.

There are also some common shared and some culture dependent ethical discussion points about the above mentioned clinical trials in Turkey. According to the findings of the local small study that we have carried out, 90% of the participants do not know clearly what a clinical research is by experience. 95% do not like very long informed consent forms. They complain that they do not understand clearly what is written on them and those forms make them feel nervous and they get scared of the procedure. 80% declared that they would not prefer to get involved in a research project unless it is very necessary when they are sick or when there is not any other alternative. They just mentioned by assumption that if they would join as healthy subjects they would like to be paid and this would be only conditional of having minimum risk. 90 % of participants were not familiar of the idea of the physician's explaining them or somebody from their environment that they would be included in a safe trial.

### 4. Discussion

The EEG has been used for many purposes besides the conventional uses of clinical diagnosis and conventional cognitive neuroscience. Long-term EEG recordings in epilepsy patients are used for seizure prediction. Neurofeedback remains an important extension, and in its most advanced form is also attempted as the basis of brain computer interfaces.

After the ECNS / ISBET / ISNIP Joint Meeting 2010 that was organized between 14-18 September 2010 in Istanbul / Turkey with many participants from many different countries and from a variety of disciplines, we have observed that neuroscience is developing very rapidly through various research projects bringing many ethical issues about human subjects to stage (11). We observed that every country tries to handle the issue according to their very specific conditions on a culture dependent way and according to their IRB review protocol and regulations.

When we observed the abstracts and presentations (11) very little was claimed about informed consent and how the trial was planned in terms of protecting human subjects. When we compare with our chosen trial examples above, the same pattern dominates with some researchers claiming about informed consent in their articles, but some do not. However, when we evaluate the answers of researchers to the questions we have asked relevant to the issue during the meeting, we might easily conclude that everybody is aware of the ethical issues and prefer to handle them in a different manner.

We do not want to name every researcher and country here specifically since the correspondence was oral conversations and permission was not taken; However, I still feel the responsibility to report that just for the sake of the difficulty in the informed consent process, some researchers bypass it, or carry out the trial without healthy control group subjects, or do not inform the subjects about the clinical trial but present the trial as a conventional treatment to the patients while some researchers definitely prefer a very proper protocol in planning the trial considering the safety of human subjects and informing them in a proper way. Participants agree that there is not a network worldwide or an efficient communication and standards between the functioning IRBs and enforced legislations although a long way has been completed by the efforts of professionals and societies.

Reidar from NIH emphasizes that common complaints for IRBs are that members are overworked, there might be delay in review of protocols and some of this can be resolved by appropriate procedures like expedited review and qualification requirement of membership (12). Rosenstein from UNC reports that research with decisionally impaired adults is different than medical care and is up to the "Informed Consent Requirements" designated by 45 CFR Part 46 that deals with the protection of human subjects (13) and Emanuel emphasizes that besides the regulation, there are other ethical requirements that are universal and not culture dependent and that make clinical research ethical (14).

According to Arıkan, Turkish subjects in psychiatry tend to either take a totally submissive position or show total rage during the informed consent procedure; yet they rarely ask for alternatives or question details. Informed consent has not been part of routine clinical practice until recent years and both researchers and subjects seem yet to be unfamiliar with the process (15). Oguz reports that "Informed consent that is related to personal autonomy is a Western setting. In developing countries the autonomy is rather collective and mainly based on previous experiences, beliefs and traditions. This difference puts the whole process of informed consent in developing countries in question" (16). Arıkan discusses that when too much information is given to the patient or the family in Turkey, it might lead to suspicion and disbelief in Turkish society.

The process rapidly enhances a feeling of extraordinariness and some kind of "paranoid thinking" since it has not been until recent times part of the routine in the standard medical care in Turkey (15).

## Conclusion

However, Turkish Society is evolving and the Turkish Government is progressively having more open institutions. In terms of process and the future, physicians are also changing their traditional and culture-dominated paternalistic role. Informed consent is trying to establish and maintain its role in patient-physician relationship.

"Mis-Un-True" Informed Consent and our message; Our impression as to the application of this new concept in clinical trials in Turkey is, currently, either of "misinformed consent", "uninformed consent" or "true

informed consent", depending on the conditions. Our expression would be "MIS-UN-TRUE Informed Consent".

Although there are difficulties for a variety of reasons mentioned above, informed consent is inevitable. Informed consent still needs a good evaluation and formulation considering the researchers' responsibilities and subjects' protection considering cultural elements in Turkey.

From an objective viewpoint, uninformed consent or misinformed consent is not efficient and acceptable in any situation, especially in trials. A proper "Informed Consent" will be the indicator of a successful clinical trial all around the world. A common ground or a better sharing network composed of comprehensive professionals and ethicists seems necessary and promising for the future process of trials in a variety of disciplines of neuroscience and psychiatry. Practically speaking, since EEG and its derivatives can not be claimed that they have the absolute value of diagnosis, treatment and follow up, any information given to the patients must be stressed in this regard. Otherwise, it would be a good example of mis-un-true informed consent.

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are allowed to publicly offer their thinking to the public [1]. The 2 May 2005 cover of *Business Week* proclaimed "Blogs will change your life". In 2004, Blog was at the top of the list of Merriam-Webster's list of "Words of the Year." Blogging has been around for some years and in recent history, blogs have constantly gained in popularity and influence [2].

### Tamil over Internet

Starting from the late-1970s and on into the early-1980s, Tamil professionals around the world were enthused to undertake individual efforts to incorporate Tamil language in computers and in the then-fledgling Internet [5]. The first initiative to identify the dimensions of disorder in Tamil computing was undertaken in 1997 at a conference in Singapore. The Second Tamil Internet Conference held in Chennai in February 1999 proposed for a Tamil font, standardization of both bilingual and monolingual schemes and it finalized a standard for data entry in Tamil. Tamilnet-99 keyboard has been developed and encoding for TAB and TAM Tamil characters were decided. Sending and receiving e-mail with text in Tamil, or handling chat, have been greatly simplified. The number of Tamil websites has become large, and it is growing. These include Tamil newspapers and magazines and e-journals, greeting cards, matrimonial sites, on-line learning resources, beauty tips, health issues, songs, movies, tourism information, games, puzzles and so on, in Tamil. Unicode has become a world standard and many computer applications have provided Unicode support so that multilingual text can be handled.

### Blogging

Aftermath of the emergence of Web 2.0 Applications, Weblogs or blogs has become an important new digital medium in the last few years [6]. The concept of 'blogging' can be traced back to the 1990s when individuals kept online diaries, accounting their personal lives and interests. A blog is defined in the dictionary as "a Web site that contains an online personal journal with reflections, comments, and often hyperlinks provided by the writer" [7]. Wikipedia defines a blog as a website where entries are made in journal style with entries displayed in a reverse chronological order. Blogs are usually conversational in nature and provide reflection, information, and / or commentary on a particular subject [8]. "Blogs are proliferating at an exponential rate. Estimations suggest that as many as 80 million people are now blogging" [9]. Blogs seem not to be just a passing fad as a new blog is created every second and there are more than 900,000 blog posts a day.

### Tamil Blogging

In the beginning almost all initiatives to propagate blogging in Tamil took place on the Net. In 2007, tremendous growth has been seen in the number of blogs and in efforts to popularize Tamil Blogs [10]. According to *thamizmanam.net* and *theenkoodu.com*, leading aggregators of Tamil blogs, there are more than 2,000 Tamil bloggers active in the blogosphere. More than 40,000 articles have been written in these blogs by Tamil bloggers, whose age ranges from 7 to 70 years

## Tamil Web Blogs: A Boon for the Freedom of Expression

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### Abstract

In the 1990s we witnessed the dawning of the Information Age. Today, the use of information technology has become an integral part of our lives. With the introduction of Web 2.0 tools such as weblogs, a new platform for interaction and exchanging ideas has been presented to the world. Blogging is an emerging and contemporarily popular medium. The entire communication process of blogs is significantly different than traditional media. As the world becomes a digital village, the use of internet in India is rapidly growing high and the users can be found everywhere. In Internet, there is numerous number of web blogs can be found in Tamil language. The aim of this research is to study the amount rights the Tamil bloggers' enjoy.

**Key words:** Web Blog, Human Rights, Tamil Blogs, Information Technology;

### Introduction

Since the dawn of the Information age, information technology has presented many possibilities of applying new technologies to enhance the efficiency and effectiveness of communication. Interactive web-access has led to the growth in blogging, a process whereby authors publicly post messages, respond to others, and

[11]. It has become extremely popular with both young and old as a way to record their thoughts, experiences and feelings.

**Freedom of Expression In Tamil Blogs**

Blogs get people excited. Or else they disturb and worry them. Some people distrust them. Others see them as the vanguard of a new information revolution. They're rocking the foundations of the media in countries such as the United States, China and Iran. Blogs are giving them the ability to let their voices be heard anywhere, without any control by editors. By facilitating the open sharing of ideas, information and perspectives, blogging has the potential to serve as a democratizing force in a country with little freedom of expression. Democratic expectations of the local blogosphere must be tempered, however, with a realistic understanding of its limitations

and of the government's hegemonic, and sometimes coercive, mechanisms of control [12]. Blogging provides citizens with an opportunity to disseminate information, ideas, opinions, images, and videos, as well as to engage in debates and discussions without the gate keeping restrictions of Big Media. In contrast to mainstream media, which tend to rely on a limited and fairly narrow selection of perspectives and experts whereas the plurality of voices, viewpoints, and knowledge available in the blogosphere. To analysis the freedom of expression in Tamil blogs, we keep track of Tamil blogs for a period of one month, starting from 31st October 2010 to 30th November 2010. We keep notice the number of blogs posted in every first day of a business week and categorized them into the five major classifications as follows.

Date	Total number of tags written	Classifications of Blogs				
		Politics	Religion	Discussion	Science	Entertainment
01.11.2010	620	174	87	103	71	185
08.11.2010	404	127	60	74	47	96
15.11.2010	601	204	96	85	63	153
22.11.2010	528	185	71	53	90	129
29.10.2010	455	143	48	73	84	107

Source: [http:// www.tamilmanam.net](http://www.tamilmanam.net)

The above table shows that many bloggers love to blog about politics and entertainment. They criticize and analyze the news content which they hear and record their views in their blog either favour or against to the news content. These postings enrich the readers with different views of the same content and help them to understand the real meaning or history behind that news. The few blogs of any substance in the Tamil blogosphere space seem to be the ones performing a watchdog function on the mainstream media and offer independent political commentary that may not find a place anywhere else. Blogging offers more freedom to express ourselves. Bloggers can express themselves without unveiling themselves to their opponents and free from the fear of revenge and other problems. They do, however, challenge the status quo by writing about subject matter not normally discussed in domestic public forums, including sexuality, women's rights, religion, and legal and illegal substance usage.

Some of the more successful blogs are like newspaper columns – indeed some of them are written by such columnists, whose experience enables them to provide a mix of knowledge, informed comment and lively writing. But much of what appears, even in the field of current affairs, is from 'ordinary people'.

Tamilmanam.net has registered that there are 172 posts on the day of marriage of the Central Minister Honorable Mr. M.K. Alagiri's son while 122 posts were posted on the day of the visit of American President Mr. Barak Obama to India. Here is a list given the details of the posts and their classification whether favour or against the news content.

Claims for the journalistic achievements of blogs have been exaggerated – the number of stories broken by them seems pretty small. Nevertheless, they follow an

honourable tradition of independent gadflies, from pamphleteers of past centuries onwards, and their influence in some circles is growing. They can be less hide-bound than established media, and can quickly gather momentum for inquiries, campaigns and the like.

Hot topic of the Day	No. of Bloggers wrote about this	Positive views	Negative Views
American President Obama visit to India	122	88	34
Resignation of the Central Minister A Rasa	94	67	27
Endiran – rating	120	106	14
Central Minister M.K. Alagiri Son's Marriage	172	91	81

Source: [http:// www.tamilmanam.net](http://www.tamilmanam.net) on 16.11.2010

**Conclusion**

It is thus tempting to argue that blogging has, and will continue to, enhance democracy. Within restrictive communication environments, blogging can be used to disseminate information, facilitate discussion, and offer perspectives not presented in mainstream media [13]. Blogs are therefore useful for building both community and the political solidarity necessary for encouraging disparate citizens to collectively champion a more democratic future for themselves and their country.

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