

Awareness of Interdependence through the Gaia Education Program as the Sustainability Movement's Potential Contribution to Bioethics

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Abstract

Bioethics and environmental ethics gained prominence in the US in the 1970s. The two intellectual and social movements have developed independently, each with its own evolution and history. However, similar issues found within bioethics can also be found in environmental ethics. Sustainability has been a leading topic of discussion within environmental ethics as well as a concern for environmental activists. This paper examines the educational program for sustainability founded by The Gaia Education Program, a program emphasizing in its curriculum an "awareness of interdependence" that can foster the crucial role of creative communication in articulating and building a sustainable society, while also providing chances for integrating bioethical discussions.

Examining the Gaia Educational Program is useful for two reasons. First, the holistic approach of the Gaia program considers not only the more conventional economic, social, environmental issues, but also concepts of worldview that often predetermine and define conventional topics. Second, the Gaia program is based on our daily life. Issues related to bioethics and environmental ethics emerge in the context of social, political, and economic conditions, so it is important to develop a discourse that emphasizes the stakeholder's real wishes that lead to self-determination and can be found through self-reflection and dialogue with others, rather than mere formal procedures that are often emphasized in bioethical discussions.

Keywords: bioethics, environmental ethics, sustainability, Gaia education, interdependence

Introduction

Human life in general has seen improvements in material well-being, thanks to developments in technology. In agriculture, various practices such as land reclamation, irrigation of fields, and selective breeding of livestock have contributed to increased yields. Moreover, machine-based mass-production, chemical fertilizers, and genetic modification allow for lower costs. In medicine, the use of drugs, vaccines, and surgery has saved many human lives. Enhancement of physical and mental abilities via synthesized chemicals, genetic engineering, and nootropics is currently being researched.

However, such artificial interventions

undermine the basis of human life. Mass-production agriculture driven by a profit-first policy has resulted in soil exhaustion of once-productive land all over the world (Falcon, 1970). Medical technologies developed as an answer to patients hoping for cures for debilitating illnesses are also being used to enhance physical and mental abilities; this trend could exacerbate dependence on the medical industry, aggravate the gap between the rich and the poor, and erode social bonds (Kawachi et al., 2002).

People's dependence on a huge system is revealed when natural disasters strike: the 2011 Tohoku mega-earthquake in Japan is an example. Although susceptible to environmental changes, the Japanese social system provides a convenient, comfortable life that also inhibits

critical thinking, obscures social, political, and economic problems that the system itself creates, and impacts human lives and the environment negatively, even if only benignly or indirectly.

It is high time that we reexamine what quality of life is, assess what is necessary to achieve a better quality of life, and consider alternate visions of quality of life consistent with sustainability. Previous studies that connect bioethics to sustainability (Dwyer, 2009; Pierce, 2001; Chaffee, 2017) offer insight, but their research centers on human health care, an anthropocentric theme. It cannot be denied that human health deeply depends on the state of the environment: 25% of human health problems are caused by environmental degradation (Pierce, 2001). There are, however, valuable concepts in educational programs for sustainability that may help lead bioethics beyond its conventional scheme.

The perspective of sustainability, with a focus on Gaia Education's "Design for Sustainability" program, provides a format for this article. The Gaia Education program is not the be-all and end-all of sustainability; rather, it is one of many fruits of the still-growing tree of ongoing discussions, debates, implementations, and sharing of wisdom coming from people, organizations, and communities all over the world.

In Section 1 of this article, an overview of the program that synthesizes community experiences from different parts of the world is presented. After establishing the link between bioethics and environmental ethics, "interdependence" as a core concept of the program is described, in Section 2. Interdependence as a creative communication tool is examined in Section 3. With the aim of enriching personal autonomy, one of the cardinal principles of bioethics, awareness-raising of interdependence as sustainability's potential contribution to bioethics is proposed, in Section 4.

1. An overview of Gaia Education's "Design for Sustainability" program

The Gaia Education Design for Sustainability educational program was conceptualized in 2005 under the original name of "Ecovillage Design

Education" (EDE) by the Global Ecovillage Network (GEN),¹ an international association that aims to build networks among people seeking sustainable lifestyles by intentionally building communities. GEN was founded during the first International Ecovillage Conference, "Ecovillages and Sustainable Communities for the 21 Century", held in Findhorn, Scotland, in 1995. Robert Gilman, one of the conference organizers, defines ecovillages as "human-scale, full-featured settlements in which human activities are harmlessly integrated into the natural world in a way that supports healthy human development and can be successfully continued into the infinite future" (Gilman, 1991).

With the formation of GEN, ecovillage movements have taken a different path from previous initiatives, from an isolated, utopian approach to a more actively communicative use of the Internet in the form of web sites, blogs, and social media. These communities promote connections, exchange ideas on carrying out eco-friendly practices, and broadcast their achievements to the world as well as engage in national and international politics. The EDE is one of their defining accomplishments: the Gaia Education program has been implemented worldwide in fifty countries, with support from different city and national governments plus the European Union, and over 17,000 people have been trained to train others, since its inception, in 2005.

The program is a synthesis of community experiences around the world with sustainability in mind. The following definition of the global network of ecovillages helps to infer how Gaia interprets sustainability: "a global confederation of people and communities that ... are dedicated to restoring the land and living 'sustainable plus' lives by putting more back into the environment than we take out." (Edwards, 2010, page 173)

Four dimensions of the concept of sustainability make up the program curriculum: "worldview", "social", "ecological", and "economic". There are five learning modules in each dimension.² These dimensions have been applied as a learning guide, an analytic framework, and a problem-solving tool by communities, nongovernment organizations, and even government organizations.³ Educational material was also further developed in line with

the formation of the United Nations Sustainable Development Goals.

Gaia Education is a course that promotes the mission of “promoting thriving communities within planetary boundaries.” In this regard, Jonathan Dowson, author of the economic module of the curriculum, remarked that the program creators assumed that the EDE would propagate many ecovillages, “but that’s not what happened. There was a glass ceiling: the price of land. Today, fewer new ecovillages are being built, even though our courses are more popular than ever...That’s fine with us. The point is not for ecovillages to replicate themselves; the point is to build a sustainable world (Litfin, 2014, p.132).” Given various kinds of constraints all over the world, the course participants are instead expected to put what they learned to practical use in their own communities and to work towards creating a sustainable world, not so much as to build new ecovillages.

There are dozens of approaches that have been proposed to change the current unsustainable circumstances. There are two reasons why the Gaia Education program is chosen as the main source material of this paper: first, the program addresses the worldview issue. According to the program description, “It has become conventional to describe sustainable development in terms of three over-arching themes: economic, social, and ecological (sometimes called environmental). These are considered to be the fundamental areas of human experience that need to be addressed in any sustainable development scenario. The EDE recognizes and adds one other dimension to these fundamental areas of concern — a dimension we’ve chosen to call ‘Worldview.’ This is in recognition that there are always underlying, often unspoken, and sometimes hidden patterns to culture that strongly influence and may, in fact, predetermine economic, social, and ecological relationships” (Gaia Education, 2012, p.11).” Second, the program is based on daily life. Its Living and Learning Pedagogy showcases theoretical material illustrated by local fieldwork, exercises, games, and concrete projects. “One central motive that all these pedagogies ... have in common is an effort to make the educational process directly relevant to people’s lives, to focus learning on the solutions to real problems

that people are experiencing.” Concerns related to bioethics and environmental ethics are manifested in social, political, and economic problems, so it is necessary to develop discourse based on the stakeholder’s real wishes found via introspection and dialogues with others, rather than mere formal procedures often emphasized in bioethical discussions.

2. The Gaia program: linkages between bioethics and environmental ethics

The academic fields of bioethics and environmental ethics became active in the US in the 1970s. Although they comprise part of the larger field of applied ethics, their concerns, perspectives, and theoretical allegiances have developed differently because each academic field has its own evolution and history. While bioethics veered towards a focus on human welfare and health, environmental ethics started to ask questions about the fate of future generations and all living creatures, human beings included. By looking at the origin of bioethics, we see issues related to environmental ethics could be included in bioethics. Bioethics as a philosophy traces its roots to Fritz Jahr, an early-20th century German Protestant pastor who was acknowledged, in 1997, as its first proponent. Jahr uses the adjective form in the formulation of a guiding principle that he coined as the “Bioethical Imperative”. This principle would be utilized, “So that the rule for our actions may be the bio-ethical demand: Respect every living being on principle as a goal in itself and treat it, if possible, as such!” (Jahr 1927). Prior to this recognition, Van Rensselaer Potter, an American biochemist–oncologist, proposed in an article the use of the term “bioethics”, in 1970 (Potter, 1970). He combined the words “biology” and “ethics” and hoped that this new field bridged the gap between the natural sciences and humanities as “the Science of Survival”. In the first paragraph of this article, he wrote, “What we must now face up to is that human ethics cannot be separated from a realistic understanding of ecology in the broadest sense....We are in great need of a land ethics, an international ethics, a geriatric ethics, and so on” (Potter, 1970, p.127).” It can be said that Jahr’s bioethics is not directly connected to

Potter's because they use unrelated terminologies, cite different studies that preceded them, and follow the current ideas of their respective times. In fact, the latest edition of the Encyclopedia of Bioethics (Meine, 2014:330) mentions Jahr only once under the "Biodiversity Conservation" entry while Potter's name is found under "History of Bioethics". Nevertheless, the fact that scholars, including Potter himself in later years, have participated in discussions on the bioethics of Jahr proves that issues raised by Jahr still have significance for the present day. Moreover, Jahr's and Potter's perspectives include all forms of living creatures and do not limit themselves to human concerns, which is the prevailing scope of bioethics today.

There has been a tendency in recent decades to equate bioethics to medical ethics, ignoring the original formulations of Jahr and Potter. If recalling its origins aids in widening conventional understanding in solving problems that modern societies face, we need to formulate a new approach to bridge the thematic gap between bioethics and environmental ethics. The Gaia program provides suggestions by providing knowledge, skills, and ways of thinking to build sustainable societies. Through experiences in ecovillages, the program's concepts incorporate lessons learned by experienced and existing people.

One way to bridge the thematic divide is to show the "interdependence" of bioethics and environmental ethics. "Interdependence" is defined as the fact or condition of depending upon each other, or mutual dependence not only on human beings but also on nature. The Gaia program points out that problems threatening human life and make it unsustainable "originate from a worldview of separation, fragmentation and reductionism" (Gaia Education, 2012, p7). Separation, fragmentation, and reductionism are derived from an overemphasized importance on independence, a highly valued ideal in many modern societies. In order to overcome this worldview insistent on self-reliance, the program proposes an awareness of interdependence based on both idea and practice.

A member of an Indian ecovillage in Auroville named Marti possesses insight based on her life in her community: "We are all unique, yet we are all part of a web of life that

is interdependent; a rushing stream hastens towards the ocean that refuses no river. When we acknowledge that we live in community, we dissolve into One Body and not only become part of Mother Nature who has nourished us and gives us life, but part of a universal cosmic consciousness that contains everything that we have been, are and will be" (Marti, 2012, p.75).

Sister Lucy Kurien, the founder and director of a community movement named "Maher" in India points out one of the principal features of the community: "...we have deep respect for nature and the interdependence of all life, which is reflected in everything we do." As for the ecological aspect of the community, she says: "Children are encouraged to take up gardening and are allotted plots to maintain, and plants to care for. We teach them about the fundamental interdependence of all forms of life and encourage them to develop a deep respect and love for nature" (Keepin, 2012, pp.181-183).

Jon Mortin Bong, a member of the Norwegian Comphill community for people with special needs, adds: "Work is a service to others, freely done and freely given. In our village we strive to get away from independence; instead, we aim to create interdependence. It is important for each one to experience the work of others that not only is it freely given, but freely accepted. In this way every human being has worth and value, as they contribute something to the general well-being of the community" (Bang, J. M., 2007, p.92).

Being aware of interdependence can change the quality of communication in the community. The Gaia program introduces Non-Violent Communication (NVC), a process advocated by Rosenberg, an American psychologist, mediator, author, and teacher. In the supplementary textbook (Rosenberg, 2007, pp.150-158), Rosenberg argues that the first level of creating peace involves connecting to life: "We can connect to the life within ourselves so we can learn from our limitations without blaming and punishing ourselves." He also mentions that "we have learned to think in terms of moralistic judgments of one another. We have words in our consciousness like right, wrong, good, bad, selfish, unselfish, terrorists, freedom fighters. And connected to these judgments is a concept of justice based on what we 'deserve.' If you do bad things, you deserve to be punished. If you

do good things, you deserve to be rewarded. Unfortunately, we have been subjected to this consciousness, this faulty education, for a long, long time. I think that's the core of violence on our planet." Being aware of interdependence brings forth a kind of communication that goes beyond the typical dynamics of reciprocity and entitlement.

3. Creative communication

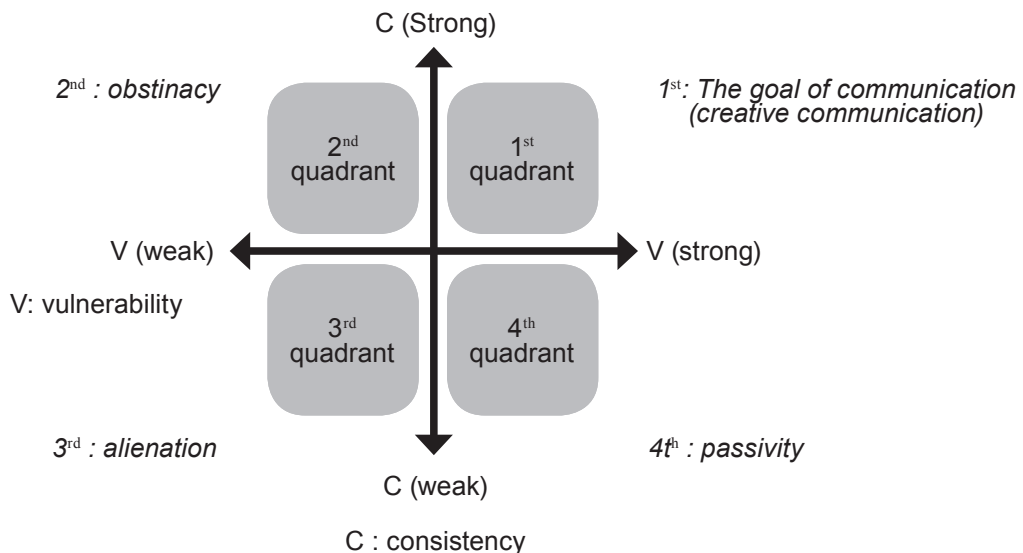
Non-violent communication stimulates creativity because it can only emerge out of spontaneity, not out of enforcement, coercion, or violence. This kind of creative communication plays a crucial role in bridging the gap between discourse in bioethics and environmental ethics. In this section, creative communication will be examined through a communication model that consists of four modes, the model being the result of disability studies proposed by Horikoshi (Horikoshi, 2013). This model provides a concrete contribution to bioethics, by addressing the issues of eugenics in bioethics, especially so-called neoliberal, consumer eugenics and the recent advancement of technologies seemingly arising from science fiction stories.

The communication model is described below:

The horizontal axis shows vulnerability, that

is, how we react to accepting others' opinions different from our own. In other words, the horizontal axis shows the ability to recognize and acknowledge the weakness of our own opinions. The word vulnerability, originating from the Latin word that means 'wound', today means 'susceptibility to injury or weakness'. This word was originally used to describe physical injury, and later its meaning came to include psychological trauma as well. In these contexts, the weakness of feeling vulnerable can be solved with adequate measures. Why is this word used to explain an element of the ideal communication mode? An argument presented by Brené Brown gives us helpful insight. She points out that vulnerability does not mean weakness at all: weakness means being unable to endure attacks or injuries while vulnerability means allowing oneself to be attacked or wounded. If a person is not aware of his vulnerability, he is actually at risk of being hurt. In addition, Brown defines vulnerability as being exposed to uncertainty, risks, and one's true self. She also argues that love, belongingness, joy, compassion, and creativity – feelings and experiences that everyone wants to have – can only emerge from being capable of weakness. Vulnerability as described means both listening to the opinion of others and having the will to change oneself. A typical example in which only one side's view

Four modes of communication styles
(developed from Horikoshi Yoshiharu's vulnerability-consistency model)



is changed is a command; a command is an example of superficial communication hiding a true intention without really changing the persons involved. In such communication, we cannot expect love, belongingness, joy, compassion, or creativity. It is difficult to imagine “forced (ordered) love”, because loving someone means having the will to maintain a relationship with him or her, each accepting the possibility of betrayal or hurt.

Next, the vertical axis shows consistency: the persistence in maintaining one’s own opinion. The possession of a consistent opinion means that someone has evaluation criteria by which the person can consider and assess the present situation. These evaluation or judgment criteria are fostered in our daily life within a larger community. Some criteria are substantive, while others are implicit. Evaluation criteria may show us an ideal way of living within the community. Incidentally, Horikoshi points out that communications shown in the third quadrant (offensive rejection or block of any communication) have been recently considered as a social problem. However, the kinds of communication shown in the fourth quadrant can also be found in current trends in modern society. In other words, people simply live without reflecting on the ideal way of living and may actively choose not to reflect. When people’s material needs are met in secure, convenient, comfortable living areas, they may sense no great need to examine critically the *status quo*, based on their evaluation criteria. When the economy is growing according to the dictates of the market, the ruling government party can generally avoid criticism. An ideal way of living, however, would be consciously thought out through a process in which we identify, refer, and express our “true” wishes, sentiments, and ideas. Since only a small number of people in the community discuss how to adapt the ideal way of living in real life, the discussion appears forced and imposed on other members. However, when the members of the community have a chance to participate in the discussion and elaborate their ideas, the gap between the ideal and the real could help foster new perspectives. Those with consistent views do not necessarily stick to their opinion; rather, they stay true to their own evaluation criteria formed through the recognition and acceptance

of their “true” wishes and feelings. Neither fixed nor unchangeable, these evaluation criteria would possibly continue to morph, in response to situational changes or dialogues with others.

People categorized in the second quadrant have their own opinion, though they do not accept the views of others. A discussion with these people often fails to reach an agreement, unless our view accords with their view. This type of communication generally can be seen in debates on controversial issues such as abortion, the intrinsic value of nature. People categorized in the fourth quadrant accept the opinions of others, but they themselves do not possess opinions of their own, have no opportunities for reflection, or intentionally do not engage in the process. This type of communication can be seen when the power balance among stakeholders is uneven. People categorized in the third quadrant do not have their own opinion and accept the opinions of others; their typical response is to reject or block communication. An ideal mode is presented in the first quadrant, where communication occurs among stakeholders who can accept the validity of each other’s ideas, while maintaining their own. In other words, people in the first quadrant respect others by accepting their potential to change their own views and accept themselves by accepting their own personality, needs, and thoughts.

It should be noted that people are not permanently fixed in any of the four quadrants of the diagram, as modes of communication are flexible. People who stand by their beliefs in a situation may accept the position of others uncritically in another setting, or they might reject the whole process of communication itself. Therefore, it is possible for anybody to express the intent to communicate in the mode presented in the first quadrant. Questions remain, however, concerning whether currently unsustainable trends promote or hinder creative communication, what conditions are needed to foster this first quadrant mode, and what contributions this communication mode offers to bioethical discussions.

4. Contribution to bioethics

Autonomy is a state wherein a person can decide what she wants to do, rejecting subordination to others. One of the cardinal principles of bioethics, the concept of autonomy has been examined, elaborated, and applied to different situations, thanks to lessons learned from past inhumane practices by medical practitioners themselves. Since this principle is set to protect individual human rights, especially the most vulnerable ones, such as subjects in medical research, autonomy is inherently individualistic. The sustainability movement offers a kind of autonomy that does not ignore the realities of life, human relationships, one's own personal history, and life perspectives influenced by being in a community. To contrast this practice to bioethics' "autonomy of the individual", I suggest an *enriched autonomy*, meaning the autonomy of the individual, plus recognition of other people's contributions in exercising autonomy.

The sustainability movement asserts that the current system maintaining modern lifestyles and communities is unsustainable. Priority is given to economic growth policies that inevitably accompany mass production, consumption, and disposal. Human resources, capital, and information are increasingly being concentrated in large cities that are highly dependent on the global economy and multi-national corporations operating under the ideology of economic rationality. One overlooked negative impact is the deterioration of communication among people. This loss of communication lowers their quality of life and the degree to which they exercise autonomy.

Among the four quadrants of the diagram examined in the previous section, the kind of communication in the fourth quadrant contributes most to keeping the present conditions of modern life and enabling the acceptance of current common values. However, there are other lifestyles and community arrangements that exist apart from the mainstream and, therefore, hold different values, beliefs, and worldviews. When different ideas conflict, the mode of communication would shift to the second quadrant, and all arguments would get nowhere and be settled with the suppression of

one side under compulsion. The autonomy of the suppressed side is not respected. When people become rich in terms of material wealth, to some extent, their mode of communication could shift back to the third quadrant and discourage them away from engagement. No exercise of autonomy occurs because they have not had the chance to be aware of their true wants.

The modes of communication found in the fourth, second and third quadrants weaken the community internally, making it difficult for its members to take appropriate measures for social, political, and economic changes. These three modes, especially passivity, prevail in most modern societies because of heightened involvement in a global market that values competition rather than cooperation. To be entitled to living independently, people have to be prepared to show their merit that generates profits to others. The danger that this orientation may lead to is a kind of eugenics, based on an individual's material benefit to society.⁴ In addition, a growing trend that promotes technological advancement and tries to enhance physical and cognitive abilities and eventually eliminate disabilities is being supported by the wealthy who are more able to afford and utilize these kinds of technologies.

However, societies following this trend will not be sustainable, in the long run. As the slogan of a global effort for sustainability (SDGs) chants: "Leave no one behind." This call has received universal approval because it is a realistic way of achieving sustainability. The Gaia education program proposes a concrete path of shifting away from the current unsustainable system to a sustainable future, by suggesting a way of enriching personal autonomy.

The Gaia education program includes lessons learned from Transition Town movements that started in 2005, in Devon, England. Transition Town is a community-based movement aimed at taking measures against the shortage of fossil fuels and the exacerbation of climate change inevitably taking place in the future. As of 2012, the movement has been adopted by 421 municipalities of 34 countries. Transition Town does not aim to do away with existing ways; instead, it practices alternative solutions in constructing a sustainable community.

Hidetake Enomoto, one of the founders

of Transition Fujino, in Japan, mentions independence, resilience, and creativity as three values required in building a sustainable community. All these values promote the idea that everyone and everything in the community is connected and interdependent. More specifically, the value of independence stimulates the current local community still dependent on large social systems to become more autonomous; the value of resilience enables the community to handle drastic alterations more flexibly, such as an economic crisis and climate change; and creativity fosters original ideas of the local people. Enomoto especially emphasizes the importance of creativity, indicating “We haven’t utilized abundant renewable energy yet. Our creativity is the energy in ourselves. There are more than seven billion people living on the earth, and the creativity would never be exhausted, no matter how much we use it. However, we haven’t made good use of it yet. (Enomoto, 2017)” The biggest obstacle for people to show their creativity is compulsion: being forced instead of being given the freedom to explore, engage, and create. In order to encourage the members of Transition Fujino to volunteer, instead of being obligated to work, the community sticks to the principle of “It is up to you to decide what you want to do, when you want to do and how much you want to do.”⁵ This motto empowers people to be aware of what they truly need, want, and decide on their own: the essence of being autonomous. Various activities have been conducted by Transition Fujino: forest conservation, local currency, food self-sufficiency, health services, and independent power generation using renewable energy. These activities operate under the principle of willingness, not obligation. This volunteer spirit is a typical outcome of creative communication. Thanks to this mindset, they do not have to adapt themselves to any imposed rules. The freedom to act in all sincerity is promoted.

Another example of the practice of enhanced autonomy as expressed by the Gaia program can be found in the As-One Community Suzuka, also in Japan. This community is undertaking various activities. For instance, Mammy’s Lunch Box, a community business that makes handmade lunch boxes, describes their management style as follows: “Employees (show up for) work (of their

own) free will, (and) they can make and sell more than 1000 lunch boxes per day. No hierarchy, no orders, no punishments. The president calls himself ‘a person in charge’ (Kishinami et al., 2016)”. Thanks to the daily practices in the community, each member is aware of the work requested from each one and would respond, based on what they are capable of offering. The community has been successfully running the business for over ten years.

Community living aimed at attaining the Gaia program’s vision of sustainability formed from lessons learned from practical experience shows that respecting, valuing, and celebrating the identities, capabilities, willingness, and diversity of the community members are indispensable to achieving that vision. Awareness of interdependence is also required in order to direct our energies towards fostering creativity in solving unexpected problems, not towards chaos arising out of willfulness.

What could bioethics learn from the perspective of interdependence then? The autonomy of the individual has been a central tenet in the protection of patients’ human rights in clinical settings. However, autonomy also provides justification for the use of medical technologies as a mere consumer right. For example, prenatal diagnosis is being rapidly applied, wherein most cases the pregnancy is terminated when genetic diseases are found. Although the choice is made freely by the patient, without coercion, there is a risk that this technology may lead to a new type of eugenics, which is based on individualistic autonomy. Since it is not realistic to prohibit the use of prenatal diagnosis by law, a new approach is needed. Modern society reflecting trends driven by this new type of eugenics is unsustainable because it is not compatible with the SDG slogan “Leave no one behind.” The sustainability movement offers fresh perspectives. The first perspective is the recognition of the fact that bioethical concerns exist in the *milieu* of an unsustainable society; that is, bioethics does not exist in a social vacuum. The second perspective is the acknowledgment of limitations in discussions presupposing dominant values of individualism, reciprocity, and entitlement. The third perspective is the opportunity to be aware of the patient’s true wants. Enriched autonomy is not simply a given

right; it is a discovery to be made by stakeholders and an outcome of creative communication.

Conclusion

A documentary film on Transition Town movements located around the world ends with the following message: “Transition is a social experiment on a massive scale. We don’t know if it will work. What we are convinced of is that if we wait for governments, it will be too little too late. If we act as individuals, it’ll be too little. But if we act as communities, it might just be enough, just in time. (Goude, Emma, 2012)”

The need to act as communities best summarizes the contribution of sustainable movements to bioethics. The endless pursuit of a better quality of life via technological advancement undermines the existence of life itself. There are no absolute, universal, clear principles that lead to one right answer, however. We need to set up social, political, and economic situations in which stakeholders can more readily self-reflect and talk with others, and, so to speak, with the environment, so that stakeholders may recognize their true desires. Awareness of interdependence fostered by the Gaia Education generates a creative kind of communication that is both a foundation of an enriched kind of autonomy and a more sustainable society.

Endnotes

- 1 The Global Ecovillage Network (GEN) was launched at the UN HABITAT conference in Istanbul 1996.
- 2 For worldview: Holistic Worldview; Reconnecting with Nature; Transformation of Consciousness; Personal Health and Planetary Health; Socially Engaged Spirituality.
For Social: Building Community & Embracing Diversity; Communication Skills: Conflict, Facilitation, and Decision making; Leadership and Empowerment; Art, Ritual and Social Transformation; Education, Personal Networks and Activism.
For economic: Shifting the Global Economy to Sustainability; Right Livelihood; Local Economies; Community Banks and Currencies; Legal and Financial Issues.

For Ecological: Green Building & Retrofitting; Local Food, Nutrient Cycles; Water, Energy and Infrastructure; Restoring Nature, Urban Regeneration and Rebuilding after Disasters; Whole Systems Approach to Design.

- 3 The government of Senegal, for example, created a National Ecovillage Agency. JICA (Japan International Cooperation Agency) is collaborating in the implementation of an ecovillage creation project (2012-2016).
- 4 See Silver 1998, Stock 2002, Habermas 2002.
- 5 yaritaihitoga yaritaikotowo yaritaitokini yaritaidakeyaru.

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