Re-considering the sense of responsibility in the age of climate change

Mitsuyo Toyoda

Introduction

Global warming: when we hear this term, many of us picture a scene of huge icebergs melting down into the ocean and polar bears left stranded on a piece of floating ice, losing their habitat to the rising seas. This scene is repeatedly shown in the media, moving the hearts of many. It aims to point out the urgency of global warming. It encourages us to think that we need to take action immediately.

However, at least for most Japanese people, it depicts a story that is happening in a place far away from where they live. If we ask whether Japanese people are responsible for what is happening in the North Pole, I do not think that most would answer "yes" immediately. But this is mistaken. First of all, global warmingis not confined to the North Pole. Instead, it began quite some time ago to influence people's lives all over the world in various ways. Secondly, the word *global warming* does not exactly capture the phenomena that we have begun to observe. "Climate Change" may be a better description. The global rise in temperature generates a variety of secondary local effects such as drought, flood, and heat waves, which then result in the increased risk of wildfire, a rise in the sea level, ecological deterioration, and so on.

Climate Change is anthropogenic: there has been a debate over the adequacy of scientific evidence to support this claim. Nevertheless we see a clear correlation between the increase in greenhouse gas emissions arising from human activity and the rising global temperature. According to the recent Intergovernmental Panel on Climate Change report, it is *very likely* that anthropogenic influences have contributed to the rise of surface temperature, the change in the global water cycle, the loss of arctic sea-ice, etc.[1] More than 97% of research papers expressing a position on anthropogenic global warming endorse the claim that human activities have influenced climatic change.[2] But what follows from that? If we *are* responsible, do we need to do anything? What do we mean by taking responsibility? We are currently still enjoying life's conveniences that depend on abundant resources and the technologies that consume them.

Among the various environmental issues we face, climate change is one of the most difficult for us to actually observe the impacts of our daily actions. Nevertheless, the accumulation of our everyday activities is generating urgent climatic effects that are creating an impact

[1] The Intergovernmental Panel on Climate Change, *Climate Change 2014 Synthesis Report Summary for Policymakers*, https://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf. In this report, "very likely" means 90-100% of confidence.

[2] John Cook, Dana Nuccitelli, Sarah A. Green, Mark Richardson, Bärbel Winkler, Rob Painting, Robert Way, Peter Jacobs and Andrew Skuce, "Quantifying the consensus on anthropogenic global warming in the scientific literature," in *Environmental Research Letters* 8 (2013): 1-7.

worldwide. Causal effects of our individual actions are hard to identify. However, recently in Japan, the problem of intensifying floods and their connection with climate change has begun to be discussed. Flooding is an observable phenomenon: we can actually *see* the damage caused by it. People are now directly witnessing and experiencing the loss of human life and destruction of properties. Flooding is not happening somewhere else overseas, it is affecting our country, our communities, and our neighborhoods. What should we do about this issue? Who is responsible for dealing with the intensifying flooding? Government bodies have played a significant role in flood control so far. But if flooding is intensified by the influence of climate change, and if climate change is anthropogenic, more people need to be involved.

In this paper, I focus on the phenomenon of flooding as an approach to consider ethical issues relating to climate change. Based on recent cases of flooding in Japan, I identify various issues of responsibility involved in those cases and discuss how ethical issues were broadened after climate change began to be considered as anthropogenic. One of the important points for discussion is how we understand the concept of responsibility. This concept generally describes the evaluation of human conduct based on a cause-and-effect relationship. The actor is considered responsible for actions carried out of one's own accord. The actor needs to take responsibility if her action causes harm to others. This common interpretation of responsibility, however, does not necessarily work in the case of climate change. If the issue of climate change is generated by the excessive use of energy and resources, people in industrialized nations as a whole seem to be responsible for it. But since the causal relationship of individual actions and their effects are so complex and varied, it is extremely challenging to identify the locus of responsibility .

I will argue that our understanding of the word "*responsibility"* needs to be challenged. I offer here, based on my research in practical philosophy, a different interpretation of responsibility and consider what is needed to develop this sense of responsibility. This interpretation offers the possibility to create opportunities for us to engage in constructive problem-solving dialogues.

Considering the locus of responsibility with intensifying floods

Throughout our history in Japan, people have suffered from natural disasters such as storms, earthquakes and volcanic eruptions, which are caused by the dynamic movement of the earth beyond human control. There have been serious threats to people's life, health and wellbeing. How to deal with natural calamities has been one of the most crucial concerns of this country, especially flooding, which occurs frequently and leaves catastrophic damage. Several rulers in the past have obtained public trust through their power to effectively control water. In the twentieth century, modern engineering contributed to strengthening flood control by harnessing the power of new materials and technology. Rivers were straightened and were converted to aqueducts that carry water quickly off to the sea. Modern developments in infrastructure proved to be successful in decreasing some of the risks inherent in nature.

If we could live without worrying about natural calamities, it would be an extraordinary development. Technological advancements in disaster prevention have contributed to of the enhanced security and well being of human communities. However, as a result of this advancement, we have come to pay little attention to our surroundings. Our trust in modern technology has caused a change in how we relate to nature. Resulting carelessness has also

created an additional threat. For example, many people lost their lives because they believed in the power of seawalls and did not think they would need to escape in the tsunami disaster caused by the Great East Japan Earthquake in 2011. How about flooding? It also still takes human lives. The fact is that we have an ever increasing danger of flooding because precipitation is intensifying. Nevertheless, it is difficult for us to be aware that such threats increasingly confront us.

For example in Japan, the frequency of localized cloudbursts is increasing. In weather forecasts, we often hear the word "*ijō* (異常)," which means *abnormal*. The weather is increasingly unpredictable because it no longer follows the traditional pattern of seasonal changes. But people have begun to realize that the degree of change is moving beyond an acceptable level. Experts have concluded that it is not just the weather that is changing; rather, more significantly, the climate itself is changing.

Strong rain is not atypical in Japan. Located in the temperate and humid climate, this country has a rich culture of rain. In our Japanese Language, there are many words and expressions associated with rain. However, new terms had to be invented to describe current abnormal patterns of rain such as *gerira gōu* (ゲリラ豪雨, guerrilla rainfall), and *kyokushoteki shūchūgōu* (局所的集中豪雨, localized concentrated downpour). According to the data from the Japan Meteorological Agency, there is an increase in the frequency of heavy rainfall that exceeds 80mm per hour. As a result, flood and landslide disasters are intensifying.

In August 2014, torrential rainfall hit the district of Asa in Hiroshima and left devastating damage causing massive landslides and taking the lives of 74 people. 133 houses were completely destroyed. Over 4,000 more houses were flooded. Whole neighborhoods in severely damaged areas disappeared since many people who survived this disaster decided not to come back to their hometown. Such a decision is especially hard for elderly residents whose identities are strongly connected to the place they have often lived for a long time.

In September 2015, the basin of the Kinugawa River was flooded. Due to the collapse of the embankment, local residents were left in the raging torrent and more than 1100 people had to be rescued by helicopters. The flooded area totaled 40% of the city of Joso.

What do these climatic incidents mean to us? It is now increasingly widely acknowledged that there is a strong correlation between the increase of greenhouse gas emissions by human activities and global climate change, which causes intensifying flooding in some parts of the world. The recognition of flooding as anthropogenic is very new to many Japanese people. When a flood disaster is regarded as anthropogenic, it is usually taken to mean that the local flood control measures were insifficient. Government bodies controlling rivers are generally considered responsible for such disasters. However, the current informed scientific views of climate change are increasingly challenging popular thinking. Anthropogenic causes of floods have begun to be considered. This recognition requires us to transform our understanding of the notion of natural disaster.

The Japanese word "*tensai* (天災)" means natural calamity. This word implies the idea that natural disasters are brought about by *ten* (天). It is very difficult to translate the word *ten* into English because there is no equivalent word for it. Although *ten* is often translated as "heaven," it does not necessarily have the strict religious connotation that "*heaven*" carries. This term

signifies the state of being “beyond human control.” Not only natural disasters but also the weather has been considered as the work of *ten*. the Japanese words for weather, *tenki* (天気) and *tenkō* (天候), also contain the character for *ten*. These terms imply the idea that climatic events are uncontrollable by humans. Torrential rainfall, droughts, earthquakes, volcanic eruptions… these events have been believed to occur without human intervention. *Tensai* contrasts with the word *jinsai* (人災), which means man-made disasters brought about by human errors.

To regard natural disasters and climatic events as the work of *ten* does not necessarily mean that people have merely accepted whatever *ten* brings to them. The avoidance of risks brought about by climatic events has been a crucial concern for humankind. Since the distant past, human beings in various cultures have been searching forways to control the realm of *ten.* Cultures from around the world have developed religious/cultural rituals requesting divine intervention. In Japan, for example, people have handed down a variety of mythological stories that illustrate the power of deities to control nature. Such deities are enshrined in temples built near places vulnerable to climatic conditions and natural disasters.

Storms cause large numbers of deaths and injuries, tremendous damageto people’s properties and disrupt the peace of their everyday lives. A variety of issues concerning the security and welfare of human life are involved in these incidents. Nevertheless, one might reason as follows: If unpredictable rainfall is beyond human control, there is no room for ethics since ethics is about governing human behavior and conduct. Climate, however, is not a matter of *ten* anymore. Assume that in at least some cases floods are induced by anthropogenic factors. In the recent past, climate, which was (and probably still is) beyond human control, began to be increasingly influenced by human activities. If humans are instrumental in causing this change, aren’t they responsible for the resulting unfavorable outcomes? The challenge of environmental ethics lies at this point. If we look at the example of flooding, a variety of ethical issues begin to emerge.

Ethical discourse

Assume that some natural disasters are anthropogenic: human activities directly or indirectly trigger catastrophic incidents such as flooding. If so, then there is a need for ethical discourse. Who is responsible for these disasters? It is not a simple task to identify the locus of responsibility.

The notion of *responsibility* stands for the state of having a duty to deal with something that has resulted from one’s action. When one’s behavior causes any harm (whether physical or mental harm) to others, and when there is something that can be done to compensate for the harm, this person is claimed to have moral responsibility. The subject of moral responsibility, in the case of environmental ethics, includes not only human beings but also other living things, ecosystems, and future generations that do not yet exist in this world.

The need for responsibility arises on the basis of at least two assumptions. First, the actor is aware that his/her conduct caused certain harm to others. Without knowing that, one cannot respond to the situation. Second, responsibility is claimed when there is a possibility for alternative actions. When someone is forced to do something which consequently harms others, the actor is not blamed: they do not take responsibility. It is regarded as a blameless

situation. Freedom of action is a prerequisite in the assigning of responsibility.

Let us go back to the example of the severe flood that happened in Hiroshima in 2014. Who is responsible for this catastrophe? Where is the locus of responsibility? Several questions arise if we consider ethical issues involved in this case.

First, government bodies have a duty to secure people from natural disasters. Did both local and national governmental agencies provide adequate flood control measures? Was the improvement of the river adequate? Adequacy does not simply mean that it is better to build more structures for flood control. Yutaka Takahashi explains that as the draining of river embankments is extended upstream, we create a higher risk of increasing the volume of river water. Most rainwater, which would previously percolate down through the soil, will now flow into the river through aqueducts, where it overflows downstream. It is ironic that the efforts to improve river environments have in fact worked to increase flooding.

Secondly, taking measures to evacuate affected areas is another task of the government, aiming to save the lives of those in the flooded region. Then, we may ask if the local government provided adequate evacuation directives. This question is always raised after natural disasters because the evacuation directives play a significant role in saving people's lives. Local governments are generally responsible for releasing the warning for evacuation: however, the timing of such warnings is very difficult to judge.

Third, after this disastrous flood, the media reported that the village that was destroyed by landslides used to be known for its vulnerability. The original name of this village, Jyarakujiashidani, means "an awful valley where a snake runs down." In Japanese mythologies, rivers are often described through the metaphor of a snake. This ancient name thus indicates that this valley is vulnerable to flooding and subsequent landslides. But the name was changed because the original name did not sound attractive. If so then, was it someone in the past who decided to change the name of this village who is responsible? Or, is the government or the developer who did not inform current residents about the vulnerability of the land to natural disasters responsible? How about the public? Do we have a responsibility to investigate the risks of our dwelling places and to protect ourselves from disasters?

In addition to these questions, more issues arise if we take into account the fact that severe flooding is induced by anthropogenic climate change.

For example, if global warming, generated due to the increase of greenhouse gas emissions by human activities, induces the active circulation of water and causes flooding, who is responsible for the loss of lives and properties caused by the flooding? Is it the people who enjoy this modern lifestyle who are responsible? After all, it is these people who have been contributing to the excessive emission of greenhouse gases. For example, since I live in Japan, which is known to consume more energy than the world average, am I responsible for climate change, and thus the flooding in Hiroshima? If so, how can I take responsibility for this incident?

It has been argued that the locus of responsibility can be clarified if we examine the cause-and-effect relationship of actions. Based on this broadly accepted moral reasoning, we recognize how difficult it is to consider ethical issues involved in climate change. There are two

points to be considered when clarifying this causal relationship. First, this relationship is not simple at all. Climatic conditions are determined as a result of the interaction of a variety of factors. Cause-effect relationships within climate change are extremely complex and cannot be identified easily. Even if we can see the correlation between the level of greenhouse gases and the rise in temperature, it does not necessarily confirm it is as a result of a cause-effect relationship.

Indeed, scientific findings have been accumulating in the field of climate science and, as I mentioned earlier, a great percentage of scientists agree that climate change is anthropogenic.[3] However, scientific verification carries a certain degree of uncertainty, which has been used as an excuse for the evasion of responsibility.

The second challenge is the ambiguity of the locus of responsibility because observable effects arise through the accumulation of small actions. Climate change has been induced not by a single action but by the accumulation of many people's actions. Although the impact of each person's action is very small, the accumulation of tiny impacts results in a collectively large environmental impact. It is then impossible to precisely identify a single locus of responsibility.

These two points are involved in ethical discourses concerning climate change. How can we deal with these difficulties? Can we find an approach to start clarifying our responsibility?

Re-considering responsibility in the age of climate change

Responsibility is usually interpreted as a concept based on the idea of cause-and-effect relationship of human conduct. It is claimed that when certain actions cause harm to someone, the actor must compensate for this harm. However, this interpretation is contestable. I examine two positions that challenge the predominant ethical assumption that the locus of responsibility needs to be clarified through the examination of cause-and-effect relationships in human activities.

First, according to our common moral sense, it is simply absurd to conclude that we should not take any actions since the causal relationship is uncertain. Stephen M. Gardiner argues that uncertainty should not be an excuse for belittling the problem of climate change:

> … to refuse to act because of uncertainty is either to refuse to accept the global warming problem as it is (insisting that it be turned into a more respectable form of problem before one will address it) or else to endorse the principle that to "do nothing" is the appropriate response to uncertainty. The former is a head-in-the-sand approach and clearly unacceptable, but the latter is also dubious and does not fit our usual practice.[4]

To do nothing is also a decision about what to do. If we know that there are problems that are likely to be caused by our activities, it is common to start thinking about what can be done in order to improve the situation. Uncertainty should not be an obstacle to taking action. Before the development of modern science, people tried to prepare for the worst-case scenarios

[3] Cook et al., "Quantifying the consensus."
[4] Stephen M. Gardiner, "Ethics and Global Climate Change," Ethics 114 (2004): 555—600.

because natural incidents were uncertain. Uncertainty used to be one of the motivations *towards* action.

However, in the history of various environmental problems, uncertainty has been used as an excuse for ignoring the problems we face. The pollution of soil and water caused by industrial and agricultural activities, for example, are often left unattended until the sources of contamination are detected by scientific and legal investigation. Delayed actions imply that the stakeholders in these cases are not acting on the basis of their moral sensibilities. Many problems of pollution involve discussion concerning collective (corporate) responsibility, which is in a different realm from personal morality. Uncertainty may become an obstacle in collective responsibility. Nevertheless, at least at the individual level, as Gardiner mentions, uncertainty is not a reason to renounce or evade environmental action.

The second position provided by Kosakai Toshiaki casts doubt upon the widely acknowledged interpretation of the concept of responsibility. His view is that if we examine how we claim responsibility more carefully, we realize that responsibility is not necessarily understood in the light of the cause-and-effect relationship. Through the examination of how responsibility is claimed in various ethical settings, Kosakai argues that it is not possible to identify a simple causal relationship because our conduct is influenced by so many factors.[5] The causes of our actions can be traced back almost endlessly. He also gives an example of collective responsibility. Let us consider the case of the nuclear pollution in Fukushima that happened after the Great East Japan Earthquake in 2011. Even if not all of the employees of Tokyo Electric Power Company were actually involved in the project of constructing this nuclear power plant, they are considered responsible for this problem simply because they worked for this company. Collective responsibility applies regardless of the causal relationship of an action to an individual. Hannah Arendt describes a similar thought. She explains that one of the conditions of claiming collective responsibility is one's awareness of being claimed responsible for what he/she does not do.[6]

What then is responsibility? Kosakai argues that responsibility is socially fabricated and is independent of the causal relationship of conduct. It is invented in an attempt to make sense of human conduct. When we say someone is responsible for certain actions, it means that these actions are considered inappropriate in a given context. According to Kosakai, claiming responsibility, especially in Japanese culture, has a ceremonial function to sustain social order. This process is used as a way to understand that certain actions are not permitted in a given society.

Where is the locus of responsibility? This question already presupposes an ethics based on the idea of a cause-and-effect relationship. Asking who is responsible for what happens is like looking for the culprit and making someone pay for what happened. I do not want to say here that we should dismiss completely this aspect of the concept of responsibility. Rather, the ideas proposed by Gardiner and Kosakai contain helpful insights to reconsider the meaning of this concept in the broader framework of climate change, where the locus of responsibility is more diffuse and ambiguous.

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[5] Kosakai Toshiaki, *Sekinin to iu kyokou* (Tokyo: University of Tokyo Press, 2008).
[6] Hannah Arendt, "Collective Responsibility," *Boston College Studies in Philosophy* 26 (1987): 43—50.

When Kosakai says that responsibility is fabricated, does he mean that responsibility does not really exist? Of course not. The notion of responsibility exists and influences how people interact with the world.

If we employ the word responsibility in order to examine what *I can do* instead of what *should be done*, we begin to see a different dimension of this word. Responsibility then emerges from one's sensitivity to what is happening and grows through one's reflection on his/her own conduct.

When considering the ethics of global climate change, people tend to focus mainly on the importance of discourse across nations. Not only in relation to global warming, but also with regard to the loss of biodiversity, pollution, or natural resource shortages to name a few of the environmental issues that have been discussed at the global level. Heated negotiations are conducted internationally to set environmental goals and regulations in order to remedy the current situation. Although such a global approach is necessary, grass-root participation and collaboration are also essential to the advancement of practical outcomes.

The idea "Think Globally, Act Locally," has become a well-known expression, spreading the importance of considering environmental issues at both levels. Although the idea is widespread, there is a gap between global environmental arguments and the individual's engagement in environmental actions. If we merely say that global issues should be taken care of by nations, no one in the end may take any action.

"Is there anything I can do?" Without each individual asking this question, responsibility will remain an abstract concept that cannot generate any concrete ethical significance.

How then can we grow this sense of responsibility? One possible approach is to promote the practice of public dialogue in which people think together about what they can and should do. I came to realize the importance of this practice through my research. My main research site is Sado Island, which is located in the Sea of Japan, about 40 km off the coast of Niigata. The focus of my work is to facilitate democratic decision-making processes by creating opportunities for people in various positions to participate in environmental dialogue and actions with the goal of developing a sustainable community. Through the continuous practice of dialogue, I have gained the impression that global environmental discourses do not resonate with people's everyday concerns. It was counterintuitive in the beginning since Sado is well-known in Japan for its pioneering work of re-introducing the extinct *Crested Ibis* species. Environmental Conservation has been prioritized in public policy on this island. Even in such a place, global environmental issues are not at the forefront of people's attention. The value of biodiversity is only discussed in terms of government policies and academic discourse. If biodiversity is too academic, how about sustainability? There should be no one who thinks that the world does not need to be sustainable. Even so, this concept seems too vague and triggers many questions. First of all, what needs to be sustained: urbanized lifestyle, economy, industry, human life, or the earth? Who decides what is to be sustained? What does one actually need to do?

As a member of The Consensus Building Research Team, I coordinated 43 workshops entitled, "Ecological Conservation For Symbiosis With The Crested Ibis", a symbolic bird of Sado Island. I also held 10 workshops for the *Ten-noh gawa* River Restoration Project, and countless

meetings for the restoration of the Kamoko estuary . In all sessions, it was crucial to invite people in a variety of positions such as farmers, fishermen, schoolteachers, government workers and even children to participate. Initially many participants hesitated to share their ideas because they were not used to being listened to. It was thus our task to create a safe environment in which people felt free to share their voices. The presence of any hierarchical relationship was discouraged. The participants had an equal opportunity to share their ideas and all voices were valued. By sharing a variety of ideas, people thought together about what they wanted to do. The group worked together on planning what they could do and committed themselves to turning their ideas into actions. For example, in the case of Kamoko, we succeeded in establishing a platform for collaboration and actually accomplished a citizen-initiated public works programme for environmental restoration. This achievement had a positive influence in the neighborhood and new community development projects started in the village of Fukura on the shore.

These achievements did not happen all at once. When we have environmental dialogues, sometimes there is an unproductive tension between the public and the government. The public makes requests to government representativesto improve their environment. Government bodies feel under pressure to respond to their requests and reluctant to engage in dialogue with the public. In order to realize constructive dialogues, it is important to encourage participants to think about and actually experience how positive engagement is possible in a given situation.

In closing, I would like to share a vital part of my successful experience with multi-generational environmental dialogue: how children are important for changing our minds and attitudes. The story is about a workshop concerning a river restoration project in Tokyo. The river under discussion was Zenpukuji Gawa, which like a sewer, carries wastewater in heavy rain. It used to be a beautiful stream running through rice fields. However, the environment of this river has changed significantly over time as all of the rice fields were built on as housing developments. The river now functions as drainage. People do not pay attention to the river except on days of heavy rain, when it overflows into the river. One of the strong wishes of local residents is to improve the sewerage system and to stop the overflow of sewage into the river. They asked the local government to build better infrastructure to achieve this. Children who were participating in the workshop, on the other hand, said that it was important to think what they could do first: “If we refrain from doing laundry and taking showers during heavy rain, we can decrease the amount of water running into the drainage and prevent it from overflowing.” There was of course no objection. Even though there are things we have to depend on the government for, we can also start by thinking about what we through individual and hence collective action can do.

Responsibility emerges and grows through this way of thinking. In the workshop just mentioned, it was the children who taught us that we needed to change how we think and act. These same children have been cleaning up this river every week after school and really try to improve its environment. These types of voluntary environmental actions result from a growing sense of responsibility in our global citizens, starting with our youngest members-the children.

I conclude by asking again: Where is the locus of responsibility for climate change? We must consider that it is in each of us. To recognize one’s own responsibility is the beginning of our

attempt to understand and reverse the negative effects of global climate change. The challenge is in us: we must change how we think about responsibility.